

# Regulatory Disclosures

## 31 December 2017



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## 1. Key ratio

### Capital ratio

	At 31 December 2017
	HK\$m
Total risk-weighted assets	1,029,152
CET1 capital	170,012
<b>CET1 capital ratio (as a percentage of risk-weighted assets)</b>	<b>16.52%</b>
Tier 1 capital	170,012
<b>Tier 1 capital ratio (as a percentage of risk-weighted assets)</b>	<b>16.52%</b>
Total capital	209,828
<b>Total capital ratio (as a percentage of risk-weighted assets)</b>	<b>20.39%</b>

### Leverage ratio

	At 31 December 2017
	HK\$m
Tier 1 capital	170,012
Leverage ratio exposure	2,461,068
<b>Leverage ratio</b>	<b>6.91%</b>

## 2. Overview of risk management and RWA

### OVA: Overview of risk management

The Group conducts risk assessment in daily operations based on its business activities, sets up risk appetite, and sets risk adjusted return targets as well as different levels of risk limits and KRIs under the overall risk appetite framework. Via such risk limits and KRIs, the risk appetite is cascaded to business units into corresponding performance indicators, so as to supervise business units to make proper adjustments to the Bank's operations based on current risk status.

The Group conducts regular assessment on risk management status and risk governance based on regulatory requirements and assesses the Bank's level of internal capital adequacy accordingly. The eight key types of risk inherent in the Group's business include: credit risk, market risk, interest rate risk, liquidity risk, operational risk (including technology risk), legal and compliance risk (including anti-money laundering risk), reputation risk and strategic risk.

The Group's risk governance structure covers 3 layers: the Board of Directors and its subordinate committees, the senior management and the management level committees, the three lines of defence risk management functions.

- Board of Directors: The Board of Directors represents the interests of shareholders, and is the highest decision making authority of the Group and has the ultimate responsibility for the oversight of risk management. The Board with the assistance of its committees has the primary responsibilities for the determination of risk management strategies, risk appetite and risk culture, and for ensuring that the Group has an effective risk management system to implement these risk management strategies.
- Senior management: Responsible for managing the various types of risks that the Group is exposed to, and approving material risk exposures or transactions within his authority delegated by the Board of Directors. The Deputy Chief Executives ("DCEs") assist the Chief Executives ("CE") in fulfilling his responsibilities on day-to-day management of various types of risk and are responsible for approving material risk exposures or transactions within their authorities delegated by the CE. The Chief Risk Officer ("CRO") assists the CE in fulfilling his responsibilities on day-to-day management of various types of risks. The CRO is also responsible for initiating new risk management strategies, projects and measures that would better monitor and manage new risk issues or areas, whether arising from new businesses, products and operating environment, or in response to regulatory changes, and reviewing material risk exposures or transactions within his delegated authority.
- Individual business units (front office): Act as the first line of defence of risk management and are responsible for soliciting business in compliance with the risk management policies and procedures and within various risk limits, and for assessing and monitoring the risk of their business, and ensuring risk data is correctly entered, kept current and aligned with the data definitions.

## 2. Overview of risk management and RWA

### OVA: Overview of risk management (continued)

- Various risk management units (middle office): Independent from the business units, and responsible for day-to-day management of different kinds of risks. They have the primary responsibilities for providing an independent due diligence through identifying, measuring, monitoring and controlling risk to ensure an effective check and balance, as well as drafting various risk management policies and procedures. They are also responsible for reporting the implementation of risk management policies and risk profiles to the Board and the Management and for providing supports and recommendations for their decision-making.
- Supporting units (back office): Responsible for providing proper day-to-day operations support to ensure that there are adequate human resources and systems to support risk management.
- Group Audit: Responsible for conducting independent checking, and reporting to the Board on the quality of risk management supervision, the adequacy and the compliance of internal policies and procedures.

The Group develops various codes of conduct and has sound management systems in place to enforce them. The standards of conduct are laid down in its risk management policies, and other operating principles and guidelines. All staff is required to follow them when conducting business.

The Group makes use of appropriate training programmes, remuneration, incentive, reward and penalty schemes, assessment and feedback mechanism to guide and drive staff to conduct business in a responsible, honest, practical and proper manner.

The Group's risk management measurement system covers comprehensive qualitative and quantitative indicators of the 8 major risk categories as required by regulator.

Under such system, the Group sets risk appetite and regularly reviews and monitors risk appetite and risk limits based on operating conditions and risk status, and reports regularly to senior management and the Board of Directors.

Regular risk reporting is made to the senior management and the Board of Directors, and such regular reporting covers:

- Implementation status of Group Risk Appetite, risk limits and KRIs
- Risk status of major risk types, portfolios and exposures
- Major regulatory compliance requirements and implementation status
- Significant risk, compliance and internal control incidents/events
- Matters of concern and main tasks

Ad hoc reporting to senior management and the Board of Directors is also conducted based on business needs of risk management and internal control.

## 2. Overview of risk management and RWA

### OVA: Overview of risk management (continued)

Based on regulatory requirements, the Group conducts a variety of stress tests on individual risks and integrated risks each year. The Group also conducts special scenario analysis, sensitivity analysis and stress testing according to emerging issues or by specific areas or businesses. Each stress testing scenario takes into account 3 levels of severity, i.e. mild, moderate, and severe, while different probabilities are applied based on level of severity. Impacts on macroeconomic and market will be evaluated under different scenarios, and impact on Group's risk indicators are also assessed accordingly.

The Bank shall apply stress testing results to various management decisions, including decisions made on strategic businesses, preparation of the business and capital planning, setting of the risk appetite, setting and adjustment of the risk limit, inclusion in the internal capital adequacy assessment process ("ICAAP"), performance of liquidity assessment, implementation of remedial actions and recovery plan, etc.

The strategies and processes to manage, hedge and mitigate risks that arise from the AI's business model include:

1. Establishing clear risk management strategies and ensuring that a comprehensive risk management system is in place to identify, assess, monitor and control various kinds of risks.
2. Establishing risk management units with clear responsibilities to perform independent risk management and control.
3. Establishing effective communication system that enables the "tone of the top" on risk management are communicated to and understood by every employee so that they could comply with BOCHK's risk management strategies.
4. Putting in place supporting policies and procedures as well as clear authority structure that guide employees' behaviors and set clear boundaries for actions.
5. Setting the risk appetite of the Group. Empirical and/or quantitative models shall be used to set limits for quantifiable risks (including credit risk, market risk, interest rate risk and liquidity risk) to ensure that exposures to such risks are controlled within acceptable risk levels.
6. Continuously strengthen risk data aggregation capabilities, establishing a comprehensive risk management information system that provides regular and sufficiently detailed reports for the Board and the Management to facilitate their continuous monitoring of the risk profile of the Group as well as the implementation of risk management policies (especially exceptions).

## 2. Overview of risk management and RWA

### OVA: Overview of risk management (continued)

7. Establishing independent internal audit, review and accountability system so as to review and evaluate the implementation of risk management system.

The Group has established various risk limits and early warning indicators of different types and different approval levels, and regularly monitors and reports implementation status to senior management and the Board of Directors. If such indicators approach or breach the early warning level or pre-set limits, timely assessment will be conducted by relevant function units and reported to corresponding approval level, and appropriate mitigation actions will be taken accordingly.

## 2. Overview of risk management and RWA

### OV1: Overview of RWA

		RWA		Minimum capital requirements
		At 31 December 2017	At 30 September 2017	At 31 December 2017
		HK\$m	HK\$m	HK\$m
1	Credit risk for non-securitization exposures	894,857	865,245	75,429
2	Of which STC approach	94,858	80,456	7,589
2a	Of which BSC approach	-	-	-
3	Of which IRB approach	799,999	784,789	67,840
4	Counterparty credit risk	16,203	16,098	1,337
5	Of which SA-CCR	-	-	-
5a	Of which CEM	9,256	9,134	780
6	Of which IMM(CCR) approach	-	-	-
7	Equity exposures in banking book under the market-based approach	-	-	-
8	CIS exposures – LTA	-	-	-
9	CIS exposures – MBA	-	-	-
10	CIS exposures – FBA	-	-	-
11	Settlement risk	-	-	-
12	Securitization exposures in banking book	-	9	-
13	Of which IRB(S) approach – ratings-based method	-	9	-
14	Of which IRB(S) approach – supervisory formula method	-	-	-
15	Of which STC(S) approach	-	-	-
16	Market risk	17,131	17,287	1,370
17	Of which STM approach	3,787	3,499	303
18	Of which IMM approach	13,344	13,788	1,067
19	Operational risk	75,514	73,968	6,041
20	Of which BIA approach	-	-	-
21	Of which STO approach	75,514	73,968	6,041
21a	Of which ASA approach	-	-	-
22	Of which AMA approach	N/A	N/A	N/A
23	Amounts below the thresholds for deduction (subject to 250% RW)	3,836	3,754	307
24	Capital floor adjustment	-	-	-
24a	Deduction to RWA	26,899	26,375	2,152
24b	Of which portion of regulatory reserve for general banking risks and collective provisions which is not included in Tier 2 Capital	193	195	16
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	26,706	26,180	2,136
<b>25</b>	<b>Total</b>	<b>980,642</b>	<b>949,986</b>	<b>82,332</b>

RWAs in this table are before the application of the 1.06 scaling factor following a clarification from the HKMA. 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%.

### 3. Linkages between financial statements and regulatory exposures

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

	At 31 December 2017							
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	Carrying values of items:					not subject to capital requirements or subject to deduction from capital
			subject to credit risk framework	subject to counterparty credit risk framework	subject to the securitization framework	subject to market risk framework		
			HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	
<b>Assets</b>								
Cash and balances with banks and other financial institutions	363,168	363,116	361,674	1,442	-	-	-	
Placements with banks and other financial institutions maturing between one and twelve months	59,056	58,651	55,437	3,214	-	-	-	
Financial assets at fair value through profit or loss	50,198	49,752	-	6,859	-	42,893	-	
Derivative financial instruments	33,616	33,616	-	33,616	-	31,277	19	
Hong Kong SAR Government certificates of indebtedness	146,200	146,200	146,200	-	-	-	-	
Advances and other accounts	1,187,987	1,187,986	1,187,986	-	-	-	-	
Investment in securities	576,423	576,414	576,414	14,458	-	-	-	
Interests in subsidiaries	-	744	744	-	-	-	-	
Interests in associates and joint ventures	415	415	415	-	-	-	-	
Investment properties	19,949	19,953	19,953	-	-	-	-	
Properties, plant and equipment	46,912	46,481	46,481	-	-	-	-	
Deferred tax assets	51	51	-	-	-	-	51	
Other assets	30,489	30,387	26,909	3,478	-	6,287	-	
<b>Total assets</b>	<b>2,514,464</b>	<b>2,513,766</b>	<b>2,422,213</b>	<b>63,067</b>	<b>-</b>	<b>80,457</b>	<b>70</b>	

### 3. Linkages between financial statements and regulatory exposures

#### LI1: Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories (continued)

	At 31 December 2017							
	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	Carrying values of items:					not subject to capital requirements or subject to deduction from capital
			subject to credit risk framework	subject to counterparty credit risk framework	subject to the securitization framework	subject to market risk framework		
			HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	
<b>Liabilities</b>								
Hong Kong SAR currency notes in circulation	146,200	146,200	-	-	-	-	146,200	
Deposits and balances from banks and other financial institutions	222,187	222,187	-	-	-	-	222,187	
Financial liabilities at fair value through profit or loss	19,720	19,720	-	-	-	16,936	2,784	
Derivative financial instruments	30,980	30,980	-	30,980	-	30,425	(50)	
Deposits from customers	1,774,611	1,774,915	-	-	-	-	1,774,915	
Debt securities and certificates of deposit in issue	21,641	21,641	-	-	-	-	21,641	
Other accounts and provisions	40,620	40,557	-	-	-	-	40,557	
Current tax liabilities	4,180	4,161	-	-	-	-	4,161	
Deferred tax liabilities	5,658	5,501	-	-	-	-	5,501	
Subordinated liabilities	18,980	18,980	-	-	-	-	18,980	
<b>Total liabilities</b>	<b>2,284,777</b>	<b>2,284,842</b>	<b>-</b>	<b>30,980</b>	<b>-</b>	<b>47,361</b>	<b>2,236,876</b>	

### 3. Linkages between financial statements and regulatory exposures

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

		At 31 December 2017				
		Total	Items subject to:			
			credit risk framework	securitization framework	counterparty credit risk framework	market risk framework
		HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
1	Asset carrying value amount under scope of regulatory consolidation (as per template LI1)	2,513,696	2,422,213	-	63,067	80,457
2	Liabilities carrying value amount under regulatory scope of consolidation (as per template LI1)	47,966	-	-	30,980	47,361
3	Total net amount under regulatory scope of consolidation	2,465,730	2,422,213	-	32,087	33,096
4	Off-balance sheet amounts	637,569	149,729	-	-	-
5	Differences due to PFE	17,294	-	-	17,294	-
6	Differences due to different netting rules, other than those already included in row 2	15,109	-	-	13,408	-
7	Differences due to consideration of provisions	3,972	3,972	-	-	-
8	Differences in valuations	678	-	-	678	-
9	Differences due to CRM and others	61,604	61,774	-	(170)	-
10	<b>Exposure amounts considered for regulatory purposes</b>	<b>3,201,956</b>	<b>2,637,688</b>	<b>-</b>	<b>63,297</b>	<b>33,096</b>

### 3. Linkages between financial statements and regulatory exposures

#### LIA: Explanations of differences between accounting and regulatory exposure amounts

The main driver for the differences between accounting values and amounts considered for regulatory purposes is off-balance sheet amounts, which contribute to exposure amounts considered for regulatory purposes but not the carrying value amount under scope of regulatory consolidation.

The Group has an established governance structure and controls framework to ensure that fair values are either determined or validated by control units independent of the front offices. Control units have overall responsibility for independent verification of valuation results from front line businesses and all other significant fair value measurements. Specific controls include verification of observable pricing inputs; review and approval for new models and changes to models; calibration and back-testing of models against observed market transactions; analysis and investigation of significant daily valuation movements; review of significant unobservable inputs and valuation adjustments. Significant valuation issues are reported to senior management, Risk Committee and Audit Committee.

The Group chooses appropriate valuation methodologies in corresponding to the nature, position and complexity of treasury products and derivatives. They can be classified into marking-to-market and marking-to-model.

Marking-to-market is valuation of positions by adopting readily available and observable close out prices in the market. If market quotation is not available, marking-to-model should be adopted. Marking-to-model is valuation which has to be benchmarked, extrapolated or otherwise derived from market data inputs.

For marking-to-market, the Group uses the price within the bid-offer spread that is most representative of the fair value of financial instruments, where appropriate, includes using on the residual of the net offsetting risk position of portfolios of financial assets and financial liabilities in cases the Group manages such groups of financial assets and liabilities according to their net market risk exposures.

If the market for assets or liabilities is not active, the Group uses valuation techniques, including the use of recent arm's length transactions, discounted cash flow analysis, option pricing models and other valuation techniques commonly used by market participants, that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.

Control units independently verify the results of fair value measurements. They source observable data from external independent parties, and compare them to the pricing inputs used in valuation for the financial instruments measured at fair value. If the difference is within a certain pre-set threshold, the selected input is considered as reasonable and can represent current market situation, which supports the conclusion that valuation is reliable.

### **3. Linkages between financial statements and regulatory exposures**

#### **LIA: Explanations of differences between accounting and regulatory exposure amounts (continued)**

On top of accounting valuation, the Group conducts liquidity risk adjustments for risk management and regulatory capital adequacy purpose in order to arrive at a prudent value. The Group has continued to consider the liquidity risk adjustment to valuation of less liquid product positions. The appropriateness of the valuation adjustments is reviewed regularly.

## 4. Capital disclosures

### Regulatory capital

		At 31 December 2017		
		Component of regulatory capital reported by bank	Amounts subject to pre-BaseI III treatment*	Cross reference to regulatory scope consolidated balance sheet
		HK\$m	HK\$m	
<b>CET1 capital: instruments and reserves</b>				
1	Directly issued qualifying CET1 capital instruments plus any related share premium	43,043		(5)
2	Retained earnings	142,208		(6)
3	Disclosed reserves	43,673		(8)+(9)+ (10)+(11)
4	<i>Directly issued capital subject to phase out from CET1 capital (only applicable to non-joint stock companies)</i>	Not applicable		
	<i>Public sector capital injections grandfathered until 1 January 2018</i>	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	<b>CET1 capital before regulatory deductions</b>	<b>228,924</b>		
<b>CET1 capital: regulatory deductions</b>				
7	Valuation adjustments	12		Not applicable
8	Goodwill (net of associated deferred tax liability)	-		
9	Other intangible assets (net of associated deferred tax liability)	-		
10	Deferred tax assets net of deferred tax liabilities	51		(2)
11	Cash flow hedge reserve	-		
12	Excess of total EL amount over total eligible provisions under the IRB approach	-		
13	Gain-on-sale arising from securitization transactions	-		
14	Gains and losses due to changes in own credit risk on fair valued liabilities	69		(1)+(3)
15	Defined benefit pension fund net assets (net of associated deferred tax liabilities)	-		
16	Investments in own CET1 capital instruments (if not already netted off paid-in capital on reported balance sheet)	-		
17	Reciprocal cross-holdings in CET1 capital instruments	-		
18	Insignificant capital investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)	-		
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	58,780		
26a	Cumulative fair value gains arising from the revaluation of land and buildings (own-use and investment properties)	48,556		(7)+(8)
26b	Regulatory reserve for general banking risks	10,224		(10)
26c	Securitization exposures specified in a notice given by the Monetary Authority	-		
26d	Cumulative losses below depreciated cost arising from the institution's holdings of land and buildings	-		
26e	Capital shortfall of regulated non-bank subsidiaries	-		
26f	Capital investment in a connected company which is a commercial entity (amount above 15% of the reporting institution's capital base)	-		
27	Regulatory deductions applied to CET1 capital due to insufficient AT1 capital and Tier 2 capital to cover deductions	-		
28	<b>Total regulatory deductions to CET1 capital</b>	<b>58,912</b>		
29	<b>CET1 capital</b>	<b>170,012</b>		

## 4. Capital disclosures

### Regulatory capital (continued)

		At 31 December 2017		
		Component of regulatory capital reported by bank	Amounts subject to pre-Basel III treatment*	Cross reference to regulatory scope consolidated balance sheet
		HK\$m	HK\$m	
<b>AT1 capital: instruments</b>				
30	Qualifying AT1 capital instruments plus any related share premium	-		
31	of which: classified as equity under applicable accounting standards	-		
32	of which: classified as liabilities under applicable accounting standards	-		
33	<i>Capital instruments subject to phase out arrangements from AT1 capital</i>	-		
34	AT1 capital instruments issued by consolidated bank subsidiaries and held by third parties (amount allowed in AT1 capital of the consolidation group)	-		
35	<i>of which: AT1 capital instruments issued by subsidiaries subject to phase out arrangements</i>	-		
36	<b>AT1 capital before regulatory deductions</b>	-		
<b>AT1 capital: regulatory deductions</b>				
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	<b>Total regulatory deductions to AT1 capital</b>	-		
44	<b>AT1 capital</b>	-		
45	<b>Tier 1 capital (Tier 1 = CET1 + AT1)</b>	<b>170,012</b>		
<b>Tier 2 capital: instruments and provisions</b>				
46	Qualifying Tier 2 capital instruments plus any related share premium	-		
47	<i>Capital instruments subject to phase out arrangements from Tier 2 capital</i>	11,576		(4)
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	<i>of which: capital instruments issued by subsidiaries subject to phase out arrangements</i>	-		
50	Collective impairment allowances and regulatory reserve for general banking risks eligible for inclusion in Tier 2 capital	6,390		Not applicable
51	<b>Tier 2 capital before regulatory deductions</b>	<b>17,966</b>		

## 4. Capital disclosures

### Regulatory capital (continued)

		At 31 December 2017		
		Component of regulatory capital reported by bank	Amounts subject to pre-BaseI III treatment*	Cross reference to regulatory scope consolidated balance sheet
		HK\$m	HK\$m	
<b>Tier 2 capital: regulatory deductions</b>				
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	-		
56	National specific regulatory adjustments applied to Tier 2 capital	(21,850)		
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	(21,850)		[(7)+(8)] *45%
56b	Portion of deductions applied 50:50 to core capital and supplementary capital based on pre-BaseI 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	<b>Total regulatory deductions to Tier 2 capital</b>	<b>(21,850)</b>		
58	<b>Tier 2 capital</b>	<b>39,816</b>		
59	<b>Total capital (Total capital = Tier 1 + Tier 2)</b>	<b>209,828</b>		

## 4. Capital disclosures

### Regulatory capital (continued)

		At 31 December 2017	
		Component of regulatory capital reported by bank	Amounts subject to pre-Basel III treatment*
		HK\$m	HK\$m
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	<b>Total risk weighted assets</b>	<b>1,029,152</b>	
<b>Capital ratios (as a percentage of risk weighted assets)</b>			
61	CET1 capital ratio	16.52%	
62	Tier 1 capital ratio	16.52%	
63	Total capital ratio	20.39%	
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)	7.434%	
65	of which: capital conservation buffer requirement	1.250%	
66	of which: bank specific countercyclical buffer requirement	0.934%	
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	10.52%	
<b>National minima (if different from Basel 3 minimum)</b>			
69	National CET1 minimum ratio	Not applicable	
70	National Tier 1 minimum ratio	Not applicable	
71	National Total capital minimum ratio	Not applicable	
<b>Amounts below the thresholds for deduction (before risk weighting)</b>			
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	1,518	
73	Significant capital investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	3,360	
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	
<b>Applicable caps on the inclusion of provisions in Tier 2 capital</b>			
76	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to the basic approach and the standardized (credit risk) approach (prior to application of cap)	1,441	
77	Cap on inclusion of provisions in Tier 2 under the basic approach and the standardized (credit risk) approach	1,248	
78	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to the IRB approach (prior to application of cap)	8,344	
79	Cap for inclusion of provisions in Tier 2 under the IRB approach	5,142	
<b>Capital instruments subject to phase-out arrangements</b>			
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	13,021	
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.

## 4. Capital disclosures

### Regulatory capital (continued)

#### 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:

Row No.	Description	Hong Kong basis	Basel III basis
		HK\$m	HK\$m
9	<b>Other intangible assets (net of associated deferred tax liability)</b>	-	-
	<p><u>Explanation</u></p> <p>As set out in paragraph 87 of the Basel III text issued by the Basel Committee (December 2010), mortgage servicing rights (MSRs) 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 follow the accounting treatment of including MSRs as part of intangible assets reported in the AI's financial statements and to deduct MSRs in full from CET1 capital. Therefore, the amount to be deducted as reported in row 9 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 9 (i.e. the amount reported under the "Hong Kong basis") adjusted by reducing the amount of MSRs to be deducted to the extent not in excess of the 10% threshold set for MSRs and the aggregate 15% threshold set for MSRs, DTAs arising from temporary differences and significant investments in CET1 capital instruments issued by financial sector entities (excluding those that are loans, facilities or other credit exposures to connected companies) under Basel III.</p>		
10	<b>Deferred tax assets net of deferred tax liabilities</b>	51	-
	<p><u>Explanation</u></p> <p>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 realized are to be deducted, whereas DTAs which relate to temporary differences may be given limited recognition in CET1 capital (and hence be excluded from deduction from CET1 capital up to the specified threshold). In Hong Kong, an AI is required to deduct all DTAs in full, irrespective of their origin, from CET1 capital. Therefore, the amount to be deducted as reported in row 10 may be greater than that required under Basel III.</p> <p>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.</p>		
18	<b>Insignificant capital investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)</b>	-	-
	<p><u>Explanation</u></p> <p>For the purpose of determining the total amount of insignificant capital investments in CET1 capital instruments issued by financial sector entities, an AI is required to aggregate any amount of loans, facilities or other credit exposures provided by it to any of its connected companies, where the connected company is a financial sector entity, as if such loans, facilities or other credit exposures were direct holdings, indirect holdings or synthetic holdings of the AI in the capital instruments of the financial sector entity, except where the AI demonstrates to the satisfaction of the Monetary Authority that any such loan was made, any such facility was granted, or any such other credit exposure was incurred, in the ordinary course of the AI's business.</p> <p>Therefore, the amount to be deducted as reported in row 18 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 18 (i.e. the amount reported under the "Hong Kong basis") adjusted by excluding the aggregate amount of loans, facilities or other credit exposures to the AI's connected companies which were subject to deduction under the Hong Kong approach.</p>		

## 4. Capital disclosures

### Regulatory capital (continued)

Row No.	Description	Hong Kong basis	Basel III basis
		HK\$m	HK\$m
19	<b>Significant capital investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)</b>	-	-
	<p><u>Explanation</u>                      For the purpose of determining the total amount of significant capital investments in CET1 capital instruments issued by financial sector entities, an AI is required to aggregate any amount of loans, facilities or other credit exposures provided by it to any of its connected companies, where the connected company is a financial sector entity, as if such loans, facilities or other credit exposures were direct holdings, indirect holdings or synthetic holdings of the AI in the capital instruments of the financial sector entity, except where the AI demonstrates to the satisfaction of the Monetary Authority that any such loan was made, any such facility was granted, or any such other credit exposure was incurred, in the ordinary course of the AI's business.</p> <p>Therefore, the amount to be deducted as reported in row 19 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 19 (i.e. the amount reported under the "Hong Kong basis") adjusted by excluding the aggregate amount of loans, facilities or other credit exposures to the AI's connected companies which were subject to deduction under the Hong Kong approach.</p>		
39	<b>Insignificant capital investments in AT1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)</b>	-	-
	<p><u>Explanation</u>                      The effect of treating loans, facilities or other credit exposures to connected companies which are financial sector entities as CET1 capital instruments for the purpose of considering deductions to be made in calculating the capital base (see note re row 18 to the template above) will mean the headroom within the threshold available for the exemption from capital deduction of other insignificant capital investments in AT1 capital instruments may be smaller. Therefore, the amount to be deducted as reported in row 39 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 39 (i.e. the amount reported under the "Hong Kong basis") adjusted by excluding the aggregate amount of loans, facilities or other credit exposures to the AI's connected companies which were subject to deduction under the Hong Kong approach.</p>		
54	<b>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)</b>	-	-
	<p><u>Explanation</u>                      The effect of treating loans, facilities or other credit exposures to connected companies which are financial sector entities as CET1 capital instruments for the purpose of considering deductions to be made in calculating the capital base (see note re row 18 to the template above) will mean the headroom within the threshold available for the exemption from capital deduction of other insignificant capital investments in Tier 2 capital instruments may be smaller. Therefore, the amount to be deducted as reported in row 54 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 54 (i.e. the amount reported under the "Hong Kong basis") adjusted by excluding the aggregate amount of loans, facilities or other credit exposures to the AI's connected companies which were subject to deduction under the Hong Kong approach.</p>		
<p>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.</p>			

#### Abbreviations:

CET1: Common Equity Tier 1

AT1: Additional Tier 1

## 4. Capital disclosures

### Reconciliation of regulatory scope consolidated balance sheet to capital components

	At 31 December 2017		Cross reference to definition of capital components
	Balance sheet as in published financial statements	Under regulatory scope of consolidation	
	HK\$m	HK\$m	
<b>ASSETS</b>			
Cash and balances with banks and other financial institutions	363,168	363,116	
Placements with banks and other financial institutions maturing between one and twelve months	59,056	58,651	
Financial assets at fair value through profit or loss	50,198	49,752	
Derivative financial instruments	33,616	33,616	
- of which: debit valuation adjustments in respect of derivative contracts		19	(1)
Hong Kong SAR Government certificates of indebtedness	146,200	146,200	
Advances and other accounts	1,187,987	1,187,986	
Investment in securities	576,423	576,414	
Interests in subsidiaries	-	744	
Interests in associates and joint ventures	415	415	
Investment properties	19,949	19,953	
Properties, plant and equipment	46,912	46,481	
Deferred tax assets	51	51	(2)
Other assets	30,489	30,387	
<b>Total assets</b>	<b>2,514,464</b>	<b>2,513,766</b>	
<b>LIABILITIES</b>			
Hong Kong SAR currency notes in circulation	146,200	146,200	
Deposits and balances from banks and other financial institutions	222,187	222,187	
Financial liabilities at fair value through profit or loss	19,720	19,720	
Derivative financial instruments	30,980	30,980	
- of which: debit valuation adjustments in respect of derivative contracts		(50)	(3)
Deposits from customers	1,774,611	1,774,915	
Debt securities and certificates of deposit in issue	21,641	21,641	
Other accounts and provisions	40,620	40,557	
Current tax liabilities	4,180	4,161	
Deferred tax liabilities	5,658	5,501	
Subordinated liabilities	18,980	18,980	
- of which: eligible for inclusion in regulatory capital subject to phase out arrangements		11,576	(4)
<b>Total liabilities</b>	<b>2,284,777</b>	<b>2,284,842</b>	

#### 4. Capital disclosures

##### Reconciliation of regulatory scope consolidated balance sheet to capital components (continued)

	At 31 December 2017		Cross reference to definition of capital components
	Balance sheet as in published financial statements	Under regulatory scope of consolidation	
	HK\$m	HK\$m	
<b>EQUITY</b>			
Share capital	43,043	43,043	(5)
Reserves	186,373	185,881	
- Retained earnings	141,728	142,208	(6)
- of which: cumulative fair value gains arising from the revaluation of investment properties		12,761	(7)
- Premises revaluation reserve	36,756	35,795	(8)
- Reserve for fair value changes of available-for-sale securities	(1,666)	(1,665)	(9)
- Regulatory reserve	10,224	10,224	(10)
- Translation reserve	(669)	(681)	(11)
Capital and reserves attributable to equity holders of the Bank	229,416	228,924	
Non-controlling interests	271	-	
Total equity	229,687	228,924	
Total liabilities and equity	2,514,464	2,513,766	

## 4. Capital disclosures

### Capital instruments

		CET1 Capital Ordinary shares	Tier 2 Capital Subordinated notes
<b>Main features of issued capital instruments</b>			
1	Issuer	Bank of China (Hong Kong) Limited	Bank of China (Hong Kong) Limited
2	Unique identifier (eg CUSIP, ISIN or Bloomberg identifier for private placement)	Not applicable	Rule 144A: CUSIP - 061199AA3 ISIN - US061199AA35 Regulation S: CUSIP - Y1391CAJ0 ISIN - USY1391CAJ00
3	Governing law(s) of the instrument	Hong Kong law	New York law (other than the provisions of the indenture relating to subordination, which are governed by Hong Kong law)
<i>Regulatory treatment</i>			
4	Transitional Basel III rules <sup>#</sup>	Not applicable	Tier 2
5	Post-transitional Basel III rules <sup>+</sup>	Common Equity Tier 1	Ineligible
6	Eligible at solo*/group/group & solo	Solo and Group	Solo and Group
7	Instrument type (types to be specified by each jurisdiction)	Ordinary shares	Other Tier 2 instruments
8	Amount recognised in regulatory capital (Currency in million, as of most recent reporting date)	HK\$43,043m (as of 31 December 2017)	HK\$11,576m (as of 31 December 2017)
9	Par value of instrument	No par value (refer to Note 1 for details)	USD2,500m in total
10	Accounting classification	Shareholders' equity	Liability - amortised cost
11	Original date of issuance	1 Oct 2001 (refer to Note 2 for details)	11 Feb 2010
12	Perpetual or dated	Perpetual	Dated
13	Original maturity date	No maturity	11 Feb 2020 (unless previously redeemed or purchased and cancelled with the prior written approval of the HKMA)
14	Issuer call subject to prior supervisory approval	No	Yes
15	Optional call date, contingent call dates and redemption amount	Not applicable	Early redemption for tax reasons; purchases of Notes by the issuer (please refer to "Description of the Notes" in Offering Memorandum dated 12 April 2010 for further details on call dates and redemption amounts)
16	Subsequent call dates, if applicable	Not applicable	Ditto
<i>Coupons / dividends</i>			
17	Fixed or floating dividend/coupon	Floating	Fixed
18	Coupon rate and any related index	Not applicable	5.55%
19	Existence of a dividend stopper	No	No
20	Fully discretionary, partially discretionary or mandatory	Fully discretionary	Mandatory
21	Existence of step up or other incentive to redeem	No	No
22	Noncumulative or cumulative	Noncumulative	Noncumulative
23	Convertible or non-convertible	Non-convertible	Non-convertible
24	If convertible, conversion trigger(s)	Not applicable	Not applicable
25	If convertible, fully or partially	Not applicable	Not applicable
26	If convertible, conversion rate	Not applicable	Not applicable
27	If convertible, mandatory or optional conversion	Not applicable	Not applicable
28	If convertible, specify instrument type convertible into	Not applicable	Not applicable
29	If convertible, specify issuer of instrument it converts into	Not applicable	Not applicable
30	Write-down feature	No	No
31	If write-down, write-down trigger(s)	Not applicable	Not applicable
32	If write-down, full or partial	Not applicable	Not applicable
33	If write-down, permanent or temporary	Not applicable	Not applicable
34	If temporary write-down, description of write-up mechanism	Not applicable	Not applicable

## 4. Capital disclosures

### Capital instruments (continued)

		CET1 Capital Ordinary shares	Tier 2 Capital Subordinated notes
<b>Main features of issued capital instruments</b>			
35	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Subordinated notes mentioned in the second column of this main features table	Upon the occurrence of a Subordination Event (Refer to Note 3 for details), subordinated to the claims of depositors and all other unsubordinated creditors of the issuer
36	Non-compliant transitioned features	No	Yes
37	If yes, specify non-compliant features	Not applicable	Does not contain provision to be written down, or converted into ordinary shares, at the point of non-viability
<b>Full terms and conditions of issued capital instruments</b>		Click <a href="#">here</a> to download	Click <a href="#">here</a> to download

Footnote:

<sup>#</sup> Regulatory treatment of capital instruments subject to transitional arrangements provided for in Schedule 4H of the Banking (Capital) Rules

<sup>+</sup> Regulatory treatment of capital instruments not subject to transitional arrangements provided for in Schedule 4H of the Banking (Capital) Rules

<sup>\*</sup> Include solo-consolidated

Note 1: Pursuant to the Hong Kong Companies Ordinance (Chapter 622) which has commenced operation on 3 March 2014, all shares issued by a company incorporated in Hong Kong before, on and after that commencement date shall have no par value and the relevant concept of authorised share capital is abolished.

Note 2:

- The authorised share capital of Bank of China (Hong Kong) Limited (“BOCHK”), comprising 4 million ordinary shares of HK\$100 each, was subdivided into 400 million ordinary shares of HK\$1 each pursuant to shareholders written resolution of BOCHK passed on 3 Sep 2001.
- On 30 Sep 2001, 400 million shares in the capital of BOCHK were transferred from Bank of China Limited to BOC Hong Kong (Holdings) Limited (“BOCHK Holdings”) pursuant to Supplemental Merger Agreement.
- BOCHK then issued a total of 42,642,840,858 ordinary shares at par value of HK\$1 each to BOCHK Holdings on 1 Oct 2001. Hence, the total issued and paid-up share capital of BOCHK was HK\$43,042,840,858 since 2001.
- The concepts of par value for shares and authorised share capital have been abolished following the commencement of the Hong Kong Companies Ordinance (Chapter 622) as mentioned in Note 1.

Note 3: “Subordination Event” shall occur if an order is made or an effective resolution is passed for the winding-up, liquidation or dissolution or similar proceeding of the issuer in Hong Kong (except for the purposes of a reconstruction, amalgamation or reorganisation, the terms of which have previously been approved by a resolution of the noteholders passed at a meeting duly convened and held in accordance with the indenture by a majority of at least 66<sup>2</sup>/<sub>3</sub> of the votes cast).

## 5. Countercyclical capital buffer (“CCyB”) ratio disclosures

### Geographical breakdown of risk-weighted amounts (“RWA”) in relation to private sector credit exposures

Jurisdiction (J)		At 31 December 2017			
		Applicable JCCyB ratio in effect	Total RWA used in computation of CCyB ratio of AI	CCyB ratio of AI	CCyB amount of AI
		%	HK\$m	%	HK\$m
1	Hong Kong SAR	1.250%	505,289		
2	Mainland China	0.000%	72,994		
3	Australia	0.000%	3,445		
4	Bangladesh	0.000%	38		
5	Belgium	0.000%	49		
6	Bermuda	0.000%	140		
7	Brunei	0.000%	71		
8	Cambodia	0.000%	4,027		
9	Canada	0.000%	1		
10	Cayman Islands	0.000%	7,459		
11	Chinese Taipei	0.000%	3,326		
12	France	0.000%	209		
13	Germany	0.000%	336		
14	India	0.000%	339		
15	Indonesia	0.000%	6,659		
16	Ireland	0.000%	1,827		
17	Japan	0.000%	1,462		
18	Jersey	0.000%	318		
19	Luxembourg	0.000%	951		
20	Macau SAR	0.000%	1,231		
21	Malaysia	0.000%	11,179		
22	Maldives	0.000%	108		
23	Marshall Islands	0.000%	2		
24	Myanmar	0.000%	584		
25	Netherlands	0.000%	1,943		
26	New Zealand	0.000%	317		
27	Panama	0.000%	1,975		
28	Philippines	0.000%	1,027		
29	Singapore	0.000%	11,910		
30	South Africa	0.000%	50		
31	South Korea	0.000%	353		
32	Sri Lanka	0.000%	2		
33	Switzerland	0.000%	60		
34	Thailand	0.000%	8,519		
35	United Kingdom	0.000%	3,217		
36	United States	0.000%	18,134		
37	West Indies UK	0.000%	6,824		
<b>Total</b>			<b>676,375</b>	<b>0.934%</b>	<b>6,316</b>

## 6. Leverage ratio disclosures

### Leverage ratio

		At 31 December 2017
		HK\$m
<b>On-balance sheet exposures</b>		
1	On-balance sheet items (excluding derivatives and SFTs, but including collateral)	2,326,020
2	Less: Asset amounts deducted in determining Basel III Tier 1 capital	(58,862)
3	Total on-balance sheet exposures (excluding derivatives and SFTs)	2,267,158
<b>Derivative exposures</b>		
4	Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	13,298
5	Add-on amounts for PFE associated with all derivatives transactions	19,372
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	(110)
8	Less: Exempted CCP leg of client-cleared trade exposures	-
9	Adjusted effective notional amount of written credit derivatives	-
10	Less: Adjusted effective notional offsets and add-on deductions for written credit derivatives	-
11	Total derivative exposures	32,560
<b>Securities financing transaction exposures</b>		
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	11,525
13	Less: Netted amounts of cash payables and cash receivables of gross SFT assets	-
14	CCR exposure for SFT assets	1
15	Agent transaction exposures	-
16	Total securities financing transaction exposures	11,526
<b>Other off-balance sheet exposures</b>		
17	Off-balance sheet exposure at gross notional amount	637,569
18	Less: Adjustments for conversion to credit equivalent amounts	(487,745)
19	Off-balance sheet items	149,824
<b>Capital and total exposures</b>		
20	Tier 1 capital	170,012
21	Total exposures	2,461,068
<b>Leverage ratio</b>		
22	Basel III leverage ratio	6.91%

### Summary comparison table

		At 31 December 2017
		HK\$m
1	Total consolidated assets as per published financial statements	2,514,464
2	Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	(698)
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	(1,055)
5	Adjustment for securities financing transactions (i.e. repos and similar secured lending)	1
6	Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	149,824
7	Other adjustments	(201,468)
	<i>of which: Hong Kong SAR Government certificates of indebtedness</i>	<i>(146,200)</i>
8	<b>Leverage ratio exposure</b>	<b>2,461,068</b>

## 7. Liquidity information disclosures

### Liquidity coverage ratio

Number of data points used in calculating the average value of the Liquidity Coverage Ratio (LCR) and related components set out in this table Basis of disclosure: consolidated	For the quarter ended 31 December 2017: 73 data points		For the quarter ended 30 September 2017: 77 data points	
	UNWEIGHTED AMOUNT (Average Value)	WEIGHTED AMOUNT (Average Value)	UNWEIGHTED AMOUNT (Average Value)	WEIGHTED AMOUNT (Average Value)
	HK\$m	HK\$m	HK\$m	HK\$m
<b>A. HIGH QUALITY LIQUID ASSETS</b>				
1 Total high quality liquid assets (HQLA)		<b>493,698</b>		<b>435,351</b>
<b>B. CASH OUTFLOWS</b>				
2 Retail deposits and small business funding, of which:	890,401	58,686	857,665	56,647
3 <i>Stable retail deposits and stable small business funding</i>	311,248	9,337	306,829	9,205
4 <i>Less stable retail deposits and less stable small business funding</i>	403,802	40,371	394,382	39,438
5 <i>Retail term deposits and small business term funding</i>	175,351	8,978	156,454	8,004
6 Unsecured wholesale funding (other than small business funding) and debt securities and prescribed instruments issued by the institution, of which:	1,016,456	483,103	929,132	449,748
7 <i>Operational deposits</i>	283,375	69,609	280,567	68,958
8 <i>Unsecured wholesale funding (other than small business funding) not covered in Row 7</i>	727,394	407,807	642,607	374,832
9 <i>Debt securities and prescribed instruments issued by the institution and redeemable within the LCR period</i>	5,687	5,687	5,958	5,958
10 Secured funding transactions (including securities swap transactions)		4,100		4,169
11 Additional requirements, of which:	362,383	65,115	340,921	63,452
12 <i>Cash outflows arising from derivative contracts and other transactions, and additional liquidity needs arising from related collateral requirements</i>	33,639	33,639	32,853	32,853
13 <i>Cash outflows arising from obligations under structured financing transactions and repayment of funding obtained from such transactions</i>	-	-	-	-
14 <i>Potential drawdown of undrawn committed facilities (including committed credit facilities and committed liquidity facilities)</i>	328,744	31,476	308,068	30,599
15 Contractual lending obligations (not otherwise covered in Section B) and other contractual cash outflows	35,705	35,705	42,080	42,080
16 Other contingent funding obligations (whether contractual or non-contractual)	270,811	4,446	269,721	4,210
17 <b>TOTAL CASH OUTFLOWS</b>		<b>651,155</b>		<b>620,306</b>
<b>C. CASH INFLOWS</b>				
18 Secured lending transactions (including securities swap transactions)	3,126	2,127	2,165	1,564
19 Secured and unsecured loans (other than secured lending transactions covered in Row 18) and operational deposits placed at other financial institutions	303,706	221,139	274,654	210,484
20 Other cash inflows	57,004	56,651	48,721	48,141
21 <b>TOTAL CASH INFLOWS</b>	<b>363,836</b>	<b>279,917</b>	<b>325,540</b>	<b>260,189</b>
<b>D. LIQUIDITY COVERAGE RATIO</b>				
22 <b>TOTAL HQLA</b>		<b>493,698</b>		<b>435,351</b>
23 <b>TOTAL NET CASH OUTFLOWS</b>		<b>371,435</b>		<b>360,117</b>
24 <b>LCR (%)</b>		<b>135.64%</b>		<b>121.12%</b>

## 7. Liquidity information disclosures

### Liquidity coverage ratio (continued)

Number of data points used in calculating the average value of the Liquidity Coverage Ratio (LCR) and related components set out in this table	For the quarter ended 30 June 2017: 71 data points		For the quarter ended 31 March 2017: 73 data points	
	UNWEIGHTED AMOUNT (Average Value)	WEIGHTED AMOUNT (Average Value)	UNWEIGHTED AMOUNT (Average Value)	WEIGHTED AMOUNT (Average Value)
	HK\$m	HK\$m	HK\$m	HK\$m
Basis of disclosure: consolidated				
<b>A. HIGH QUALITY LIQUID ASSETS</b>				
1 Total high quality liquid assets (HQLA)		<b>401,086</b>		<b>430,490</b>
<b>B. CASH OUTFLOWS</b>				
2 Retail deposits and small business funding, of which:	818,414	53,969	810,832	53,575
3 <i>Stable retail deposits and stable small business funding</i>	295,159	8,855	296,964	8,909
4 <i>Less stable retail deposits and less stable small business funding</i>	375,752	37,575	376,234	37,623
5 <i>Retail term deposits and small business term funding</i>	147,503	7,539	137,634	7,043
6 Unsecured wholesale funding (other than small business funding) and debt securities and prescribed instruments issued by the institution, of which:	904,946	443,508	817,828	386,680
7 <i>Operational deposits</i>	288,253	70,912	322,770	79,519
8 <i>Unsecured wholesale funding (other than small business funding) not covered in Row 7</i>	612,432	368,335	495,026	307,129
9 <i>Debt securities and prescribed instruments issued by the institution and redeemable within the LCR period</i>	4,261	4,261	32	32
10 Secured funding transactions (including securities swap transactions)		4,434		6,075
11 Additional requirements, of which:	339,217	62,905	348,764	65,307
12 <i>Cash outflows arising from derivative contracts and other transactions, and additional liquidity needs arising from related collateral requirements</i>	32,271	32,271	34,948	34,948
13 <i>Cash outflows arising from obligations under structured financing transactions and repayment of funding obtained from such transactions</i>	-	-	-	-
14 <i>Potential drawdown of undrawn committed facilities (including committed credit facilities and committed liquidity facilities)</i>	306,946	30,634	313,816	30,359
15 Contractual lending obligations (not otherwise covered in Section B) and other contractual cash outflows	53,624	53,624	51,834	51,834
16 Other contingent funding obligations (whether contractual or non-contractual)	272,672	3,529	281,479	3,805
17 <b>TOTAL CASH OUTFLOWS</b>		<b>621,969</b>		<b>567,276</b>
<b>C. CASH INFLOWS</b>				
18 Secured lending transactions (including securities swap transactions)	736	492	2,498	1,665
19 Secured and unsecured loans (other than secured lending transactions covered in Row 18) and operational deposits placed at other financial institutions	297,298	242,930	205,397	155,328
20 Other cash inflows	54,390	53,960	54,534	54,205
21 <b>TOTAL CASH INFLOWS</b>	<b>352,424</b>	<b>297,382</b>	<b>262,429</b>	<b>211,198</b>
<b>D. LIQUIDITY COVERAGE RATIO</b>				
22 <b>TOTAL HQLA</b>		<b>401,086</b>		<b>430,490</b>
23 <b>TOTAL NET CASH OUTFLOWS</b>		<b>324,587</b>		<b>356,078</b>
24 <b>LCR (%)</b>		<b>123.88%</b>		<b>121.41%</b>

## 7. Liquidity information disclosures

### Liquidity coverage ratio (continued)

Notes:

- The weighted amount of HQLA is to be calculated as the amount after applying the haircuts as required under the Banking (Liquidity) Rules.
- The unweighted amounts of cash inflows and cash outflows are to be calculated as the principal amounts in the calculation of the LCR as required under the Banking (Liquidity) Rules.
- The weighted amounts of cash inflows and cash outflows are to be calculated as the amounts after applying the inflow and outflow rates as required under the Banking (Liquidity) Rules.
- The adjusted value of total HQLA and the total net cash outflows have taken into account any applicable ceiling as required under the Banking (Liquidity) Rules.

The Group's average LCR of the each quarter in 2017 were 121.41%, 123.88%, 121.12% and 135.64% respectively, continuously maintained at stable and healthy levels.

The HQLA consists of cash, balances at central banks and high quality marketable securities issued or guaranteed by sovereigns, central banks, public sector entities or multilateral development banks and non-financial corporate debt securities. In 2017, the majority of the HQLA was composed of Level 1 HQLA.

The net cash outflow was mainly from retail and corporate customer deposit which are the Group's primary source of funds, together with deposit and balance from bank and other financial institution. To ensure stable, sufficient and diversified source of funds, the Group actively attracts new deposits, keeps the core deposit and obtains supplementary funding from the interbank market or by issuing debts in the capital market. Other cash outflow, such as commitment, cash outflow under derivative contract and potential collateral requirement, were minimal to the LCR.

Majority of the Group's customer deposits are denominated in HKD, USD and RMB. As the supply of HKD denominated HQLA in the market is relatively limited, the Group swaps surplus HKD funding into USD and other foreign currencies, part of funding are deployed to investment in HQLA.

## 8. Credit risk for non-securitization exposures

### CRA: General information about credit risk

Credit risk is risk of loss that a customer or counterparty is unable to or unwilling to meet its contractual obligations. Credit risk exists in the trading book and banking book, as well as from on- and off-balance sheet transactions of the Group. It arises principally from lending, trade finance and treasury businesses.

The Group has formulated a comprehensive set of credit risk management policies and procedures, and appropriate credit limits to manage and control credit risk that may arise. These policies, procedures and credit limits are regularly reviewed and updated to cope with changes in market conditions and business strategies.

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

The Board of Directors delegates credit approval authority to the CE. The CE can further delegate to the subordinates within his limit authorised by the Board of Directors. The Group sets the limits of credit approval authority according to the credit business nature, rating, the level of transaction risk, and the extent of the credit exposure.

The Chief Credit Officer, who reports directly to the CRO, takes charge of credit risk management and is also responsible for the control of credit risk exposures of subsidiaries in line with the credit risk management principles and requirements set by the Group. Various units of the Group have their respective credit risk management responsibilities. Business units act as the first line of defence. The Risk Management Department ("RMD"), which is independent from the business units, is responsible for the day-to-day management of credit risks and has the primary responsibility for providing an independent due diligence through identifying, measuring, monitoring and controlling credit risk to ensure an effective checks and balances, as well as drafting, reviewing and updating credit risk management policies and procedures. It is also responsible for the design, development and maintenance of the Group's internal rating system and ensures the system complies with the relevant regulatory requirements. Back offices are responsible for credit administration, providing operations support and supervision on the implementation of prerequisite terms and conditions of credit facilities.

The Group Audit is responsible for conducting independent reviews on the adequacy and effectiveness of credit risk management framework, as well as the compliance to internal policies and procedures.

Risk Management Department provides regular credit management information reports and ad hoc reports to the MC, RMC, and Board of Directors to facilitate their continuous monitoring of credit risk.

In addition, the Group identifies credit concentration risk by industry, geography, customer, and counterparty. The Group monitors changes to counterparties credit risk, quality of the credit portfolio and credit risk concentrations, and reports regularly to the Group's Management.

## 8. Credit risk for non-securitization exposures

### CR1: Credit quality of exposures

		At 31 December 2017			
		Gross carrying amounts of		Allowances / impairments	Net values
		Defaulted exposures	Non-defaulted exposures		
		HK\$'m	HK\$'m	HK\$'m	HK\$'m
1	Loans	1,659	1,593,288	(4,084)	1,590,863
2	Debt securities	-	575,478	-	575,478
3	Off-balance sheet exposures	157	637,412	-	637,569
4	<b>Total</b>	<b>1,816</b>	<b>2,806,178</b>	<b>(4,084)</b>	<b>2,803,910</b>

The Group identifies the exposures as "default" if the exposure is past due for more than 90 days or the borrower is unlikely to pay in full for the credit obligations.

### CR2: Changes in defaulted loans and debt securities

		HK\$'m
1	<b>Defaulted loans and debt securities at 30 June 2017</b>	<b>1,555</b>
2	Loans and debt securities that have defaulted since the last reporting period	504
3	Returned to non-defaulted status	(39)
4	Amounts written off	(340)
5	Other changes	(21)
6	<b>Defaulted loans and debt securities at 31 December 2017</b>	<b>1,659</b>

### CRB: Additional disclosure related to credit quality of exposures

Advances with a specific repayment date are classified as overdue when the principal or interest is past due and remains unpaid. Advances repayable by regular instalments are classified as overdue when an instalment payment is past due and remains unpaid. 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 instruction or when the advances have remained continuously exceeded the approved limit that was advised to the borrower. Impaired loans represent advances which are individually assessed to be impaired.

The occurrence of loss event(s) may not necessarily result in impairment loss where the advances are fully collateralised. While such advances are past due for more than 90 days, they are regarded as not being impaired.

The Group assesses as at the end of each reporting period whether there is objective evidence that a financial asset or group of financial assets is impaired. A financial asset or a group of financial assets is impaired and impairment losses are incurred if, and only if, there is objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset (a "loss event") and that loss event (or events) has an impact on the reliably estimated future cash flows of the financial asset or group of financial assets.

Rescheduled advances are those advances that have been restructured or renegotiated because of deterioration in the financial position of the borrower or of the inability of the borrower to meet the original repayment schedule.

## 8. Credit risk for non-securitization exposures

CRB: Additional disclosure related to credit quality of exposures (continued)

### (i) Exposures by geographical areas

		At 31 December 2017
		HK\$m
1	Hong Kong	1,730,592
2	Mainland of China	433,106
3	United States	133,518
4	Others	510,778
<b>5</b>	<b>Total</b>	<b>2,807,994</b>

### (ii) Exposures by industry

		At 31 December 2017
		HK\$m
1	Personal	473,110
2	Financial and insurance services	784,089
3	Manufacturing	193,940
4	Public, commercial and other services	252,704
5	Real estate	353,788
6	Wholesale, retail, import and export trades	311,067
7	Others	439,296
<b>8</b>	<b>Total</b>	<b>2,807,994</b>

### (iii) Exposures by residual maturity

		At 31 December 2017
		HK\$m
1	Within one year	1,716,748
2	One to five years	741,756
3	Over five years	339,399
4	Indefinite	10,091
<b>5</b>	<b>Total</b>	<b>2,807,994</b>

## 8. Credit risk for non-securitization exposures

CRB: Additional disclosure related to credit quality of exposures (continued)

### (iv) Impaired exposures, related allowances and write-offs by geographical areas

		At 31 December 2017		
		Impaired exposures	Related allowances	Write-offs
		HK\$m	HK\$m	HK\$m
1	Hong Kong	427	(121)	465
2	Mainland of China	21	(18)	-
3	United States	-	-	-
4	Others	923	(399)	102
5	<b>Total</b>	<b>1,371</b>	<b>(538)</b>	<b>567</b>

### (v) Impaired exposures, related allowances and write-offs by industry

		At 31 December 2017		
		Impaired exposures	Related allowances	Write-offs
		HK\$m	HK\$m	HK\$m
1	Personal	103	(74)	395
2	Financial and insurance services	-	-	-
3	Manufacturing	294	(115)	102
4	Public, commercial and other services	2	(2)	2
5	Real estate	36	(33)	-
6	Wholesale, retail, import and export trades	183	(109)	23
7	Others	753	(205)	45
8	<b>Total</b>	<b>1,371</b>	<b>(538)</b>	<b>567</b>

### (vi) Aging analysis of accounting past due exposures

		At 31 December 2017
		HK\$m
1	Overdue for three months or less	3,617
2	Overdue for six months or less but over three months	117
3	Overdue for one year or less but over six months	123
4	Overdue for over one year	313
5	<b>Total</b>	<b>4,170</b>

### (vii) Restructured exposures

		At 31 December 2017
		HK\$m
1	Impaired exposures	238
2	Not impaired exposures	-
3	<b>Total</b>	<b>238</b>

## 8. Credit risk for non-securitization exposures

### **CRC: Qualitative disclosures related to credit risk mitigation**

The Group's policies and procedures stipulate the counterparty credit risk management and the netting should only be applied where there is a legal right to do so. Recognised netting only can be done pursuant to a valid bilateral netting agreement in accordance with the Banking (Capital) Rules section 209. The Group adopts the netting approach which is consistent with the Banking (Capital) Rules for capital adequacy purposes, and only those OTC derivative transactions subject to valid bilateral netting agreements are eligible for netting approach.

The Group has in place specific policies with respect to revaluation and management of collateral. These policies articulate the standards to monitor and manage the collateral's security as the secondary repayment source and recovery of obligation loss. All collateral are revalued on a regular basis. More frequent revaluation is required for collateral with higher volatility or deteriorated accounts.

The credit and market risk concentrations within the credit risk mitigation (recognised collateral and guarantees for capital calculation) used by the Group are under a low level.

## 8. Credit risk for non-securitization exposures

### CR3: Overview of recognized credit risk mitigation

		At 31 December 2017				
		Exposures unsecured: carrying amount	Exposures to be secured	Exposures secured by recognized collateral	Exposures secured by recognized guarantees	Exposures secured by recognized credit derivative contracts
		HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
1	Loans	1,192,217	398,646	70,810	327,836	-
2	Debt securities	542,802	32,676	-	32,676	-
<b>3</b>	<b>Total</b>	<b>1,735,019</b>	<b>431,322</b>	<b>70,810</b>	<b>360,512</b>	<b>-</b>
4	Of which defaulted	813	349	349	-	-

### CRD: Qualitative disclosures on use of ECAI ratings under STC approach

The ECAIs recognised by the Group include Standard & Poor's, Moody's and Fitch.

The Group adopts STC approach based on external credit rating to determine the risk weight of the small residual credit exposures that was approved by the HKMA to be exempted from FIRB approach and the exposures are listed as below:

- Sovereign
- Public sector entity
- Multilateral development bank
- Credit exposures of overseas banking subsidiaries and branches

The Group performs the ECAI issuer ratings mapping to its exposures in banking book in accordance with Part 4 of the Banking (Capital) Rules.

## 8. Credit risk for non-securitization exposures

### CR4: Credit risk exposures and effects of recognized credit risk mitigation – for STC approach

Exposure classes		At 31 December 2017					
		Exposures pre-CCF and pre-CRM		Exposures post-CCF and post-CRM		RWA and RWA density	
		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	%
1	Sovereign exposures	334,982	2,217	334,982	444	21,564	6
2	PSE exposures	39,219	1,961	40,057	2,402	2,276	5
2a	Of which: domestic PSEs	5,226	1,961	6,064	2,402	1,693	20
2b	Of which: foreign PSEs	33,993	-	33,993	-	583	2
3	Multilateral development bank exposures	28,854	-	28,854	-	-	-
4	Bank exposures	10,356	13,973	10,356	6,859	7,973	46
5	Securities firm exposures	1	4	1	-	-	50
6	Corporate exposures	46,188	25,279	45,031	7,231	46,276	89
7	CIS exposures	-	-	-	-	-	-
8	Cash items	263	-	263	-	-	-
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	12,808	17,228	12,286	498	9,588	75
11	Residential mortgage loans	1,894	3,147	1,055	-	548	52
12	Other exposures which are not past due exposures	14,076	13,201	6,034	118	6,152	100
13	Past due exposures	311	9	312	9	481	150
14	Significant exposures to commercial entities	-	-	-	-	-	-
<b>15</b>	<b>Total</b>	<b>488,952</b>	<b>77,019</b>	<b>479,231</b>	<b>17,561</b>	<b>94,858</b>	<b>19</b>

## 8. Credit risk for non-securitization exposures

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

		At 31 December 2017										Total credit risk exposures amount (post CCF and post CRM) HK\$m
Exposure class	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	
1	Sovereign exposures	249,769	-	76,305	-	6,098	-	3,254	-	-	-	335,426
2	PSE exposures	31,078	-	11,381	-	-	-	-	-	-	-	42,459
2a	Of which: domestic PSEs	-	-	8,466	-	-	-	-	-	-	-	8,466
2b	Of which: foreign PSEs	31,078	-	2,915	-	-	-	-	-	-	-	33,993
3	Multilateral development bank exposures	28,854	-	-	-	-	-	-	-	-	-	28,854
4	Bank exposures	-	-	5,570	-	9,572	-	2,073	-	-	-	17,215
5	Securities firm exposures	-	-	-	-	1	-	-	-	-	-	1
6	Corporate exposures	-	-	105	-	11,851	-	40,258	48	-	-	52,262
7	CIS exposures	-	-	-	-	-	-	-	-	-	-	-
8	Cash items	263	-	-	-	-	-	-	-	-	-	263
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	-	-	-	-	-	12,784	-	-	-	-	12,784
11	Residential mortgage loans	-	-	-	622	-	410	23	-	-	-	1,055
12	Other exposures which are not past due exposures	-	-	-	-	-	-	6,152	-	-	-	6,152
13	Past due exposures	-	-	-	-	-	-	-	273	-	48	321
14	Significant exposures to commercial entities	-	-	-	-	-	-	-	-	-	-	-
15	<b>Total</b>	<b>309,964</b>	<b>-</b>	<b>93,361</b>	<b>622</b>	<b>27,522</b>	<b>13,194</b>	<b>51,760</b>	<b>321</b>	<b>-</b>	<b>48</b>	<b>496,792</b>

## 8. Credit risk for non-securitization exposures

### **CRE: Qualitative disclosures related to internal models for measuring credit risk under IRB approach**

The internal model developments, controls and changes are complied with the regulatory requirements of Banking (Capital) Rules by the HKMA. The Group establishes the model standards to govern the process for the initial development, the approval and the implementation of the internal rating system, as well as the procedures for monitoring and reporting of the model performance.

To ensure the discriminatory power, accuracy and stability of the rating systems meet regulatory and management requirements, review of a rating model will be triggered if the performance of the model deteriorates materially against pre-determined tolerance limit.

The model development and maintenance unit of Risk Management Department is responsible for developing, maintaining and changing internal rating models. The model validation unit of Risk Management Department is responsible for independent validation of internal rating models.

The implementation of initial IRB models and the subsequent material changes of models are approved by the Group's Risk Committee of the Board on the recommendation of the Asset and Liability Management Committee ("ALCO").

The Risk Management Department as a credit risk control unit is responsible for the design, selection, testing and implementation, oversight of the effectiveness, as well as related monitoring and review of an internal rating system.

Internal audit reviews at least annually the internal rating system (including the validation process and the estimation of the risk components) and the operations of the related credit risk control unit. The audit purpose is to verify the control mechanism over the internal rating system is functioning as intended.

Comprehensive validation of all internal rating models is carried out by Model Validation Team that is functionally independent of model development, maintenance unit and business units. The validation findings and conclusions will be submitted directly to the Group's senior management and the Risk Committee.

In principle, models already approved and launched for official use are validated at least once a year. If material changes in the market environment or business activities are perceived to have potentially significant impact on effectiveness of IRB systems, unscheduled validation will be conducted accordingly.

For newly-developed or revised internal rating models, independent validation should be carried out before the model is submitted to the Risk Committee for approval for implementation. The validation opinions will be submitted together with the model development documentation for consideration in the model approval process.

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## 8. Credit risk for non-securitization exposures

### CRE: Qualitative disclosures related to internal models for measuring credit risk under IRB approach (continued)

On an ongoing basis, regular validation reports are endorsed by the Risk Committee. Significant findings of model weakness are reported to the senior management and the Risk Committee. Corresponding remedial actions are taken by the model development and maintenance unit, and followed up by the validation unit, which is also governed by the Risk Committee and senior management.

The scope of reporting related to credit risk models covers the assessment on the discriminatory power, accuracy and stability of the rating systems, the use of rating overrides and its reason analysis, the major findings during the model review and validation.

The Group adopts the IRB approach to calculate the regulatory capital requirements for most of the corporate and bank exposures, and adopts the supervisory slotting criteria approach to project finance exposures under specialised lending. The Group adopts retail IRB approach for retail exposures to individuals and small business.

The following indicates the portion of total EAD for each of the portfolio covered by the STC approach and IRB approach:

- Sovereign: 100% adopts STC approach
- Bank: 4.77% adopts STC approach and 95.23% adopts FIRB approach
- Corporate: 5.03% adopts STC approach and 94.97% adopts FIRB approach
- Retail: 3.52% adopts STC approach and 96.48% adopts retail IRB approach
- Other: 1.93% adopts STC approach and 98.07% adopts Specific Risk-Weight approach.

Under the FIRB approach, the Group uses the following key models with respect to each asset class:

- Bank exposures, including banks and regulated securities firms.
- Corporate exposures, including large corporates, medium corporates, real estate developers, real estate investors, insurance companies and object finance.
- Retail exposures, including residential mortgages, qualifying revolving retail exposures, other retail exposures and small business.

The models in portfolios are categorised mainly by product nature or obligor types. The main differences among the models are the reflection of the risk characteristics (e.g. secured or unsecured products, and obligors with different sales turnover, exposure size and industry, etc.)

Probability of default ("PD") represents the likelihood of a default event in a one-year horizon.

## 8. Credit risk for non-securitization exposures

### CRE: Qualitative disclosures related to internal models for measuring credit risk under IRB approach (continued)

For bank and corporate exposures, PD models are developed based on historical loss data, combining both quantitative and qualitative data on latest financial performance, management quality, industry risks, group connection and negative warning signals of each obligor.

For retail business including residential mortgage to both individuals and property-holding shell companies, qualifying revolving retail exposures and other retail exposures to individuals and small business retail exposures, the PD models incorporate the characteristics of obligors, facility types, and the obligor's account behaviour.

The validation of the rating models is divided into quantitative and qualitative assessments: Quantitative assessments include a series of statistical tests to assess the discriminatory power, stability, accuracy and conservativeness of PD estimates. Qualitative assessment focuses on the process of rating assignment, review and approval.

LGD is mainly determined by the characteristics of facility, collateralisation, loss recovery and the associated costs. Downturn LGD takes into account of the recoveries experience in the historical downturn situation. The determination of the time lapse between the default event and the closure of the exposure is based on empirical data and expert judgement.

In modeling the credit conversion factors ("CCF"), fixed horizon method has been used and the horizon chosen is 12 months. For the estimation of CCF for facilities of off-balance sheet exposures such as the undrawn portion of credit lines, CCF estimation considered the factors such as utilisation rate. The estimated EAD amount after applying CCF cannot be less than the current drawn amount. For loans with reducing balance amortisation, the outstanding balance is adopted as the EAD estimate.

## 8. Credit risk for non-securitization exposures

### CR6: Credit risk exposures by portfolio and PD ranges – for IRB approach

#### (a) FIRB approach

		At 31 December 2017											
	PD scale	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	%		%	Year	HK\$m	%	HK\$m	HK\$m
Portfolio (i) – 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		-	-	-	-	-	-	-	-	-	-	-	-
Portfolio (ii) – Bank	0.00 to < 0.15	417,213	10,152	45	449,895	0.05	276	45	2.50	123,547	27	108	-
	0.15 to < 0.25	37,823	606	19	42,026	0.22	48	45	2.50	23,776	57	42	-
	0.25 to < 0.50	17,695	3,262	-	18,155	0.39	41	45	2.50	14,811	82	32	-
	0.50 to < 0.75	2,504	2,624	1	2,531	0.54	11	32	2.50	1,286	51	4	-
	0.75 to < 2.50	63	1,037	-	60	1.93	7	4	2.50	8	13	-	-
	2.50 to < 10.00	30	212	-	30	2.67	1	-	-	-	-	-	-
	10.00 to < 100.00	-	-	-	-	-	-	-	-	-	-	-	-
	100.00 (Default)	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total		475,328	17,893	26	512,697	0.08	384	45	2.50	163,428	32	186	2,587
Portfolio (iii) – Corporate – specialized lending (other than HVCRE) – FIRB/AIRB	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		-	-	-	-	-	-	-	-	-	-	-	-

## 8. Credit risk for non-securitization exposures

### CR6: Credit risk exposures by portfolio and PD ranges – for IRB approach (continued)

#### (a) FIRB approach (continued)

At 31 December 2017													
	PD scale	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	%		%	Year	HK\$m	%	HK\$m	HK\$m
Portfolio (iv) – Corporate – small-and-medium sized corporates	0.00 to < 0.15	9,781	1,368	22	10,168	0.09	219	44	2.50	2,243	22	4	
	0.15 to < 0.25	1,441	1,829	15	3,785	0.22	185	42	2.50	1,367	36	4	
	0.25 to < 0.50	5,439	5,671	31	13,745	0.39	340	42	2.50	6,512	47	23	
	0.50 to < 0.75	8,712	7,644	10	12,549	0.60	496	42	2.50	7,247	58	32	
	0.75 to < 2.50	30,865	13,132	3	24,801	1.32	916	41	2.50	18,032	73	132	
	2.50 to < 10.00	9,110	5,045	4	6,933	3.98	466	34	2.50	5,885	85	97	
	10.00 to < 100.00	498	455	2	396	12.42	30	38	2.50	557	141	19	
	100.00 (Default)	46	21	-	47	100.00	4	37	2.50	156	336	9	
Sub-total		65,892	35,165	12	72,424	1.17	2,656	41	2.50	41,999	58	320	653
Portfolio (v) – Corporate – HVCRE – FIRB/AIRB	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		-	-	-	-	-	-	-	-	-	-	-	
Portfolio (vi) – Corporate – other (including purchased corporate receivables)	0.00 to < 0.15	308,135	123,096	48	516,380	0.10	592	45	2.50	154,435	30	226	
	0.15 to < 0.25	22,168	18,130	38	73,335	0.22	221	45	2.50	34,424	47	72	
	0.25 to < 0.50	52,491	14,775	44	77,721	0.39	305	44	2.50	47,349	61	134	
	0.50 to < 0.75	181,577	72,960	25	96,832	0.58	407	44	2.50	70,196	72	246	
	0.75 to < 2.50	192,474	108,946	15	123,321	1.33	820	42	2.50	115,893	94	686	
	2.50 to < 10.00	71,968	48,773	4	30,646	3.78	288	30	2.50	29,200	95	357	
	10.00 to < 100.00	3,446	2,943	-	1,457	11.66	26	28	2.50	1,844	127	49	
	100.00 (Default)	1,437	1	-	898	100.00	23	43	2.50	2,465	274	339	
Sub-total		833,696	389,624	31	920,590	0.59	2,682	44	2.50	455,806	50	2,109	7,361

## 8. Credit risk for non-securitization exposures

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

(a) FIRB approach (continued)

		At 31 December 2017												
	PD scale	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	%		%	Year	HK\$m	%	HK\$m	HK\$m
		Portfolio (vii) – Equity – PD/LGD approach	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	-	-	-	-	-	-	-	-	-	-	-	-	
Portfolio (viii) – Retail – QRRE	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	-	-	-	-	-	-	-	-	-	-	-	-	
Portfolio (ix) – Retail – Residential mortgage exposures (including both to individuals and to property- holding shell companies)	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	-	-	-	-	-	-	-	-	-	-	-	-	

## 8. Credit risk for non-securitization exposures

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

(a) FIRB approach (continued)

		At 31 December 2017											
	PD scale	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	%		%	Year	HK\$m	%	HK\$m	HK\$m
Portfolio (x) – Retail – small business retail exposures	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	-	-	-	-	-	-	-	-	-	-	-	-
Portfolio (xi) – Other retail exposures to individuals	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	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total (sum of all portfolios)</b>		<b>1,374,916</b>	<b>442,682</b>	<b>30</b>	<b>1,505,711</b>	<b>0.44</b>	<b>5,722</b>	<b>44</b>	<b>2.50</b>	<b>661,233</b>	<b>44</b>	<b>2,615</b>	<b>10,601</b>

## 8. Credit risk for non-securitization exposures

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

(b) Retail IRB approach

		At 31 December 2017											
	PD scale	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	%		%	Year	HK\$m	%	HK\$m	HK\$m
Portfolio (i) – 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	-	-	-	-	-	-	-	-	-	-	-	-
Portfolio (ii) – Bank	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	-	-	-	-	-	-	-	-	-	-	-	-
Portfolio (iii) – Corporate – specialized lending (other than HVCRE) – FIRB/AIRB	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	-	-	-	-	-	-	-	-	-	-	-	-

## 8. Credit risk for non-securitization exposures

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

(b) Retail IRB approach (continued)

		At 31 December 2017											
	PD scale	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	%		%	Year	HK\$m	%	HK\$m	HK\$m
Portfolio (iv) – Corporate – small-and-medium sized corporates	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		-	-	-	-	-	-	-	-	-	-	-	-
Portfolio (v) – Corporate – HVCRE – FIRB/AIRB	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		-	-	-	-	-	-	-	-	-	-	-	-
Portfolio (vi) – Corporate – other (including purchased corporate receivables)	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		-	-	-	-	-	-	-	-	-	-	-	-

## 8. Credit risk for non-securitization exposures

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

(b) Retail IRB approach (continued)

		At 31 December 2017											
	PD scale	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	%		%	Year	HK\$m	%	HK\$m	HK\$m
Portfolio (vii) – Equity – PD/LGD approach	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	-	-	-	-	-	-	-	-	-	-	-	-
Portfolio (viii) – Retail – QRRE	0.00 to < 0.15	6,149	54,029	-	34,883	0.10	717,265	90		1,938	6	33	
	0.15 to < 0.25	2,738	24,187	-	21,275	0.23	601,692	91		2,273	11	44	
	0.25 to < 0.50	824	17,419	-	13,769	0.34	442,298	89		2,028	15	42	
	0.50 to < 0.75	1,045	3,655	-	3,689	0.58	96,455	92		846	23	20	
	0.75 to < 2.50	992	3,121	-	3,840	1.16	112,250	92		1,494	39	41	
	2.50 to < 10.00	1,464	1,525	-	2,589	5.48	45,233	94		3,083	119	133	
	10.00 to < 100.00	542	173	-	699	17.22	13,240	95		1,523	218	113	
	100.00 (Default)	43	49	-	82	100.00	1,648	88		909	1,103	-	
	Sub-total	13,797	104,158	-	80,826	0.67	2,030,081	90		14,094	17	426	216
Portfolio (ix) – Retail – Residential mortgage exposures (including both to individuals and to property- holding shell companies)	0.00 to < 0.15	140,733	-	100	140,734	0.10	82,769	11		24,058	17	16	
	0.15 to < 0.25	43,853	-	-	43,853	0.22	14,109	11		6,689	15	11	
	0.25 to < 0.50	34,308	-	-	34,308	0.39	12,054	12		5,495	16	16	
	0.50 to < 0.75	27,839	-	-	27,839	0.56	9,871	12		4,661	17	19	
	0.75 to < 2.50	1,642	-	-	1,642	1.12	942	12		312	19	2	
	2.50 to < 10.00	1,024	-	-	1,024	4.85	623	12		374	37	6	
	10.00 to < 100.00	750	-	-	750	22.72	433	11		470	63	20	
	100.00 (Default)	84	-	-	84	100.00	86	12		118	141	1	
	Sub-total	250,233	-	-	250,234	0.34	120,887	11		42,177	17	91	647

## 8. Credit risk for non-securitization exposures

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

(b) Retail IRB approach (continued)

		At 31 December 2017											
	PD scale	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	%		%	Year	HK\$m	%	HK\$m	HK\$m
Portfolio (x) – Retail – small business retail exposures	0.00 to < 0.15	1,117	2,078	36	1,856	0.09	1,676	13		56	3	-	
	0.15 to < 0.25	419	267	35	513	0.22	382	13		29	6	-	
	0.25 to < 0.50	616	359	36	747	0.39	476	14		65	9	-	
	0.50 to < 0.75	734	380	42	893	0.58	554	14		96	11	1	
	0.75 to < 2.50	1,038	483	38	1,222	1.28	910	19		260	21	3	
	2.50 to < 10.00	261	81	44	297	3.85	518	20		86	29	2	
	10.00 to < 100.00	16	2	47	17	17.97	53	45		17	98	2	
	100.00 (Default)	16	-	116	16	100.00	32	76		45	274	9	
Sub-total		4,217	3,650	37	5,561	1.03	4,601	15		654	12	17	19
Portfolio (xi) – Other retail exposures to individuals	0.00 to < 0.15	1,587	2,407	1	3,795	0.07	2,385	16		112	3	-	
	0.15 to < 0.25	2,544	16	-	2,557	0.22	4,108	12		136	5	1	
	0.25 to < 0.50	18,733	19	-	18,748	0.34	12,219	12		1,256	7	8	
	0.50 to < 0.75	9,090	12	-	9,104	0.58	6,867	17		1,241	14	9	
	0.75 to < 2.50	7,562	7,588	-	9,323	1.01	75,998	21		2,099	23	23	
	2.50 to < 10.00	208	8	-	212	4.02	365	19		57	27	2	
	10.00 to < 100.00	157	7	-	162	19.93	1,369	39		154	95	20	
	100.00 (Default)	111	3	-	112	100.00	1,029	83		1,022	908	20	
Sub-total		39,992	10,060	-	44,013	0.85	104,340	16		6,077	14	83	113
<b>Total (sum of all portfolios)</b>		<b>308,239</b>	<b>117,868</b>	<b>1</b>	<b>380,634</b>	<b>0.48</b>	<b>2,259,909</b>	<b>29</b>		<b>63,002</b>	<b>17</b>	<b>617</b>	<b>995</b>

## 8. Credit risk for non-securitization exposures

### CR7: Effects on RWA of recognized credit derivative contracts used as recognized credit risk mitigation – for IRB approach

		At 31 December 2017	
		Pre-credit derivatives RWA	Actual RWA
		HK\$m	HK\$m
1	Corporate – Specialized lending under supervisory slotting criteria approach (project finance)	-	-
2	Corporate – Specialized lending under supervisory slotting criteria approach (object finance)	-	-
3	Corporate – Specialized lending under supervisory slotting criteria approach (commodities finance)	-	-
4	Corporate – Specialized lending under supervisory slotting criteria approach (income-producing real estate)	-	-
5	Corporate – Specialized lending (high-volatility commercial real estate)	-	-
6	Corporate – Small-and-medium sized corporates	41,999	41,999
7	Corporate – Other corporates	455,806	455,806
8	Sovereigns	-	-
9	Sovereign foreign public sector entities	-	-
10	Multilateral development banks	-	-
11	Bank exposures – Banks	163,086	163,086
12	Bank exposures – Securities firms	342	342
13	Bank exposures – Public sector entities (excluding sovereign foreign public sector entities)	-	-
14	Retail – Small business retail exposures	654	654
15	Retail – Residential mortgages to individuals	41,251	41,251
16	Retail – Residential mortgages to property-holding shell companies	926	926
17	Retail – Qualifying revolving retail exposures (QRRE)	14,094	14,094
18	Retail – Other retail exposures to individuals	6,077	6,077
19	Equity – Equity exposures under market-based approach (simple risk-weight method)	-	-
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	-	-
27	Other – Other items	75,764	75,764
<b>28</b>	<b>Total (under the IRB calculation approaches)</b>	<b>799,999</b>	<b>799,999</b>

The Group did not use any recognised credit derivative contracts for credit risk mitigation.

## 8. Credit risk for non-securitization exposures

### CR8: RWA flow statements of credit risk exposures under IRB approach

	<b>HK\$m</b>
<b>1 RWA as at 30 September 2017</b>	<b>784,789</b>
2 Asset size	5,258
3 Asset quality	8,455
4 Model updates	-
5 Methodology and policy	-
6 Acquisitions and disposals	-
7 Foreign exchange movements	1,497
8 Other	-
<b>9 RWA as at 31 December 2017</b>	<b>799,999</b>

## 8. Credit risk for non-securitization exposures

### CR9: Back-testing of PD per portfolio – for IRB approach

#### (a) FIRB approach

		At 31 December 2017							
Portfolio	PD Range	External rating equivalent (Standard & Poor's)	Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Of which: new defaulted obligors in the year	Average historical annual default rate
					Beginning of the year	End of the year			
	%	%	%	%					%
Bank	0.00 to < 0.15	AAA to BBB+	0.06	0.07	350	273	-	-	-
	0.15 to < 0.25	BBB+ to BBB	0.22	0.22	20	44	-	-	-
	0.25 to < 0.50	BBB to BB+	0.39	0.39	34	45	-	-	-
	0.50 to < 0.75	BB+	0.57	0.58	20	19	-	-	-
	0.75 to < 2.50	BB+ to B+	0.96	1.49	13	14	-	-	-
	2.50 to < 10.00	B+ to B-	3.51	3.09	2	3	-	-	-
	10.00 to < 100.00	B- to C	-	-	-	-	-	-	-
Corporate – small-and-medium sized corporates	0.00 to < 0.15	AAA to BBB+	0.10	0.11	251	246	-	-	-
	0.15 to < 0.25	BBB+ to BBB	0.22	0.22	194	203	-	-	-
	0.25 to < 0.50	BBB to BB+	0.39	0.39	361	376	-	-	0.11
	0.50 to < 0.75	BB+	0.59	0.58	597	550	-	-	0.12
	0.75 to < 2.50	BB+ to B+	1.32	1.42	1,114	1,058	1	-	0.29
	2.50 to < 10.00	B+ to B-	4.22	4.03	531	527	2	-	0.88
	10.00 to < 100.00	B- to C	11.72	12.86	50	32	-	-	3.63
Corporate – other (including purchased corporate receivables)	0.00 to < 0.15	AAA to BBB+	0.09	0.10	561	579	-	-	-
	0.15 to < 0.25	BBB+ to BBB	0.22	0.22	213	217	-	-	-
	0.25 to < 0.50	BBB to BB+	0.39	0.39	307	288	-	-	-
	0.50 to < 0.75	BB+	0.58	0.59	574	511	-	-	0.06
	0.75 to < 2.50	BB+ to B+	1.34	1.33	1,019	1,043	1	-	0.23
	2.50 to < 10.00	B+ to B-	3.78	4.23	417	423	2	2	1.38
	10.00 to < 100.00	B- to C	12.00	13.26	54	49	1	-	5.91

## 8. Credit risk for non-securitization exposures

### CR9: Back-testing of PD per portfolio – for IRB approach (continued)

#### (b) Retail IRB approach

Portfolio	PD Range %	External rating equivalent (Standard & Poor's)	Weighted average PD %	Arithmetic average PD by obligors %	At 31 December 2017		Defaulted obligors in the year	Of which: new defaulted obligors in the year	Average historical annual default rate %
					Number of obligors				
					Beginning of the year	End of the year			
Retail – QRRE	0.00 to < 0.15		0.10	0.10	500,310	516,125	369	8	0.07
	0.15 to < 0.25		0.20	0.22	415,585	427,525	374	3	0.10
	0.25 to < 0.50		0.30	0.35	416,445	422,681	277	4	0.13
	0.50 to < 0.75		0.50	0.59	89,967	89,649	234	15	0.32
	0.75 to < 2.50		1.05	1.04	102,144	108,845	344	20	0.40
	2.50 to < 10.00		4.74	5.48	41,554	42,739	819	2	2.36
	10.00 to < 100.00		15.16	19.64	13,530	13,295	1,100	3	8.63
Retail – Residential mortgage exposures (including both to individuals and to property-holding shell companies)	0.00 to < 0.15		0.11	0.09	69,440	68,192	2	-	0.01
	0.15 to < 0.25		0.22	0.22	13,635	15,653	2	-	0.04
	0.25 to < 0.50		0.32	0.38	15,869	18,390	3	-	0.02
	0.50 to < 0.75		0.45	0.57	17,845	12,616	3	-	0.02
	0.75 to < 2.50		0.75	1.08	2,610	4,689	2	-	0.23
	2.50 to < 10.00		3.54	4.72	864	685	6	-	1.08
	10.00 to < 100.00		21.30	22.50	563	485	19	-	4.37
Retail – small business retail exposures	0.00 to < 0.15		0.09	0.09	1,681	1,677	1	-	0.06
	0.15 to < 0.25		0.22	0.22	428	383	-	-	0.28
	0.25 to < 0.50		0.39	0.39	531	476	-	-	0.24
	0.50 to < 0.75		0.58	0.59	606	557	2	-	0.82
	0.75 to < 2.50		1.31	1.34	1,054	920	12	1	2.16
	2.50 to < 10.00		3.87	5.06	609	518	53	36	6.28
	10.00 to < 100.00		21.21	31.52	80	52	13	-	25.89

## 8. Credit risk for non-securitization exposures

### CR9: Back-testing of PD per portfolio – for IRB approach (continued)

#### (b) Retail IRB approach (continued)

Portfolio	PD Range	External rating equivalent (Standard & Poor's)	Weighted average PD	Arithmetic average PD by obligors	At 31 December 2017		Defaulted obligors in the year	Of which: new defaulted obligors in the year	Average historical annual default rate
					Number of obligors				
					Beginning of the year	End of the year			
	%		%	%					%
Other retail exposures to individuals	0.00 to < 0.15		0.08	0.08	1,725	1,549	2	-	0.09
	0.15 to < 0.25		0.16	0.22	1,788	3,838	2	-	0.10
	0.25 to < 0.50		0.24	0.36	9,720	11,416	7	1	0.09
	0.50 to < 0.75		0.34	0.60	7,836	4,998	7	-	0.10
	0.75 to < 2.50		0.56	1.31	83,782	76,519	460	181	0.47
	2.50 to < 10.00		2.80	5.23	531	293	105	78	5.68
	10.00 to < 100.00		19.32	31.20	1,260	1,341	311	1	32.08

### CR10: Specialized lending under supervisory slotting criteria approach and equities under simple risk-weight method – for IRB approach

There were no specialised lending under supervisory slotting criteria approach and the Group did not use simple risk-weight method to measure equities exposures as at 31 December 2017.

## 9. Counterparty credit risk

### **CCRA: Qualitative disclosures related to counterparty credit risk (including those arising from clearing through CCPs)**

The Group's management objective to counterparty credit risk is to ensure credit risk is properly managed and controlled within the general credit risk management framework. The Group has also formulated relevant policy which covers identification, measurement, control and monitoring of counterparty credit risk.

The Group establishes credit limit through formal credit approval procedures to control the pre-settlement credit risk arising from derivative transactions and settlement limit to control the settlement risk arising from foreign exchange-related transactions for counterparties including CCP in both the trading book and banking book. The Group monitors the risk exposure due to market fluctuations by using the current exposure and the potential exposure value of the transactions.

The Group establishes prudent eligibility criteria and haircut policy of debt securities being pledged as collateral for securities financing transactions.

In controlling and monitoring of wrong-way risk (risk of existence of positive correlation between the PD of a counterparty and credit exposures driven by mark-to-market value of the underlying transactions), specific wrong-way risk transactions are generally not allowed; monitoring measures have been formulated for those counterparties that would be exposed to potential general wrong-way risk being identified by making use of internal risk management tools.

Based on the existing ISDAs and CSAs signed with BOCHK's counterparties, there is no impact on collateral amount that BOCHK would be required to provide given a credit rating downgrade.

## 9. Counterparty credit risk

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

		At 31 December 2017					
		Replacement cost (RC)	PFE	Effective EPE	Alpha ( $\alpha$ ) used for computing default risk exposure	Default risk exposure after CRM	RWA
		HK\$m	HK\$m	HK\$m		HK\$m	HK\$m
1	SA-CCR (for derivative contracts)	-	-		1.4	-	-
1a	CEM	13,220	17,294		-	30,252	9,256
2	IMM (CCR) approach			-	-	-	-
3	Simple Approach (for SFTs)					-	-
4	Comprehensive Approach (for SFTs)					26,650	355
5	VaR (for SFTs)					-	-
6	<b>Total</b>						<b>9,611</b>

### CCR2: CVA capital charge

		At 31 December 2017	
		EAD post CRM	RWA
		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 standardized CVA method	30,334	6,463
4	<b>Total</b>	<b>30,334</b>	<b>6,463</b>

## 9. Counterparty credit risk

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

		At 31 December 2017										
Risk Weight	Exposure class	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	
1	Sovereign exposures	15	-	-	-	-	-	4	-	-	-	19
2	PSE exposures	-	-	62	-	-	-	-	-	-	-	62
2a	Of which: domestic PSEs	-	-	3	-	-	-	-	-	-	-	3
2b	Of which: foreign PSEs	-	-	59	-	-	-	-	-	-	-	59
3	Multilateral development bank exposures	-	-	-	-	-	-	-	-	-	-	-
4	Bank exposures	-	-	7	-	6	-	10	-	-	-	23
5	Securities firm exposures	-	-	-	-	-	-	-	-	-	-	-
6	Corporate exposures	54	-	-	-	-	-	139	-	-	-	193
7	CIS exposures	-	-	-	-	-	-	-	-	-	-	-
8	Regulatory retail exposures	598	-	-	-	-	200	-	-	-	-	798
9	Residential mortgage loans	-	-	-	-	-	-	-	-	-	-	-
10	Other exposures which are not past due exposures	3,690	-	-	-	-	-	787	-	-	-	4,477
11	Significant exposures to commercial entities	-	-	-	-	-	-	-	-	-	-	-
12	<b>Total</b>	<b>4,357</b>	<b>-</b>	<b>69</b>	<b>-</b>	<b>6</b>	<b>200</b>	<b>940</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5,572</b>

## 9. Counterparty credit risk

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

#### FIRB approach

	PD scale	At 31 December 2017						
		EAD post-CRM	Average PD	Number of obligors	Average LGD	Average maturity	RWA	RWA density
		HK\$m	%		%	Year	HK\$m	%
Portfolio (i) – 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	-	-	-	-	-	-	-	
Portfolio (ii) – Bank	0.00 to < 0.15	42,004	0.06	146	19	1.42	4,813	11
	0.15 to < 0.25	1,719	0.22	19	26	1.68	599	35
	0.25 to < 0.50	99	0.39	11	45	2.50	80	82
	0.50 to < 0.75	60	0.51	2	45	2.50	42	70
	0.75 to < 2.50	-	-	-	-	-	-	-
	2.50 to < 10.00	2	4.11	3	45	2.50	3	140
	10.00 to < 100.00	-	-	-	-	-	-	-
	100.00 (Default)	-	-	-	-	-	-	-
Sub-total	43,884	0.07	181	19	1.44	5,537	13	
Portfolio (iii) – Corporate	0.00 to < 0.15	3,168	0.11	23	28	1.73	671	21
	0.15 to < 0.25	13	0.22	7	45	2.50	6	46
	0.25 to < 0.50	54	0.39	11	45	2.50	33	60
	0.50 to < 0.75	194	0.53	20	45	2.50	134	69
	0.75 to < 2.50	3,229	1.18	44	16	1.19	1,130	35
	2.50 to < 10.00	787	2.87	36	45	2.50	991	126
	10.00 to < 100.00	1	10.54	1	45	2.50	2	197
	100.00 (Default)	-	-	-	-	-	-	-
Sub-total	7,446	0.88	142	25	1.61	2,967	40	
Portfolio (iv) – 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	-	-	-	-	-	-	-	
<b>Total (sum of all portfolios)</b>	<b>51,330</b>	<b>0.19</b>	<b>323</b>	<b>20</b>	<b>1.46</b>	<b>8,504</b>	<b>17</b>	

## 9. Counterparty credit risk

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

	At 31 December 2017					
	Derivative contracts				SFTs	
	Fair value of recognized collateral received		Fair value of posted collateral		Fair value of recognized collateral received	Fair value of posted collateral
	Segregated	Unsegregated	Segregated	Unsegregated		
	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
Cash	-	11,850	-	787	14,458	11,501
Debt securities	-	-	-	-	9,158	14,767
Equity securities	-	-	-	-	2,668	-
<b>Total</b>	-	<b>11,850</b>	-	<b>787</b>	<b>26,284</b>	<b>26,268</b>

### CCR6: Credit-related derivatives contracts

	At 31 December 2017	
	Protection bought	Protection sold
	HK\$m	HK\$m
<b>Notional amounts</b>		
Index credit default swaps	195	391
<b>Total notional amounts</b>	<b>195</b>	<b>391</b>
<b>Fair values</b>		
Positive fair value (asset)	-	6
Negative fair value (liability)	(3)	-

### CCR7: RWA flow statements of default risk exposures under IMM(CCR) approach

The Group did not use IMM(CCR) approach to measure default risk exposures as at 31 December 2017.

## 9. Counterparty credit risk

### CCR8: Exposures to CCPs

		At 31 December 2017	
		Exposure after CRM	RWA
		HK\$m	HK\$m
<b>1</b>	<b>Exposures of the AI as clearing member or client to qualifying CCPs (total)</b>		<b>129</b>
2	Default risk exposures to qualifying CCPs (excluding items disclosed in rows 7 to 8), of which:	4,738	95
3	(i) OTC derivative transactions	4,104	82
4	(ii) Exchange-traded derivative contracts	634	13
5	(iii) Securities financing transactions	-	-
6	(iv) Netting sets subject to valid cross-product netting agreements	-	-
7	Initial margin	1,583	32
8	Default fund contributions	74	2
<b>9</b>	<b>Exposures of the AI as clearing member or client to non-qualifying CCPs (total)</b>		<b>-</b>
10	Default risk exposures to non-qualifying CCPs (excluding items disclosed in rows 15 to 16), of which:	-	-
11	(i) OTC derivative transactions	-	-
12	(ii) Exchange-traded derivative contracts	-	-
13	(iii) Securities financing transactions	-	-
14	(iv) Netting sets subject to valid cross-product netting agreements	-	-
15	Initial margin	-	-
16	Default fund contributions	-	-

## 10. Securitization exposures

### **SECA: Qualitative disclosures related to securitization exposures**

BOCHK has not sponsored or managed or provided implicit support to securitisation exposures and does not hold any re-securitisation exposures as at 31 December 2017.

### **SEC1: Securitization exposures in banking book**

There were no securitisation exposures in the banking book as at 31 December 2017.

### **SEC2: Securitization exposures in trading book**

There were no securitisation exposures in the trading book as at 31 December 2017.

### **SEC3: Securitization exposures in banking book and associated capital requirements – where AI acts as originator**

There were no securitisation exposures in the banking book and the associated capital requirements where the Group acts as an originator as at 31 December 2017.

### **SEC4: Securitization exposures in banking book and associated capital requirements – where AI acts as investor**

There were no securitisation exposures in the banking book and the associated capital requirements where the Group acts as an investor as at 31 December 2017.

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## 11. Market risk

### MRA: Qualitative disclosures related to market risk

#### Market Risk

Market risk refers to the risk of loss arising from movements in the value of foreign exchange, interest rate, equity and commodity positions held by the Group due to the volatility of financial market price (foreign exchange rate, interest rate, equity price, commodity price).

#### Market Risk Governance

The Group's market risk management is intended to ensure proper oversight of market risk, assure market risk taking activities are consistent with our risk appetite while optimising risk and return. In accordance with the Group's corporate governance principles in respect of risk management, the Board and RMC, senior management and functional departments/units perform their duties and responsibilities to manage the Group's market risk. The RMD is mainly responsible for managing market risk, assisting senior management to perform their day-to-day duties, independently monitoring the market risk profile and compliance of management policies and limits of the Group and BOCHK, and ensuring that the aggregate and individual market risks are within acceptable levels. The Group's risk management report is submitted to the senior management and RMC on a monthly basis.

The Group's market risk management covers BOCHK and its subsidiaries. The Group establishes market risk management policies to regulate BOCHK's and subsidiaries' market risk management; meanwhile, the Group sets up the Group VAR and stress test limits, which are allocated and monitored across the Group, according to the business requirements and risk tolerance levels. In line with the requirements set in the Group policy, the subsidiaries formulate the detailed policies and procedures and are responsible for managing their daily market risk. The subsidiaries management information and reports are submitted to BOCHK on a daily and monthly basis.

The Group sets up market risk indicators and limits to identify, measure, monitor and control market risk. Major risk indicators and limits include but are not limited to VAR, Stop Loss, Open Position, Stress Testing and Sensitivity Analysis (Basis Point Value, Greeks), etc. Trading market risks are managed holistically at the portfolio level on a daily basis. Global Markets may utilise hedging strategies to manage risk within set limits. Hedging may lead to basis risks – due to less than perfect correlation between the hedging instrument in question and the position to be hedged, which are managed within the overall limits. As such, the RMD does not distinguish between specific positions and their respective hedges.

Market risk limits are established for the Group, individual entities, business unit and at granular levels within the business lines, reflecting the nature and magnitude of the market risks. Major risk indicators and limits are classified into four levels, and are approved by the RMC, MC, CRO and the DCE in charge of the treasury business or the head of the respective business unit respectively. Regular review of the market risk limits should be conducted at least once a year. Treasury business units of BOCHK and subsidiaries (as for Group Limit) are required to conduct their business within approved market risk indicators and limits.

## 11. Market risk

### MRB: Additional qualitative disclosures for AI using IMM approach

The Group continues to adopt the internal models (“IMM”) approach to calculate the general market risk capital charge for foreign exchange and interest rate exposures and, with the approval from the HKMA, exclude its structural FX positions in the calculation of the market risk capital charge. The Group continues to adopt the standardised (market risk) (“STM”) approach to calculate the market risk capital charge for the remaining exposures. Regulatory VAR and stressed VAR models are adopted to use in the Group and BOCHK.

Regulatory VAR and stressed VAR for determining market risk capital requirements are calculated at a 99% confidence level for a 10-day holding period. The stressed VAR uses the same methodology as the VAR model and is generated with inputs calibrated to the historical market data from a continuous 12-month period of significant financial stress relevant to the Group's portfolio. For management purposes, the Group uses 1-day 99% VAR to measure and report general market risks of the Group and subsidiaries, and sets up the VAR limit of the Group and subsidiaries.

Directly modeled 10-day holding period is used in the calculation of regulatory VAR, whereby two-year historical observations are equally weighted. Absolute returns are used for interest rates; logarithmic returns are used for foreign exchange rates and implied volatilities under historical simulation, where the data are updated daily.

Stressed VAR model is based on a directly modeled 10-day holding period, which is same as regulatory VAR model. Based on the assessment at the most volatile period in recent history, relevant historical crises are first identified. With further assessment, January 2008 to December 2008 is chosen as the stress period in calculating stressed VAR. The period used is approved by the HKMA and regularly reviewed.

Full revaluation approach is used in both VAR and stressed VAR model. Specific risk charge is calculated as a standalone charge by using a different method (i.e. Standardised approach). It is aggregated by simple sum with the VAR and stressed VAR contributions when computing the market risk capital charge.

The Group adopts back-testing to measure the accuracy of VAR model results. The back-testing compares the calculated VAR figure of market risk positions of each business day with the actual and hypothetical gains or losses arising from those positions on the next business day. Generally speaking, the number of back-testing exceptions in a rolling 12-month period will not exceed four times, given a 99% confidence level.

## 11. Market risk

### MR1: Market risk under STM approach

		At 31 December 2017
		RWA
		HK\$m
	Outright product exposures	
1	Interest rate exposures (general and specific risk)	2,347
2	Equity exposures (general and specific risk)	1,145
3	Foreign exchange (including gold) exposures	-
4	Commodity exposures	269
	Option exposures	
5	Simplified approach	-
6	Delta-plus approach	26
7	Other approach	-
8	Securitization exposures	-
<b>9</b>	<b>Total</b>	<b>3,787</b>

### MR2: RWA flow statements of market risk exposures under IMM approach

		VaR	Stressed VaR	IRC	CRC	Other	Total RWA
		HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
<b>1</b>	<b>RWA as at 30 September 2017</b>	<b>4,511</b>	<b>9,277</b>	-	-	-	<b>13,788</b>
1a	Regulatory adjustment	(2,759)	(6,220)	-	-	-	(8,979)
<b>1b</b>	<b>RWA as at day-end of 30 September 2017</b>	<b>1,752</b>	<b>3,057</b>	-	-	-	<b>4,809</b>
2	Movement in risk levels*	(609)	(8)	-	-	-	(617)
3	Model updates/changes	-	-	-	-	-	-
4	Methodology and policy	-	-	-	-	-	-
5	Acquisitions and disposals	-	-	-	-	-	-
6	Foreign exchange movements	-	-	-	-	-	-
7	Other	-	-	-	-	-	-
<b>7a</b>	<b>RWA as at day-end of 31 December 2017</b>	<b>1,143</b>	<b>3,049</b>	-	-	-	<b>4,192</b>
7b	Regulatory adjustment	2,658	6,494	-	-	-	9,152
<b>8</b>	<b>RWA as at 31 December 2017</b>	<b>3,801</b>	<b>9,543</b>	-	-	-	<b>13,344</b>

\* Movements as a result of changes in positions and risk levels.

## 11. Market risk

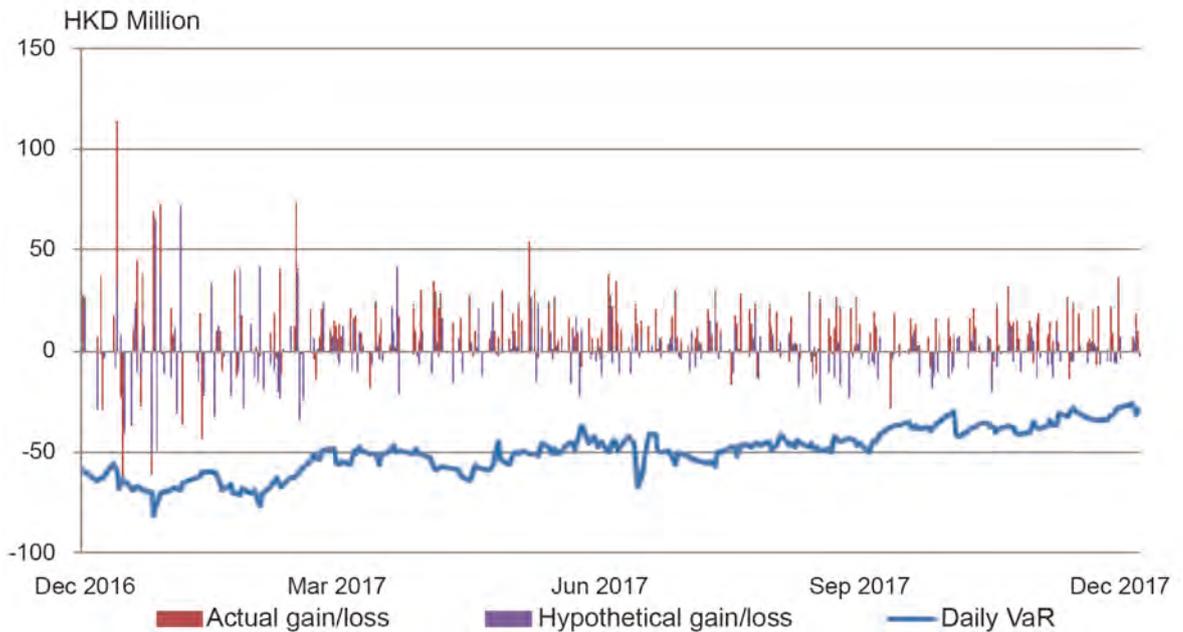
### MR3:IMM approach values for market risk exposures

		HK\$m
<b>VaR (10 days – one-tailed 99% confidence interval)</b>		
1	Maximum Value	189
2	Average Value	112
3	Minimum Value	84
4	Period End	91
<b>Stressed VaR (10 days – one-tailed 99% confidence interval)</b>		
5	Maximum Value	340
6	Average Value	252
7	Minimum Value	194
8	Period End	244
<b>Incremental risk charge (IRC) (99.9% confidence interval)</b>		
9	Maximum Value	-
10	Average Value	-
11	Minimum Value	-
12	Period End	-
<b>Comprehensive risk charge (CRC) (99.9% confidence interval)</b>		
13	Maximum Value	-
14	Average Value	-
15	Minimum Value	-
16	Period End	-
17	Floor	-

\* The above values cover the period between July 2017 and December 2017.

## 11. Market risk

### MR4: Comparison of VaR estimates with gains or losses



Market risk regulatory capital charge is calculated under the Banking (Capital) (Amendment) Rules 2011 to incorporate capital charge for stressed VAR. Regulatory VAR and stressed VAR for determining market risk capital requirements are calculated at a 99% confidence level for a 10-day holding period. The stressed VAR uses the same methodology as the VAR model and is generated with inputs calibrated to the historical market data from a continuous 12-month period of significant financial stress relevant to the Group's portfolio.

The Group adopts a regulatory VAR model, using a historical simulation approach and two years of historical data, to capture general interest rate and foreign exchange risks over a 10-day holding period with a 99% confidence level. The Group adopts back-testing to measure the accuracy of VAR model results. Actual and hypothetical P&L are compared against the corresponding 99% one-day regulatory VAR over the recent 250 business days. The numbers of exception (Actual or hypothetical P&L exceeds the VAR) determines the value of VAR multiplication factor.

Actual P&Ls are the P&Ls in respect to trading activities within the scope of regulatory VAR model, which includes intraday P&Ls; excludes commissions, fees and reserves. Hypothetical P&Ls are the hypothetical changes in portfolio value assuming unchanged end-of-day position.

There were no back-testing exceptions against both actual and hypothetical P&Ls over the recent 250 business days.

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## 12. Operational risk

	At 31 December 2017
	HK\$m
Capital charge for operational risk	6,041

The Group uses the standardised (operational risk) approach to calculate its operational risk capital charge.