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1. Capital charge for credit, market and operational risks

The bases of regulatory capital calculation for credit risk, market risk and operational risk are described in Note 4.5 to the Financial Statements in this Annual Report.

As a result of the change in the bases of regulatory capital calculation, the amounts shown below are not directly comparable.

The financial information contained in these supplementary notes has been prepared on a consolidated basis that comprises the positions of BOCHK and certain subsidiaries specified by the HKMA for its regulatory purposes and in accordance with the Banking (Capital) Rules. Subsidiaries that are not included in the consolidation for regulatory purposes in respect of calculation of capital adequacy ratio are denoted in "Appendix – Subsidiaries of the Company" on pages 261 to 264.

The table below summarises the capital requirements and capital charge calculated by applying 8% on the risk-weighted amounts, computed on the same consolidation basis for credit, market, and operational risks.

	2012 **HK$'m**	2011 HK$'m
Credit risk	**56,343**	46,341
Market risk	**906**	1,625
Operational risk	**4,421**	4,065
	61,670	52,031

For detail of capital management and capital adequacy ratio of the Group, please refer to Note 4.5 to the Financial Statements in this Annual Report.

2. Capital requirements for credit risk

The table below shows the capital requirements for credit risk for each class and subclass of exposures as specified in the Banking (Capital) Rules.

	2012 HK$'m	2011 HK$'m
Capital required for exposures under the IRB approach		
Corporate		
Specialised lending under supervisory slotting criteria approach		
– Project finance	**115**	223
Small-and-medium sized corporate	**3,726**	3,625
Other corporates	**31,896**	24,054
Bank		
Banks	**9,180**	9,913
Securities firms	**7**	7
Retail		
Residential mortgages		
– Individuals	**674**	702
– Property-holding shell companies	**42**	46
Qualifying revolving retail	**836**	779
Small business retail	**79**	86
Other retail to individuals	**403**	409
Others		
Cash items	**–**	–
Other items	**5,879**	4,870
Securitisation	**12**	22
Total capital requirements for exposures under the IRB approach	**52,849**	44,736
Capital required for exposures under the standardised (credit risk) approach		
On-balance sheet exposures		
Sovereigns	**1,333**	94
Public sector entities	**43**	36
Multilateral development banks	**–**	–
Banks	**6**	3
Securities firms	**–**	–
Corporate	**1,156**	779
Regulatory retail	**379**	271
Residential mortgage loans	**231**	173
Other exposures which are not past due	**105**	76
Past due exposures	**3**	2
Off-balance sheet exposures		
Off-balance sheet exposures other than OTC derivative transactions and credit derivative contracts	**231**	162
OTC derivative transactions	**7**	9
Securitisation	**–**	–
Total capital requirements for exposures under the standardised (credit risk) approach	**3,494**	1,605
Total capital requirements for credit risk exposures	**56,343**	46,341

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3. Credit risk under the internal ratings-based approach

3.1 The internal rating systems and risk components

The Group adopts the foundation internal ratings-based ("FIRB") approach to calculate the regulatory capital requirements for most of the corporate and bank exposures, and adopts the supervisory slotting criteria approach to project finance exposures under "specialised lending". The Group adopts retail IRB approach for retail exposures to individuals and small business. The following is the table showing the Group's different capital calculation approaches to each asset class and sub-classes of exposures.

Asset class	Exposure sub-class	Capital calculation approach
Corporate exposures	Specialised lending under supervisory slotting criteria approach (project finance)	Supervisory Slotting Criteria Approach
	Small-and-medium sized corporates	FIRB Approach
	Other corporates	FIRB Approach
Sovereign exposures	Sovereigns	Standardised (credit risk) Approach
	Sovereign foreign public sector entities	
	Multilateral development banks	
Bank exposures	Banks	FIRB Approach
	Securities firms	FIRB Approach
	Public sector entities (excluding sovereign foreign public sectors entities)	Standardised (credit risk) Approach
Retail exposures	Residential mortgages to individuals	Retail IRB Approach
	Residential mortgages to property-holding shell companies	
	Qualifying revolving retail	
	Small business retail	
	Other retail to individuals	
Equity exposures		Standardised (credit risk) Approach
Other exposures	Cash items	Specific Risk-weight Approach
	Other items	

3. Credit risk under the internal ratings-based approach (continued)

3.1 The internal rating systems and risk components (continued)

(A) The structure of internal rating systems and the relationship between internal ratings and external ratings

The Group's internal rating system is a two dimensional rating system that provides separate assessment of borrower and transaction characteristics. For corporate and bank portfolios, the obligor rating dimension reflects exclusively the risk of borrower default and the facility rating dimension reflects transaction specific factors that affect the loss severity in the case of borrower default.

The Group developed statistical models to provide own estimated probability of default ("PD") for its corporate, bank and all retail borrowers, and loss given default ("LGD") and exposure at default ("EAD") for retail exposures under Retail IRB Approach.

The Group uses internal rating system to assess the borrower's likelihood of default for all IRB portfolios. PD estimates the risk of borrower default over a one-year period. A borrower credit grade means a grouping of similar credit-worthiness to which borrowers are assigned on the basis of specified and distinct set of rating criteria, from which the mid-point PD are derived for RWA calculation.

In the process of obligor rating assignment, variables of latest financial performance, management quality, industry risks and group connection of each obligor are assessed as critical factors to predict borrower's ability and willingness to meet with the contractual obligations under different economic conditions.

The borrowers for corporate and bank, and retail PD pools are assigned into eight broad obligor ratings including seven grades for non-defaulted obligors with sub-divisions into 26 minor credit grades and one for defaulted obligors. In the supervisory slotting criteria approach for the project finance exposures, there are four grades for non-defaulted borrowers and one for defaulted borrowers in accordance with the HKMA guidance. The estimates for retail IRB portfolios are pooled by nature of obligors, facility types, collateral types and delinquency status into PD, EAD and LGD pools. This pooling process provides the basis of accurate and consistent estimation for PD, LGD and EAD at the pool level for exposures arising from residential mortgages to both individuals and property-holding shell companies, qualifying revolving retail exposures and other retail exposures to individuals and small business retail exposures. All credit transactions for corporates and banks are assigned facility ratings (in terms of LGD) in accordance with the HKMA guidance. LGD estimates multiplied by the PD estimates produce the expected loss (EL) estimates, which are used to assess credit risk quantitatively.

3. Credit risk under the internal ratings-based approach (continued)

3.1 The internal rating systems and risk components (continued)

(A) The structure of internal rating systems and the relationship between internal ratings and external ratings (continued)

For each internal rating, the equivalent external rating in terms of default risk is as below:

Internal Credit Grades	Definition of Internal Ratings	Standard & Poor's Equivalent
1 2	The obligors in grades "1" and "2" have extremely low default risk. The obligor's capacity to meet its financial commitment on the obligation is extremely strong.	AAA AA+ AA AA-
3	The obligors in grade "3" have low default risk but are somewhat susceptible to the adverse effects of changes in circumstances and economic conditions. However, the obligor's capacity to meet its financial commitment on the obligation is very strong.	A+ A A-
4	The obligors in grade "4" have relatively low default risk and are currently under adequate protection. However, adverse economic conditions or changing circumstances are likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.	BBB+ BBB BBB-
5	The obligors in grade "5" have medium default risk which are less vulnerable to nonpayment than other speculative obligors. However, they face major ongoing uncertainties or exposure to adverse business, financial, or economic conditions which could lead to the obligor's inadequate capacity to meet its financial commitment on the obligation.	BB+ BB BB-
6	The obligors in grade "6" have high default risk and are vulnerable to nonpayment. The obligors currently have the capacity to meet its financial commitment on the obligation but adverse business, financial, or economic conditions will very likely impair the obligor's capacity or willingness to meet its financial commitment on the obligation.	B+ B B-
7	The obligors in grade "7" have very high default risk and are currently quite vulnerable to nonpayment. The obligors' ability to meet their financial commitment and obligation are dependent upon favorable business, financial, and economic conditions. In the event of adverse business, financial, or economic conditions, these obligors are not likely to have the capacity to meet its financial commitment on the obligation.	CCC CC C
8	Obligors rated "8" are in payment default.	D

3. Credit risk under the internal ratings-based approach (continued)

3.1 The internal rating systems and risk components (continued)

(B) Use of internal estimates

Besides using PD estimates for regulatory capital calculation in corporate and bank exposures, the Group further developed PD estimates for the sovereign exposures, together with the LGD and EAD estimates for corporate, bank and sovereign exposures developed in 2011 for the purpose of enhancing the use of internal rating estimates. From 2012 onwards, each of corporate, bank, and sovereign exposures is estimated by individual LGD and EAD based on the nature of the facility types, collateral types. The estimates of risk components derived from internal rating systems have been used in credit approval, credit monitoring, reporting and analysis of credit risk information, etc.

(C) Process of managing and recognising credit risk mitigation

For those collaterals recognised under capital management, the Group has well-defined policies and procedures for collateral valuation and management which are compliant with the operational requirements for recognised collateral of credit risk mitigation as stated in the Banking (Capital) Rules.

For the credit exposures adopting FIRB approach for capital calculation purpose, the recognised eligible guarantees include the guarantees provided by banks and securities firms with a lower risk weights than the counterparty; and corporates with internal credit ratings which are equivalent to external credit rating A- or above. The Group takes into account the credit risk mitigation effect of recognised collaterals through its determination of the net credit exposures and the effective LGD.

For retail IRB approach, the effect of the credit risk mitigation is incorporated into the internal risk parameters of PD or LGD depending on the nature of the guarantees and collaterals for calculating the risk exposures.

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

Up to the date of report, for capital calculation, the Group has not used any recognised credit derivative contracts, on- or off-balance sheet recognised netting for credit risk mitigation yet.

(D) The control mechanisms used for internal rating systems

The Group has established a comprehensive control mechanism to ensure the integrity, accuracy and consistency of the rating systems including the processes for using the risk components in the day-to-day business to assess credit risk.

All of IRB risk models are approved by the Risk Committee ("RC") of the Board on the recommendation of the Group's Basel II Steering Committee ("SC"). The SC supervises the use of these internal rating models for risk identification and assessments in the Group's credit decisions.

In order to achieve reasonably accurate risk ratings assignment, the Group has established a rating approval process which is independent of the sales and marketing units. Since internal rating is one of the key inputs to credit decision making, a control mechanism is put in place to ensure the integrity, accuracy and consistency of the rating assignment. For the wholesale (corporate and bank) portfolio, internal ratings are normally approved by credit officers who are functionally separated from the sales and marketing units. In some cases where the transactions are in small amount and of very low risk, the credit ratings can be assigned and approved by staff within the sales and marketing units, subject to post-approval review of ratings by Risk Management Department.

3. Credit risk under the internal ratings-based approach (continued)

3.1 The internal rating systems and risk components (continued)

(D) The control mechanisms used for internal rating systems (continued)

The rating assignment and risk quantification process of retail portfolio are highly automated. As an integral part of the daily credit assessment process, the accuracy and completeness of data input for automatic rating assignment are verified by units independent from business development function.

The obligor rating assignment is reviewed at least annually as required by the Group's credit risk policy. When credit events occur to the obligor, rating review is triggered promptly in accordance with the Group's credit risk policy.

Rating override is designed to allow the credit analyst to include any other relevant credit information that has not yet been captured in the rating process. For reasons of conservatism and prudential considerations, overrides are unlimited in terms of downgrades but more restricted for better grades (upgrades). All upgrades will be limited to a maximum of two sub-grades supported by a very narrowly pre-defined list of appropriate reasons. All overrides need to be signed off by a higher level of credit approval authority. The internal rating policy sets a trigger point of 10% overrides on rating cases. The use of overrides and override reasons are analysed as part of performance review on IRB rating models.

The performance of internal rating system is put under ongoing periodic monitoring. The senior management periodically reviews the performance and predictive ability of the internal rating system. The effectiveness of the internal rating system and processes are reviewed by independent control functions. The model maintenance unit conducts assessment on the discriminatory power, accuracy and stability of the rating systems while the validation unit performs comprehensive review of the internal rating system. Internal audit reviews the internal rating system and the operations of the related credit risk control units. The results of the review are reported to the Board and senior management regularly.

A model validation team which is independent from the model development unit and rating assignment units, conducts periodic model validations using both qualitative and quantitative analysis. Model acceptance standards are established to ensure the discriminatory power, accuracy and stability of the rating systems meet regulatory and management requirements. Review of a rating model will be triggered if the performance of the model deteriorates materially against pre-determined tolerance limits.

(E) Approach for determining provisions

The approach in determining provisions is in line with the Group's accounting policies. For details, please refer to Note 2.14 "Impairment of financial assets" to the Financial Statements in this Annual Report.

3. Credit risk under the internal ratings-based approach (continued)

3.2 Exposures by IRB calculation approach

The tables below show the Group's exposures other than securitisation exposures (including the EAD of on-balance sheet exposures and off-balance sheet exposures) by each IRB calculation approach.

	2012				
	Foundation IRB Approach HK$'m	**Supervisory Slotting Criteria Approach HK$'m**	**Retail IRB Approach HK$'m**	**Specific Risk-weight Approach HK$'m**	**Total exposures HK$'m**
Corporate	**640,927**	**1,391**	**–**	**–**	**642,318**
Bank	**429,712**	**–**	**–**	**–**	**429,712**
Retail					
Residential mortgages to individuals and property-holding shell companies	**–**	**–**	**209,677**	**–**	**209,677**
Qualifying revolving retail	**–**	**–**	**55,256**	**–**	**55,256**
Other retail to individuals and small business retail	**–**	**–**	**31,938**	**–**	**31,938**
Others	**–**	**–**	**–**	**163,857**	**163,857**
Total	**1,070,639**	**1,391**	**296,871**	**163,857**	**1,532,758**

	2011				
	Foundation IRB Approach HK$'m	Supervisory Slotting Criteria Approach HK$'m	Retail IRB Approach HK$'m	Specific Risk-weight Approach HK$'m	Total exposures HK$'m
Corporate	540,672	2,875	–	–	543,547
Bank	438,956	–	–	–	438,956
Retail					
Residential mortgages to individuals and property-holding shell companies	–	–	193,566	–	193,566
Qualifying revolving retail	–	–	50,856	–	50,856
Other retail to individuals and small business retail	–	–	30,899	–	30,899
Others	–	–	–	133,623	133,623
Total	979,628	2,875	275,321	133,623	1,391,447

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3. Credit risk under the internal ratings-based approach (continued)

3.3 Exposures subject to supervisory estimates under the IRB approach

By definition, amounts reported under the supervisory slotting criteria approach continue to be subject to supervisory estimates. The table below shows the total EAD of the Group's exposures subject to supervisory estimates under the use of IRB approach.

	2012 HK$'m	2011 HK$'m
Corporate	**642,318**	543,547
Bank	**429,712**	438,956
Others	**163,857**	133,623
	1,235,887	1,116,126

3.4 Exposures covered by credit risk mitigation used

(A) Exposures covered by recognised collateral

The table below shows the Group's exposures (after the effect of any on-balance sheet or off-balance sheet recognised netting) which are covered by recognised collateral after the application of haircuts required under the Banking (Capital) Rules. These exposures exclude OTC derivative transactions and repo-style transactions.

	2012 HK$'m	2011 HK$'m
Corporate	**97,907**	89,764
Bank	**440**	318
Others	**–**	–
	98,347	90,082

(B) Exposures covered by recognised guarantees

The table below shows the Group's exposures (after the effect of any on-balance sheet or off-balance sheet recognised netting) which are covered by recognised guarantees after the application of haircuts required under the Banking (Capital) Rules. These exposures exclude OTC derivative transactions and repo-style transactions.

	2012 HK$'m	2011 HK$'m
Corporate	**20,834**	18,660
Bank	**17,451**	20,360
Retail	**–**	–
Others	**–**	–
	38,285	39,020

3. Credit risk under the internal ratings-based approach (continued)

3.5 Risk assessment for corporate and bank exposures under IRB approach

The tables below detail the Group's total EAD of corporate and bank exposures by exposure-weighted average risk-weight and exposure-weighted average PD for each obligor grade as at 31 December.

The EAD and PD disclosed below in respect of corporate and bank exposures have taken into account the effect of recognised guarantees. No recognised netting was adopted by the Group.

For definition of each obligor grade, please refer to page 236.

(A) Corporate exposures (other than specialised lending under supervisory slotting criteria approach)

	2012		
Internal Credit Grades	**Exposure at default HK$'m**	**Exposure-weighted average risk-weight %**	**Exposure-weighted average PD %**
Grade 1	**–**	**–**	**–**
Grade 2	**22,607**	**16.14**	**0.04**
Grade 3	**163,693**	**24.50**	**0.07**
Grade 4	**152,425**	**45.17**	**0.25**
Grade 5	**199,136**	**84.56**	**1.20**
Grade 6	**100,041**	**133.52**	**5.59**
Grade 7	**1,272**	**220.60**	**26.72**
Grade 8/Default	**1,753**	**153.97**	**100.00**
	640,927		

	2011		
Internal Credit Grades	Exposure at default HK$'m	Exposure-weighted average risk-weight %	Exposure-weighted average PD %
Grade 1	–	–	–
Grade 2	17,031	15.25	0.03
Grade 3	145,987	24.55	0.07
Grade 4	128,251	43.87	0.25
Grade 5	183,532	82.03	1.23
Grade 6	62,308	118.60	5.34
Grade 7	2,982	205.70	21.13
Grade 8/Default	581	193.31	100.00
	540,672		

3. Credit risk under the internal ratings-based approach (continued)

3.5 Risk assessment for corporate and bank exposures under IRB approach (continued)

(B) Corporate exposures (specialised lending under supervisory slotting criteria approach)

Supervisory Rating Grades	2012 Exposure at default HK$'m	2012 Exposure-weighted average risk-weight %	2011 Exposure at default HK$'m	2011 Exposure-weighted average risk-weight %
Strong	**16**	**70.00**	243	70.00
Good	**953**	**90.00**	2,001	83.13
Satisfactory	**422**	**115.00**	577	115.00
Weak	**–**	**–**	54	250.00
Default	**–**	**–**	–	–
	1,391		2,875	

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

(C) Bank exposures

Internal Credit Grades	2012 Exposure at default HK$'m	2012 Exposure-weighted average risk-weight %	2012 Exposure-weighted average PD %
Grade 1	**–**	**–**	**–**
Grade 2	**41,148**	**16.89**	**0.04**
Grade 3	**314,401**	**22.34**	**0.06**
Grade 4	**72,441**	**41.53**	**0.20**
Grade 5	**1,711**	**62.29**	**0.56**
Grade 6	**11**	**53.36**	**5.02**
Grade 7	**–**	**–**	**–**
Grade 8/Default	**–**	**–**	**–**
	429,712		

3. Credit risk under the internal ratings-based approach (continued)

3.5 Risk assessment for corporate and bank exposures under IRB approach (continued)

(C) Bank exposures (continued)

	2011		
Internal Credit Grades	Exposure at default HK$'m	Exposure-weighted average risk-weight %	Exposure-weighted average PD %
Grade 1	–	–	–
Grade 2	56,964	16.54	0.04
Grade 3	296,602	23.87	0.07
Grade 4	81,028	41.91	0.20
Grade 5	4,348	64.55	0.75
Grade 6	14	23.68	7.46
Grade 7	–	–	–
Grade 8/Default	–	–	–
	438,956		

3.6 Risk assessment for retail exposures under IRB approach

The tables below show breakdown of retail exposures on a pool basis by expected loss percentage (EL%) range as at 31 December.

Residential mortgages

	2012 HK$'m	2011 HK$'m
Up to 1%	**208,576**	192,602
>1%	**969**	850
Default	**132**	114
	209,677	193,566

Qualifying revolving retail

	2012 HK$'m	2011 HK$'m
Up to 10%	**54,610**	50,218
>10%	**624**	620
Default	**22**	18
	55,256	50,856

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3. Credit risk under the internal ratings-based approach (continued)

3.6 Risk assessment for retail exposures under IRB approach (continued)

Other retail

	2012 HK$'m	2011 HK$'m
Up to 2%	**21,895**	19,390
>2%	**248**	479
Default	**78**	83
	22,221	19,952

Small business retail

	2012 HK$'m	2011 HK$'m
Up to 1%	**9,459**	10,676
>1%	**209**	218
Default	**49**	53
	9,717	10,947

3.7 Analysis of actual loss and estimates

The table below shows the actual losses which represent the net charges (including write-offs and individually assessed impairment allowances) made by each class of exposures under the internal ratings-based approach for the year.

	2012 HK$'m	2011 HK$'m
Corporate	**488**	(12)
Bank	**–**	3
Residential mortgages to individuals and property-holding shell companies	**–**	–
Qualifying revolving retail	**127**	93
Other retail to individuals	**12**	27
Small business retail	**12**	8
	639	119

Increase in the impairment charge of corporate exposures was mainly caused by the loan restructuring of a few corporate customers leading to loans downgraded.

3. Credit risk under the internal ratings-based approach (continued)

3.7 Analysis of actual loss and estimates (continued)

The table below shows the expected loss which is the estimated loss likely to be incurred arising from the potential default of the obligors in respect of the exposure over a one-year period.

	Expected loss at 31 December 2011 HK$'m	Expected loss at 31 December 2010 HK$'m
Corporate	**2,914**	2,539
Bank	**189**	149
Residential mortgages to individuals and property-holding shell companies	**93**	97
Qualifying revolving retail	**309**	268
Other retail to individuals	**111**	126
Small business retail	**32**	33
	3,648	3,212

The tables below set out the actual default rate compared against the estimated PD of the respective portfolio.

	Actual default rate during 2012 %	**Estimated PD at 31 December 2011 %**
Corporate	**0.49**	**1.81**
Bank	**–**	**0.48**
Residential mortgages to individuals and property-holding shell companies	**0.04**	**0.62**
Qualifying revolving retail	**0.17**	**0.61**
Other retail to individuals	**0.76**	**1.75**
Small business retail	**0.58**	**1.34**

	Actual default rate during 2011 %	Estimated PD at 31 December 2010 %
Corporate	0.37	1.73
Bank	0.22	0.44
Residential mortgages to individuals and property-holding shell companies	0.03	0.69
Qualifying revolving retail	0.18	0.60
Other retail to individuals	0.72	1.86
Small business retail	0.48	1.40

3. Credit risk under the internal ratings-based approach (continued)

3.7 Analysis of actual loss and estimates (continued)

It should be noted that expected loss and actual loss are measured and calculated using different methodologies compliant to relevant regulatory and accounting standards, which are therefore not directly comparable. The limitation arises mainly from the fundamental differences in the definition of "loss". The expected loss under Basel II which estimates the economic loss arising from the potential default of the obligor by taking into account the time value of money and including the direct and indirect costs associated with the recoveries on the credit exposures, while actual loss is the net individually assessed impairment charges and write-offs made during the year in accordance with the accounting standards.

The actual default rate (actual PD) is measured by using the number of obligors (for wholesale exposures) or number of accounts (for retail exposures) defaulted whereas the estimated probability of default (estimated PD) is an estimate of the long run average default rate over an economic cycle and is the estimated one-year forward-looking PD from the date of rating assignment.

Hence, actual PD in a particular year ("point-in-time") will typically differ from the estimated PD which is the "through-the-cycle" estimates as economies move above or below the cyclical norms.

The estimated PD is more conservative than the actual default rate for all asset classes.

4. Credit risk under the standardised (credit risk) approach

4.1 Ratings from External Credit Assessment Institutions ("ECAI")

The Group continues to adopt standardised (credit risk) ("STC") approach based on external rating to determine the risk weight of the following asset classes of exposures:

– Sovereign

– Public sector entity

– Multilateral development bank

The Group performs the ECAI issuer ratings mapping to its exposures in banking book in accordance with Part 4 of the Banking (Capital) Rules. The ECAIs recognised by the Group include Standard & Poor's, Moody's and Fitch.

4.2 Credit risk mitigation

For credit exposures adopting STC approach, the main types of recognised collaterals include cash deposits, debt securities and shares for non-past due exposures. In addition, real estate collateral is also recognised for past due exposures. The treatment of recognised collateral is compliant with the comprehensive approach for credit risk mitigation as mentioned in the Banking (Capital) Rules. For credit exposures under STC approach, the recognised guarantees for capital calculation includes the guarantee given by sovereigns, public sector entities, multilateral development banks with a lower risk weight than the counterparty, and corporate with external rating of A- or above.

4. Credit risk under the standardised (credit risk) approach (continued)

4.3 Credit risk exposures other than securitisation exposures under the standardised (credit risk) approach

	2012						
	Total Exposures HK$'m	Exposures after CRM* Rated HK$'m	Exposures after CRM* Unrated HK$'m	Risk-weighted amount Rated HK$'m	Risk-weighted amount Unrated HK$'m	Total exposures covered by recognised collateral HK$'m	Total exposures covered by recognised guarantees or recognised credit derivative contracts HK$'m
On-balance sheet exposures							
Sovereign	237,263	238,873	–	16,662	–	–	–
Public sector entity	24,584	24,437	–	538	–	–	193
Multilateral development bank	21,769	21,769	–	–	–	–	–
Bank	382	382	–	78	–	–	–
Securities firm	–	–	–	–	–	–	–
Corporate	19,683	9,133	8,927	5,520	8,927	206	1,417
Regulatory retail	6,431	–	6,317	–	4,737	114	–
Residential mortgage loans	5,812	–	5,766	–	2,883	–	46
Other exposures which are not past due	1,560	–	1,317	–	1,317	243	–
Past due exposures	31	–	31	–	39	–	–
Total for on-balance sheet exposures	317,515	294,594	22,358	22,798	17,903	563	1,656
Off-balance sheet exposures							
Off-balance sheet exposures other than OTC derivative transactions and credit derivative contracts	4,682	1,924	2,758	231	2,655	754	386
OTC derivative transactions	144	62	82	4	80	–	–
Total for off-balance sheet exposures	4,826	1,986	2,840	235	2,735	754	386
Total for non-securitisation exposures	322,341	296,580	25,198	23,033	20,638	1,317	2,042
Exposures deducted from Core Capital or Supplementary Capital	116						

4. Credit risk under the standardised (credit risk) approach (continued)

4.3 Credit risk exposures other than securitisation exposures under the standardised (credit risk) approach (continued)

	2011						
	Total Exposures HK$'m	Exposures after CRM* Rated HK$'m	Exposures after CRM* Unrated HK$'m	Risk-weighted amount Rated HK$'m	Risk-weighted amount Unrated HK$'m	Total exposures covered by recognised collateral HK$'m	Total exposures covered by recognised guarantees or recognised credit derivative contracts HK$'m
On-balance sheet exposures							
Sovereign	285,206	290,546	–	1,172	–	–	–
Public sector entity	23,204	23,020	–	448	–	–	193
Multilateral development bank	22,491	22,491	–	–	–	–	–
Bank	210	210	–	43	–	–	–
Securities firm	–	–	–	–	–	–	–
Corporate	18,268	6,188	6,615	3,118	6,615	318	5,147
Regulatory retail	4,644	–	4,514	–	3,385	130	–
Residential mortgage loans	4,346	–	4,337	–	2,168	–	9
Other exposures which are not past due	1,078	–	946	–	946	132	–
Past due exposures	15	–	15	–	23	–	–
Total for on-balance sheet exposures	359,462	342,455	16,427	4,781	13,137	580	5,349
Off-balance sheet exposures							
Off-balance sheet exposures other than OTC derivative transactions and credit derivative contracts	3,871	1,954	1,917	226	1,797	556	218
OTC derivative transactions	177	58	119	1	117	–	–
Total for off-balance sheet exposures	4,048	2,012	2,036	227	1,914	556	218
Total for non-securitisation exposures	363,510	344,467	18,463	5,008	15,051	1,136	5,567
Exposures deducted from Core Capital or Supplementary Capital	84						

* Recognised credit risk mitigation satisfying the requirements and conditions set out in the Banking (Capital) Rules.

5. Counterparty credit risk-related exposures

The Group's counterparty credit risk arising from over-the-counter ("OTC") derivative transactions, repo-style transactions both in trading and banking book is subject to the same risk management framework as mentioned in Note 4 to the Financial Statements in this Annual Report. The Group establishes credit limit through formal credit approval procedures to control the pre-settlement credit risk arising from OTC derivative transactions and settlement limit to control the settlement risk arising from foreign exchange-related transactions in both the trading book and banking book. The Group monitors the risk exposure due to fluctuations in the market by using the current exposure and the potential exposure value of the transactions. Exceptions or excesses are timely and closely identified and monitored by Risk Management Department.

Currently, the Group uses the Current Exposure Method to measure and monitor the counterparty credit exposures, which comprises current exposures and potential future exposures.

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

The Group formulates policy for classification of credit assets according to the PD of individual counterparty and the period of overdue. If there is objective evidence that an impairment loss has been incurred, impairment allowance will be provided according to HKFRS and regulatory requirements.

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5. Counterparty credit risk-related exposures (continued)

5.1 Counterparty credit risk exposures

The following tables summarise the Group's exposures to counterparty credit risk arising from OTC derivative and repo-style transactions.

(A) Counterparty credit risk exposures under the internal ratings-based approach

	2012 HK$'m	2011 HK$'m
OTC derivative:		
Gross total positive fair value	**12,884**	7,435
Credit equivalent amounts	**22,591**	14,680
Less: Value of recognised collateral		
– debt securities	**–**	–
– others	**–**	–
Net credit equivalent amounts	**22,591**	14,680
Exposure at default by counterparty type		
Corporate	**797**	1,521
Banks	**21,794**	13,159
Retail	**–**	–
Others	**–**	–
	22,591	14,680
Risk weighted amounts by counterparty type		
Corporate	**509**	1,402
Banks	**4,443**	2,906
Retail	**–**	–
Others	**–**	–
	4,952	4,308
Repo-style transactions:		
Net credit exposures	**–**	3,488
Exposure at default by counterparty type		
Corporate	**–**	–
Banks	**–**	3,488
Retail	**–**	–
Others	**–**	–
	–	3,488
Risk weighted amounts by counterparty type		
Corporate	**–**	–
Banks	**–**	1,852
Retail	**–**	–
Others	**–**	–
	–	1,852

5. Counterparty credit risk-related exposures (continued)

5.1 Counterparty credit risk exposures (continued)

(B) Counterparty credit risk exposures under the standardised (credit risk) approach

	2012 HK$'m	2011 HK$'m
OTC derivative:		
Gross total positive fair value	**41**	83
Credit equivalent amounts	**144**	177
Less: Value of recognised collateral		
– debt securities	**–**	–
– others	**–**	–
Net credit equivalent amounts	**144**	177
Credit equivalent amounts net of recognised collateral by counterparty type		
Sovereign	**51**	57
Public sector entity	**5**	–
Bank	**5**	2
Corporate	**75**	107
Regulatory retail	**8**	6
Other exposures which are not past due exposures	**–**	5
Past due exposures	**–**	–
	144	177
Risk weighted amounts by counterparty type		
Sovereign	**–**	–
Public sector entity	**1**	–
Bank	**3**	1
Corporate	**74**	107
Regulatory retail	**6**	5
Other exposures which are not past due exposures	**–**	5
Past due exposures	**–**	–
	84	118

There are no outstanding repo-style transactions under the standardised (credit risk) approach as at 31 December 2012 (2011: Nil).

There is no effect of valid bilateral netting agreement on the credit equivalent amounts of the derivative transactions as at 31 December 2012 (2011: Nil).

There are no outstanding credit derivative contracts as at 31 December 2012 (2011: Nil).

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6. Assets securitisation

The Group continues to adopt the ratings-based method under IRB approach to calculate the credit risk for both securitisation and re-securitisation exposures as an investing institution in the year 2012. Since this approach employs mapping of external credit ratings for risk weights calculations, the Group adopts the three ECAIs (Standard & Poor's, Moody's and Fitch) recognised by HKMA for this purpose.

The Group monitors the risks inherent in its securitisation assets and re-securitisation assets on an ongoing basis. The external credit ratings, assessment of the underlying assets and market prices are used for managing credit risk associated with the investment. For interest rate risk in its banking book, control measures for asset backed securities and mortgage backed securities include, but not limited to AFS EV and PVBP.

The Group has no outstanding exposures that are held with the intention of transferring exposures booked in the banking book and trading book into securitisation transactions as at 31 December 2012.

Securitisation exposures arising from the Group's investing activities are analysed as follows:

6.1 Securitisation exposures

	2012
	On-balance sheet Banking Book HK$'m
Residential mortgage loans	**1,156**
Commercial mortgage loans	**–**
Student loans	**172**
Re-securitisations	**3**
	1,331

	2011* HK$'m
Residential mortgage loans	1,780
Commercial mortgage loans	5
Student loans	467
	2,252

* As a result of the new requirements under Banking (Disclosure) (Amendment) Rules 2011, the amounts shown are not directly comparable with those of 31 December 2012.

There are no on-balance sheet securitisation exposures booked in trading book as at 31 December 2012.

There are no off-balance sheet securitisation exposures booked in banking and trading books as at 31 December 2012.

6. Assets securitisation (continued)

6.1 Securitisation exposures (continued)

There are no securitisation transactions in trading book subject to the IMM approach as at 31 December 2012.

There are no securitisation exposures deducted from core and/or supplementary capital as at 31 December 2012 and 2011.

The Group has no credit risk mitigations which are treated as part of securitisation and re-securitisation transactions as at 31 December 2012.

The Group has no credit derivative contracts which are treated as part of synthetic securitisation transactions as at 31 December 2011.

6.2 Breakdown by risk-weights of the securitisation exposures (excluding re-securitisation exposures) under internal ratings-based (securitisation) approach

	2012	
	Securitisation exposures HK$'m	Capital requirements HK$'m
7%	1,043	6
8%	51	–
10%	59	1
12%	105	1
15%	–	–
18%	–	–
20%	–	–
25%	–	–
35%	–	–
50%	–	–
60%	50	2
75%	–	–
100%	20	2
250%	–	–
425%	–	–
650%	–	–
Deducted from capital	–	–
	1,328	12

UNAUDITED SUPPLEMENTARY FINANCIAL INFORMATION

6. Assets securitisation (continued)

6.3 Breakdown by risk-weights of the re-securitisation exposures under internal ratings-based (securitisation) approach

	2012	
	Securitisation exposures HK$'m	**Capital requirements HK$'m**
20%	–	–
25%	–	–
30%	–	–
35%	**3**	–
40%	–	–
50%	–	–
60%	–	–
65%	–	–
100%	–	–
150%	–	–
200%	–	–
225%	–	–
300%	–	–
500%	–	–
650%	–	–
750%	–	–
850%	–	–
Deducted from capital	–	–
	3	–

6.4 Breakdown by risk-weights of the securitisation exposures (including re-securitisation exposures) under internal ratings-based (securitisation) approach

	2011*		
	Securitisation exposures HK$'m	Risk-weighted amount HK$'m	Capital requirements HK$'m
7%	1,817	134	11
8%	61	5	1
10%	111	12	1
12%	100	13	1
35%	34	13	1
60%	105	67	5
100%	24	26	2
Deducted from capital	–	–	–
	2,252	270	22

* As a result of the new requirements under Banking (Disclosure) (Amendment) Rules 2011, the amounts shown are not directly comparable with those of 31 December 2012.

6. Assets securitisation (continued)

6.5 Summary of accounting policies for securitisation exposures

The Group held certain securitised debt securities at the end of the reporting period. They are classified and measured for accounting purpose in accordance with the Group's accounting policies as outlined in Note 2.8 "Financial assets". For those investments measured at fair value, further details on their valuation are outlined in Note 4.6(B) "Financial instruments measured at fair value".

7. Capital requirements for market risk

	2012 HK$'m	2011 HK$'m
Under the standardised (market risk) approach		
Foreign exchange exposures (net)	**–**	432
Interest rate exposures		
– non-securitisation exposure	**117**	240
Equity exposures	**36**	36
Commodity exposures	**6**	9
Under the internal models approach		
General foreign exchange and interest rate exposures	**747**	908
Capital charge for market risk	**906**	1,625

In 2012, market risk regulatory capital charge is calculated under the Banking (Capital) (Amendment) Rules 2011 to incorporate capital charge for stressed VAR. The following table sets out the IMM VAR and stressed VAR[1] for the general market risk exposure calculated under the IMM approach of the Group.

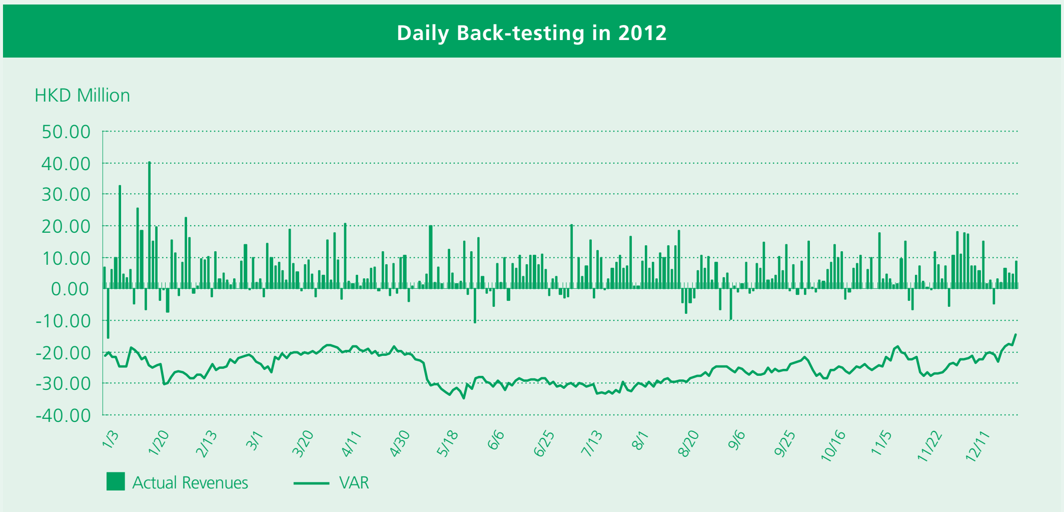
	Year	**At 31 December HK$'m**	**Minimum for the year HK$'m**	**Maximum for the year HK$'m**	**Average for the year HK$'m**
IMM VAR for foreign exchange and interest rate risk	2012	38.5	35.0	105.1	63.9
IMM VAR for foreign exchange risk	2012	19.7	16.2	70.1	36.3
IMM VAR for interest rate risk	2012	24.9	15.5	104.9	44.8
Stressed VAR for foreign exchange and interest rate risk	2012	221.9	140.7	334.6	217.4
Stressed VAR for foreign exchange risk	2012	25.0	24.3	73.2	43.2
Stressed VAR for interest rate risk	2012	216.9	133.2	339.1	218.3

Note:

1 IMM VAR and stressed VAR measures used for market risk regulatory capital purposes are calculated to a 99% confidence level and use a 10-day holding period. The stressed VAR uses the same methodology as the VAR model and is generated with inputs calibrated to the historical data from a continuous 12-month period of significant financial stress relevant to the Group's portfolio.

7. Capital requirements for market risk (continued)

The graph below shows the regulatory back-testing result of the Group's market risk under IMM approach.



There were no actual losses exceeding the VAR estimates for the Group in 2012 as shown in the back-testing results.

8. Capital requirements for operational risk

	2012 HK$'m	2011 HK$'m
Capital charge for operational risk	**4,421**	4,065

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

9. Equity exposures in banking book

Equity holdings in other entities are accounted for in accordance with the underlying intentions of holdings at the inception of acquisition. The classifications for equity holdings taken for relationship and strategic purposes will be separated from those taken for other purposes (including capital appreciation). Investments in equity shares which are intended to be held on a continuing basis, but which do not comprise investments in associates, jointly controlled entities or subsidiaries, are classified as available-for-sale securities and are reported in the balance sheet as "Investment in securities".

For equity exposures in banking book other than associates, jointly controlled entities or subsidiaries, the Group applies the same accounting treatment and valuation methodologies as detailed in the Notes 2.8(4) and 2.11 to the Financial Statements. If additional investment is made subsequently such that an investee becomes an associate, jointly controlled entity or subsidiary, then the investment is reclassified in accordance with the Group's accounting policies.

Gains or losses related to equity exposures are summarised below:

	2012 HK$'m	2011 HK$'m
Realised gains from sales	**6**	36
Unrealised gains on revaluation recognised in reserves but not through profit or loss	**771**	526
Unrealised gains included in supplementary capital	**347**	237

10. Connected transactions

In 2012, BOCHK, a wholly-owned subsidiary of the Company, and its subsidiaries engaged on a regular basis in the usual course of their business in numerous transactions with BOC and its Associates. As BOC is the Company's controlling shareholder and therefore a connected person of the Company, all such transactions constituted connected transactions for the purposes of the Listing Rules. The Group is subject to the control of the State Council of the PRC Government through China Investment Corporation ("CIC"), its wholly-owned subsidiary Central Huijin Investment Ltd. ("Central Huijin"), and BOC in which Central Huijin has controlling equity interests. Central Huijin is the ultimate controlling shareholder of the Company. Central Huijin has accepted PRC Government's authorisation in carrying out equity investment in core financial enterprises. For the purposes of this report, therefore, Central Huijin and its Associates have not been treated as connected persons to the Company.

The transactions fell into the following two categories:

1. exempted transactions entered into in the usual course of business and under normal commercial terms. Such transactions were exempted from disclosure and independent shareholder approval by virtue of Rules 14A.31, 14A.33 and 14A.65 of the Listing Rules;

2. certain continuing connected transactions conducted pursuant to the Services and Relationship Agreement entered into among, inter alia, the Company and BOC dated 6 July 2002 (as amended and supplemented from time to time and the latest amendment was for a period of three years commencing 1 January 2011), whereas BOC has agreed to, and agreed to procure its Associates to, enter into all future arrangements with the Group on an arm's length basis, on normal commercial terms and at rates no less favourable than those offered to independent third parties, in relation to certain areas including, among others, information technology services, training services, physical bullion agency services, correspondent banking arrangements, treasury transactions, provision of insurance and syndicated loans, and the Company has agreed to, and agreed to procure its subsidiaries to, enter into all future arrangements on the same basis, provided that the rates offered by the Group to BOC and its Associates will be no more favourable than those offered to independent third parties. The Services and Relationship Agreement is also amended to allow for the provision of (i) call centre services, cash management services and card services and other related business between BOC or its Associates and the Group; and (ii) information technology services by the Group to BOC's worldwide branches and subsidiaries. On 30 December 2010 the Company made an announcement (the "Announcement") in accordance with Rule 14A.47 of the Listing Rules, and has got the approval from the independent shareholders on 25 May 2011. The Announcement listed those continuing connected transactions that exceeded the de minimus threshold and set out caps in respect of such transactions for the three years 2011-2013. These transactions were conducted in the ordinary course of its business and on normal commercial terms. Details of these continuing connected transactions are set out below and are described in the announcements which may be viewed at the Company's website. The Company has complied with the disclosure requirements in accordance with Chapter 14A of the Listing Rules.

Type of Transaction	2012 Cap (HK$'m)	2012 Actual Amount (HK$'m)
Information Technology Services	1,000	48
Property Transactions	1,000	137
Bank-note Delivery	1,000	114
Provision of Insurance Cover	1,000	127
Card Services	1,000	104
Custody Business	1,000	36
Call Center Services	1,000	48
Securities Transactions	5,000	226
Fund Distribution Transactions	5,000	39
Insurance Agency	5,000	589
Foreign Exchange Transactions	5,000	195
Trading of Financial Assets	150,000	8,208
Inter-bank Capital Markets	150,000	1,714

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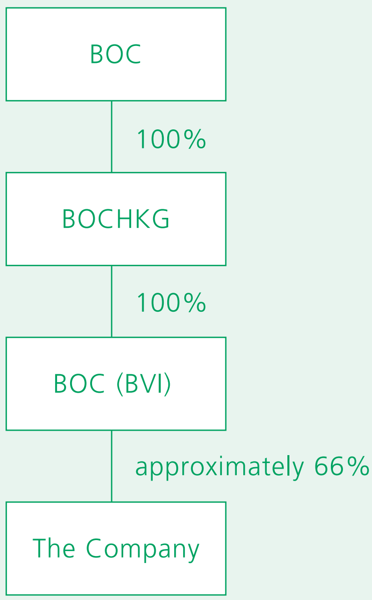
11. Reconciliation between HKFRSs vs IFRS/CAS

The Company understands that BOC, an intermediate holding company as well as controlling shareholder of the Company, will prepare and disclose consolidated financial information in accordance with IFRS and CAS for which the Company and its subsidiaries will form part of the consolidated financial statements. CAS is the new set of PRC accounting standards that has been effective for annual periods beginning on or after 1 January 2007 for companies publicly listed in PRC. The requirements of CAS have substantially converged with HKFRSs and IFRS.

The consolidated financial information of "BOC Hong Kong Group" for the periods disclosed by BOC in its consolidated financial statements is not the same as the consolidated financial information of the Group for the periods published by the Company pursuant to applicable laws and regulations in Hong Kong. There are two reasons for this.

First, the definitions of "BOC Hong Kong Group" (as adopted by BOC for the purpose of its own financial disclosure) and "Group" (as adopted by the Company in preparing and presenting its consolidated financial information) are different: "BOC Hong Kong Group" refers to BOCHKG and its subsidiaries, whereas "Group" refers to the Company and its subsidiaries (see the below organisation chart). Though there is difference in definitions between "BOC Hong Kong Group" and "Group", their financial results for the periods presented are substantially the same. This is because BOCHKG and BOC (BVI) are holding companies only and have no substantive operations of their own.



Second, the Group has prepared its consolidated financial statements in accordance with HK GAAP prior to 1 January 2005 and as from 1 January 2005 onwards in accordance with HKFRSs; whereas the consolidated financial information reported to BOC is prepared in accordance with IFRS and CAS respectively. Despite the fact that HKFRSs have converged with IFRS, there is a timing difference in the initial adoption of HKFRSs and IFRS by the Group and by BOC respectively.

11. Reconciliation between HKFRSs vs IFRS/CAS (continued)

The Board considers that the best way to ensure that shareholders and the investing public understand the material differences between the consolidated financial information of the Group published by the Company on the one hand, and the consolidated financial information of BOC Hong Kong Group disclosed by BOC in its financial statements on the other hand, is to present reconciliations of the profit after tax/net assets of the Group prepared under HKFRSs to the profit after tax/net assets of the Group prepared under IFRS and CAS respectively for the periods presented.

The major differences between HKFRSs and IFRS/CAS, which arise from the difference in measurement basis in IFRS or CAS and the timing difference in the initial adoption of HKFRSs and IFRS relate to the following:

– re-measurement of carrying value of treasury products;

– restatement of carrying value of bank premises; and

– deferred taxation impact arising from the above different measurement basis.

(a) Re-measurement of carrying value of treasury products

Due to the difference in the timing of first adoption of HKFRSs and IFRS, classification and measurement of certain investment securities under HKFRSs and IFRS were different. Therefore, investment securities were reclassified and re-measured to align with the accounting policies of BOC for the relevant periods. Classification and measurement under IFRS and CAS is basically the same. As the investment securities matured gradually, the related timing difference will be eliminated.

(b) Restatement of carrying value of bank premises

The Company has elected for a revaluation model rather than cost model to account for bank premises and investment properties under HKFRSs. On the contrary, BOC has elected for the cost model for bank premises and revaluation model for investment properties under IFRS and CAS. Therefore, adjustments have been made to the carrying value of bank premises as well as to re-calculate the depreciation charge and disposal gain/loss under IFRS and CAS.

(c) Deferred tax adjustments

These represent the deferred tax effect of the aforesaid adjustments.

As the counterpart of IFRS/CAS to the amendment to HKAS 12 has already been mandatorily effective since 1 January 2012, there is no more difference due to early adoption of the amendment in HKFRSs by the Company.

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11. Reconciliation between HKFRSs vs IFRS/CAS (continued)

Profit after tax/net assets reconciliation

HKFRSs vs IFRS/CAS

	Profit after tax		Net assets	
	2012 HK$'m	2011 HK$'m	**2012 HK$'m**	2011 HK$'m
Profit after tax/net assets of BOC Hong Kong (Holdings) Limited prepared under HKFRSs	**21,547**	20,813	**155,074**	133,183
Add: IFRS/CAS adjustments				
Re-measurement of carrying value of treasury products	**(12)**	(27)	**–**	–
Restatement of carrying value of bank premises	**658**	488	**(35,148)**	(26,124)
Deferred tax adjustments	**(106)**	(33)	**5,798**	4,305
Effect of early adoption of HKAS 12 (Amendment)	**–**	(323)	**–**	(1,778)
Profit after tax/net assets of BOC Hong Kong (Holdings) Limited prepared under IFRS/CAS	**22,087**	20,918	**125,724**	109,586