

The Hongkong and Shanghai Banking
Corporation Limited

**Supplementary Notes on the Financial
Statements 2016**



Contents

	Page
Introduction	
Purpose	3
Basis of preparation	3
Supplementary notes 2016	3
Capital ratios and RWA	
Capital ratios and buffers	4
Summary of risk-weighted assets	4
Credit risk capital requirements	5
Credit risk	
Internal ratings-based approach	6
Standardised approach	7
Credit risk exposures	8
Counterparty credit risk exposures	18
Credit risk mitigation	21
Securitisation	21
Market risk	
Overview and governance	24
Market risk measures	24
Market risk capital models	25
Market risk capital requirement	26
Analysis of VaR, stressed VaR and incremental risk charges measures	27
Operational risk	28
Other disclosures	
Leverage ratio	28
Equity exposures in the banking book	28
Interest rate exposures in the banking book	29
Off-balance sheet exposures other than derivative transactions	30
Loans and advances to customers	30
Mainland activities	32
International claims	33
Foreign currency positions	33
Dividend income	33
Cash and sight balances at central banks	34
Non-trading reverse repurchase and repurchase agreements	34
Impairment allowances on loans and advances to customers	34
Impairment and rescheduled amounts relating to placings with and advances to banks and other assets	35
Senior management compensation and benefits	36
Basis of consolidation	37

Appendices

	Page
I Transition Disclosures Template	38
II Balance Sheet Reconciliation	46
III Liquidity Coverage Ratio Standard Disclosure Template	51
IV Leverage Ratio Common Disclosure Templates	54
V Countercyclical Capital Buffer Ratio Standard Disclosure Template	55
VI Capital Instruments	56

Tables

	Page		Page
1 Capital ratios	4	48 Reconciliation of balance sheets – financial accounting to regulatory scope of consolidation	46
2 Capital buffers	4	49 Detailed reconciliation of balance sheets – financial accounting to regulatory scope of consolidation statements	47
3 The group's total risk-weighted assets	4	50 Liquidity coverage ratio	51
4 Credit risk capital requirements	5	51 Leverage Ratio Common Disclosure Template	54
5 Exposures by IRB calculation approach	8	52 Leverage Ratio Summary Comparison Table	54
6 Exposures covered by recognised guarantees or recognised credit derivative contracts	8	53 Countercyclical Capital Buffer Ratio	55
7 Corporate exposures (other than specialised lending) – analysis by obligor grade	9	54 Capital instruments	56
8 Corporate exposures (specialised lending) – analysis by supervisory rating grade	10		
9 Sovereign exposures – analysis by obligor grade	11		
10 Bank exposures – analysis by obligor grade	12		
11 Retail exposures – analysis by internal PD grade	13		
12 Undrawn commitments	14		
13 Actual and projected PD, LGD and EAD	15		
14 IRB expected loss and impairment charges	15		
15 Credit risk exposures under the standardised approach	16		
16 Counterparty credit risk exposures under the advanced internal ratings-based approach	18		
17 Counterparty credit risk exposures under the standardised (credit risk) approach	19		
18 Major classes of exposures under the advanced internal ratings-based approach by counterparty type	19		
19 Major classes of exposures under the standardised (credit risk) approach by counterparty type	19		
20 Risk exposures to derivative transactions	20		
21 Contract amounts of credit derivative contracts which create exposure to counterparty credit risk	20		
22 Securitisation transactions – underlying exposures and impairment	22		
23 Securitisation exposure – by exposure type	23		
24 Securitisation exposure – by risk-weighted bands	23		
25 Market risk capital requirement	26		
26 The group's VaR for the positions covered by the internal models approach	27		
27 The group's stressed VaR for the positions covered by the internal models approach	27		
28 The group's incremental risk charge	27		
29 Capital requirement for operational risk	28		
30 Leverage ratio	28		
31 Equity exposures in the banking book	28		
32 Change in projected net interest income arising from a shift in yield curves	29		
33 Off-balance sheet exposures other than derivative transactions	30		
34 Loans and advances to customers by geographical location	30		
35 Loans and advances to customers by industry	31		
36 Mainland activities	32		
37 International claims	33		
38 Foreign currency positions	33		
39 Dividend income	33		
40 Cash and sight balances at central banks	34		
41 Non-trading reverse repos with customers and banks	34		
42 Impairment allowances on loans and advances to customers	34		
43 Overdue and rescheduled loans and advances to customers	35		
44 Analysis of remuneration between fixed, variable, deferred and non-deferred amounts	36		
45 Analysis of deferred remuneration	36		
46 Principal entities with a different regulatory and accounting scope of consolidation statements	37		
47 The group's regulatory capital	38		

Introduction

Purpose

The information contained in this document is for The Hongkong and Shanghai Banking Corporation Limited ('the Bank') and its subsidiaries (together 'the group'). It is supplementary to and should be read in conjunction with the *Annual Report and Accounts 2016*. The Annual Report and Accounts and these Supplementary Notes (which includes Supplementary Notes on the Financial Statements and the Regulatory Capital Instruments), taken together, comply with the Banking (Disclosure) Rules made under section 60A of the Banking Ordinance. They also serve to comply with the disclosures on remuneration as required by the Hong Kong Monetary Authority ('HKMA') Supervisory Policy Manual CG-5 'Guideline on a Sound Remuneration System'.

References to 'HSBC', 'the Group' or 'the HSBC Group' within this document mean HSBC Holdings plc together with its subsidiaries. Within this document the Hong Kong Special Administrative Region of the People's Republic of China is referred to as 'Hong Kong'. The abbreviations 'HK\$m' and 'HK\$bn' represent millions and billions (thousands of millions) of Hong Kong dollars respectively.

While the Supplementary Notes are not required to be externally audited, the document has been verified internally in accordance with the group's policies on disclosure and its financial reporting and governance processes.

Basis of preparation

The approaches used in calculating the group's regulatory capital or capital charge are in accordance with the Banking (Capital) Rules. The group uses the advanced internal ratings-based approach to calculate its credit risk for the majority of its non-securitisation exposures and the internal ratings-based (securitisation) approach to determine credit risk for its banking book securitisation exposures. For market risk, the group uses an internal models approach to calculate its general market risk for the risk categories of interest rate and foreign exchange (including gold) exposures, and equity exposures. The group also uses an internal models approach to calculate its market risk in respect of specific risk for interest rate exposures and equity exposures. The group uses the standardised (market risk) approach for calculating other market risk positions, as well as trading book securitisation exposures, and the standardised (operational risk) approach to calculate its operational risk.

Except where indicated otherwise, the financial information contained in these Supplementary Notes has been prepared on a consolidated basis. The basis of consolidation for regulatory purposes is different from that for accounting purposes. Information regarding subsidiaries that are not included in the consolidation for regulatory purposes is set out in the 'Basis of consolidation' section.

The accounting policies applied in preparing these Supplementary Notes are the same as those applied in preparing the consolidated financial statements for the year ended 31 December 2016, as set out in Note 1 on the financial statements in the *Annual Report and Accounts 2016*.

These supplementary notes on financial statements are unaudited.

Supplementary notes 2016

The Supplementary Notes on the financial statements 2016 comprise majority of information required under the Banking (Disclosure) Rules.

For disclosures which have been enhanced or are new, we do not generally restate or provide prior year comparatives.

The principal changes in our Supplementary notes 2016, compared with 2015, are:

- New disclosures:
 - Capital buffers
 - Countercyclical buffer standard disclosure template
- Other changes:
 - Combine the Supplementary Notes Appendices into the Supplementary Notes on the Financial Statements
 - Transfer of a few disclosures from Annual Report and Accounts to Supplementary Notes:
 - Dividend income
 - Cash and sight balances at central banks
 - Non-trading reverse repurchase and repurchase agreements
 - Impairment allowances on loans and advances to
 - Impairment and rescheduled amounts relating to placings with and advances to banks and other assets
 - Capital instruments

Capital ratios and RWA

The following tables show the capital ratios, capital buffers and risk-weighted assets ('RWAs') as contained in the 'Capital

Adequacy Ratio' return required to be submitted to the HKMA on a consolidated basis under the requirements of section 3C(1) of the Banking (Capital) Rules.

Credit ratios and buffers

Table 1: Capital ratios

	31 Dec 2016	31 Dec 2015
	%	%
Common Equity Tier 1 ('CET1') capital	16.0	15.6
Tier 1 capital	17.2	16.6
Total capital	19.0	18.6

Table 2: Capital buffers

	31 Dec 2016
	%
Capital conservation buffer ratio	0.6
Countercyclical buffer ratio	0.4
Higher loss absorbency ratio	0.6
Total	1.6

Summary of risk-weighted assets

Table 3: The group's total risk-weighted assets

	31 Dec 2016	31 Dec 2015
	HK\$m	HK\$m
Credit risk		
- standardised approach	243,399	235,235
- internal ratings-based ('IRB') approach	1,778,086	1,701,500
- IRB (securitisation) approach	6,205	5,695
Counterparty credit risk		
- standardised approach	4,223	5,003
- IRB approach	95,840	98,229
- central clearing counterparty ('CCP')	4,326	3,511
- credit valuation adjustment ('CVA')	66,761	70,021
Market risk	90,454	101,551
Operational risk	299,295	298,662
Total	2,588,589	2,519,407

Credit risk capital requirements

The group uses the advanced internal ratings-based ('IRBA') approach to calculate its credit risk for the majority of its non-securitisation exposures. The remainder of its credit risk for non-securitisation exposures was assessed using the standardised (credit risk) approach.

The table below shows the capital requirements for credit risk for each class and subclass of non-securitisation exposures as specified in the Banking (Capital) Rules. Capital requirement means the amount of capital required to be held for that risk based on its risk-weighted amount multiplied by 8%.

Table 4: Credit risk capital requirements

	31 Dec 2016	31 Dec 2015
	HK\$m	HK\$m
Capital required for exposures under the IRB approach		
Corporate exposures		
Specialised lending under the supervisory slotting criteria approach		
– project finance	1,248	1,029
– object finance	33	42
– commodities finance	–	9
– income-producing real estate	2,963	2,421
Small- and medium-sized corporates	4,068	15,068
Other corporates	83,264	69,977
Sovereign exposures		
Sovereigns	10,730	10,627
Multilateral development banks	479	146
Bank exposures		
Banks	11,915	10,991
Securities firms	849	718
Retail exposures		
Residential mortgages		
– individuals	8,383	7,419
– property-holding shell companies	346	311
Qualifying revolving retail exposures	5,059	4,968
Small business retail exposures	16	13
Other retail exposures to individuals	787	746
Equity exposures		
Equity exposures under the simple risk-weighted method	2,162	2,440
Other equity exposures	10,000	9,187
Other exposures		
Cash items	152	242
Other items	10,083	10,174
Total for the IRB approach	152,537	146,528
Capital required for exposures under the standardised approach		
Sovereign exposures	14	54
Public sector entity exposures	827	812
Bank exposures	71	50
Securities firm exposures	1	1
Corporate exposures	8,529	8,439
Regulatory retail exposures	3,965	4,215
Residential mortgages loans	3,578	3,399
Other exposures which are not past due exposures	1,066	511
Past due exposures	396	326
Off-balance sheet exposures other than OTC derivative transactions and credit derivative contracts	1,078	1,094
OTC derivative transactions and credit derivative contracts	338	400
Total for the standardised approach	19,863	19,301
Capital required for Central Clearing Counterparties (CCP)	346	281
Capital required for Credit Valuation Adjustment (CVA)	5,341	5,602
Total	178,087	171,712

Credit risk

Internal ratings-based approach

The internal ratings system and its risk components

Nature of exposures within each IRB class

The group uses the advanced IRB approach for the majority of its business under the approval granted by the HKMA. This includes the following major classes of non-securitisation exposures:

- Corporate exposures, including exposures to global and local large corporates, middle-market corporates, non-bank financial institutions and specialised lending.
- Sovereign exposures, including exposures to central governments, central monetary institutions, multilateral development banks and relevant international organisations.
- Bank exposures, including exposures to banks and regulated securities firms.
- Retail exposures, including residential mortgages, qualifying revolving retail exposures and other retail exposures.
- Equity exposures.
- Other exposures, including cash items and other assets.

Measurement and monitoring – risk rating systems

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

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

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

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

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

Application of IRB parameters

The group's credit risk rating framework incorporates the probability of default ('PD') of a borrower and the loss severity, expressed in terms of exposure at default ('EAD') and loss given default ('LGD'). These measures are used to calculate both expected loss ('EL') and capital requirements, subject to any floors required by the HKMA. They are also used in conjunction with other inputs to inform rating assessments for the purpose of credit approval and many other risk management decisions.

The narrative explanations that follow relate to the IRB advanced approaches, that is, IRB advanced for distinct customers and retail IRB for the portfolio-managed retail business.

Wholesale business

PD for wholesale customer segments (Central Governments and Central Banks (Sovereigns), Institutions, Corporates) is estimated using a Customer Risk Rating ('CRR') scale of 23 grades, of which 21 are non-default grades representing varying degrees of strength of financial condition and two are default grades. A score generated by a model for the individual borrower type is mapped to the corresponding CRR. The process through which this, or a judgementally amended CRR, is then recommended to and reviewed by a credit approver takes into account all additional information relevant to the risk rating determination, including external ratings where available. The approved CRR is mapped to a PD value range of which the 'mid-point' is used in the regulatory capital calculation. PD models are developed where the risk profile of corporate borrowers is specific to a country and sector. For illustration purposes, the CRR is also mapped to external ratings of Standard and Poor's ('S&P'), though we also benchmark against other agencies' ratings in an equivalent manner.

LGD and EAD estimation for the wholesale business is subject to a Group framework of basic principles. EAD is estimated to a 12-month horizon and broadly represents the current exposure, plus an estimate for future increases in exposure, taking into account such factors as available but undrawn facilities and the crystallisation of contingent exposures, post-default. LGD focuses on the facility and collateral structure, involving factors like facility priority/seniority, the type and value of collateral, type of client and regional variances in experience, and is expressed as a percentage of EAD.

The group uses the Supervisory Slotting Criteria approach in rating its specialised lending exposures. Under this approach, ratings are determined by considering both the borrower and the transaction risk characteristics.

Retail business

The wide range of application and behavioural information used in the management of retail portfolios has been supplemented with models to derive the measures of PD, EAD and LGD required for Basel framework. For management information and reporting purposes, retail portfolios are segmented according to location, analytically derived PD bands, in nine composite PD grades, facilitating comparability across the group's retail customer segments, business lines and product types.

Model governance

Model governance of group risk rating models, including development, validation and monitoring, are under the general oversight of the Wholesale Model Oversight Committees ('WMOC') and Retail Banking and Wealth Management Risk ('RBWMR') MOC. Both the WMOC and RBWMR MOC are under the oversight of the Group MOC and are accountable to the group Risk Management Meeting.

Internal Audit, or a comparable independent model review unit, conducts regular reviews of the risk rating model application by the global businesses.

Use of internal estimates

Internal risk parameters derived from applying the IRB approach are not only employed in the calculation of risk-weighted assets ('RWAs') for the purpose of determining regulatory capital requirements, but also in many other contexts within risk management and business processes, including:

- **credit approval and monitoring:** IRB models, scorecards and other methodologies are valuable tools deployed in the assessment of customer and portfolio risk in lending decisions, including the use of CRR grades within watch list processes and other enhanced monitoring procedures for wholesale portfolios; for retail portfolios, return on RWA is being used to assess the segment level profitability for lending decisions;
- **risk appetite:** IRB measures are an important element of risk appetite definition at customer, sector and portfolio levels, and in the implementation of the Group risk appetite framework; for instance, in subsidiaries' operating plans and the calculation of remuneration through the assessment of performance;
- **portfolio management:** regular reports to the Board, Audit Committee and Risk Committee contain analyses of risk exposures, e.g. by customer segment and quality grade, employing IRB metrics;
- **pricing:** IRB risk parameters are used in wholesale pricing tools when considering new transactions and annual reviews; and
- **economic capital:** IRB measures provide customer risk components for the economic capital model that has been implemented across the group to improve the consistent analysis of economic returns, help determine which customers, business units and products add greatest value, and drive higher returns through effective economic capital allocation.

Standardised approach

Application of the standardised approach

The standardised (credit risk) approach is applied where exposures do not qualify for use of an IRB approach and/or where an exemption from IRB has been granted.

The standardised (credit risk) approach requires banks to use risk assessments prepared by External Credit Assessment Institutions ('ECAI') to determine the risk weightings applied to rated counterparties.

ECAI risk assessments are used within the group as part of the determination of risk weightings for the following classes of exposure:

- public sector entity exposures;
- bank or corporate exposures (those without an internal CRR); and
- collective investment scheme exposures.

The group uses external credit ratings from the following ECAIs:

- Fitch Ratings;
- Moody's Investors Service; and
- Standard & Poor's Ratings Services.

The group determines ECAI issuer ratings or ECAI issue-specific ratings in the banking book in a process consistent with Part 4 of the Banking (Capital) Rules.

All other exposure classes are assigned risk weightings as prescribed in the HKMA's Banking (Capital) Rules.

Credit risk exposures

Exposures by IRB calculation approach

The following table shows the group's exposures¹ by each IRB calculation approach:

Table 5: Exposures by IRB calculation approach

	Advanced IRB approach	Supervisory slotting criteria approach	Retail IRB approach	Total exposures
	HK\$m	HK\$m	HK\$m	HK\$m
At 31 Dec 2016				
Corporate exposures	2,009,441	72,779	–	2,082,220
Sovereign exposures	1,710,340	–	–	1,710,340
Bank exposures	869,789	–	–	869,789
Retail exposures				
– residential mortgages to individuals and property-holding shell companies	–	–	703,041	703,041
– qualifying revolving retail exposures	–	–	251,138	251,138
– other retail exposures to individuals and small business retail exposures	–	–	58,217	58,217
At 31 Dec 2015				
Corporate exposures	1,921,516	64,394	–	1,985,910
Sovereign exposures	1,577,190	–	–	1,577,190
Bank exposures	816,240	–	–	816,240
Retail exposures				
– residential mortgages to individuals and property-holding shell companies	–	–	686,548	686,548
– qualifying revolving retail exposures	–	–	237,721	237,721
– other retail exposures to individuals and small business retail exposures	–	–	55,288	55,288

¹ This includes EAD of on-balance sheet and off-balance sheet exposures.

The corporate, sovereign and bank exposures reported under the IRBA approach as at 31 December 2016 include amounts of HK\$80,641m, HK\$6,335m and HK\$237,051m respectively (31 December 2015: HK\$75,280m, HK\$5,261m and HK\$199,163m respectively) that are subject to supervisory estimates. In addition, equity exposures of HK\$6,460m (31 December 2015: HK\$7,296m) reported under the simple risk-weighted method and amounts reported under the Supervisory Slotting Criteria approach are subject to supervisory estimates.

Exposures covered by recognised guarantees or recognised credit derivative contracts

The following shows the group's exposures¹ (after the effect of any on-balance sheet or off-balance sheet recognised netting) that are covered by recognised guarantees or recognised credit derivative contracts after the application of haircuts required under the Banking (Capital) Rules. These exposures exclude securities financing transactions and derivative contracts.

Table 6: Exposures covered by recognised guarantees or recognised credit derivative contracts

	31 Dec 2016	31 Dec 2015
	HK\$m	HK\$m
Corporate exposures	511,674	495,235
Sovereign exposures	1,257	1,163
Bank exposures	7,671	20,918
Retail exposures	42,431	38,310
Total	563,033	555,626

¹ This includes EAD of on-balance sheet and off-balance sheet exposures.

Risk assessment for exposures under IRB approach

The EADs, PDs and LGDs disclosed below in respect of corporate, sovereign, and bank and retail exposures have taken into account the effect of recognised collateral, recognised netting, recognised guarantees and recognised credit derivative contracts.

Table 7: Corporate exposures (other than specialised lending) – analysis by obligor grade

	CRR	PD range	Exposure at default	Exposure-weighted average PD ¹	Exposure-weighted average LGD	Exposure-weighted average risk-weight	RWAs	Mapped external rating
		%	HK\$m	%	%	%	HK\$m	
At 31 Dec 2016								
Default risk								
Minimal	0.1	0.000 to 0.010	—	—	—	—	—	
	1.1	0.011 to 0.028	11,399	0.03	41.6	19	2,111	AAA to AA
	1.2	0.029 to 0.053	99,077	0.04	41.8	14	13,856	AA-
Low	2.1	0.054 to 0.095	285,030	0.07	45.3	22	62,379	A+ to A
	2.2	0.096 to 0.169	233,523	0.13	46.6	32	74,962	A-
Satisfactory	3.1	0.170 to 0.285	237,189	0.22	43.4	41	97,735	BBB+
	3.2	0.286 to 0.483	291,375	0.37	41.3	50	146,091	BBB
	3.3	0.484 to 0.740	214,509	0.63	39.8	62	132,552	BBB-
Fair	4.1	0.741 to 1.022	153,060	0.87	41.6	74	113,636	BB+
	4.2	1.023 to 1.407	128,924	1.20	40.0	79	101,538	BB
	4.3	1.408 to 1.927	121,033	1.65	37.9	84	101,396	BB-
Moderate	5.1	1.928 to 2.620	103,674	2.25	35.8	88	90,850	BB-
	5.2	2.621 to 3.579	40,977	3.05	40.4	108	44,220	B+
	5.3	3.580 to 4.914	36,705	4.20	43.3	129	47,497	B
Significant	6.1	4.915 to 6.718	18,509	5.75	46.2	153	28,396	B-
	6.2	6.719 to 8.860	9,023	7.85	44.7	171	15,447	B-
High	7.1	8.861 to 11.402	4,439	10.00	46.0	190	8,439	CCC+
	7.2	11.403 to 15.000	2,496	13.00	40.9	189	4,717	CCC+
Special Management	8.1	15.001 to 22.000	2,275	19.00	41.8	217	4,928	CCC
	8.2	22.001 to 50.000	70	36.00	39.6	220	154	CCC- to CC
	8.3	50.001 to 99.999	517	75.00	50.3	145	751	C
Default	9/10	100.000	15,637	100.00	45.2	—	—	Default
Total			2,009,441				1,091,655	
At 31 Dec 2015								
Default risk								
Minimal	0.1	0.000 to 0.010	—	—	—	—	—	
	1.1	0.011 to 0.028	5,842	0.03	38.7	10	587	AAA to AA
	1.2	0.029 to 0.053	120,316	0.04	41.6	14	17,139	AA-
Low	2.1	0.054 to 0.095	179,704	0.07	46.1	22	38,876	A+ to A
	2.2	0.096 to 0.169	274,579	0.13	46.4	33	89,599	A-
Satisfactory	3.1	0.170 to 0.285	232,008	0.22	43.2	41	94,173	BBB+
	3.2	0.286 to 0.483	272,260	0.37	40.7	50	136,715	BBB
	3.3	0.484 to 0.740	239,059	0.63	42.1	67	159,823	BBB-
Fair	4.1	0.741 to 1.022	143,904	0.87	40.2	71	101,926	BB+
	4.2	1.023 to 1.407	116,321	1.20	41.8	83	96,355	BB
	4.3	1.408 to 1.927	111,570	1.65	38.4	84	93,229	BB-
Moderate	5.1	1.928 to 2.620	101,727	2.25	37.2	92	93,781	BB-
	5.2	2.621 to 3.579	44,291	3.05	42.9	117	51,863	B+
	5.3	3.580 to 4.914	36,859	4.20	41.4	124	45,854	B
Significant	6.1	4.915 to 6.718	13,512	5.75	41.1	137	18,523	B-
	6.2	6.719 to 8.860	7,510	7.85	46.2	171	12,877	B-
High	7.1	8.861 to 11.402	5,050	10.00	35.3	140	7,094	CCC+
	7.2	11.403 to 15.000	1,939	13.00	37.0	173	3,354	CCC+
Special Management	8.1	15.001 to 22.000	604	19.00	41.3	209	1,260	CCC
	8.2	22.001 to 50.000	3	36.00	47.3	254	7	CCC- to CC
	8.3	50.001 to 99.999	24	75.00	31.9	89	22	C
Default	9/10	100.000	14,434	100.00	45.4	—	—	Default
Total			1,921,516				1,063,057	

¹ PD is floored at 0.03% according to the HKMA Banking (Capital) Rules.

Table 8: Corporate exposures (specialised lending) – analysis by supervisory rating grade

	At 31 Dec 2016		At 31 Dec 2015	
	Exposures at default	Exposure-weighted average risk-weight	Exposures at default	Exposure-weighted average risk-weight
	HK\$m	%	HK\$m	%
Strong	55,697	65	49,827	62
Good	14,108	83	12,156	79
Satisfactory	951	122	2,085	122
Weak	1,385	265	201	265
Default	638	–	125	–
Total	72,779	–	64,394	–

The supervisory rating grade and risk weights of specialised lending are determined in accordance with section 158 of the Banking (Capital) Rules.

Table 9: Sovereign exposures – analysis by obligor grade

	CRR	PD range %	Exposure at default HK\$m	Exposure- weighted average PD %	Exposure- weighted average LGD %	Exposure- weighted average risk- weight %	RWAs HK\$m	Mapped external rating
At 31 Dec 2016								
Default risk								
Minimal	0.1	0.000 to 0.010	395,192	0.01	45.0	6	25,273	AAA
	1.1	0.011 to 0.028	926,503	0.02	24.8	3	31,706	AA+ to AA
	1.2	0.029 to 0.053	222,839	0.04	45.0	11	25,152	AA- to A+
Low	2.1	0.054 to 0.095	98,687	0.07	45.0	21	20,786	A
	2.2	0.096 to 0.169	13,843	0.13	45.0	24	3,291	A-
Satisfactory	3.1	0.170 to 0.285	28,907	0.22	45.0	35	10,158	BBB+
	3.2	0.286 to 0.483	308	0.37	45.0	47	144	BBB
	3.3	0.484 to 0.740	2,303	0.63	45.0	64	1,467	BBB-
Fair	4.1	0.741 to 1.022	87	0.87	45.0	87	76	BB+
	4.2	1.023 to 1.407	6,981	1.20	45.0	86	6,002	BB
	4.3	1.408 to 1.927	8,397	1.65	45.0	108	9,029	BB-
Moderate	5.1	1.928 to 2.620	5,947	2.25	45.0	107	6,345	BB-
	5.2	2.621 to 3.579	–	–	–	–	–	B+
	5.3	3.580 to 4.914	–	–	–	–	–	B
Significant	6.1	4.915 to 6.718	346	5.75	45.0	198	686	B
	6.2	6.719 to 8.860	–	–	–	–	–	B-
High	7.1	8.861 to 11.402	–	–	–	–	–	CCC+
	7.2	11.403 to 15.000	–	–	–	–	–	CCC+
Special Management	8.1	15.001 to 22.000	–	–	–	–	–	CCC+
	8.2	22.001 to 50.000	–	–	–	–	–	CCC+
	8.3	50.001 to 99.999	–	–	–	–	–	CCC to C
Default	9/10	100.000	–	–	–	–	–	Default
Total			1,710,340				140,115	
At 31 Dec 2015								
Default risk								
Minimal	0.1	0.000 to 0.010	440,512	0.01	45.0	5	20,651	AAA
	1.1	0.011 to 0.028	772,369	0.02	24.0	3	25,521	AA+ to AA
	1.2	0.029 to 0.053	220,192	0.04	45.0	12	26,670	AA- to A+
Low	2.1	0.054 to 0.095	24,409	0.07	45.0	17	4,079	A
	2.2	0.096 to 0.169	63,884	0.13	45.0	32	20,570	A-
Satisfactory	3.1	0.170 to 0.285	28,440	0.22	45.0	36	10,274	BBB+
	3.2	0.286 to 0.483	258	0.37	45.0	60	153	BBB
	3.3	0.484 to 0.740	2,999	0.63	45.0	64	1,925	BBB-
Fair	4.1	0.741 to 1.022	–	–	–	–	–	BB+
	4.2	1.023 to 1.407	8,218	1.20	45.0	86	7,063	BB
	4.3	1.408 to 1.927	9,258	1.65	45.0	106	9,848	BB-
Moderate	5.1	1.928 to 2.620	5,031	2.25	45.0	111	5,594	BB-
	5.2	2.621 to 3.579	1,221	3.05	45.0	125	1,525	B+
	5.3	3.580 to 4.914	–	–	–	–	–	B
Significant	6.1	4.915 to 6.718	399	5.75	45.0	198	791	B
	6.2	6.719 to 8.860	–	–	–	–	–	B-
High	7.1	8.861 to 11.402	–	–	–	–	–	CCC+
	7.2	11.403 to 15.000	–	–	–	–	–	CCC+
Special Management	8.1	15.001 to 22.000	–	–	–	–	–	CCC+
	8.2	22.001 to 50.000	–	–	–	–	–	CCC+
	8.3	50.001 to 99.999	–	–	–	–	–	CCC to C
Default	9/10	100.000	–	–	–	–	–	Default
Total			1,577,190				134,664	

Table 10: Bank exposures – analysis by obligor grade

	CRR	PD range %	Exposure at default HK\$m	Exposure- weighted average PD ¹ %	Exposure- weighted average LGD %	Exposure- weighted average risk- weight %	RWAs HK\$m	Mapped external rating
At 31 Dec 2016								
Default risk								
Minimal	0.1	0.000 to 0.010	12,082	0.03	42.3	18	2,146	AAA
	1.1	0.011 to 0.028	137,856	0.03	37.8	11	15,057	AA+ to AA
	1.2	0.029 to 0.053	346,977	0.04	36.9	12	40,297	AA- to A+
Low	2.1	0.054 to 0.095	227,262	0.07	36.5	17	38,733	A
	2.2	0.096 to 0.169	52,375	0.13	39.8	27	14,061	A-
Satisfactory	3.1	0.170 to 0.285	45,704	0.22	39.7	39	18,013	BBB+
	3.2	0.286 to 0.483	28,866	0.37	40.7	51	14,717	BBB
	3.3	0.484 to 0.740	7,259	0.63	43.3	66	4,774	BBB-
Fair	4.1	0.741 to 1.022	5,344	0.87	45.6	86	4,578	BB+
	4.2	1.023 to 1.407	757	1.20	45.9	91	689	BB
	4.3	1.408 to 1.927	1,412	1.65	50.7	110	1,552	BB-
Moderate	5.1	1.928 to 2.620	1,035	2.25	37.4	100	1,032	BB-
	5.2	2.621 to 3.579	660	3.05	42.6	114	751	B+
	5.3	3.580 to 4.914	1,139	4.20	56.3	155	1,770	B
Significant	6.1	4.915 to 6.718	799	5.75	50.8	162	1,298	B
	6.2	6.719 to 8.860	7	7.85	50.9	178	13	B-
High	7.1	8.861 to 11.402	22	10.00	48.1	214	48	CCC+
	7.2	11.403 to 15.000	10	13.00	54.5	249	25	CCC+
Special Management	8.1	15.001 to 22.000	–	–	–	–	–	CCC+
	8.2	22.001 to 50.000	–	–	–	–	–	CCC+
	8.3	50.001 to 99.999	–	–	–	–	–	CCC to C
Default	9/10	100.000	223	100.00	62.2	–	–	Default
Total			869,789				159,554	
At 31 Dec 2015								
Default risk								
Minimal	0.1	0.000 to 0.010	24,938	0.03	20.0	8	2,108	AAA
	1.1	0.011 to 0.028	111,114	0.03	36.3	10	11,198	AA+ to AA
	1.2	0.029 to 0.053	360,764	0.04	40.1	12	42,116	AA- to A+
Low	2.1	0.054 to 0.095	182,844	0.07	33.5	18	32,400	A
	2.2	0.096 to 0.169	72,577	0.13	40.7	28	20,307	A-
Satisfactory	3.1	0.170 to 0.285	24,873	0.22	41.6	40	9,960	BBB+
	3.2	0.286 to 0.483	19,265	0.37	42.2	52	9,932	BBB
	3.3	0.484 to 0.740	9,384	0.63	43.3	64	6,026	BBB-
Fair	4.1	0.741 to 1.022	3,017	0.87	45.6	84	2,525	BB+
	4.2	1.023 to 1.407	1,070	1.20	44.8	91	970	BB
	4.3	1.408 to 1.927	1,815	1.65	49.9	109	1,985	BB-
Moderate	5.1	1.928 to 2.620	464	2.25	56.3	140	648	BB-
	5.2	2.621 to 3.579	474	3.05	43.1	120	570	B+
	5.3	3.580 to 4.914	1,779	4.20	57.8	158	2,811	B
Significant	6.1	4.915 to 6.718	871	5.75	54.0	170	1,480	B
	6.2	6.719 to 8.860	802	7.85	36.6	142	1,142	B-
High	7.1	8.861 to 11.402	33	10.00	67.1	265	88	CCC+
	7.2	11.403 to 15.000	23	13.00	60.3	275	63	CCC+
Special Management	8.1	15.001 to 22.000	11	19.00	73.8	368	40	CCC+
	8.2	22.001 to 50.000	–	–	–	–	–	CCC+
	8.3	50.001 to 99.999	–	–	–	–	–	CCC to C
Default	9/10	100.000	122	100.00	62.0	–	–	Default
Total			816,240				146,369	

1 PD is floored at 0.03% according to the HKMA Banking (Capital) Rules.

Table 11: Retail exposures – analysis by internal PD grade

At 31 Dec 2016	PD range	Exposure at default	Exposure-weighted average PD	Exposure-weighted average LGD	Exposure-weighted average risk-weight	RWAs
	%	HK\$m	%	%	%	HK\$m
Residential mortgages						
Band 1	0.000 to 0.483	500,748	0.14	10.5	13	64,473
Band 2	0.484 to 1.022	97,179	0.70	15.2	19	18,251
Band 3	1.023 to 4.914	80,290	1.82	10.7	21	16,687
Band 4	4.915 to 8.860	18,560	5.27	10.4	38	6,987
Band 5	8.861 to 15.000	1,221	12.46	11.0	57	698
Band 6	15.001 to 50.000	2,885	16.60	12.2	70	2,012
Band 7	50.001 to 100.000	2,158	100.00	13.1	–	–
Total		703,041				109,108
Qualifying revolving retail exposures						
Band 1	0.000 to 0.483	178,948	0.13	101.6	8	13,769
Band 2	0.484 to 1.022	28,111	0.68	97.3	29	8,226
Band 3	1.023 to 4.914	33,568	2.14	95.2	66	22,216
Band 4	4.915 to 8.860	5,829	6.73	95.7	149	8,681
Band 5	8.861 to 15.000	1,444	11.42	97.6	207	2,992
Band 6	15.001 to 50.000	2,716	21.19	93.7	259	7,037
Band 7	50.001 to 100.000	522	92.05	92.9	61	317
Total		251,138				63,238
Other retail exposures						
Band 1	0.000 to 0.483	38,649	0.17	11.6	5	2,059
Band 2	0.484 to 1.022	7,807	0.67	20.7	17	1,349
Band 3	1.023 to 4.914	9,578	2.61	33.4	47	4,519
Band 4	4.915 to 8.860	1,285	6.68	50.2	82	1,054
Band 5	8.861 to 15.000	461	11.44	67.4	126	578
Band 6	15.001 to 50.000	235	24.75	81.4	201	474
Band 7	50.001 to 100.000	202	99.73	84.9	2	4
Total		58,217				10,037
Total retail						
Band 1	0.000 to 0.483	718,345	0.14	33.3	11	80,301
Band 2	0.484 to 1.022	133,097	0.69	32.8	21	27,826
Band 3	1.023 to 4.914	123,436	1.96	35.4	35	43,422
Band 4	4.915 to 8.860	25,674	5.67	31.8	65	16,722
Band 5	8.861 to 15.000	3,126	11.83	59.4	137	4,268
Band 6	15.001 to 50.000	5,836	19.07	52.9	163	9,523
Band 7	50.001 to 100.000	2,882	98.54	32.6	11	321
Total		1,012,396				182,383

Table 11: Retail exposures – analysis by internal PD grade (continued)

At 31 Dec 2015	PD range %	Exposure at default HK\$m	Exposure-weighted average PD %	Exposure-weighted average LGD %	Exposure-weighted average risk-weight %	RWAs HK\$m
Residential mortgages						
Band 1	0.000 to 0.483	475,615	0.14	10.7	11	50,932
Band 2	0.484 to 1.022	97,347	0.70	15.7	18	17,718
Band 3	1.023 to 4.914	83,713	1.74	10.2	19	16,097
Band 4	4.915 to 8.860	22,624	5.28	10.7	38	8,665
Band 5	8.861 to 15.000	4,882	12.78	11.7	62	3,021
Band 6	15.001 to 50.000	269	15.90	13.2	74	200
Band 7	50.001 to 100.000	2,098	100.00	14.4	–	–
Total		686,548				96,633
Qualifying revolving retail exposures						
Band 1	0.000 to 0.483	166,559	0.13	101.7	8	12,990
Band 2	0.484 to 1.022	27,154	0.69	97.6	29	7,992
Band 3	1.023 to 4.914	33,565	2.14	95.3	66	22,268
Band 4	4.915 to 8.860	5,988	6.68	95.6	148	8,865
Band 5	8.861 to 15.000	1,482	11.47	97.5	207	3,071
Band 6	15.001 to 50.000	2,546	21.32	93.6	260	6,617
Band 7	50.001 to 100.000	427	90.97	92.3	69	295
Total		237,721				62,098
Other retail exposures						
Band 1	0.000 to 0.483	37,325	0.17	11.5	5	2,040
Band 2	0.484 to 1.022	6,619	0.66	20.7	17	1,135
Band 3	1.023 to 4.914	8,859	2.58	32.8	47	4,120
Band 4	4.915 to 8.860	1,267	6.30	47.4	77	976
Band 5	8.861 to 15.000	525	11.58	67.7	126	662
Band 6	15.001 to 50.000	266	25.05	82.7	205	546
Band 7	50.001 to 100.000	427	99.94	63.3	–	2
Total		55,288				9,481
Total retail						
Band 1	0.000 to 0.483	679,499	0.14	33.1	10	65,963
Band 2	0.484 to 1.022	131,119	0.69	32.9	20	26,844
Band 3	1.023 to 4.914	126,137	1.90	34.5	34	42,485
Band 4	4.915 to 8.860	29,879	5.60	29.2	62	18,507
Band 5	8.861 to 15.000	6,889	12.40	34.4	98	6,754
Band 6	15.001 to 50.000	3,082	21.17	85.6	239	7,362
Band 7	50.001 to 100.000	2,952	98.68	32.8	10	296
Total		979,557				168,211

The following table shows the amount of undrawn commitments and exposure-weighted average EAD for corporate, sovereign and bank exposures:

Table 12: Undrawn commitments

	At 31 Dec 2016		At 31 Dec 2015	
	Undrawn commitments HK\$m	Exposure- weighted average EAD HK\$m	Undrawn commitments HK\$m	Exposure- weighted average EAD HK\$m
Corporate exposures	1,236,299	372,722	1,165,206	321,725
Sovereign exposures	1,066	317	1,377	410
Bank exposures	49,921	11,276	38,540	8,415
Total	1,287,286	384,315	1,205,123	330,550

IRB expected loss and impairment charges**Actual and projected PD, LGD and EAD**

The following table compares actual outcomes for the year against the risk elements estimated at the beginning of the year.

Table 13: Actual and projected PD, LGD and EAD

	PD		LGD		EAD	
	Actual %	Projected %	Actual %	Projected %	Actual %	Projected %
At 31 Dec 2016						
Sovereign	—	0.17	—	34.58	—	100.43
Bank	—	0.50	—	36.13	—	93.75
Corporate	0.49	0.91	40.45	42.16	60.70	64.34
Residential mortgages	0.69	0.88	6.89	13.49	97.99	111.22
Qualifying revolving retail	0.41	0.73	82.92	91.73	85.05	85.83
Other retail	1.02	1.46	43.00	54.72	86.33	100.39
At 31 Dec 2015						
Sovereign	—	0.23	—	35.69	—	100.18
Bank	—	0.61	—	36.05	—	98.98
Corporate	0.48	0.93	37.75	43.60	61.29	67.82
Residential mortgages	0.71	0.89	8.02	14.60	97.01	113.03
Qualifying revolving retail	0.44	0.68	81.93	92.05	82.89	84.85
Other retail	1.22	1.40	41.74	56.58	82.13	98.72

The difference between actual PD and projected PD is driven by the difference in the time horizon used to calculate actual and estimated default rates. The actual default rate represents the actual number of borrower or account defaults during the year, whereas the projected PD is based on internally developed models built on long-run default experience.

The group measures actual LGD by calculating the economic loss incurred by the defaults, whereas projected LGD is based on an internally developed model built on loss experience in downturn conditions and applied with the relevant regulatory floors as appropriate. For wholesale classes, due to the different calculation methodologies and the portfolio mix between the default population and the overall book, actual and projected results can differ. In general, the projected LGD was more conservative than actual LGD across asset classes.

The group measures actual EAD by comparing the realised credit exposure of the defaulted counterparties in 2016 against the limits one year prior to default. The projected EAD is based on an internally developed model built on long-run default experience.

IRB expected loss and impairment charges

The following table sets out, for each IRB exposure class, the expected loss ('EL') and the actual loss experience reflected in impairment charges. EL is the estimated loss likely to be incurred arising from the potential default of the obligator in respect of the exposure over a one-year period. Impairment charges are the net charge for actual losses for each IRB class made during the year.

The movement of impairment charges in 2016 is immaterial. It should be noted that impairment charges and EL are measured using different methodologies that are not directly comparable. In general, EL is greater than impairment charges for each IRB class. The limitation arises from the fundamental differences in the definition of 'loss' under the accounting standards that determine impairment charges by reflecting the current circumstances and specific cashflow expectations of a customer, and the Basel framework, which determines the regulatory EL calculation on a forward looking basis using modelled estimates.

Table 14: IRB expected loss and impairment charges

	At 31 Dec 2016		At 31 Dec 2015	
	Expected loss at 1 Jan HK\$m	Impairment charge for the year HK\$m	Expected loss at 1 Jan HK\$m	Impairment charge for the year HK\$m
Sovereign	366	—	502	—
Bank	454	—	677	—
Corporate	13,119	3,248	12,698	2,551
Residential mortgages	839	1	877	(55)
Qualifying revolving retail	2,501	883	2,203	854
Other retail	504	205	505	199
Total	17,783	4,337	17,462	3,549

Table 15: Credit risk exposures under the standardised approach

	Exposures after recognised credit risk mitigation ²			Risk-weighted amounts			Total exposures covered by recognised collateral	Total exposures covered by recognised guarantees or recognised credit derivative contracts	
	Total exposures ¹	Rated	Unrated	Total	Rated	Unrated			Total
At 31 Dec 2016	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	
Assets									
On-balance sheet									
Sovereign	3,197	20,627	—	20,627	177	—	177	—	
Public sector entity	127,306	110,412	—	110,412	10,343	—	10,343	17,104	
Bank	993	558	631	1,189	413	472	885	—	
Securities firm	117	—	17	17	—	9	9	100	
Corporate	155,020	12,892	101,686	114,578	5,010	101,597	106,607	39,893	
Cash items	327	—	327	327	—	—	—	—	
Regulatory retail	70,390	—	66,079	66,079	—	49,559	49,559	4,122	
Residential mortgage loan	105,156	—	105,107	105,107	—	44,726	44,726	48	
Other exposures which are not past due exposures	43,020	—	13,330	13,330	—	13,330	13,330	29,691	
Past due exposures	3,621	411	3,210	3,621	284	4,663	4,947	370	
Total on-balance sheet	509,147	144,900	290,387	435,287	16,227	214,356	230,583	74,230	21,547
Off-balance sheet									
Off-balance sheet exposures other than OTC derivative transactions or credit derivative contracts	20,257	1,814	14,526	16,340	483	12,999	13,482	3,917	600
Derivative contracts and securities financing transactions	11,454	5,983	3,904	9,887	755	3,468	4,223	1,567	—
Total off-balance sheet	31,711	7,797	18,430	26,227	1,238	16,467	17,705	5,484	600
Total	540,858	152,697	308,817	461,514	17,465	230,823	248,288	79,714	22,147
Exposures risk-weighted at 1,250%	—								

Table 15: Credit risk exposures under the standardised approach (continued)

	Exposures after recognised credit risk mitigation ²			Risk-weighted amounts			Total exposures covered by recognised collateral	Total exposures covered by recognised guarantees or recognised credit derivative contracts	
	Total exposures ¹	Rated	Unrated	Total	Rated	Unrated			Total
At 31 Dec 2015	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	
Assets									
On-balance sheet									
Sovereign	3,382	20,434	–	20,434	676	–	676	–	–
Public sector entity	97,330	81,080	–	81,080	10,155	–	10,155	5	16,540
Bank	582	242	563	805	128	491	619	–	–
Securities firm	16	–	16	16	–	8	8	–	–
Corporate	152,672	3,041	102,905	105,946	2,875	102,619	105,494	46,014	1,354
Cash items	336	–	336	336	–	–	–	–	–
Regulatory retail	75,314	–	70,244	70,244	–	52,683	52,683	4,755	315
Residential mortgage loan	95,466	–	95,375	95,375	–	42,482	42,482	90	1
Other exposures which are not past due exposures	44,457	–	6,382	6,382	–	6,382	6,382	38,074	–
Past due exposures	3,085	458	2,626	3,084	308	3,771	4,079	406	205
Total on-balance sheet	472,640	105,255	278,447	383,702	14,142	208,436	222,578	89,344	18,415
Off-balance sheet									
Off-balance sheet exposures other than OTC derivative transactions or credit derivative contracts	20,957	1,703	14,578	16,281	611	13,071	13,682	4,676	657
Derivative contracts and securities financing transactions	11,167	5,154	4,516	9,670	830	4,173	5,003	1,497	–
Total off-balance sheet	32,124	6,857	19,094	25,951	1,441	17,244	18,685	6,173	657
Total	504,764	112,112	297,541	409,653	15,583	225,680	241,263	95,517	19,072
Exposures risk-weighted at 1,250%	–								

¹ Total exposures are the principal amounts for on-balance sheet exposures, or the credit equivalent amount or default exposure for off-balance sheet exposures, as applicable, net of individually assessed impairment allowances.

² Exposures covered by recognised guarantees or recognised credit derivative contracts are reclassified after credit risk mitigation to reflect the exposures to the credit protection providers.

Counterparty credit risk exposures

Counterparty credit risk ('CCR') arises for derivatives and securities financing transactions ('SFTs'). It is calculated in both the trading and non-trading books, and is the risk that a counterparty may default before settlement of the transaction. An economic loss occurs if the transaction or portfolio of transactions with the counterparty has a positive economic value at the time of default. CCR is generated primarily in our wholesale global businesses.

The group uses current exposure method to calculate exposure values for CCR RWAs.

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

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

Collateral arrangements

It is our policy to revalue all traded transactions and associated collateral positions on a daily basis. An independent collateral management function manages the collateral process including pledging and receiving collateral and investigating disputes and non-receipts. Eligible collateral types are controlled under a policy to ensure price transparency, price stability, liquidity, enforceability, independence, reusability and eligibility for regulatory purposes. A valuation 'haircut' policy reflects the fact that collateral may fall in value between the date the collateral was called and the date of liquidation or enforcement. At least 97% of collateral held as credit risk mitigation under CSA's is either cash or liquid government securities.

Credit ratings downgrade

The credit ratings downgrade language in a Master Agreement or Credit Support Annexes defines the series of events that are triggered if the credit rating of the affected party falls below a specified level. The group presently produces a report that identifies the additional collateral requirements where credit ratings downgrade language affects the threshold levels within a collateral agreement.

Under the terms of our current collateral obligations under derivative contracts and based on the positions at 31 December 2016, we estimate that we could be required to post additional collateral of up to HK\$13m (2015: HK\$448m) in the event of a one-notch downgrade in credit ratings, which would increase to HK\$69m (2015: HK\$541m) in the event of a two-notch downgrade.

Wrong-way risk

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

There are two types of wrong-way risk.

- General wrong-way risk occurs when the probability of counterparty default is positively correlated with general risk factors; for example, where a counterparty is resident and/or incorporated in a higher-risk country and seeks to sell a non-domestic currency in exchange for its home currency.
- Specific wrong-way risk occurs in self-referencing transactions. These are transactions in which exposure is driven by capital or financing instruments issued by the counterparty and occurs where exposure from HSBC's perspective materially increases as the value of the counterparty's capital or financing instruments referenced in the contract decreases. It is HSBC policy that specific wrong-way transactions are approved on a case by case basis.

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

Table 16: Counterparty credit risk exposures under the advanced internal ratings-based approach

	Footnotes	At 31 Dec 2016		At 31 Dec 2015	
		Derivative contracts ¹	Securities financing transactions	Derivative contracts ¹	Securities financing transactions
		HK\$m	HK\$m	HK\$m	HK\$m
Gross total positive fair value		548,348	—	415,871	—
Default risk exposures, net of bilateral netting	1	355,811	83,589	300,233	58,137
Recognised collateral held by type:					
Debt securities		7,794	214,747	5,327	188,717
Others		45,021	231,104	26,419	121,637
Total		52,815	445,851	31,746	310,354
Default risk exposures, net of recognised collateral held		355,811	83,589	300,233	58,137
Risk-weighted amounts		92,208	6,515	94,778	4,914

1 The recognised collateral is netted against the default risk exposure for securities financing transactions with or without a netting agreement in place.

2 For derivative contracts, the recognised collateral is reflected in the LGD.

Table 17: Counterparty credit risk exposures under the standardised (credit risk) approach

	Footnotes	At 31 Dec 2016		At 31 Dec 2015	
		Derivative contracts	Securities financing transactions	Derivative contracts	Securities financing transactions
		HK\$m	HK\$m	HK\$m	HK\$m
Gross total positive fair value		7,534	—	8,113	—
Default risk exposures, net of bilateral netting	1	10,465	989	10,978	189
Recognised collateral held by type:					
Debt securities		88	344	—	187
Others		1,479	7,238	1,497	2,943
Total		1,567	7,582	1,497	3,130
Default risk exposures, net of recognised collateral held	2	8,898	989	9,481	189
Risk-weighted amounts		3,350	873	4,820	183

1 Default risk exposure is the credit equivalent amount for derivative contracts and principal amount after CRM for securities financing transactions.

2 The recognised collateral is netted against the default risk exposure for derivative contracts. Comparatives have been restated.

Table 18: Major classes of exposures under the advanced internal ratings-based approach by counterparty type

	Footnotes	At 31 Dec 2016		At 31 Dec 2015	
		Derivative contracts	Securities financing transactions	Derivative contracts	Securities financing transactions
		HK\$m	HK\$m	HK\$m	HK\$m
Notional amounts					
Sovereigns		747,858	40,913	842,106	30,554
Banks		31,651,885	458,339	28,342,977	325,342
Corporates		3,107,760	21,901	2,414,422	7,192
Total		35,507,503	521,153	31,599,505	363,088
Default risk exposures					
Sovereigns	1	6,335	24,898	6,291	23,906
Banks		260,489	56,809	213,469	33,215
Corporates		88,987	1,882	80,473	1,016
Total		355,811	83,589	300,233	58,137
Risk-weighted amounts					
Sovereigns		981	792	1,807	1,039
Banks		49,019	4,783	42,078	3,361
Corporates		42,208	940	50,893	514
Total		92,208	6,515	94,778	4,914

1 The recognised collateral is netted against the default risk exposure for securities financing transactions with or without a netting agreement in place.

2 For derivative contracts, the recognised collateral is reflected in the LGD.

Table 19: Major classes of exposures under the standardised (credit risk) approach by counterparty type

	Footnotes	At 31 Dec 2016		At 31 Dec 2015	
		Derivative contracts	Securities financing transactions	Derivative contracts	Securities financing transactions ¹
		HK\$m	HK\$m	HK\$m	HK\$m
Notional amounts					
Public sector entities		182,425	1,357	151,779	249
Banks		2,670	—	5,270	—
Corporates		103,339	2,842	89,808	838
Total		288,434	4,199	246,857	1,087
Default risk exposures ¹		10,465	989	10,978	189
Risk-weighted amounts		3,350	873	4,820	183

1 Default risk exposure is the credit equivalent amount for derivative contracts and principal amount after CRM for securities financing transactions.

Table 20: Risk exposures to derivative transactions

	Contract amount HK\$m	Risk-weighted amount HK\$m	Fair value HK\$m
At 31 Dec 2016			
Exchange rate contracts	16,149,863	75,011	127,034
– forwards	12,075,183	39,941	80,257
– options purchased	451,584	5,952	5,009
– swaps	3,623,096	29,118	41,768
Interest rate contracts	18,619,479	14,665	30,926
– forwards	1,544,746	130	366
– options purchased	442,915	1,229	1,455
– swaps	16,631,818	13,306	29,105
Credit derivative contracts	473,753	1,752	260
Other OTC derivatives contracts	552,842	4,130	9,838
Total	35,795,937	95,558	168,058
At 31 Dec 2015			
Exchange rate contracts	14,894,259	76,539	85,431
– forwards	10,891,177	27,480	36,767
– options purchased	486,589	18,613	10,858
– swaps	3,516,493	30,446	37,806
Interest rate contracts	15,883,929	14,422	27,616
– forwards	978,256	9	109
– options purchased	271,366	1,691	1,708
– swaps	14,634,307	12,722	25,799
Credit derivative contracts	431,097	1,419	330
Other OTC derivatives contracts	637,077	7,218	15,232
Total	31,846,362	99,598	128,609

The above table is compiled in accordance with the 'Capital Adequacy Ratio' return submitted to the HKMA. This return is prepared using a consolidated basis, as specified by the HKMA under the requirements of section 3C of the Banking (Capital) Rules. This consolidation basis is different from the group's basis of consolidation for accounting purposes, as explained in the 'Basis of consolidation' section. Therefore, the contract

amounts shown in the above table are different from those disclosed in the *Annual Report and Accounts 2016*.

The fair values are calculated after taking into account the effect of valid bilateral netting agreements amounting to HK \$387,824m (2015: HK\$295,375m).

Table 21: Contract amounts of credit derivative contracts which create exposure to counterparty credit risk

	31 Dec 2016 HK\$m	31 Dec 2015 HK\$m
Used for credit portfolio		
Credit default swaps		
– protection bought ¹	3,257	3,372
– protection sold	–	–
Total return swaps		
– protection bought	–	–
– protection sold	–	–
Total	3,257	3,372
Used for intermediation activities		
Credit default swaps		
– protection bought	238,780	213,507
– protection sold	233,315	211,095
Total return swaps		
– protection bought	1,658	6,495
– protection sold	–	–
Total	473,753	431,097

¹ Credit derivative swaps protection bought used for credit portfolio in the banking book are not subject to default risk exposure under section 118(2) and section 119(f) of Banking (Capital) Rules. Comparatives have been restated.

Credit risk mitigation

The group grants credit facilities on the basis of capacity to repay, rather than place primary reliance on credit risk mitigation. Depending on a customer's standing and the type of product, unsecured facilities may be provided. The mitigation of credit risk is nevertheless a key aspect of effective risk management. By consideration of type, jurisdiction and geographical location of the credit risk mitigation held, there is no material concentration.

The group's general policy is to promote the use of credit risk mitigation, justified by commercial prudence and good practice as well as capital efficiency. Specific, detailed policies cover the acceptability, structuring and terms of various types of business with regard to the availability of credit risk mitigation; for example, in the form of collateral security. These policies, together with the determination of suitable valuation parameters, are subject to regular review to ensure that they are supported by empirical evidence and continue to fulfil their intended purpose.

The most common method of mitigating credit risk is to take collateral. The main types of recognised collateral taken by the group are those as stated in section 77 of the Banking (Capital) Rules, including (but not limited to) cash on deposit, a mortgage over property, a charge over business assets, guarantees, equities (including convertible bonds) included in any main indices, units or shares in collective investment schemes and various recognised debt securities.

In accordance with sections 98 and 99 of the Banking (Capital) Rules, certain guarantees and credit derivative contracts are recognised for credit risk mitigation purposes. The main types of guarantees are from sovereigns, corporates and banks. The credit-mitigating effect of recognised guarantees is grounded on empirical evidence of loss recovery experiences regionally. Exposures related to sovereign and bank guarantees are managed by central teams in HSBC Group Head Office in London.

Trading facilities are often supported by charges over financial instruments such as cash, debt securities and equities. Netting is extensively used and is a prominent feature of market standard documentation. Techniques such as credit default swaps, structured credit notes and securitisation structures can be deployed to actively manage the credit risk of the portfolios. The credit and market risk concentrations within the credit risk mitigants (recognised collateral, netting, guarantees and credit derivative contracts) used by the group are not considered to be material.

The group's policy stipulates that netting should only be applied where there is a legal right to do so. Under section 209 of the Banking (Capital) Rules, recognised netting is defined as any netting done pursuant to a valid bilateral netting arrangement. Consistent with the Banking (Capital) Rules, only bilateral netting arrangements are eligible to net amounts owed by the group for capital adequacy purposes.

The group has in place specific policies with respect to the valuation and revaluation of credit risk mitigants. The primary objective of these policies is to monitor and ensure that the respective mitigants will provide the secure repayment source as anticipated at the time they were taken. Where collateral is subject to high volatility, valuation is frequent; where stable, less so. Policies in respect of credit mitigants underlying past due accounts are more stringent and call for more frequent monitoring and valuation.

In terms of their application within an IRB approach, risk mitigants are considered in two broad categories: 1) those which reduce the intrinsic probability of default of a borrower

and therefore are accounted for with adjustments to PD estimation; 2) those which affect the estimated recoverability of obligations and are accounted for with adjustments of LGD or, in certain circumstances, EAD.

The adjustment of PD estimation is also subject to supplementary methodologies in respect of a 'sovereign floor', constraining the risk ratings assigned to borrowers in countries of higher risk, and partial parental support.

LGD and EAD values, in the case of individually assessed exposures, are determined by reference to internal risk parameters based on the nature of the exposure, subject to the relevant regulatory requirements and floors. For retail portfolios, credit mitigation data is incorporated into the internal risk parameters and fed into the calculation of the EL band summarising both customer delinquency and product or facility risk.

Securitisation

Group securitisation strategy

The group's strategy is to use securitisations to meet its needs for aggregate funding or capital management, to the extent that market, regulatory treatments and other conditions are suitable, and for customer facilitation.

Group securitisation roles

The roles played by the group in the securitisation process are as follows:

- Investor: where the group invests in a securitisation transaction directly, or provides derivatives or liquidity facilities to a securitisation;
- Originator: where the group originates the assets being securitised, either directly or indirectly; and
- Sponsor: in relation to an asset-backed commercial paper ('ABCP') programme, or a programme with similar features, where the group establishes and manages a securitisation programme that purchases exposures from third parties.

The group as investor

The group has exposure to third-party securitisations, including re-securitisation positions, in the form of investments, liquidity facilities and as a derivative counterparty. The majority of the group's securitisation positions are held as part of its investment portfolios in the banking book. The group also holds securitisation positions occasionally to generate trading profits. The credit and market risks of securitisation positions are monitored and managed along with their respective business portfolios. Factors such as the estimated future cash flows on underlying pools of collateral, including prepayment speeds, and whether historical performance remains representative of current economic and credit conditions, are considered in assessing impairment of these positions.

The group as originator

The group securitises customer loans and advances that it originated using special purpose entities ('SPEs') to diversify its sources of funding for asset origination, and for capital efficiency purposes. In such cases, the group transfers the loans and advances to the SPEs for cash, and the SPEs issue debt securities to investors to fund the cash purchases. The group may also act as a derivative counterparty or provide a guarantee. Credit enhancements to the underlying assets may be used to obtain investment grade ratings on the senior debt issued by the SPEs. The group currently consolidates these securitisations for accounting purposes. The group did not use any SPEs to securitise exposures acquired from third parties during the year (2015: none). The group's policy on credit risk mitigation to mitigate the risks of securitisation exposures

retained is the same as that for non-securitisation exposures, as set out in the 'Credit risk mitigation' section.

In addition, the group uses SPEs to mitigate the capital absorbed by some of the customer loans and advances it has originated. Credit derivatives are used to transfer the credit risk associated with such customer loans and advances to an SPE, using securitisations commonly known as synthetic securitisations, by which the SPEs write credit default swap protection to the group. These SPEs are consolidated for accounting purposes when the group is exposed to the majority of risks and rewards of ownership. The group did not originate any synthetic securitisations during the year (2015: none).

The group as sponsor

There were no outstanding underlying exposures in securitisation transactions where the group acted as a sponsor (2015: none).

Valuation of securitisation positions

The group's banking and trading book investments in securitisation exposures, including re-securitisation exposures, are valued according to their accounting classification. Valuation methods include, but are not limited to, quotations from third parties, observed trade levels and calibrated valuations from market standard models. The principal assumptions to determine fair value are based on benchmark information about prepayment speeds, default rates, loss severities and the historical performance of the underlying assets. This process did not change in 2016.

Securitisation activities in 2016

As an investor, the group's securitisation activities in 2016 mainly consisted of changes to the existing portfolio mix in the normal course of business. There was no transfer of securitisation exposures between the banking book and trading book during the year (2015: none).

As an originator, the group securitised HK\$11,119m of additional residential mortgages in the banking book into an existing SPE (2015: none). The group did not securitise corporate loans in the banking book in 2016 (2015: HK\$1,589m). There were no gains or losses recognised (2015: none).

Securitisation accounting treatment

For accounting purposes, the group consolidates SPEs when the substance of the relationship indicates that it controls them. In assessing control, all relevant factors are considered, including qualitative and quantitative aspects. The group reassesses the required consolidation whenever there is a change in the substance of the relationship between the group

and an SPE; for example, when the nature of its involvement or the governing rules, contractual arrangements or capital structure of the SPE change.

For securitisation transactions originated, the transfer of assets to an SPE may give rise to full or partial derecognition of the financial assets concerned. Only in the event that derecognition is achieved are sales and any resultant gains on sales recognised in the financial statements.

Full derecognition occurs when the group transfers its contractual right to receive cash flows from the financial assets, or retains the right but assumes an obligation to pass on the cash flows from the asset, and transfers substantially all the risks and rewards of ownership. The risks include credit, interest rate, currency, prepayment and other price risks.

Partial derecognition occurs when the group sells or otherwise transfers financial assets in such a way that some but not substantially all of the risks and rewards of ownership are transferred but control is retained. These financial assets are recognised on the balance sheet to the extent of the group's continuing involvement.

The rights and obligations that the group retains from its continuing involvement in securitisations are initially recorded as an allocation of the fair value of the financial asset between the part that is derecognised and the part that continues to be recognised on the date of transfer.

When the group has contractual arrangements that could require it to provide financial support for the underlying exposures that have been securitised, these are recognised following the accounting policies as set out in the group's Annual Report and Accounts.

Securitisation regulatory capital approaches

The group uses the internal ratings-based (securitisation) approach to calculate the credit risk for its securitisation exposures in the banking book. Securitisation positions in the trading book are treated under the standardised (market risk) approach, which calculates the market risk capital charge for specific risk interest rate exposures using the same methodology as the internal ratings-based (securitisation) approach.

The group uses Standard & Poor's Rating Services, Moody's Investors Service and Fitch Ratings as the ECAs for each and all classes of securitisation exposures.

Table 22: Securitisation transactions – underlying exposures and impairment

	31 Dec 2016	31 Dec 2015
	HK\$m	HK\$m
As originator		
Traditional securitisations:		
– residential mortgage loans	22,964	15,910
Total	22,964	15,910

At 31 December 2016, there were securitised impaired or overdue residential mortgage loans of HK\$514m (2015: HK\$380m) and there were no losses recognised during the year (2015: none).

The group does not report any amounts under the internal ratings-based (securitisation) approach or the standardised (market risk) approach for these securitisation exposures as they

do not fall within the scope of s229(1) of the Banking (Capital) Rules. The related credit risk has been calculated using the same approach as other non-securitisation exposures. The capital requirements and the amounts deducted from capital under the internal ratings-based (securitisation) approach are therefore nil.

Table 23: Securitisation exposure – by exposure type

	At 31 Dec 2016			At 31 Dec 2015		
	Banking book	Trading book	Total	Banking book	Trading book	Total
	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
On-balance sheet exposures						
As investor	10,208	4	10,212	6,615	6	6,621
– residential mortgages loans	–	4	4	276	6	282
– commercial mortgages loans	–	–	–	445	–	445
– loans and receivables	4,065	–	4,065	540	–	540
– auto loans	6,143	–	6,143	5,354	–	5,354
Off-balance sheet exposures						
As investor	1,565	–	1,565	654	–	654
– commercial mortgage loans	–	–	–	608	–	608
– loans and receivables	1,565	–	1,565	46	–	46
Total	11,773	4	11,777	7,269	6	7,275

Table 24: Securitisation exposure – by risk-weighted bands

	Securitisation exposures ¹			Capital requirement ²		
	Banking book	Trading book	Total	Banking book	Trading book	Total
	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
At Dec 2016						
As investor						
Securitisations						
– less than or equal to 10%	6,373	–	6,373	38	–	38
– greater than 10% and less than or equal to 20%	–	–	–	–	–	–
– greater than 20% and less than or equal to 50%	–	–	–	–	–	–
– greater than 50% and less than or equal to 100%	5,400	–	5,400	458	–	458
– greater than 100% and less than or equal to 650%	–	–	–	–	–	–
– greater than 650% and less than 1,250%	–	–	–	–	–	–
– 1,250%	–	4	4	–	5	5
Re-securitisations	–	–	–	–	–	–
– 1,250%	–	–	–	–	–	–
Total	11,773	4	11,777	496	5	501

At Dec 2015

As investor						
Securitisations						
– less than or equal to 10%	1,718	–	1,718	11	–	11
– greater than 10% and less than or equal to 20%	388	–	388	7	–	7
– greater than 20% and less than or equal to 50%	–	–	–	–	–	–
– greater than 50% and less than or equal to 100%	5,163	–	5,163	438	–	438
– greater than 100% and less than or equal to 650%	–	–	–	–	–	–
– greater than 650% and less than 1,250%	–	–	–	–	–	–
– 1,250%	–	6	6	–	6	6
Re-securitisations	–	–	–	–	–	–
– 1,250%	–	–	–	–	–	–
Total	7,269	6	7,275	456	6	462

¹ Securitisation exposures are presented as the principal amount net of specific provision or partial write-offs.

² Capital requirement means the amount of capital required to be held for that risk based on the risk-weighted amount for that risk multiplied by 12.5.

Securitisation exposures deducted from capital

There were no securitisation exposures deducted from capital (2015: none).

There were no credit-enhancing interest-only strips and other exposures that have been allocated a risk-weight of 1,250% by the group (2015: none).

Securitisation – Other disclosures

- There were no securitisation transactions that were subject to an early amortisation provision in which the group was the originating institution (2015: none).
- There were no securitisation transactions under the internal ratings-based (securitisation) approach that were covered by

recognised guarantees or recognised credit derivative contracts during the year (2015: none). There were no re-securitisation exposures to which credit risk mitigation or guarantees were applied (2015: none).

- There were no affiliates within the meaning of section 35 of the Banking (Capital) Rules that the group managed or advised, which invested in the securitisation exposures issued by (i) the group; or (ii) the SPEs of which the group was a sponsor (2015: none).
- At 31 December 2016, there were no outstanding exposures held by the group with the intention of transferring into a securitisation transaction (2015: none).

Market risk

Overview and governance

Overview and objectives

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

Exposures to market risk

Exposure to market risk is separated into two portfolios:

- Trading portfolios comprise positions arising from market-making and the warehousing of customer derived positions.
- Non-trading portfolios comprise positions that primarily arise from the interest rate management of our retail and commercial banking assets and liabilities, financial investments designated as AFS and held to maturity, and exposures arising from our insurance operations.

The diagram below illustrates the main business areas where trading and non-trading market risks reside and market risk measures to monitor and limit exposures.

Risk Types	Trading Risk	Non-Trading Risk				
	<ul style="list-style-type: none"> - Foreign exchange & Commodities - Interest rates - Credit spreads - Equities 	<ul style="list-style-type: none"> - Structural foreign exchange - Interest rates - Credit spreads 				
Global Business	GB&M, incl BSM	GB&M, incl BSM	GPB	CMB	RBWM	
Risk Measure	VaR / Sensitivity / Stress testing	VaR / Sensitivity / Stress testing				

BSM, for external reporting purposes, forms part of Corporate Centre while daily operations and risk are managed within GB&M.

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

The nature of the hedging and risk mitigation strategies performed across the Group corresponds to the market risk management instruments available within each operating jurisdiction. These strategies range from the use of traditional market instruments, such as interest rate swaps, to more sophisticated hedging strategies to address a combination of risk factors arising at portfolio level.

Market risk governance

Market risk is managed and controlled through limits approved by the Risk Management Meeting of the GMB for HSBC Holdings plc and the various global businesses. These limits are allocated across business lines and to the Group's legal entities. The management of market risk is principally undertaken in Global Markets through risk limits. Value at Risk limits are set for portfolios, products and risk types, with market liquidity and business need being the primary factors in determining the level of limits set.

Each major operating entity has an independent market risk management and control function that is responsible for measuring market risk exposures in accordance with the

policies defined by Group Risk, and monitoring and reporting these exposures against the prescribed limits on a daily basis. Each operating entity is required to assess the market risks arising on each product in its business and to transfer them to either its local Markets unit for management, or to separate books managed under the supervision of the local ALCO.

Our aim is to ensure that all market risks are consolidated within operations that have the necessary skills, tools, management and governance to manage them. In certain cases where the market risks cannot be fully transferred, we identify the impact of varying scenarios on valuations or on net interest income resulting from any residual risk positions.

Model risk is governed through Model Oversight Committees ('MOC's) at the regional and global level. These Committees have direct oversight and approval responsibility for all traded risk models utilised for risk measurement and management and stress testing. The MOCs prioritise the development of models, methodologies and practices used for traded risk management and ensure that they remain within our risk appetite and business plans. The Regional MOC reports into the Group MOC, which oversees all risk types at Group level. Group MOC informs the Risk Management Meeting of the GMB about material issues at least on a bi-annual basis. The Risk Management Meeting is the Group's 'Designated Committee' according to the regulatory rules and it has delegated day-to-day governance of all traded risk models to the Global WCMR MOC.

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

Market risk measures

Monitoring and limiting market risk exposures

Our objective is to manage and control market risk exposures while maintaining a market profile consistent with our risk appetite.

We use a range of tools to monitor and limit market risk exposures, including sensitivity analysis, VaR and stress testing.

Sensitivity analysis

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

Value at risk

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

In addition, we calculate VaR for non-trading portfolios to have a complete picture of risk. Our models are predominantly based on historical simulation. VaR is calculated at a 99% confidence level for a one-day holding period. Where we do not calculate VaR explicitly, we use alternative tools as described in the Stress testing section below.

Our VaR models derive plausible future scenarios from past series of recorded market rates and prices, taking into account inter-relationships between different markets and rates such as interest rates and foreign exchange rates. Our models use a mixed approach when applying changes in market rates and prices:

- equity, credit and FX risk factors the potential movements are typically represented on a relative return basis; and
- interest rates, a mixed approach is used. Curve movements are typically absolute, whereas volatilities are on a relative return basis.

We use the past two years as the data set in our VaR models, which is updated on a fortnightly basis and these scenarios are then applied to the market baselines and trading positions on a daily basis. The models also incorporate the effect of option features on the underlying exposures.

The valuation approach used in our models include:

- non-linear instruments are valued using a full revaluation approach; and
- linear instruments, such as bonds and swap, are valued using a sensitivity based approach.

The nature of the VaR models means that an increase in observed market volatility will lead to an increase in VaR even without any changes in the underlying positions.

VaR model limitations

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

- the use of historical data as a proxy for estimating future events may not encompass all potential events, particularly those which are extreme in nature;
- the use of a holding period assumes that all positions can be liquidated or the risks offset during that period. This may not fully reflect the market risk arising at times of severe illiquidity, when the holding period may be insufficient to liquidate or hedge all positions fully;
- the use of a 99% confidence level, by definition does not take into account losses that might occur beyond this level of confidence; and
- VaR is calculated on the basis of exposures outstanding at the close of business and therefore does not necessarily reflect intra-day exposures.

Risk-not-in-VaR framework

The Risks-not-in-VaR ('RNIV') framework captures risks from exposures in the HSBC trading book that are not captured well by the VaR model. Our VaR model is designed to capture significant basis risk, such as CDS versus bond, asset swap spreads and cross-currency basis. Other basis risks which are not completely covered in VaR, such as the London interbank offered rate ('Libor') tenor basis, are complemented by our RNIV calculations and are integrated into our capital framework.

Risk factors are reviewed on a regular basis and either incorporated directly in the VaR models, where possible, or quantified through the VaR-based RNIV approach or a stress test approach within the RNIV framework. The outcome of the VaR-based RNIV is included in the VaR calculation and back-testing; a stressed VaR RNIV is also computed for the risk factors considered in the VaR-based RNIV approach.

Stress-type RNIVs are also included where appropriate.

Back-testing

We routinely validate the accuracy of our VaR models by back-testing them against both actual, and hypothetical profit and loss against the trading VaR numbers. Hypothetical profit and

loss excludes non-modelled items, such as fees, commissions and revenues of intra-day transactions.

We would expect on average to see two or three profits, and/or two or three losses, in excess of VaR at the 99% confidence level over a one-year period. The actual number of profits or losses in excess of VaR over this period can therefore be used to gauge how well the models are performing.

We back-test our VaR, which reflect the full scope of HSBC, including entities that do not have local permission to use VaR for regulatory purposes.

Stress testing

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

Stress testing is implemented at legal entity, regional and overall Group levels. A standard set of scenarios is utilised consistently across all regions within the Group. Scenarios are tailored to capture the relevant events or market movements at each level. The risk appetite around potential stress losses for the region is set and monitored against referral limits. Scenarios are tailored to capture the relevant events or market movements at each level. The risk appetite around potential stress losses for the region is set and monitored against referral limits.

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

Stressed VaR and stress testing, together with reverse stress testing and the management of gap risk, provide management with insights regarding the 'tail risk' beyond VaR for which HSBC's appetite is limited.

Market risk capital models

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

For regulatory purposes, the trading book comprises all positions in financial instruments and commodities that are held with trading intent.

HSBC maintains a Trading Book Policy that defines the minimum requirements for trading book positions and the process for classifying positions as trading or banking book. Positions in the trading book are subject to market risk-based rules, i.e. market risk capital, computed using regulatory approved models. Otherwise, the market risk capital is calculated using the Standardised approach.

If any of the policy criteria are not met, then the position is categorised as a banking book exposure.

VaR

VaR used for regulatory purposes differs from VaR used for management purpose with key differences listed below.

VaR	Regulatory	Management
Scope	Regulatory approval	Broader population of trading and banking book positions
Confidence	99%	99%
Liquidity horizon	10-day	1-day
Data set	Past 2 years	Past 2 years

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

Stressed VaR

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

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

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

Incremental Risk Charge

The IRC measures the default and migration risk of issuers of traded instruments.

IRC risk factors include credit migration, default, product basis, concentration, hedge mismatch, recovery rate and liquidity. The

PDs are floored to reflect the lack of historical data on defaults and a period of stress is used to calibrate the spread changes for the relevant ratings. The IRC model is validated quarterly by stressing key model parameters and reviewing the response of the model.

The IRC is a stand-alone charge generating no diversification benefit with other charges. We do not use weighted averages for calculating the liquidity horizon for the IRC measure. IRC relies on a range of liquidity horizons from three months, corresponding to the regulatory floor, to one year. A wide range of criteria can indicate the liquidity of a position. The liquidity horizon for the IRC measure depends on a set of factors, such as issuer features, including rating, sector, geography, and size of positions, including product, maturity and concentration.

The IRC transition matrices are calibrated using transition and default data published by three rating agencies (Standard & Poor's, Moody's and Fitch Ratings) as the starting point, in combination with internal rules for flooring. The average of the three matrices is computed for each sector, ignoring zero transition probabilities. The PDs are then floored: sovereign PDs are consistent with IRB, while a 3bp floor is applied to corporates' and banks' PDs.

The IRC correlation matrix is derived from historical CDS spreads data, covering the latest two-year VaR period. The returns estimation window is set equal to either three, or 12 months, depending on the liquidity horizon of each obligor. First, each obligor is mapped to six sector/rating categories; then the correlation matrix is obtained by computing the arithmetic mean of correlations for each category.

Market risk capital requirement

Table 25: Market risk capital requirement

	31 Dec 2016 HK\$m	31 Dec 2015 HK\$m
Under the standardised (market risk) approach		
Commodity exposures	1	1
Equity exposures	26	25
Interest rate exposures non-securitisation	–	–
Interest rate exposures securitisation	5	6
Under the standardised (market risk) approach		
VaR	1,099	1,096
Stressed VaR	2,225	2,292
Incremental risk charge	2,990	3,722
Add-ons for interest rate	340	282
Add-ons for equity	550	700
Capital requirement¹ for market risk	7,236	8,124

¹ Capital requirement means the amount of regulatory capital that the group is required to hold for an exposure to a relevant risk which, if multiplied by 12.5, becomes the risk-weighted amount of that exposure for that risk.

Analysis of VaR, stressed VaR and incremental risk charges measures

Table 26: The group's VaR for the positions covered by the internal models approach

	31 Dec 2016	31 Dec 2015
	HK\$m	HK\$m
Total		
Year end	103	93
Average	113	137
Maximum	157	234
Minimum	79	80
Interest rate		
Year end	101	71
Average	108	102
Maximum	161	196
Minimum	62	60
Foreign exchange		
Year end	56	40
Average	69	66
Maximum	102	118
Minimum	39	31
Credit spread		
Year end	17	29
Average	23	27
Maximum	54	45
Minimum	10	13
Equity		
Year end	16	23
Average	19	17
Maximum	32	30
Minimum	11	8

The above table is prepared in accordance with the basis of preparation used to calculate the group's market risk capital charge under the internal models approach. The preparation basis and the amounts shown are different from those disclosed

in the Risk Report of the *Annual Report and Accounts 2016*, which reflects the group's trading VaR within Global Markets where the management of market risk is principally undertaken.

Table 27: The group's stressed VaR for the positions covered by the internal models approach

	31 Dec 2016	31 Dec 2015
	HK\$m	HK\$m
Year end	589	671
Average	653	672
Maximum	856	1,025
Minimum	462	361

Table 28: The group's incremental risk charge

	31 Dec 2016	31 Dec 2015
	HK\$m	HK\$m
Year end	2,703	3,534
Average	3,435	4,976
Maximum	4,211	7,382
Minimum	2,674	3,534

Operational risk

The group uses the standardised (operational risk) approach to calculate its operational risk.

Capital requirement means an amount of regulatory capital which the group is required to hold for an exposure to a relevant risk, which, if multiplied by 12.5, becomes the risk-weighted amount of that exposure for that risk.

Table 29: Capital requirement for operational risk

	31 Dec 2016	31 Dec 2015
	HK\$m	HK\$m
	23,944	23,893

Other disclosures

Leverage ratio

The following table shows the group's leverage ratio, as calculated under regulatory scope of consolidation.

Table 30: Leverage ratio

	31 Dec 2016	31 Dec 2015
	%	%
Leverage ratio	6.3	6.4
Capital and leverage ratio exposure measure	HK\$m	HK\$m
Tier 1 Capital	444,872	418,758
Total exposure measure	7,018,046	6,514,618

The decrease in the leverage ratio from 31 December 2015 to 31 December 2016 was mainly due to an increase in total assets during the year.

Further details regarding the group's leverage positions are set out in Appendix IV 'Leverage Ratio Common Disclosure Templates'.

Equity exposures in the banking book

Included within this category are primarily investments made by the group for strategic purposes, which are subject to additional internal procedures and approvals to ensure that the investment is in accordance with the group's and HSBC Group's strategy, and to ensure compliance with all relevant regulatory and legal restrictions.

These exposures are classified as available-for-sale equity securities and accounted for in accordance with the accounting policies as described in Notes 1b(iii) and (v) in the *Annual Report and Accounts 2016*.

Table 31: Equity exposures in the banking book

	31 Dec 2016	31 Dec 2015
	HK\$m	HK\$m
Realised gains from sales for the year	16	10,758
Unrealised gains included in reserves but not through the income statement	2,958	3,084

Interest rate exposures in the banking book

A principal part of our management of market risk in non-trading portfolios is to monitor the sensitivity of projected net interest income at least quarterly under varying interest rate scenarios (simulation modelling). The group aims, through its management of market risk in non-trading portfolios, to mitigate the effect of prospective interest rate movements that could reduce future net interest income, while balancing the cost of such hedging activities on the current net revenue stream.

For simulation modelling, our businesses use a combination of scenarios and assumptions relevant to them and local markets, as well as standard scenarios that are required throughout the HSBC Group. The standard scenarios are consolidated to illustrate the combined pro forma effect on the group's consolidated portfolio valuations and net interest income.

The table below sets out the effect on future net interest income of an incremental 25 basis points parallel rise or fall in all yield curves at the beginning of each quarter during the 12 months from 1 January. Assuming no management actions, the sensitivity of projected net interest income is as follows:

Table 32: Change in projected net interest income arising from a shift in yield curves

	2017 Projections			2016 Projections	
	HK\$m			HK\$m	
	HK dollar	US dollar	Others	Total	Total
+25 basis points at the beginning of each quarter	3,905	2,943	2,499	9,347	6,287
-25 basis points at the beginning of each quarter	(6,175)	(5,602)	(2,457)	(14,234)	(11,065)

The sensitivity analysis is based on the simplified assumption that Balance Sheet Management positioning remains unchanged. As the group is a deposit-led bank, our deposit-taking businesses generally benefit from rising interest rates.

The main drivers of the year-on-year changes in the group's projected net interest income were due to higher implied Hong Kong dollar and US dollar yield curves under a reducing interest rate scenario, wider margins in a rising interest rate scenario and a decrease in the funding requirements of the trading book. Projected net interest income and its associated sensitivity, as reflected in the table above, include the expense of internally funding trading assets, while the related revenue is reported in 'Net trading income'. The interest rate sensitivities set out in the table above are illustrative only and are based on simplified scenarios. The figures represent the effect of the pro forma movements in net interest income based on the projected yield curve scenarios and the group's current interest rate risk profile. This effect, however, does not incorporate actions that would be taken by Balance Sheet Management or in the business units to mitigate the effect of interest rate risk. In practice, Balance Sheet Management seeks proactively to change the interest rate risk profile to minimise losses and optimise net revenues. The projections above also assume that interest rates of all maturities move by the same amount (although rates are not assumed to become negative in the falling rates scenario) and, therefore, do not reflect the potential impact on net interest income of some rates changing while others remain unchanged. In addition, the projections take account of the effect on net interest income of anticipated differences in changes between

interbank interest rates and interest rates linked to other bases (such as Central Bank rates, or product rates over which the entity has discretion in terms of the timing and extent of rate changes). The projections make other simplifying assumptions, including that contractually fixed term positions run to maturity, managed rate products and non-interest bearing balances, such as interest-free current accounts, are subject to interest rate risk behaviouralisation, and any material effect from the extent to which movements in interest rates will alter the demand for the group's products and how customers' behaviour may change with movements in interest rates, such as loan repayments are incorporated.

Projecting the movements in net interest income from prospective changes in interest rates is a complex interaction of structural and managed exposures. The group's exposure to the effect of movements in interest rates on its net interest income arises in two main areas: savings and demand deposit accounts and Balance Sheet Management portfolios.

- The net interest income of savings and demand deposit accounts increases as interest rates rise and decreases as interest rates fall. However, this risk is asymmetrical in a very low interest rate environment, as there is limited room to lower deposit pricing in the event of interest rate reductions.
- Interest rate risk is transferred from the commercial bank to Balance Sheet Management under our policy where interest rate risk is managed within defined limits.

Off-balance sheet exposures other than derivative transactions

The table below gives the nominal contract amounts and risk-weighted amounts of contingent liabilities and commitments. The information is consistent with that in the 'Capital Adequacy Ratio' return submitted to the HKMA by the group. The return is prepared on a consolidated basis as specified by the HKMA

under the requirement of section 3C(1) of the Banking (Capital) Rules.

For accounting purposes, acceptances and endorsements are recognised on the balance sheet in 'Other assets' in accordance with HKAS 39 'Financial Instruments: Recognition and Measurement'. For the purpose of the Banking (Capital) Rules, acceptances and endorsements are included in the capital adequacy calculation as if they were contingencies.

Table 33: Off-balance sheet exposures other than derivative transactions

	31 Dec 2016	31 Dec 2015
	HK\$m	HK\$m
Contract amounts		
Direct credit substitutes	70,125	69,988
Transaction-related contingencies	155,320	152,810
Trade-related contingencies	96,836	99,461
Forward asset purchases	1,975	2,135
Forward forward deposits placed	—	1,615
Commitments that are unconditionally cancellable without prior notice	1,992,095	1,879,081
Commitments which have an original maturity of not more than one year	57,541	52,023
Commitments which have an original maturity of more than one year	206,549	168,258
Total	2,580,441	2,425,371
Risk-weighted amounts	296,666	264,216

Loans and advances to customers

Analysis of loans and advances to customers by geographical areas according to the location of counterparties, after recognised risk transfer:

Table 34: Loans and advances to customers by geographical location

	Hong Kong	Rest of Asia-Pacific	Other	Total
	HK\$m	HK\$m	HK\$m	HK\$m
At 31 Dec 2016				
Gross loans and advances to customers	1,419,335	1,175,230	252,241	2,846,806
At 31 Dec 2015				
Gross loans and advances to customers	1,371,783	1,194,267	207,769	2,773,819

The following analysis of the group's loans and advances to customers is based on the categories contained in the 'Quarterly Analysis of Loans and Advances and Provisions –

(MA(BS)2A)' return required to be submitted to the HKMA by branches of the Bank and by banking subsidiaries in Hong Kong.

Table 35: Loans and advances to customers by industry

	Gross Advances at 31 Dec		Collateral and other security at 31 Dec	
	2016 HK\$m	2015 HK\$m	2016 HK\$m	2015 HK\$m
Industrial, commercial and financial	752,440	702,109	375,403	368,627
– property development	102,920	87,696	36,245	34,282
– property investment	262,462	240,018	186,097	182,025
– financial concerns	53,322	55,658	34,112	36,968
– stockbrokers	7,034	6,685	1,009	1,133
– wholesale and retail trade	97,408	94,460	26,953	22,996
– manufacturing	47,544	47,486	12,045	12,720
– transport and transport equipment	39,755	43,566	25,082	25,654
– recreational activities	1,152	718	417	288
– information technology	32,212	17,356	2,905	1,465
– others	108,631	108,466	50,538	51,096
Individuals	600,820	571,822	506,375	479,498
– advances for the purchase of flats under the Hong Kong Government's Home Ownership Scheme, Private Sector Participation Scheme and Tenants Purchase Scheme	30,215	27,702	30,215	27,702
– advances for the purchase of other residential properties	434,494	413,768	434,494	413,753
– credit card advances	56,872	55,353	–	–
– others	79,239	74,999	41,666	38,043
Gross loans and advances to customers for use in Hong Kong	1,353,260	1,273,931	881,778	848,125
Trade Finance	166,226	166,107	34,697	34,697
Gross loans and advances to customers for use outside Hong Kong	1,327,320	1,333,781	467,450	473,317
Gross loans and advances to customers	2,846,806	2,773,819	1,383,925	1,356,139

The categories of advances, and the relevant definitions, used by the HKMA differ from those used for internal purposes by the HSBC Group as disclosed in Note 10 on the financial statements in the *Annual Report and Accounts 2016*.

The geographical information shown above has been classified by the location of the principal operations of the subsidiary and by the location of the branch responsible for advancing the funds.

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

Mainland activities

The analysis of mainland activities is based on the categories of non-bank counterparties and the type of direct exposures

defined by the HKMA under the Banking (Disclosure) Rules with reference to the HKMA's 'Return of Mainland Activities – (MA (BS)20)', which includes the mainland exposures extended by the Bank's Hong Kong offices and wholly-owned banking subsidiaries in mainland China.

Table 36: Mainland activities

	On-balance sheet exposure HK\$m	Off-balance sheet exposure HK\$m	Total exposures HK\$m
At 31 Dec 2016			
Types of counterparties			
1 Central government, central government-owned entities and their subsidiaries and joint ventures ('JVs')	167,028	13,385	180,413
2 Local governments, local government-owned entities and their subsidiaries and JVs	38,936	6,744	45,680
3 People's Republic of China ('PRC') nationals residing in Mainland China or other entities incorporated in Mainland China and their subsidiaries and JVs	229,646	28,467	258,113
4 Other entities of central government not reported in item 1 above	5,170	633	5,803
5 Other entities of local governments not reported in item 2 above	2,255	1,080	3,335
6 PRC nationals residing outside Mainland China or entities incorporated outside Mainland China where the credit is granted for use in Mainland China	53,560	5,926	59,486
7 Other counterparties where the exposures are considered by the reporting institution to be non-bank Mainland China exposures	66,930	12,762	79,692
Total	563,525	68,997	632,522
Total assets after provision	4,633,452		
On-balance sheet exposures as percentage of total assets	12.16%		
At 31 Dec 2015			
Types of counterparties			
1 Central government, central government-owned entities and their subsidiaries and joint ventures ('JVs')	191,692	10,303	201,995
2 Local governments, local government-owned entities and their subsidiaries and JVs	45,911	6,866	52,777
3 PRC nationals residing in Mainland China or other entities incorporated in Mainland China and their subsidiaries and JVs	221,513	27,012	248,525
4 Other entities of central government not reported in item 1 above	10,317	763	11,080
5 Other entities of local governments not reported in item 2 above	6,736	1,125	7,861
6 PRC nationals residing outside Mainland China or entities incorporated outside Mainland China where the credit is granted for use in Mainland China	73,418	7,644	81,062
7 Other counterparties where the exposures are considered by the reporting institution to be non-bank Mainland China exposures	61,189	3,333	64,522
Total	610,776	57,046	667,822
Total assets after provision	4,022,835		
On-balance sheet exposures as percentage of total assets	15.18%		

International claims

The group's country risk exposures in the tables below are prepared in accordance with the HKMA Return of International Banking Statistics – (MA(BS)21) guidelines. International claims are on-balance sheet exposures to counterparties based on the location of the counterparties, after taking into account the

transfer of risk, and represent the sum of cross-border claims in all currencies and local claims in foreign currencies.

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

Table 37: International claims

	Banks HK\$m	Official sector HK\$m	Non-bank financial institutions HK\$m	Non-financial private sector HK\$m	Others HK\$m	Total HK\$m
At 31 Dec 2016						
Developed countries	504,161	502,212	222,634	260,178	90	1,489,275
– of which: United States	39,832	180,005	56,400	75,309	–	351,546
Offshore centres	74,368	12,848	60,671	391,842	966	540,695
– of which: Hong Kong SAR	38,402	1,603	29,084	239,598	964	309,651
Developing Asia and Pacific	380,965	110,261	42,855	366,475	135	900,691
– of which: mainland China	284,589	71,514	18,270	194,667	135	569,175
At 31 Dec 2015						
Developed countries	461,536	503,088	154,330	239,419	–	1,358,373
– of which: United States	47,871	253,652	28,895	50,599	–	381,017
Offshore centres	83,297	8,719	57,780	401,698	839	552,333
– of which: Hong Kong SAR	26,095	1,559	20,323	238,139	835	286,951
Developing Asia and Pacific	398,275	89,010	41,544	386,748	177	915,754
– of which: mainland China	310,337	49,652	17,875	202,518	117	580,499

Foreign currency positions

The group had the following non-structural foreign currency positions that were not less than 10% of the net non-structural positions in all foreign currencies in either year:

Table 38: Foreign currency positions

	United States dollars HK\$m	Singapore dollars HK\$m	Brunei dollars HK\$m	Renminbi HK\$m
At 31 Dec 2016				
Spot assets	1,985,265	225,685	3,594	547,523
Spot liabilities	(2,249,564)	(191,497)	(3,561)	(500,789)
Forward purchases	10,013,184	157,890	5	2,533,147
Forward sales	(9,716,499)	(191,999)	(4)	(2,600,506)
Net options positions	(13,474)	1	–	13,867
Net long (net short) position	18,912	80	34	(6,758)
At 31 Dec 2015				
Spot assets	1,755,460	214,592	11,405	601,725
Spot liabilities	(1,886,435)	(185,277)	(15,168)	(576,803)
Forward purchases	8,316,811	156,565	212	2,603,843
Forward sales	(8,172,575)	(182,482)	(190)	(2,628,291)
Net options positions	5,232	(9)	–	(3,170)
Net long (net short) position	18,493	3,389	(3,741)	(2,696)

Dividend income

Table 39: Dividend income

	31 Dec 2016 HK\$m	31 Dec 2015 HK\$m
Listed investments	141	133
Unlisted investments	93	77
Total	234	210

Cash and sight balances at central banks

Table 40: Cash and sight balances at central banks

	31 Dec 2016	31 Dec 2015
	HK\$m	HK\$m
Cash in hand	20,134	15,844
Sight balances at central banks	193,649	135,259
Total	213,783	151,103

At 31 December 2016, the total amount placed with central banks by the group, included within cash and sight balances at central banks, reverse repurchase agreements – non-trading,

and placings with and advances to banks, amounted to HK \$369,637m (2015: HK\$290,052m).

Non-trading reverse repurchase and repurchase agreements

Table 41: Non-trading reverse repos with customers and banks

	31 Dec 2016	31 Dec 2015
	HK\$m	HK\$m
Assets		
Banks	235,016	168,988
Customers	36,551	43,791
Total	271,567	212,779
Liabilities		
Banks	22,487	13,585
Customers	5,323	2,573
Total	27,810	16,158

Impairment allowances on loans and advances to customers

For individually assessed customer loans and advances, where the industry sector comprises not less than 10% of the group's total gross loans and advances to customers, the analysis of

gross impaired loans and advances and allowances by major industry sectors based on categories and definitions used by the HSBC Group is as follows:

Table 42: Impairment allowances on loans and advances to customers

	Total gross loans and advances	Gross impaired advances	Individually assessed allowances	Collectively assessed allowances	Net new impairment allowances	Advances written-off in a year
	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
At 31 Dec 2016						
Residential mortgages	760,608	1,979	(198)	(72)	103	43
Commercial, industrial and international trade	812,262	9,684	(5,524)	(2,148)	2,555	1,338
Other property-related lending	291,830	797	(181)	(88)	(134)	141
At 31 Dec 2015						
Residential mortgages	733,225	1,735	(169)	(55)	24	48
Commercial, industrial and international trade	825,183	8,543	(4,513)	(2,110)	2,084	1,155
Other property-related lending	272,860	1,098	(378)	(180)	142	32

Impairment is assessed collectively to cover losses that have been incurred but have not yet been identified on loans subject

to individual assessment or for homogeneous groups of loans that are not considered individually significant.

Table 43: Overdue and rescheduled loans and advances to customers

	Hong Kong		Rest of Asia-Pacific		Total	
	HK\$m	% ¹	HK\$m	% ¹	HK\$m	% ¹
At 31 Dec 2016						
Gross amounts which have been overdue with respect to either principal or interest for:						
– more than three months but not more than six months	869	–	1,590	0.2	2,459	0.1
– more than six months but not more than one year	1,043	0.1	2,249	0.2	3,292	0.1
– more than one year	3,575	0.2	3,457	0.3	7,032	0.2
Total	5,487	0.3	7,296	0.7	12,783	0.4
Individually assessed impairment allowances made in respect of amounts overdue	(1,976)		(3,767)		(5,743)	
Fair value of collateral held in respect of amounts overdue	2,262		2,541		4,803	
Rescheduled loans and advances to customers	391	–	3,371	0.3	3,762	0.1
At 31 Dec 2015						
Gross amounts which have been overdue with respect to either principal or interest for:						
– more than three months but not more than six months	1,081	0.1	1,712	0.2	2,793	0.1
– more than six months but not more than one year	1,698	0.1	1,268	0.1	2,966	0.1
– more than one year	2,344	0.1	2,951	0.3	5,295	0.2
Total	5,123	0.3	5,931	0.6	11,054	0.4
Individually assessed impairment allowances made in respect of amounts overdue	(1,609)		(3,355)		(4,964)	
Fair value of collateral held in respect of amounts overdue	1,643		1,820		3,463	
Rescheduled loans and advances to customers	409	–	3,134	0.3	3,543	0.1

¹ Percentages shown are of gross loans and advances to customers.

Rescheduled loans and advances to customers are those loans and advances that have been restructured or renegotiated because of deterioration in the financial position of the borrower, or because of the inability of the borrower to meet the original repayment schedule. Rescheduled loans and advances to customers are stated net of any loans and advances that have subsequently become overdue for more than three months and which are included in 'Overdue loans and advances to customers'.

Impairment and rescheduled amounts relating to placings with and advances to banks and other assets

There were no significant impaired or rescheduled placings with and advances to banks, nor overdue or rescheduled other assets as at 31 December 2016 and 31 December 2015. Information relating to overdue balances can be found in Risk Report in the *Annual Report and Accounts 2016*.

Senior management compensation and benefits

Remuneration of senior management and key personnel

The following tables show the remuneration paid to senior management and key personnel. These disclosures are in compliance with the guideline in Part 3 (Disclosure on remuneration) of the HKMA Supervisory Policy Manual CG-5 'Guideline on a Sound Remuneration System'. Senior management is defined as those persons responsible for oversight of the group's strategy, activities or material business lines. This includes the Executive Directors, Executive Committee members, Chief Executive, Alternative Chief Executive and Managers as registered with the HKMA. There were 28 members of senior management in 2016 (2015: 27 members). This includes one member (2015: one) who is a Director of, and is remunerated by, HSBC Holdings plc and is consequently not included in the disclosures below.

Key personnel is defined as individual employees whose duties or activities involve the assumption of material risk or the taking on of material exposures on behalf of the group. Under the provisions of the UK Prudential Regulation Authority's ('PRA') Remuneration Rules ('the Rules'), HSBC is required to identify individuals who will be considered as 'Identified Staff and Material Risk Takers' (collectively referred to as 'Material Risk Takers' or 'MRTs') based on the qualitative and quantitative criteria specified in the Regulatory Technical Standard ('RTS') issued by the European Banking Authority ('EBA'). Based on the criteria applicable to the Group, the identified number of MRTs, and, in turn, key personnel, in 2016 were 280 members (2015: 242 members).

The group follows the remuneration system of HSBC Holdings plc. Please refer to the HSBC remuneration practices and governance at <http://www.hsbc.com/about-hsbc/corporate-governance> and the Capital and Risk Management Pillar 3 Disclosures of HSBC Holdings plc for details of the governance structure and the major design characteristics of the remuneration system.

Table 44: Analysis of remuneration between fixed, variable, deferred and non-deferred amounts

Footnote	2016			2015		
	Senior management	Key personnel	Total	Senior management	Key personnel	Total
Number of people	27	280	307	26	242	268
	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
Fixed						
Cash-based	218	1,194	1,412	116	924	1,040
Shares-based	22	14	36	110	128	238
Total fixed pay	240	1,208	1,448	226	1,052	1,278
Variable						
Cash	49	268	317	51	278	329
Non-deferred shares	45	252	297	50	265	315
Deferred cash	60	219	279	64	238	302
Deferred shares	62	223	285	76	242	318
Total variable pay	216	962	1,178	241	1,023	1,264

Table 45: Analysis of deferred remuneration

Footnotes	2016			2015		
	Senior management	Key personnel	Total	Senior management	Key personnel	Total
Number of people	27	280	307	26	242	268
	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
Deferred remuneration at 31 Dec						
Outstanding, unvested	421	1,046	1,467	382	859	1,241
Outstanding, cash	136	376	512	136	267	403
Outstanding, shares	285	670	955	246	592	838
Awarded during the year	169	606	775	126	401	527
Paid out	126	376	502	147	476	623
Deferred shares paid out	60	258	318	80	402	482
Deferred cash paid out	66	118	184	67	74	141
Reduced through performance adjustment	—	—	—	—	—	—

1 The forms of variable remuneration and the proportion deferred are based on the seniority, role and responsibilities of employees and their level of total variable compensation.

2 Outstanding, unvested, deferred remuneration is exposed to ex post-explicit adjustments.

3 There is no reduction of deferred remuneration and retained remuneration due to ex post-explicit adjustments during 2016 and 2015 via the application of malus and/or clawback.

4 Outstanding, unvested, deferred shares are exposed to ex post-implicit adjustments. The total value of these shares in 2016 and 2015 are calculated based on the closing market share price of HSBC Holdings plc as at 31 December of the respective financial years. HSBC's share price is 22% higher as at 31 December 2016 when compared to that of 31 December 2015.

Basis of consolidation

The basis of consolidation for financial accounting purposes is in accordance with Hong Kong Financial Reporting Standards ('HKFRS'), as described in Note 1 on the financial statements in the Bank's *Annual Report and Accounts 2016*.

The basis of consolidation for regulatory purposes is different from that for accounting purposes. Subsidiaries included in the consolidation for regulatory purposes are specified in a notice from the HKMA in accordance with section 3C(1) of the Banking (Capital) Rules. Subsidiaries not included in consolidation for regulatory purposes are securities and insurance companies that are authorised and supervised by a regulator, and are subject to supervisory arrangements regarding the maintenance of adequate capital to support business activities comparable to those prescribed for authorised institutions under the Banking (Capital) Rules and the Banking Ordinance. The capital invested by the group in these subsidiaries is deducted from the capital base as determined in accordance with Part 3 of the Banking (Capital) Rules.

For insurance entities, the figures shown below exclude deferred acquisition cost assets, as these are derecognised for consolidation purpose due to the recognition of the present value of in-force long-term insurance business ('PVIF') on long-

term insurance contracts and investment contracts with discretionary participation features at group level. The PVIF asset of HK\$44,076m (31 December 2015: HK\$36,897m) and the related deferred tax liability, however, are recognised at the consolidated group level only, and are therefore also not included in the asset or equity positions for the stand-alone entities shown above.

There are no subsidiaries that are included within both the accounting scope of consolidation and the regulatory scope of consolidation, but where the method of consolidation differs at 31 December 2016 and 31 December 2015.

There are no subsidiaries that are included within the regulatory scope of consolidation, but not included within the accounting scope of consolidation at 31 December 2016 and 31 December 2015.

The group operates subsidiaries in a number of countries and territories where capital is governed by local rules, and there may be restrictions on the transfer of regulatory capital and funds between members of the banking group.

Table 46: Principal entities with a different regulatory and accounting scope of consolidation statements

Principal activities	At 31 Dec 2016		At 31 Dec 2015	
	Total assets HK\$m	Total equity HK\$m	Total assets HK\$m	Total equity HK\$m
HSBC Broking Futures (Hong Kong) Ltd	2,635	594	2,915	589
HSBC Broking Services (Asia) Ltd and its subsidiaries	16,789	3,190	16,806	3,014
HSBC Corporate Advisory (Malaysia) Sdn Bhd	9	8	6	5
HSBC Global Asset Management Holdings (Bahamas) Ltd	125	124	124	124
HSBC Global Asset Management (Hong Kong) Ltd	664	392	617	363
HSBC Investment Funds (Hong Kong) Ltd	486	203	319	157
HSBC Global Asset Management (Japan) K.K.	136	83	146	76
HSBC Global Asset Management (Singapore) Ltd	83	60	92	55
HSBC Insurance (Asia-Pacific) Holdings Ltd and its subsidiaries	344,885	22,531	305,340	22,207
HSBC InvestDirect (India) Ltd and its subsidiaries	643	520	637	497
HSBC Securities (Asia) Ltd and its subsidiaries	425	423	435	421
HSBC Securities (Japan) Ltd	131,911	1,360	95,063	1,213
HSBC Securities (Singapore) Pte Ltd	252	58	174	60
HSBC Securities Brokers (Asia) Ltd	11,046	4,367	10,094	4,264
Hang Seng Futures Ltd	102	102	102	102
Hang Seng Insurance Co. Ltd and its subsidiaries	122,228	8,941	112,857	9,139
Hang Seng Investment Management Ltd	1,266	1,248	946	910
Hang Seng Investment Services Ltd	9	9	9	9
Hang Seng Securities Ltd	2,340	1,355	2,493	1,596
Hang Seng Qianhai Fund Management Co. Ltd ¹	205	198	—	—

¹ The entity was established in 2016.

Appendix I - Transition Disclosures Template

The following table sets out the detailed composition of the group's regulatory capital using the Transition Disclosures Template, as specified by the Hong Kong Monetary Authority ('HKMA'). The table also shows those items that are currently benefiting from the Basel III transitional arrangements, and are consequently subject to the pre-Basel III treatment, as set out in Schedule 4H to the Banking (Capital) Rules.

Table 47: The group's regulatory capital

	At 31 Dec 2016		Cross-referenced to **
	Component of regulatory capital HK\$m	Amounts subject to pre-Basel III treatment* HK\$m	
Common equity tier 1 (CET1) capital: instruments and reserves			
1 Directly issued qualifying CET1 capital instruments plus any related share premium	112,905		28
2 Retained earnings	354,521		35
3 Disclosed reserves	84,350		31
4 Directly issued capital subject to phase out from CET1 capital (only applicable to non-joint stock companies)	Not applicable		
Public sector capital injections grandfathered until 1 Jan 2018	Not applicable		
5 Minority interests arising from CET1 capital instruments issued by consolidated bank subsidiaries and held by third parties (amount allowed in CET1 capital of the consolidation group)	22,676		40
6 CET1 capital before regulatory deductions	574,452		
CET1 capital: regulatory deductions			
7 Valuation adjustments	2,020		34+39
8 Goodwill (net of associated deferred tax liability)	8,582		7+10+13+21
9 Other intangible assets (net of associated deferred tax liability)	5,447	–	8+11+22
10 Deferred tax assets net of deferred tax liabilities	1,566		12
11 Cash flow hedge reserve	(222)		33
12 Excess of total EL amount over total eligible provisions under the IRB approach	–	–	
13 Gain-on-sale arising from securitisation transactions	–		
14 Gains or losses due to changes in own credit risk on fair valued liabilities	1,195	–	16+17+18+20
15 Defined benefit pension fund net assets (net of associated deferred tax liabilities)	62	–	14+23
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)	57,395	34,666	1+3+4+6+9+15-43 -44
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	84,099		
26a Cumulative fair value gains arising from the revaluation of land and buildings (own-use and investment properties)	58,168		32+38
26b Regulatory reserve for general banking risks	25,931		36
27 Regulatory deductions applied to CET1 capital due to insufficient Additional Tier 1 (AT1) capital and Tier 2 capital to cover deductions	–		
28 Total regulatory deductions to CET1 capital	160,144		
29 CET1 capital	414,308		
AT1 capital: instruments			
30 Qualifying AT1 capital instruments plus related share premium	14,737		30
31 – of which: classified as equity under applicable accounting standards	14,737		30
32 – of which: classified as liabilities under applicable accounting standards	–		
33 Capital instruments subject to phase out arrangements from AT1 capital	25,228		26
34 AT1 capital instruments issued by consolidated bank subsidiaries and held by third parties (amount allowed in AT1 capital of the consolidated group)	7,932		41+42
35 – of which: AT1 capital instruments issued by subsidiaries subject to phase out arrangements	6,534		42

Table 47: The group's regulatory capital (continued)

	At 31 Dec 2016		Cross-referenced to **
	Component of regulatory capital	Amounts subject to pre-Base I treatment*	
	HK\$m	HK\$m	
36 AT1 capital before regulatory deductions	47,897		
AT1 capital: regulatory deductions			
37 Investments in own AT1 capital instruments	–	–	
38 Reciprocal cross-holdings in AT1 capital instruments	–	–	
39 Insignificant capital investments in AT1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)	–	–	
40 Significant capital investments in AT1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	–	–	
41 National specific regulatory adjustments applied to AT1 capital	17,333		
41a Portion of deductions applied 50:50 to core capital and supplementary capital based on pre-Base I treatment which, during transitional period, remain subject to deduction from Tier 1 capital	17,333		
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	17,333		43
42 Regulatory deductions applied to AT1 capital due to insufficient Tier 2 capital to cover deductions	–		
43 Total regulatory deductions to AT1 capital	17,333		
44 AT1 capital	30,564		
45 Tier 1 capital (Tier 1 = CET1 + AT1)	444,872		
Tier 2 capital: instruments and provisions			
46 Qualifying Tier 2 capital instruments plus any related share premium	20,010		19
47 Capital instruments subject to phase out arrangements from Tier 2 capital	4,653		24+27
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)	1,462		25
49 – of which: capital instruments issued by subsidiaries subject to phase out arrangements	1,462		25
50 Collective impairment allowances and regulatory reserve for general banking risks eligible for inclusion in Tier 2 capital	14,581		2+37
51 Tier 2 capital before regulatory deductions	40,706		
Tier 2 capital: regulatory deductions			
52 Investments in own Tier 2 capital instruments	–	–	
53 Reciprocal cross-holdings in Tier 2 capital instruments	–	–	
54 Insignificant capital investments in Tier 2 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)	–	–	
55 Significant capital investments in Tier 2 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	3,773	–	5
56 National specific regulatory adjustments applied to Tier 2 capital	(9,497)		
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	(26,830)		(29+32+38)×45%
56b Portion of deductions applied 50:50 to core capital and supplementary capital based on pre-Base I treatment which, during transitional period, remain subject to deduction from Tier 2 capital	17,333		
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	17,333		44
57 Total regulatory deductions to Tier 2 capital	(5,724)		
58 Tier 2 capital	46,430		
59 Total capital (Total capital = Tier 1 + Tier 2)	491,302		
60 Total risk-weighted assets	2,588,589		
Capital ratios (as a percentage of risk-weighted assets)			
61 CET1 capital ratio	16.01%		
62 Tier 1 capital ratio	17.19%		
63 Total capital ratio	18.98%		
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)	6.10%		
65 – of which: capital conservation buffer requirement	0.63%		
66 – of which: bank specific countercyclical buffer requirement	0.35%		
67 – of which: G-SIB or D-SIB buffer requirement	0.63%		
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	10.98%		

Table 47: The group's regulatory capital (continued)

		At 31 Dec 2016		Cross-referenced to **
		Component of regulatory capital	Amounts subject to pre-Basel III treatment*	
		HK\$m	HK\$m	
National minima (if different from Basel 3 minimum)				
69	National CET1 minimum ratio	Not applicable		
70	National Tier 1 minimum ratio	Not applicable		
71	National Total capital minimum ratio	Not applicable		
Amounts below the thresholds for deduction (before risk weighting)				
72	Insignificant capital investments in CET1 capital instruments, AT1 capital instruments and Tier 2 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	13,707		
73	Significant capital investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	47,171		
74	Mortgage servicing rights (net of related tax liability)	Not applicable		
75	Deferred tax assets arising from temporary differences (net of related tax liability)	Not applicable		
Applicable caps on the inclusion of provisions in Tier 2 capital				
76	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to the basic approach and the standardised (credit risk) approach (prior to application of cap)	3,770		
77	Cap on inclusion of provisions in Tier 2 under the basic approach and the standardised (credit risk) approach	3,104		
78	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to the IRB approach (prior to application of cap)	17,278		
79	Cap for inclusion of provisions in Tier 2 under the IRB approach	11,477		
Capital instruments subject to phase-out arrangements				
80	Current cap on CET1 capital instruments subject to phase-out arrangements	Not applicable		
81	Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)	Not applicable		
82	Current cap on AT1 capital instruments subject to phase-out arrangements	30,942		
83	Amount excluded from AT1 capital due to cap (excess over cap after redemptions and maturities)	—		
84	Current cap on T2 capital instruments subject to phase-out arrangements	27,346		
85	Amount excluded from T2 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.

** Cross-referenced to Balance Sheet Reconciliation in Appendix IIb.

Table 47: The group's 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:

	At 31 Dec 2016	
	Hong Kong basis	Basel III basis
	HK\$m	HK\$m
10 Deferred tax assets net of deferred tax liabilities	1,566	12

Explanation

As set out in paragraphs 69 and 87 of the Basel III text issued by the Basel Committee (December 2010), Deferred Tax Assets ('DTAs') that rely on future profitability of the bank to be realised are to be deducted, whereas DTAs which relate to temporary differences may be given limited recognition in CET1 capital (and hence be excluded from deduction from CET1 capital up to the specified threshold). In Hong Kong, an AI is required to deduct all DTAs in full, irrespective of their origin, from CET1 capital. Therefore, the amount to be deducted as reported in row 10 may be greater than that required under Basel III.

The amount reported under the column 'Basel III basis' in this box represents the amount reported in row 10 (i.e. the amount reported under the 'Hong Kong basis') adjusted by reducing the amount of DTAs to be deducted which relate to temporary differences to the extent not in excess of the 10% threshold set for DTAs arising from temporary differences and the aggregate 15% threshold set for Mortgage Servicing Rights ('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.

	At 31 Dec 2016	
	Hong Kong basis	Basel III basis
	HK\$m	HK\$m
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)	92,061	90,241

Explanation

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.

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 that were subject to deduction under the Hong Kong approach.

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.

Table 47: The group's regulatory capital (continued)

	At 31 Dec 2015		Cross-reference to **
	Component of regulatory capital	Amounts subject to pre-Basel III treatment*	
	HK\$m	HK\$m	
Common equity tier 1 (CET1) capital: instruments and reserves			
1	Directly issued qualifying CET1 capital instruments plus any related share premium	94,598	31
2	Retained earnings	327,574	37
3	Disclosed reserves	91,906	34
4	Directly issued capital subject to phase-out from CET1 capital (only applicable to non-joint stock companies)	Not applicable	
	Public sector capital injections grandfathered until 1 Jan 2018	Not applicable	
5	Minority interests arising from CET1 capital instruments issued by consolidated bank subsidiaries and held by third parties (amount allowed in CET1 capital of the consolidated group)	22,352	41
6	CET1 capital before regulatory deductions	536,430	
	CET1 capital: regulatory deductions		
7	Valuation adjustments	1,845	1+2+3+6
8	Goodwill (net of associated deferred tax liability)	8,788	10+13+16+24
9	Other intangible assets (net of associated deferred tax liability)	5,244	11+14+25
10	Deferred tax assets net of deferred tax liabilities	1,863	15
11	Cash flow hedge reserve	51	36
12	Excess of total EL amount over total eligible provisions under the IRB approach	—	—
13	Gain-on-sale arising from securitisation transactions	—	—
14	Gains or losses due to changes in own credit risk on fair valued liabilities	940	19+20+21+23
15	Defined benefit pension fund net assets (net of associated deferred tax) liabilities	40	17+26
16	Investment 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)	39,524	51,774 5+7+9+12+18-44-45
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	84,316	
26a	Cumulative fair value gains arising from the revaluation of land and buildings (own-use and investment properties)	56,497	35+40
26b	Regulatory reserve for general banking risks	27,819	38
27	Regulatory deductions applied to CET1 capital due to insufficient Additional Tier 1 (AT1) capital and Tier 2 capital to cover deductions	—	
28	Total regulatory deductions to CET1 capital	142,611	
29	CET1 capital	393,819	
	AT1 capital: instruments		
30	Qualifying AT1 capital instruments plus related share premium	14,737	33
31	– of which: classified as equity under applicable accounting standards	14,737	33
32	– of which: classified as liabilities under applicable accounting standards	—	
33	Capital instruments subject to phase out arrangements from AT1 capital	25,213	29
34	AT1 capital instruments issued by consolidated bank subsidiaries and held by third parties (amount allowed in AT1 capital of the consolidated group)	10,876	42+43
35	– of which: AT1 capital instruments issued by subsidiaries subject to phase-out arrangements	9,494	43
36	AT1 capital before regulatory deductions	50,826	
	AT1 capital: regulatory deductions		
37	Investments in own AT1 capital instruments	—	—
38	Reciprocal cross-holdings in AT1 capital instruments	—	—
39	Insignificant capital investments in AT1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)	—	—
40	Significant capital investments in AT1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	—	—

Table 47: The group's regulatory capital (continued)

	At 31 Dec 2015		Cross-reference to **
	Component of regulatory capital	Amounts subject to pre-BaseI III treatment*	
	HK\$m	HK\$m	
41 National specific regulatory adjustments applied to AT1 capital	25,887		
41a 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 1 capital	25,887		
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	25,887		44
42 Regulatory deductions applied to AT1 capital due to insufficient Tier 2 capital to cover deductions	–		
43 Total regulatory deductions to AT1 capital	25,887		
44 AT1 capital	24,939		
45 Tier 1 capital (Tier 1 = CET1 + AT1)	418,758		
Tier 2 capital: instruments and provisions			
46 Qualifying Tier 2 capital instruments plus any related share premium	19,996		22
47 Capital instruments subject to phase out arrangements from Tier 2 capital	17,442		27+30
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)	1,607		28
49 – of which: capital instruments issued by subsidiaries subject to phase out arrangements	1,607		28
50 Collective impairment allowances and regulatory reserve for general banking risks eligible for inclusion in Tier 2 capital	14,040		4+39
51 Tier 2 capital before regulatory deductions	53,085		
Tier 2 capital: regulatory deductions			
52 Investments in own Tier 2 capital instruments	–	–	
53 Reciprocal cross-holdings in Tier 2 capital instruments	–	–	
54 Insignificant capital investments in Tier 2 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation (amount above 10% threshold)	–	–	
55 Significant capital investments in Tier 2 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	3,172	–	8
56 National specific regulatory adjustments applied to Tier 2 capital	(192)		
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	(26,079)		(32+35+40)x45%
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	25,887		
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	25,887		45
57 Total regulatory deductions to Tier 2 capital	2,980		
58 Tier 2 capital	50,105		
59 Total capital (Total capital = Tier 1 + Tier 2)	468,863		
60 Total risk-weighted assets	2,519,407		
Capital ratios (as a percentage of risk-weighted assets)			
61 CET1 capital ratio	15.63%		
62 Tier 1 capital ratio	16.62%		
63 Total capital ratio	18.61%		
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)	4.50%		
65 – of which: capital conservation buffer requirement	0.00%		
66 – of which: bank specific countercyclical buffer requirement	0.00%		
67 – of which: G-SIB or D-SIB buffer requirement	0.00%		
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	10.61%		
National minima (if different from Basel 3 minimum)			
69 National CET1 minimum ratio	Not applicable		
70 National Tier 1 minimum ratio	Not applicable		
71 National Total capital minimum ratio	Not applicable		
Amounts below the thresholds for deduction (before risk weighting)			
72 Insignificant capital investments in CET1 capital instruments, AT1 capital instruments and Tier 2 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	10,178		
73 Significant capital investments in CET1 capital instruments issued by financial sector entities that are outside the scope of regulatory consolidation	43,334		
74 Mortgage servicing rights (net of related tax liability)	Not applicable		

Table 47: The group's regulatory capital (continued)

	At 31 Dec 2015		Cross-reference to **
	Component of regulatory capital	Amounts subject to pre-Basel III treatment*	
	HK\$m	HK\$m	
75 Deferred tax assets arising from temporary differences (net of related tax liability)	Not applicable		
Applicable caps on the inclusion of provisions in Tier 2 capital			
76 Provisions eligible for inclusion in Tier 2 in respect of exposures subject to the basic approach and the standardised (credit risk) approach (prior to application of cap)	4,040		
77 Cap on inclusion of provisions in Tier 2 under the basic approach and the standardised (credit risk) approach	3,016		
78 Provision eligible for inclusion in Tier 2 in respect of exposures subject to the IRB approach (prior to application of cap)	19,493		
79 Cap for inclusion of provisions in Tier 2 under the IRB approach	11,024		
Capital instruments subject to phase-out arrangements			
80 Current cap on CET1 capital instruments subject to phase-out arrangements	Not applicable		
81 Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)	Not applicable		
82 Current cap on AT1 capital instruments subject to phase-out arrangements	36,099		
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	31,904		
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.

**Cross-referenced to Balance Sheet Reconciliation in Appendix IIb.

Table 47: The group's 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:

	At 31 Dec 2015	
	Hong Kong basis	Basel III basis
	HK\$m	HK\$m
10 Deferred tax assets net of deferred tax liabilities	1,863	49

Explanation

As set out in paragraphs 69 and 87 of the Basel III text issued by the Basel Committee (December 2010), Deferred Tax Assets ('DTAs') that rely on future profitability of the bank to be realised are to be deducted, whereas DTAs which relate to temporary differences may be given limited recognition in CET1 capital (and hence be excluded from deduction from CET1 capital up to the specified threshold). In Hong Kong, an AI is required to deduct all DTAs in full, irrespective of their origin, from CET1 capital. Therefore, the amount to be deducted as reported in row 10 may be greater than that required under Basel III.

The amount reported under the column 'Basel III basis' in this box represents the amount reported in row 10 (i.e. the amount reported under the 'Hong Kong basis') adjusted by reducing the amount of DTAs to be deducted which relate to temporary differences to the extent not in excess of the 10% threshold set for DTAs arising from temporary differences and the aggregate 15% threshold set for Mortgage Servicing Rights ('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.

	At 31 Dec 2015	
	Hong Kong basis	Basel III basis
	HK\$m	HK\$m
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)	91,298	89,690

Explanation

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.

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.

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.

Appendix II – Balance Sheet Reconciliation

The following tables together provide a reconciliation of the group's consolidated statement of financial position, as published in the *Annual Report and Accounts 2016*, to the Transition Disclosures Template in Appendix I of this document.

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

Table 48: Reconciliation of balance sheets – financial accounting to regulatory scope of consolidation

	At 31 Dec 2016		At 31 Dec 2015	
	Balance sheet in published financial statements	Under regulatory scope of consolidation	Balance sheet in published financial statements	Under regulatory scope of consolidation
	HK\$m	HK\$m	HK\$m	HK\$m
Assets				
Cash and sight balances at central banks	213,783	212,296	151,103	150,784
Items in the course of collection from other banks	21,401	21,401	25,020	25,020
Hong Kong Government certificates of indebtedness	242,194	242,194	220,184	220,184
Trading assets	371,634	355,754	302,626	302,119
Derivatives	479,807	480,420	380,955	381,092
Financial assets designated at fair value	106,016	403	99,095	911
Reverse repurchase agreements – non-trading	271,567	164,413	212,779	120,813
Placings with and advances to banks	463,211	449,806	421,221	408,269
Loans and advances to customers	2,834,114	2,830,421	2,762,290	2,757,787
Financial investments	1,835,351	1,530,100	1,716,046	1,444,795
Amounts due from Group companies	242,773	348,643	244,396	310,861
Investments in subsidiaries	–	15,784	–	15,714
Interests in associates and joint ventures	125,792	122,966	122,438	119,653
Goodwill and intangible assets	56,936	11,173	49,568	10,849
Property, plant and equipment	111,640	108,765	110,064	107,238
Deferred tax assets	1,503	1,462	1,836	1,792
Prepayments, accrued income and other assets	171,230	141,939	134,062	114,168
Total assets	7,548,952	7,037,940	6,953,683	6,492,049
Liabilities				
Hong Kong currency notes in circulation	242,194	242,194	220,184	220,184
Items in the course of transmission to other banks	37,753	37,753	30,753	30,753
Repurchase agreements – non-trading	27,810	27,810	16,158	16,158
Deposits by banks	192,479	192,295	148,294	147,620
Customer accounts	4,900,004	4,886,500	4,640,076	4,627,328
Trading liabilities	188,470	188,372	191,851	191,487
Derivatives	462,458	462,638	369,419	369,974
Financial liabilities designated at fair value	51,116	14,814	50,770	14,722
Debt securities in issue	25,235	25,235	40,859	40,859
Retirement benefit liabilities	3,867	3,867	5,809	5,809
Amounts due to Group companies	198,038	201,046	110,073	108,322
Accruals and deferred income, Other liabilities and provisions	99,487	95,426	86,920	83,297
Liabilities under insurance contracts	386,170	–	340,820	–
Current tax liabilities	1,619	1,472	2,456	2,010
Deferred tax liabilities	21,401	14,248	18,799	12,835
Subordinated liabilities	4,836	4,836	8,003	8,003
Preference shares	26,879	26,779	36,553	36,451
Total liabilities	6,869,816	6,425,285	6,317,797	5,915,812
Equity				
Share capital	114,359	114,359	96,052	96,052
Other equity instruments	14,737	14,737	14,737	14,737
Other reserves	85,886	84,350	93,031	91,906
Retained profits	413,024	354,521	380,381	327,574
Total shareholders' equity	628,006	567,967	584,201	530,269
Non-controlling interests	51,130	44,688	51,685	45,968
Total equity	679,136	612,655	635,886	576,237
Total equity and liabilities	7,548,952	7,037,940	6,953,683	6,492,049

The following table expands the balance sheet under the regulatory scope of consolidation to show separately the capital components that are reported in the Transition Disclosures Template in Appendix I. The capital components in this table contain a reference that shows how these amounts are included in the Transition Disclosures Template in Appendix I.

Table 49: Detailed reconciliation of balance sheets – financial accounting to regulatory scope of consolidation statements

	At 31 December 2016		Cross-referenced to Definition of Capital Components
	Balance sheet in published financial statements	Under regulatory scope of consolidation	
	HK\$m	HK\$m	
Assets			
Cash and sight balances at central banks	213,783	212,296	
Items in the course of collection from other banks	21,401	21,401	
Hong Kong Government certificates of indebtedness	242,194	242,194	
Trading assets	371,634	355,754	
– of which: significant capital investments in financial sector entities exceeding 10% threshold		12	1
Derivatives	479,807	480,420	
Financial assets designated at fair value	106,016	403	
Reverse repurchase agreements – non-trading	271,567	164,413	
Placings with and advances to banks	463,211	449,806	
Loans and advances to customers	2,834,114	2,830,421	
– of which: impairment allowances eligible for inclusion in Tier 2 capital		2,058	2
Financial investments	1,835,351	1,530,100	
– of which: significant capital investments in financial sector entities exceeding 10% threshold		2,103	3
Amounts due from Group companies	242,773	348,643	
– of which: significant capital investments in financial sector entities exceeding 10% threshold		1,821	4
– significant capital investments in financial sector entities		3,773	5
Investments in subsidiaries	–	15,784	
– of which: significant capital investments in financial sector entities exceeding 10% threshold		15,784	6
Interests in associates and joint ventures	125,792	122,966	
– of which: goodwill		3,681	7
– intangible assets		43	8
– significant capital investments in financial sector entities exceeding 10% threshold		72,071	9
Goodwill and intangible assets	56,936	11,173	
– of which: goodwill		5,024	10
– intangible assets		6,149	11
Property, plant and equipment	111,640	108,765	
Deferred tax assets	1,503	1,462	
– of which: deferred tax assets net of related tax liabilities		1,566	12
– deferred tax liabilities related to goodwill		(104)	13
Prepayments, accrued income and other assets	171,230	141,939	
– of which: defined benefit pension fund net assets		70	14
– significant capital investments in financial sector entities exceeding 10% threshold		270	15
Total assets	7,548,952	7,037,940	

Table 49: Detailed reconciliation of balance sheets – financial accounting to regulatory scope of consolidation statements (continued)

	At 31 Dec 2016		Cross-referenced to Definition of Capital components
	Balance sheet in published financial statements HK\$m	Under regulatory scope of consolidation HK\$m	
Liabilities			
Hong Kong currency notes in circulation	242,194	242,194	
Items in the course of transmission to other banks	37,753	37,753	
Repurchase agreements – non-trading	27,810	27,810	
Deposits by banks	192,479	192,295	
Customer accounts	4,900,004	4,886,500	
Trading liabilities	188,470	188,372	
– of which: gains and losses due to changes in own credit risk on fair valued liabilities		193	16
Derivatives	462,458	462,638	
– of which: gains and losses due to changes in own credit risk on fair valued liabilities		907	17
Financial liabilities designated at fair value	51,116	14,814	
– of which: gains and losses due to changes in own credit risk on fair valued liabilities		31	18
Debt securities in issue	25,235	25,235	
Retirement benefit liabilities	3,867	3,867	
Amounts due to Group companies	198,038	201,046	
– of which: qualifying Tier 2 capital instruments		20,010	19
gains and losses due to changes in own credit risk on fair valued liabilities		64	20
Accruals and deferred income, other liabilities and provisions	99,487	95,426	
Liabilities under insurance contracts	386,170	–	
Current tax liabilities	1,619	1,472	
Deferred tax liabilities	21,401	14,248	
– of which: deferred tax liabilities related to goodwill		(19)	21
deferred tax liabilities related to intangibles		(745)	22
deferred tax liabilities related to defined benefit pension fund net assets		(8)	23
Subordinated liabilities	4,836	4,836	
– of which: portion eligible for Tier 2 capital instruments, subject to phase-out arrangements		3,102	24
portion eligible for Tier 2 capital instruments issued by subsidiaries, subject to phase-out arrangements		1,462	25
Preference shares	26,879	26,779	
– of which: portion eligible for AT1 capital instruments, subject to phase-out arrangements		25,228	26
portion eligible for Tier 2 capital instruments, subject to phase-out arrangements		1,551	27
Total liabilities	6,869,816	6,425,285	
Equity			
Share capital	114,359	114,359	
– of which: portion eligible for inclusion in CET1 capital		112,905	28
revaluation reserve capitalisation issue		1,454	29
Other equity instruments	14,737	14,737	
– of which: qualifying AT1 capital instruments		14,737	30
Other reserves	85,886	84,350	31
– of which: fair value gains arising from revaluation of land and buildings		53,764	32
cash flow hedging reserves		(222)	33
valuation adjustment		843	34
Retained profits	413,024	354,521	35
– of which: regulatory reserve for general banking risks		25,931	36
regulatory reserve eligible for inclusion in Tier 2 capital		12,523	37
fair value gains arising from revaluation of land and buildings		4,404	38
valuation adjustment		1,177	39
Total shareholders' equity	628,006	567,967	
Non-controlling interests	51,130	44,688	
– of which: portion allowable in CET1 capital		22,676	40
portion allowable in AT1 capital		1,398	41
portion in AT1 capital, subject to phase-out arrangements		6,534	42
Total equity	679,136	612,655	
Total equity and liabilities	7,548,952	7,037,940	

Table 49: Detailed reconciliation of balance sheets – financial accounting to regulatory scope of consolidation statements (continued)

	At 31 December 2015		Cross-referenced to Definition of Capital Components
	Balance sheet in published financial statements	Under regulatory scope of consolidation	
	HK\$m	HK\$m	
Assets			
Cash and sight balances at central banks	151,103	150,784	
Items in the course of collection from other banks	25,020	25,020	
Hong Kong Government certificates of indebtedness	220,184	220,184	
Trading assets	302,626	302,119	
– of which: valuation adjustments		248	1
Derivatives	380,955	381,092	
– of which: valuation adjustments		843	2
Financial assets designated at fair value	99,095	911	
– of which: valuation adjustments		1	3
Reverse repurchase agreements – non-trading	212,779	120,813	
Placings with and advances to banks	421,221	408,269	
Loans and advances to customers	2,762,290	2,757,787	
– of which: impairment allowances eligible for inclusion in Tier 2 capital		1,810	4
Financial investments	1,716,046	1,444,795	
– of which: significant capital investments in financial sector entities exceeding 10% threshold		1,406	5
valuation adjustments		753	6
Amounts due from Group companies	244,396	310,861	
– of which: significant capital investments in financial sector entities exceeding 10% threshold		1,608	7
significant capital investments in financial sector entities		3,172	8
Investments in subsidiaries	–	15,714	
– of which: significant capital investment in financial sector entities exceeding 10% threshold		15,714	9
Interests in associates and joint ventures	122,438	119,653	
– of which: goodwill		3,934	10
intangible assets		92	11
significant capital investments in financial sector entities exceeding 10% threshold		72,293	12
Goodwill and intangible assets	49,568	10,849	
– of which: goodwill		4,949	13
intangible assets		5,900	14
Property, plant and equipment	110,064	107,238	
Deferred tax assets	1,836	1,792	
– of which: deferred tax assets net of related tax liabilities		1,863	15
deferred tax liabilities related to goodwill		(71)	16
Prepayments, accrued income and other assets	134,062	114,168	
– of which: defined benefit pension fund net assets		48	17
significant capital investments in financial sector entities exceeding 10% threshold		277	18
Total assets	6,953,683	6,492,049	

Table 49: Detailed reconciliation of balance sheets – financial accounting to regulatory scope of consolidation statements (continued)

	At 31 December 2015		Cross-referenced to Definition of Capital Components
	Balance sheet in published financial statements	Under regulatory scope of consolidation	
	HK\$m	HK\$m	
Liabilities			
Hong Kong currency notes in circulation	220,184	220,184	
Items in the course of transmission to other banks	30,753	30,753	
Repurchase agreements – non-trading	16,158	16,158	
Deposits by banks	148,294	147,620	
Customer accounts	4,640,076	4,627,328	
Trading liabilities	191,851	191,487	
– of which: gains and losses due to changes in own credit risk on fair valued liabilities		133	19
Derivatives	369,419	369,974	
– of which: gains and losses due to changes in own credit risk on fair valued liabilities		794	20
Financial liabilities designated at fair value	50,770	14,722	
– of which: gains and losses due to changes in own credit risk on fair valued liabilities		(49)	21
Debt securities in issue	40,859	40,859	
Retirement benefit liabilities	5,809	5,809	
Amounts due to Group companies	110,073	108,322	
– of which: qualifying Tier 2 capital instruments		19,996	22
gains and losses due to changes in own credit risk on fair valued liabilities		62	23
Accruals and deferred income, other liabilities and provisions	86,920	83,297	
Liabilities under insurance contracts	340,820	–	
Current tax liabilities	2,456	2,010	
Deferred tax liabilities	18,799	12,835	
– of which: deferred tax liabilities related to goodwill		(24)	24
deferred tax liabilities related to intangibles		(748)	25
deferred tax liabilities related to defined benefit pension fund net assets		(8)	26
Subordinated liabilities	8,003	8,003	
– of which: portion eligible for Tier 2 capital instruments, subject to phase-out arrangements		6,204	27
portion eligible for Tier 2 capital instruments issued by subsidiaries, subject to phase-out arrangements		1,607	28
Preference shares	36,553	36,451	
– of which: portion eligible for AT1 capital instruments, subject to phase-out arrangements		25,213	29
portion eligible for Tier 2 capital instruments, subject to phase-out arrangements		11,238	30
Total liabilities	6,317,797	5,915,812	
Equity			
Share capital	96,052	96,052	
– of which: portion eligible for inclusion in CET1 capital		94,598	31
revaluation reserve capitalisation issue		1,454	32
Other equity instruments	14,737	14,737	
– of which: qualifying AT1 capital instruments		14,737	33
Other reserves	93,031	91,906	34
– of which: fair value gains arising from revaluation of land and buildings		52,098	35
cash flow hedging reserves		51	36
Retained profits	380,381	327,574	37
– of which: regulatory reserve for general banking risks		27,819	38
regulatory reserve eligible for inclusion in Tier 2 capital		12,230	39
fair value gains arising from revaluation of land and buildings		4,399	40
Total shareholders' equity	584,201	530,269	
Non-controlling interests	51,685	45,968	
– of which: portion allowable in CET1 capital		22,352	41
portion allowable in AT1 capital		1,382	42
portion in AT1 capital, subject to phase-out arrangements		9,494	43
Total equity	635,886	576,237	
Total equity and liabilities	6,953,683	6,492,049	

Appendix III – Liquidity Coverage Ratio Standard Disclosure Template

The number of data points used in calculating the average value of the Liquidity Coverage Ratio ('LCR') and related components, as set out in the following table for the quarters ending on 31 December 2016, 30 September 2016, 30 June 2016, 31 March 2016, 31 December 2015, 30 September 2015, 30 June 2015 and 31 March 2015, was three.

Table 50: Liquidity coverage ratio

	Quarter ended 31 Dec 2016		Quarter ended 30 Sept 2016		Quarter ended 30 June 2016		Quarter ended 31 March 2016	
	Unweighted amount (Average value) HK\$m	Weighted amount (Average value) HK\$m	Unweighted amount (Average value) HK\$m	Weighted amount (Average value) HK\$m	Unweighted amount (Average value) HK\$m	Weighted amount (Average value) HK\$m	Unweighted amount (Average value) HK\$m	Weighted amount (Average value) HK\$m
A High quality liquid assets								
1 Total high quality liquid assets ('HQLA')		1,650,922		1,610,636		1,587,029		1,572,652
B Cash outflows								
2 Retail deposits and small business funding:	3,031,004	279,518	3,019,984	281,028	2,947,988	275,229	2,895,024	265,813
– of which:								
3 <i>stable retail deposits and stable small business funding</i>	471,661	23,583	419,414	20,971	391,387	19,569	471,677	23,584
4 <i>less stable retail deposits and less stable small business funding</i>	2,559,343	255,935	2,600,570	260,057	2,556,601	255,660	2,421,235	242,123
5 <i>retail term deposits and small business term funding</i>	–	–	–	–	–	–	2,112	106
6 Unsecured wholesale funding (other than small business funding) and debt securities and prescribed instruments issued by the institution	2,042,190	1,075,776	2,002,865	1,038,333	2,023,810	1,062,190	2,030,154	1,099,889
– of which:								
7 <i>operational deposits</i>	540,661	130,820	573,263	138,245	615,082	148,272	518,636	125,788
8 <i>unsecured wholesale funding (other than small business funding) not covered in Row 7</i>	1,499,711	943,138	1,426,932	897,418	1,405,622	910,812	1,508,571	971,154
9 <i>debt securities and prescribed instruments issued by the institution and redeemable within the LCR period</i>	1,818	1,818	2,670	2,670	3,106	3,106	2,947	2,947
10 Secured funding transactions (including securities swap transactions)		6,868		9,983		9,941		11,710
11 Additional requirements	427,863	152,774	408,444	144,294	452,677	149,038	413,168	147,811
– of which:								
12 <i>cash outflows arising from derivative contracts and other transactions, and additional liquidity needs arising from related collateral requirements</i>	109,955	108,490	103,289	103,289	98,864	98,864	101,689	101,579
13 <i>cash outflows arising from obligations under structured financing transactions and repayment of funding obtained from such transactions</i>	675	675	492	492	688	688	634	634
14 <i>potential drawdown of undrawn committed facilities (including committed credit facilities and committed liquidity facilities)</i>	317,233	43,609	304,663	40,513	353,125	49,486	310,845	45,598
15 Contractual lending obligations (not otherwise covered in Section B) and other contractual cash outflows	131,615	131,615	119,529	119,529	109,736	109,736	119,453	119,453
16 Other contingent funding obligations (whether contractual or non-contractual)	2,131,137	13,151	2,212,195	14,477	2,220,047	14,673	2,148,392	13,589
17 Total cash outflows		1,659,702		1,607,644		1,620,807		1,658,265
C Cash inflows								
18 Secured lending transactions (including securities swap transactions)	397,328	119,370	389,233	102,724	342,790	95,844	200,011	69,129
19 Secured and unsecured loans (other than secured lending transactions covered in Row 18) and operational deposits placed at other financial institutions	775,922	503,954	785,737	514,251	849,167	560,315	901,254	606,525
20 Other cash inflows	167,537	143,063	164,780	140,351	171,168	144,647	163,711	137,869
21 Total cash inflows	1,340,787	766,387	1,339,750	757,326	1,363,125	800,806	1,264,976	813,523

Table 50: Liquidity coverage ratio (continued)

	Quarter ended 31 Dec 2016		Quarter ended 30 Sept 2016		Quarter ended 30 June 2016		Quarter ended 31 March 2016	
	Unweighted amount (Average value)	Weighted amount (Average value)	Unweighted amount (Average value)	Weighted amount (Average value)	Unweighted amount (Average value)	Weighted amount (Average value)	Unweighted amount (Average value)	Weighted amount (Average value)
	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
D Liquidity coverage ratio (Adjusted value)								
22 Total HQLA		1,650,922		1,610,636		1,587,029		1,572,652
23 Total net cash outflows		893,315		850,318		820,001		844,742
24 LCR (%)		184.9%		189.6%		193.6%		186.6%

Table 50: Liquidity coverage ratio (continued)

	Quarter ended 31 Dec 2015		Quarter ended 30 Sept 2015		Quarter ended 30 June 2015		Quarter ended 31 March 2015	
	Unweighted amount (Average value)	Weighted amount (Average value)	Unweighted amount (Average value)	Weighted amount (Average value)	Unweighted amount (Average value)	Weighted amount (Average value)	Unweighted amount (Average value)	Weighted amount (Average value)
	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m	HK\$m
A High quality liquid assets								
1 Total high quality liquid assets ('HQLA')		1,507,643		1,462,890		1,417,970		1,367,500
B Cash outflows								
2 Retail deposits and small business funding:	2,838,733	267,643	2,787,703	266,697	2,845,943	274,376	2,738,847	262,591
– of which:								
3 <i>stable retail deposits and stable small business funding</i>	319,140	15,957	224,949	11,247	186,685	9,334	188,439	9,422
4 <i>less stable retail deposits and less stable small business funding</i>	2,514,124	251,412	2,546,250	254,625	2,641,575	264,158	2,512,969	251,297
5 <i>retail term deposits and small business term funding</i>	5,469	274	16,504	825	17,683	884	37,438	1,872
6 Unsecured wholesale funding (other than small business funding) and debt securities and prescribed instruments issued by the institution	2,071,665	1,252,511	2,118,180	1,338,394	2,144,246	1,389,353	2,090,592	1,368,151
– of which:								
7 <i>operational deposits</i>	132,202	33,001	–	–	–	–	–	–
8 <i>unsecured wholesale funding (other than small business funding) not covered in Row 7</i>	1,935,196	1,215,243	2,112,498	1,332,712	2,138,244	1,383,351	2,087,796	1,365,355
9 <i>debt securities and prescribed instruments issued by the institution and redeemable within the LCR period</i>	4,267	4,267	5,682	5,682	6,002	6,002	2,796	2,796
10 Secured funding transactions (including securities swap transactions)		5,351		1,401		934		1,016
11 Additional requirements	331,053	121,232	315,777	138,008	379,541	187,961	434,596	238,768
– of which:								
12 <i>cash outflows arising from derivative contracts and other transactions, and additional liquidity needs arising from related collateral requirements</i>	78,218	77,085	100,310	100,310	142,252	141,279	182,109	181,048
13 <i>cash outflows arising from obligations under structured financing transactions and repayment of funding obtained from such transactions</i>	118	118	–	–	–	–	–	–
14 <i>potential drawdown of undrawn committed facilities (including committed credit facilities and committed liquidity facilities)</i>	252,717	44,029	215,467	37,698	237,289	46,682	252,487	57,720
15 Contractual lending obligations (not otherwise covered in Section B) and other contractual cash outflows	89,584	89,584	89,329	89,329	84,818	84,818	90,480	90,480
16 Other contingent funding obligations (whether contractual or non-contractual)	2,085,329	12,642	1,957,862	11,727	1,862,982	12,281	1,738,986	11,969
17 Total cash outflows		1,748,963		1,845,556		1,949,723		1,972,975
C Cash inflows								
18 Secured lending transactions (including securities swap transactions)	170,270	68,945	180,424	82,565	193,750	75,485	204,074	82,273
19 Secured and unsecured loans (other than secured lending transactions covered in Row 18) and operational deposits placed at other financial institutions	901,886	609,516	975,986	682,747	972,860	687,761	951,911	661,789
20 Other cash inflows	156,984	127,302	180,686	146,649	215,408	191,143	255,051	233,587
21 Total cash inflows	1,229,140	805,763	1,337,096	911,961	1,382,018	954,389	1,411,036	977,649
D Liquidity coverage ratio (Adjusted value)								
22 Total HQLA		1,507,643		1,462,890		1,417,970		1,367,500
23 Total net cash outflows		943,200		933,595		995,334		995,326
24 LCR (%)		159.8%		156.7%		142.5%		137.4%

Appendix IV – Leverage Ratio Common Disclosure Templates

Table 51: Leverage Ratio Common Disclosure Template

	Leverage ratio framework	
	31 Dec 2016 HK\$m	31 Dec 2015 HK\$m
On-balance sheet exposures		
1 On-balance sheet items (excluding derivatives and SFTs, but including collateral)	5,836,357	5,536,520
2 Less: Asset amounts deducted in determining Basel III Tier 1 capital (reported as negative amounts)	(177,736)	(169,012)
3 Total on-balance sheet exposures (excluding derivatives and SFTs) (sum of lines 1 and 2)	5,658,621	5,367,508
Derivative exposures		
4 Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	105,139	91,620
5 Add-on amounts for PFE associated with all derivatives transactions	255,023	219,161
6 Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the operative accounting framework	–	–
7 Less: Deductions of receivables assets for cash variation margin provided in derivatives transactions (reported as negative amounts)	–	–
8 Less: Exempted CCP leg of client-cleared trade exposures (reported as negative amounts)	(1,851)	(1,008)
9 Adjusted effective notional amount of written credit derivatives	233,308	211,123
10 Less: Adjusted effective notional offsets and add-on deductions for written credit derivatives (reported as negative amounts)	(219,221)	(193,992)
11 Total derivative exposures (sum of lines 4 to 10)	372,398	326,904
Securities financing transaction exposures		
12 Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	459,604	334,395
13 Less: Netted amounts of cash payables and cash receivables of gross SFT assets (reported as negative amounts)	–	–
14 CCR exposure for SFT assets	13,308	4,731
15 Agent transaction exposures	–	–
16 Total securities financing transaction exposures (sum of lines 12 to 15)	472,912	339,126
Other off-balance sheet exposures		
17 Off-balance sheet exposures at gross notional amount	2,582,005	2,426,025
18 Less: Adjustments for conversion to credit equivalent amounts (reported as negative amounts)	(2,067,890)	(1,944,945)
19 Off-balance sheet items (sum of lines 17 and 18)	514,115	481,080
Capital and total exposures		
20 Tier 1 capital	444,872	418,758
21 Total exposures (sum of lines 3, 11, 16 and 19)	7,018,046	6,514,618
Leverage ratios		
22 Basel III leverage ratio	6.34%	6.43%

Table 52: Leverage Ratio Summary Comparison Table

	Leverage ratio framework	
	31 Dec 2016 HK\$m	31 Dec 2015 HK\$m
1 Total consolidated assets as per published financial statements	7,548,952	6,953,683
2 Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	(511,012)	(461,634)
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	(108,022)	(54,188)
5 Adjustments for securities financing transactions (i.e. repos and similar secured lending)	13,308	4,731
6 Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	514,115	481,080
7 Other adjustments	(439,295)	(409,054)
8 Leverage ratio exposure	7,018,046	6,514,618

Other adjustments mainly represent the Hong Kong Government certificates of indebtedness and assets deducted in determining Basel III Tier 1 capital. These are excluded for deriving the Leverage ratio exposure in accordance with the Leverage Ratio Framework issued by the HKMA.

Appendix V – Countercyclical Capital Buffer Ratio Standard Disclosure Template

The issuance of the Basel III regulatory capital standards by the Basel Committee provide for the implementation of a CCyB beginning on 1 January 2016. The Hong Kong Monetary Authority ('HKMA') set out the CCyB requirement in Part1B Division 4 in the Banking (Capital) Rules and Section 24B and 45B in the Banking (Disclosures) Rules accordingly.

At 31 December 2016, the applicable jurisdictional ('J') CCyB rate in force in Hong Kong was 0.625%, as set by the HKMA. For the rest of the jurisdictions in which the Bank had private sector credit exposures, the applicable JCCyB rates were either at 0% or there was not yet an announcement being made by the corresponding regulators.

CCyB is calculated as the weighted average of the applicable CCyB rates in effect in the jurisdictions to which banks have a private sector credit exposure. The group uses booking country as the basis of geographical allocation for credit risk and risk country for market risk, which is defined by considering the country of incorporation, location of guarantor, headquarter domicile, distribution of revenue and booking country.

Table 53: Countercyclical Capital Buffer Ratio

Jurisdiction	At 31 Dec 2016			
	Applicable JCCyB rates in effect	Total RWA used in computation of CCyB ratio	CCyB ratio	CCyB amount
	%	HK\$m	%	HK\$m
1 Hong Kong SAR	0.625	999,947		
2 Mainland China	—	227,262		
3 Australia	—	78,456		
4 Bahamas	—	23		
5 Bangladesh	—	13,173		
6 Belgium	—	1		
7 Bermuda	—	45		
8 Brazil	—	1		
9 Brunei	—	2,885		
10 Canada	—	34		
11 Cayman Islands	—	941		
12 Chinese Taipei	—	32,448		
13 France	—	99		
14 Germany	—	60		
15 India	—	77,987		
16 Indonesia	—	49,871		
17 Japan	—	15,503		
18 Macau SAR	—	20,164		
19 Malaysia	—	66,777		
20 Maldives	—	1,198		
21 Mauritius	—	9,406		
22 Mongolia	—	148		
23 Netherlands	—	161		
24 New Zealand	—	8,667		
25 Philippines	—	9,947		
26 Singapore	—	90,367		
27 South Korea	—	18,811		
28 Sri Lanka	—	13,493		
29 Switzerland	—	8		
30 Thailand	—	13,190		
31 United Kingdom	—	732		
32 United States	—	260		
33 Vietnam	—	12,970		
Total		1,765,035	0.35	6,250

Appendix VI – Capital Instruments

The following is a summary of the group's common equity tier 1 ('CET1') capital, additional tier 1 ('AT1') capital and tier 2 capital instruments.

Table 54: Capital instruments

	At 31 Dec 2016	
	Issued/Par value	Amount recognised in regulatory capital HK\$m
CET1 capital instruments		
Ordinary shares:		
45,743,491,798 issued and fully paid ordinary shares	HK\$114,359m	112,905
AT1 capital instruments		
Floating rate perpetual subordinated loans, callable from 2019	US\$1,900m	14,737
Perpetual non-cumulative preference shares	US\$3,253m	25,228
Tier 2 capital instruments		
Perpetual cumulative preference shares	US\$200m	1,551
Primary capital undated floating rate notes	US\$400m	3,102
Subordinated loan due 2022	US\$300m	2,327
Subordinated loan due 2023	US\$500m	3,878
Subordinated loan due 2024, callable from 2019	US\$1,600m	12,409
Subordinated loan due 2025, callable from 2020	US\$180m	1,396
Fixed rate (4.35%) subordinated bonds due 2022, callable from 2017	MYR500m	729
Fixed rate (5.05%) subordinated bonds due 2027, callable from 2022	MYR500m	733
		21,472
	At 31 Dec 2015	
CET1 capital instruments		
Ordinary shares:		
38,420,982,901 issued and fully paid ordinary shares	HK\$96,052m	94,598
AT1 capital instruments		
Floating rate perpetual subordinated loans, callable from 2019	US\$1,900m	14,737
Perpetual non-cumulative preference shares	US\$3,253m	25,213
Tier 2 capital instruments		
Perpetual cumulative preference shares	US\$400m	3,100
Cumulative preference shares due 2024	US\$1,050m	8,138
Primary capital undated floating rate notes	US\$800m	6,204
Subordinated loan due 2022	US\$300m	2,325
Subordinated loan due 2023	US\$500m	3,875
Subordinated loan due 2024, callable from 2019	US\$1,600m	12,401
Subordinated loan due 2025, callable from 2020	US\$180m	1,395
Fixed rate (4.35%) subordinated bonds due 2022, callable from 2017	MYR500m	801
Fixed rate (5.05%) subordinated bonds due 2027, callable from 2022	MYR500m	806
		21,603

A description of the main features, and the full terms and conditions of the group's capital instruments can be found in the Regulatory Disclosures section of our website, www.hsbc.com.hk.

