HSBC HOLDINGS PLC Form 6-K March 07, 2012 Table of Contents

## FORM 6-K

## SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

**Report of Foreign Private Issuer** 

Pursuant to Rule 13a - 16 or 15d - 16 of

the Securities Exchange Act of 1934

For the month of March 2012

## **HSBC** Holdings plc

42nd Floor, 8 Canada Square, London E14 5HQ, England

(Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F).

Form 20-F x Form 40-F "

(Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934).

Yes " No x

(If Yes is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b): 82-

# **HSBC Holdings plc**

**Capital and Risk Management** 

**Pillar 3 Disclosures** 

at

**31 December 2011** 

#### Cautionary statement regarding forward-looking statements

The Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (Pillar 3 Disclosures 2011) contains certain forward-looking statements with respect to HSBC s financial condition, results of operations and business.

Statements that are not historical facts, including statements about HSBC s beliefs and expectations, are forward-looking statements. Words such as expects, anticipates, intends, plans, believes, seeks, estimates, potential and reasonably possible, variations of these words and expressions are intended to identify forward-looking statements. These statements are based on current plans, estimates and projections, and therefore undue reliance should not be placed on them. Forward-looking statements speak only as of the date they are made. HSBC makes no commitment to revise or update any forward-looking statements to reflect events or circumstances occurring or existing after the date of any forward-looking statements.

Written and/or oral forward-looking statements may also be made in the periodic reports to the US Securities and Exchange Commission, summary financial statements to shareholders, proxy statements, offering circulars and prospectuses, press releases and other written materials, and in oral statements made by HSBC s Directors, officers or employees to third parties, including financial analysts.

Forward-looking statements involve inherent risks and uncertainties. Readers are cautioned that a number of factors could cause actual results to differ, in some instances materially, from those anticipated or implied in any forward-looking statement. These factors include changes in general economic conditions in the markets in which we operate, changes in government policy and regulation and factors specific to HSBC.

#### Certain defined terms

Unless the context requires otherwise, HSBC Holdings means HSBC Holdings plc and HSBC, the Group, we, us and our refers to HSBC Holdings 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. When used in the terms shareholders equity and total shareholders equity, shareholders means holders of HSBC Holdings ordinary shares and those preference shares classified as equity. The abbreviations US\$m and US\$bn represent millions and billions (thousands of millions) of US dollars, respectively.

HSBC HOLDINGS PLC

## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011

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HSBC HOLDINGS PLC

## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

## Key regulatory data

Capital ratio at 31 December Risk-weighted assets (RWA s) at 31 December 2011

Components By composition

Basel II exposure at 31 December 2011 RWAs at 31 December 2011

Credit risk by industry sector By global business

Expected loss and impairment charges

RWAs at 31 December 2011

Comparison

By geographical region

2

HSBC HOLDINGS PLC

#### Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

#### Introduction

HSBC is one of the world s largest banking and financial services organisations. We serve around 89 million customers through our four global businesses: Retail Banking and Wealth Management, Commercial Banking, Global Banking and Markets, and Global Private Banking.

Our network of around 7,200 offices covers 85 countries and territories in six geographical regions: Europe, Hong Kong, Rest of Asia-Pacific, Middle East and North Africa (MENA), North America and Latin America.

Listed on the London, Hong Kong, New York, Paris and Bermuda stock exchanges, shares in HSBC Holdings plc are held by over 220,000 shareholders in 132 countries and territories.

Details of the Group s principal activities, business and operating models and strategic direction may be found on page 10 of the Annual Report and Accounts 2011.

#### Basel II

The United Kingdom ( UK ) Financial Services Authority ( FSA ) supervises HSBC on a consolidated basis, and therefore receives information on the capital adequacy of, and sets capital requirements for, the Group as a whole. Individual banking subsidiaries are directly regulated by their local banking supervisors, who set and monitor their capital adequacy requirements.

We calculate capital at a Group level using the Basel II framework of the Basel Committee on Banking Supervision (Basel Committee) as implemented by the FSA. However, local regulators are at different stages of implementation and local reporting may still be on a Basel I basis, notably in the United States (US). In most jurisdictions, non-banking financial subsidiaries are also subject to the supervision and capital requirements of local regulatory authorities.

Basel II is structured around three pillars: minimum capital requirements, supervisory review process and market discipline. The Capital Requirements Directive ( CRD ) implemented Basel II in the European Union ( EU ) and the FSA then gave effect to the CRD by including the requirements of the CRD in its own rulebooks.

#### Pillar 3 disclosures 2011

Pillar 3, market discipline, complements the minimum capital requirements and the supervisory review process. Its aim is to develop disclosures by banks which allow market participants to assess the

scope of application of Basel II, capital, particular risk exposures and risk assessment processes, and hence the capital adequacy of the institution. Under the Pillar 3 framework all material risks must be disclosed, enabling a comprehensive view of the institution s risk profile.

All material and non-proprietary information required by Pillar 3 is included in the *Pillar 3 Disclosures 2011*, which comprise both quantitative and qualitative information and are provided at the HSBC Group consolidated level. The FSA permits certain Pillar 3 requirements to be satisfied by inclusion within the financial statements.

Where we adopt this approach, references are provided to the relevant pages of the Annual Report and Accounts 2011.

Principal changes to disclosures

The principal changes to our *Pillar 3 Disclosures 2011*, compared with the previous year, are those commonly known as Basel 2.5, implemented in the EU via CRD III, which increased the capital and disclosure requirements for re-securitisation exposures and market risk with effect from 31 December 2011. Further details are set out from page 34. In addition, we have replaced a table of counterparty sector exposures with a more granular industry sector analysis (page 18), and further developed our disclosures on remuneration (page 45).

Movement in risk-weighted assets in 2011

RWAs increased by US\$106.4bn or 10% in 2011. Exchange rate differences caused a net reduction in RWAs of around US\$9bn in the year, and the remaining increase in RWAs of US\$115bn arose mainly in credit risk and market risk.

RWAs increased by approximately US\$50bn as a result of the introduction of Basel 2.5, net of mitigating actions undertaken by management. Of this increase, around US\$40bn was in market risk, of which the largest component was stressed VAR. Higher risk weights on re-securitisations increased credit risk RWAs by around US\$10bn, primarily impacting the GB&M legacy portfolios.

The remaining increase in credit risk RWAs largely reflected growth in our global businesses, notably in Commercial Banking, and also included an increase in loan balances in our mainland China associates. Further details of the movement in our RWAs in 2011 may be found on page 211 of the *Annual Report and Accounts 2011*.

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#### Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

#### Future developments

The regulation of financial institutions continues to undergo significant change. In the areas of risk and capital management, considerable progress has been made in implementing the G20 governments—agenda to increase the stability and resilience of the financial system, and further major changes in regulation are foreseen.

Following Basel Committee issuance in December 2010 of Basel III rules, the European Commission issued in July 2011 its related implementing proposals, known as CRD IV,

comprising a Directive and Regulation which together will supersede earlier Directives. These proposals are currently under review within the European legislative process, which is expected to conclude in 2012.

Significant regulatory matters within the scope of CRD IV include quality and quantity of capital, counterparty credit risk, liquidity and funding, capital buffers and leverage. The new requirements will be phased in from 1 January 2013, as shown in the table below, with many areas subject to development of technical standards by the European Banking Authority and full implementation required by 1 January 2019.

Table 1: Basel III phase-in arrangements

	2013	2014	2015	2016	2017	2018	2019
	%	%	%	%	%	%	%
Minimum common equity capital ratio Capital conservation buffer	3.5	4.0	4.5	4.5 0.625	4.5 1.25	4.5 1.875	4.5 2.5
Minimum common equity plus capital conservation buffer	3.5	4.0	4.5	5.125	5.75	6.375	7.0
Minimum tier 1 ratio	4.5	5.5	6.0	6.0	6.0	6.0	6.0
Minimum total capital plus conservation buffer	8.0	8.0	8.0	8.625	9.25	9.875	10.5

In September 2011, the UK Independent Commission on Banking published its final Report, to which the Government responded before year end. At a global level, in November, the Basel Committee issued its final rules for the enhanced supervision of institutions designated global systemically important banks ( G-SIBs ). The capital requirements of HSBC, as a G-SIB, could be significantly affected by these measures, which are in addition to those expected under CRD IV.

An overview of the above, together with related developments on the G20 agenda for financial sector regulation, may be found in the discussion of macro-prudential and regulatory risks on page 100 of the *Annual Report and Accounts 2011*. An assessment of the impact of Basel III, measures for G-SIBs and various mitigating actions by management on our capital position and our target core tier 1 ratio may be found in the Capital section on page 212 of the *Annual Report and Accounts 2011*.

Frequency

We publish comprehensive Pillar 3 disclosures annually on the HSBC internet site, with summarised regulatory capital information provided in our interim reports and management statements.

Comparison with the Annual Report and Accounts 2011

The *Pillar 3 Disclosures 2011* have been prepared in accordance with regulatory capital adequacy concepts and rules, rather than in accordance with International Financial Reporting Standards (IFRS s). Therefore, some information in the *Pillar 3 Disclosures 2011* is not directly comparable with the financial information in the *Annual Report and Accounts 2011*. This is most pronounced for the credit risk disclosures, where credit exposure is defined as the amount at risk that is estimated by the Group under specified Basel II parameters. This differs from similar information in the *Annual Report and Accounts 2011*, which is mainly reported at the balance sheet date and therefore does not reflect the likelihood of future drawings of committed credit lines.

#### Verification

The Pillar 3 Disclosures 2011 have been appropriately verified internally, but have not been audited by the Group s external auditor.

#### Significant subsidiaries

Links to the financial information of significant subsidiaries, including capital resources and requirements, are available on our investor relations website page www.hsbc.com/investor-relations/financial-results/hsbc-group-companies.

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HSBC HOLDINGS PLC

#### Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

#### **Consolidation basis**

The basis of consolidation for financial accounting purposes is described on page 292 of the *Annual Report and Accounts 2011* and differs from that used for regulatory purposes. Investments in banking associates are equity accounted in the financial accounting consolidation, whereas their exposures are proportionally consolidated for regulatory purposes. Subsidiaries and associates engaged in insurance and non-financial activities are excluded from the regulatory consolidation and are deducted from regulatory capital. The regulatory consolidation does not include special purpose entities (SPE s) where significant risk has been transferred to third parties. Exposures to these SPEs are risk-weighted as securitisation positions for regulatory purposes.

#### Scope of Basel II permissions

Credit risk capital requirements

Basel II applies three approaches of increasing sophistication to the calculation of Pillar 1 credit risk capital requirements. The most basic level, the standardised approach, requires banks to use external credit ratings to determine the risk weightings applied to rated counterparties. Other counterparties are grouped into broad categories and standardised risk weightings are applied to these categories. The next level, the internal ratings-based ( IRB ) foundation approach, allows banks to calculate their credit risk capital requirements on the basis of their internal assessment of a counterparty s probability of default ( PD ), but subjects their quantified estimates of exposure at default ( EAD ) and loss given default ( LGD ) to standard supervisory parameters. Finally, the IRB advanced approach allows banks to use their own internal assessment in both determining PD and quantifying EAD and LGD.

The capital resources requirement, which is intended to cover unexpected losses, is derived from a formula specified in the regulatory rules, which incorporates PD, LGD, EAD and other variables such as maturity and correlation. Expected losses under the IRB approaches are calculated by multiplying PD by EAD and LGD. Expected losses are deducted from capital to the extent that they exceed total accounting impairment allowances.

For consolidated Group reporting, we have adopted the IRB advanced approach for the majority of our business. A number of Group companies and portfolios are in transition to IRB advanced from standardised or IRB foundation approaches, pending definition of local regulations or model development and approval; others will remain on standardised

under exemptions from IRB treatment. Approaches used for securitisation exposures are described on page 36.

Counterparty credit risk capital requirement

Counterparty credit risk, in both the trading and non-trading books, is the risk that the counterparty to a transaction may default before completing the satisfactory settlement of the transaction. Three approaches to calculating counterparty credit risk and determining exposure values are defined by Basel II: standardised, mark-to-market and internal model method ( IMM ). These exposure values are used to determine capital requirements under one of the credit risk approaches; standardised, IRB foundation and IRB advanced.

We use the mark-to-market and IMM approaches for counterparty credit risk. Our longer-term aim is to migrate more positions from the mark-to-market to the IMM approach.

Market risk capital requirement

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

The market risk capital requirement is measured using internal market risk models, where approved by the FSA, or the FSA standard rules. Following the implementation of Basel 2.5, our internal market risk models comprise VAR, stressed VAR, incremental risk charge and correlation trading under the comprehensive risk measure.

The majority of our market risk is subject to internal models, and we continue to increase the proportion that is assessed this way.

Operational risk capital requirement

Basel II includes capital requirements for operational risk, again utilising three levels of sophistication. The capital required under the basic indicator approach is a simple percentage of gross revenues, whereas under the standardised approach, it is one of three different percentages of gross revenues allocated to each of eight defined business lines. Both these approaches use an average of the last three financial years revenues. Finally, the advanced measurement approach uses banks own statistical analysis and modelling of operational risk data to determine capital requirements.

We have adopted the standardised approach in determining our operational risk capital requirement.

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

## Capital and Risk

#### Capital management

Table 2: Capital structure

	At 31 I 2011	December 2010
	US\$bn	US\$bn
Composition of regulatory capital		
Tier 1 capital Shareholders equity Shareholders equity per balance sheet Preference share premium Other equity instruments Deconsolidation of special purpose entities <sup>2</sup>	154.1 158.7 (1.4) (5.9) 2.7	142.7 147.7 (1.4) (5.9) 2.3
Non-controlling interests Non-controlling interests per balance sheet Preference share non-controlling interests Non-controlling interest transferred to tier 2 capital Non-controlling interest in deconsolidated subsidiaries	4.0 7.4 (2.4) (0.5) (0.5)	3.9 7.2 (2.4) (0.5) (0.4)
Regulatory adjustments to the accounting basis Unrealised losses on available-for-sale debt securities <sup>3</sup> Own credit spread Defined benefit pension fund adjustment <sup>4</sup> Reserves arising from revaluation of property and unrealised gains on available-for-sale equities Cash flow hedging reserve	(4.4) 2.2 (3.6) (0.4) (2.7) 0.1	1.8 3.8 (0.9) 1.7 (3.1) 0.3
Deductions Goodwill capitalised and intangible assets 50% of securitisation positions 50% of tax credit adjustment for expected losses 50% of excess of expected losses over impairment allowances	(31.3) (27.5) (1.2) 0.2 (2.8)	(32.3) (28.0) (1.5) 0.3 (3.1)
Core tier 1 capital	122.4	116.1
Other tier 1 capital before deductions Preference share premium Preference share non-controlling interests Hybrid capital securities	17.9 1.4 2.4 14.1	17.9 1.4 2.4 14.1
Deductions Unconsolidated investments <sup>5</sup> 50% of tax credit adjustment for expected losses	(0.8) (1.0) 0.2	(0.8) (1.1) 0.3
Tier 1 capital	139.5	133.2
Tier 2 capital		

Total qualifying tier 2 capital before deductions Reserves arising from revaluation of property and unrealised gains on available-for-sale equities Collective impairment allowances <sup>6</sup> Perpetual subordinated debt Term subordinated debt Non-controlling interest in tier 2 capital  Total deductions other than from tier 1 capital Unconsolidated investments <sup>5</sup> 50% of securitisation positions 50% of excess of expected losses over impairment allowances	48.7 2.7 2.8 40.2 0.3 (17.9) (13.9) (1.2) (2.8)	52.7 3.1 3.1 2.8 43.4 0.3 (18.3) (13.7) (1.5) (3.1)
Total regulatory capital  Total tier 2 capital before deductions plus hybrid capital securities	170.3 62.8	167.6 66.8

- 1 Includes externally verified profits for the year to 31 December 2011.
- 2 Mainly comprises unrealised losses on available-for-sale (AFS) debt securities within special purpose entities which are excluded from the regulatory consolidation.
- 3 Under FSA rules, unrealised gains/losses on debt securities net of tax must be excluded from capital resources.
- 4 Under FSA rules, any defined benefit asset is derecognised, and the defined benefit liability may be substituted with the additional funding that will be paid into the relevant schemes over the following five year period.
- 5 Mainly comprise investments in insurance entities.
- 6 Under FSA rules, collective impairment allowances on loan portfolios on the standardised approach are included in tier 2 capital.

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

Capital ratios

Core tier 1 ratio Tier 1 ratio Total capital ratio

2011	2010
%	%
10.1	10.5
11.5	12.1
14.1	15.2

Credit risk Counterparty credit risk Market risk Operational risk Total

At 31 Dece	mber 2011	At 31 December 2010			
	Capital		Capital		
RWAs	required1	RWAs	required1		
US\$bn	US\$bn	US\$bn	US\$bn		
958.2	76.7	890.6	71.3		
53.8	4.3	50.2	4.0		
73.2	5.9	38.7	3.1		
124.3	9.9	123.6	9.8		
1,209.5	96.8	1,103.1	88.2		

Table 3: Risk-weighted assets by risk type and geographical region

	Hong	Asia-		North	Latin	Total
Europe US\$bn	Kong US\$bn	Pacific US\$bn	MENA US\$bn	America US\$bn	America US\$bn	RWAs <sup>1</sup> US\$bn
233.9 25.2 43.8 37.3	80.9 3.7 6.6 14.5	241.5 5.1 10.6 22.1	50.3 1.1 1.0 6.5	273.5 14.6 21.2 28.0	78.1 4.1 4.2 15.9	958.2 53.8 73.2 124.3
340.2	105.7	279.3	58.9	337.3	102.3	1,209.5
217.3 22.7 22.4 39.2	86.3 3.3 2.0 15.3	190.9 4.1 3.5 19.0	45.7 1.6 0.3 6.5	274.5 16.3 11.3 28.6	75.9 2.2 2.8 15.0	890.6 50.2 38.7 123.6 1,103.1
	233.9 25.2 43.8 37.3 340.2 217.3 22.7 22.4	Europe US\$bn  233.9 25.2 3.7 43.8 6.6 37.3 14.5 340.2 105.7	Europe US\$bn         Kong US\$bn         Pacific US\$bn           233.9         80.9         241.5           25.2         3.7         5.1           43.8         6.6         10.6           37.3         14.5         22.1           340.2         105.7         279.3           217.3         86.3         190.9           22.7         3.3         4.1           22.4         2.0         3.5           39.2         15.3         19.0	Europe US\$bn         Kong US\$bn         Pacific US\$bn         MENA US\$bn           233.9         80.9         241.5         50.3           25.2         3.7         5.1         1.1           43.8         6.6         10.6         1.0           37.3         14.5         22.1         6.5           340.2         105.7         279.3         58.9           217.3         86.3         190.9         45.7           22.7         3.3         4.1         1.6           22.4         2.0         3.5         0.3           39.2         15.3         19.0         6.5	Europe US\$bn         Kong US\$bn         Pacific US\$bn         MENA US\$bn         America US\$bn           233.9         80.9         241.5         50.3         273.5           25.2         3.7         5.1         1.1         14.6           43.8         6.6         10.6         1.0         21.2           37.3         14.5         22.1         6.5         28.0           340.2         105.7         279.3         58.9         337.3           217.3         86.3         190.9         45.7         274.5           22.7         3.3         4.1         1.6         16.3           22.4         2.0         3.5         0.3         11.3           39.2         15.3         19.0         6.5         28.6	Europe US\$bn         Kong US\$bn         Pacific US\$bn         MENA US\$bn         America US\$bn           233.9         80.9         241.5         50.3         273.5         78.1           25.2         3.7         5.1         1.1         14.6         4.1           43.8         6.6         10.6         1.0         21.2         4.2           37.3         14.5         22.1         6.5         28.0         15.9           340.2         105.7         279.3         58.9         337.3         102.3           217.3         86.3         190.9         45.7         274.5         75.9           22.7         3.3         4.1         1.6         16.3         2.2           22.4         2.0         3.5         0.3         11.3         2.8           39.2         15.3         19.0         6.5         28.6         15.0

<sup>1</sup> RWAs are non-additive across geographical regions due to market risk diversification effects within the Group. Table 4: Risk-weighted assets by global business and geographical region

<sup>1</sup> The regulatory capital charge, calculated as 8% of RWAs.

			Rest of				
		Hong			North	Latin	Total
	Europe US\$bn	Kong US\$bn	Pacific US\$bn	MENA US\$bn	America US\$bn	America US\$bn	RWAs US\$bn
At 31 December 2011							
Retail Banking and Wealth Management	49.9	17.3	32.5	8.1	214.7	28.7	351.2
Commercial Banking	88.3	38.8	147.6	26.2	43.5	38.5	382.9
Global Banking and Markets <sup>1</sup>	182.0	40.3	85.3	23.0	72.1	34.5	423.0
Global Private Banking	15.0	2.1	1.5	0.2	3.3	0.4	22.5
Other	5.0	7.2	12.4	1.4	3.7	0.2	29.9
	340.2	105.7	279.3	58.9	337.3	102.3	1,209.5
At 31 December 2010 <sup>2</sup>							
Retail Banking and Wealth Management	53.0	18.5	26.6	7.6	220.8	30.5	357.0
Commercial Banking	80.1	39.8	109.8	24.8	45.0	34.9	334.4
Global Banking and Markets <sup>1</sup>	141.8	38.1	68.3	20.1	58.4	30.1	353.2
Global Private Banking	16.5	2.1	1.9	0.4	3.6	0.4	24.9
Other	10.2	8.4	10.9	1.2	2.9		33.6
	301.6	106.9	217.5	54.1	330.7	95.9	1,103.1

<sup>1</sup> RWAs are non-additive across geographical regions due to market risk diversification effects within the Group.

<sup>2</sup> RWAs from associates, reported principally in Other and Rest of Asia-Pacific at 31 December 2010, have been reallocated in order to properly align with the classification of income. In addition, RWAs from Global Asset Management have been reallocated to Retail Banking and Wealth Management, principally from Global Banking and Markets.

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#### Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

#### Capital management and allocation

Our approach to capital management is driven by our strategic and organisational requirements, taking into account the regulatory, economic and commercial environment in which we operate.

It is our objective to maintain a strong capital base to support the development of our business and to meet regulatory capital requirements at all times. To achieve this, our policy is to hold capital in a range of different forms and from diverse sources.

Our policy on capital management is underpinned by a capital management framework, which enables us to manage our capital in a consistent and aligned manner. The framework, which is approved by the Group Management Board (GMB) annually, incorporates a number of different capital measures including market capitalisation, invested capital, economic capital and regulatory capital.

The responsibility for global capital allocation principles and decisions rests with GMB. Through our structured internal governance processes, we maintain discipline over our investment and capital allocation decisions and seek to ensure that returns on investment are adequate after taking account of capital costs. Our strategy is to allocate capital to businesses on the basis of their economic profit generation, regulatory and economic capital requirements and cost of capital.

#### Transferability of capital within the Group

Our capital management process is articulated in the annual Group capital plan which is approved by the Board. The plan is drawn up with the objective of maintaining both an appropriate amount of capital and an optimal mix between the different components of capital. HSBC Holdings and its major subsidiaries raise non-equity tier 1 capital and subordinated debt in accordance with our guidelines on market and investor concentration, cost, market conditions, timing, capital composition and maturity profile. Each of our subsidiaries manages its own capital to support its planned business growth and meet its local regulatory requirements within the context of the approved annual Group capital plan. In accordance with our capital management framework, capital generated by subsidiaries in excess of planned requirements is returned to HSBC Holdings, normally by way of dividends.

HSBC Holdings is the primary provider of equity capital to its subsidiaries and also provides non-equity capital to subsidiaries where necessary. These investments are substantially funded by HSBC

Holdings own capital issuance and profit retention. As part of its capital management process, HSBC Holdings seeks to maintain a prudent balance between the composition of its capital and that of its investment in subsidiaries.

During 2011 and 2010, none of the Group s subsidiaries experienced significant restrictions on paying dividends or repaying loans and advances.

#### Internal assessment of capital adequacy

We assess the adequacy of our capital by considering the resources necessary to cover unexpected losses arising from discretionary risks, such as credit risk and market risk, or non-discretionary risks, such as operational risk and reputational risk. The framework, together with related policies define the Internal Capital Adequacy Assessment Process ( ICAAP ) by which GMB examines our risk profile from both regulatory and economic capital viewpoints and ensures that our level of capital:

remains sufficient to support our risk profile and outstanding commitments;

exceeds our formal minimum regulatory capital requirements by an agreed margin;

is capable of withstanding a severe economic downturn stress scenario; and

remains consistent with our strategic and operational goals, and shareholder and rating agency expectations.

The regulatory and economic capital assessments rely upon the use of models that are integrated into our management of risk. Economic capital is the internally calculated capital requirement which we deem necessary to support the risks to which we are exposed. The minimum regulatory capital that we are required to hold is determined by the rules established by the FSA for the consolidated Group and by local regulators for individual Group companies. The economic capital assessment is the more risk-sensitive measure, as it covers a wider range of risks and takes account of the substantial diversification of risk accruing from our operations. Our economic capital models are calibrated to quantify the level of capital that is sufficient to absorb potential losses over a one-year time horizon to a 99.95% level of confidence for our banking activities and to a 99.5% level of confidence for our insurance activities and pension risks. Our approach to capital management is aligned to our corporate structure, business model and strategic direction. Our discipline around capital allocation is maintained within established processes and benchmarks, further details of which can be found

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HSBC HOLDINGS PLC

#### Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

on page 215 of the Annual Report and Accounts 2011.

Economic capital is the metric by which risk is measured and linked to capital within our risk appetite framework. The risk appetite statement, which describes the quantum and types of risks that we are prepared to take in executing our strategy, is approved annually by the Board of Directors of HSBC Holdings (the Board), advised by the Group Risk Committee (GRC). Its implementation is overseen by GMB.

Our risk management framework fosters the continuous monitoring of the risk environment and an integrated evaluation of risks and their interactions. Certain of these risks are assessed and managed via the capital planning process. Risks that are measured through economic capital and those that are not are compared below.

Further details on the risk appetite framework may be found on page 234 of the Annual Report and Accounts 2011.

Risks assessed via capital

#### Credit (including counterparty credit), market and operational risk

We assess economic capital requirements for these risk types by utilising the embedded operational infrastructure used for the pillar 1 capital calculation, together with an additional suite of models that take into account, in particular:

the increased level of confidence required to meet our strategic goals (99.95%); and

internal assessments of diversification of risks within our portfolios and, similarly, any concentrations of risk that arise. Our economic capital assessment operates alongside our regulatory capital process and consistently demonstrates a substantially lower overall capital requirement for credit risk than the regulatory equivalent, reflecting the empirical evidence of the benefits of global diversification. However, we maintain a prudent stance on capital coverage, ensuring that any model risk is mitigated.

#### Interest rate risk in the banking book

Interest rate risk in the banking book ( IRRBB ) is defined as the exposure of our non-trading products to interest rates.

This risk arises in such portfolios principally from mismatches between the future yield on assets and their funding costs, as a result of interest rate changes. Analysis of this risk is complicated by

having to make assumptions on embedded optionality within certain product areas such as the incidence of mortgage prepayments, and from behavioural assumptions regarding the economic duration of liabilities which are contractually repayable on demand such as current accounts. IRRBB economic capital is measured as the amount of capital necessary to cover an unexpected loss in the value of our non-trading assets over one year to a 99.95% level of confidence.

#### Insurance risk

We operate a bancassurance model which provides insurance products for customers with whom we have a banking relationship. Many of these insurance products are manufactured by our subsidiaries but, where we consider it operationally more effective, third parties are engaged to manufacture insurance products for sale through our banking network. We work with a limited number of market-leading partners to provide such products. When manufacturing products ourselves, we underwrite the insurance risk and retain the risks and rewards associated with writing insurance contracts.

We continue to make progress in the implementation of a risk-based capital methodology for our insurance businesses. During 2011, we developed the use of risk-based capital metrics in the risk appetite statement, introduced internal economic capital reporting and enhanced the risk-based capital disclosure in the ICAAP.

#### Pension risk

We operate a number of pension plans throughout the world. Some of them are defined benefit plans, of which the largest is the HSBC Bank (UK) Pension Scheme. In order to fund the benefits associated with these plans, sponsoring Group companies (and in some instances, employees) make regular contributions in accordance with advice from actuaries and in consultation with the scheme s trustees (where relevant). In situations where a funding deficit emerges, sponsoring Group companies agree to make additional contributions to the plans, to address the deficit over an appropriate repayment period.

Further details of such payments may be found in Note 7 on page 316 of the Annual Report and Accounts 2011.

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HSBC HOLDINGS PLC

#### Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

The defined benefit plans invest these contributions in a range of investments designed to meet their long-term liabilities.

Pension risk arises from the potential for a deficit in a defined benefit plan to arise from a number of factors, including:

investments delivering a return below that required to provide the projected plan benefits. This could arise, for example, when there is a fall in the market value of equities, or when increases in long-term interest rates cause a fall in the value of fixed income securities held;

the prevailing economic environment leading to corporate failures, thus triggering write-downs in asset values (both equity and debt);

a change in either interest rates or inflation which causes an increase in the value of the scheme liabilities; and

scheme members living longer than expected (known as longevity risk).

Pension risk is assessed by way of an economic capital model that takes into account potential variations in these factors, using VAR methodology.

#### Residual risk

Residual risk is, primarily, the risk that mitigation techniques prove less effective than expected. This category also includes risks that arise from specific reputational or business events that give rise to exposures not deemed to be included in the major risk categories. We conduct economic capital assessments of such risks on a regular, forward-looking basis to ensure that their impact is adequately covered by our capital base.

Risks not explicitly assessed via capital

#### Liquidity risk

We use cash-flow stress testing as part of our control processes to assess liquidity risk. We do not manage liquidity through the explicit allocation of capital as, in common with standard industry practice, this is not considered to be an appropriate or adequate mechanism for managing these risks. However, we recognise that a strong capital base can help to mitigate liquidity risk both by providing a capital buffer to allow an entity to raise funds and deploy them in liquid positions, and by serving to reduce the credit risk taken by providers of funds to the Group.

#### Structural foreign exchange risk

Structural foreign exchange risks arise from our net investments in subsidiaries, branches and associates,

the functional currencies of which are other than the US dollar. Unrealised gains or losses due to revaluations of structural foreign exchange exposures are reflected in reserves, whereas other unrealised gains or losses arising from revaluations of foreign exchange positions are reflected in the income statement.

Our structural foreign exchange exposures are managed with the primary objective of ensuring, where practical, that our consolidated capital ratios and the capital ratios of the individual banking subsidiaries are largely protected from the effect of changes in exchange rates. This is usually achieved by ensuring that, for each subsidiary bank, the ratio of structural exposures in a given currency to RWAs denominated in that currency is broadly equal to the capital ratio of the subsidiary in question. We evaluate residual structural foreign exchange exposures using a VAR model, but typically do not assign any economic capital for these since they are managed within appropriate economic capital buffers.

#### Reputational risk

As a banking group, our good reputation depends upon the way in which we conduct our business, but it can also be affected by the way in which clients, to whom we provide financial services, conduct themselves. The safeguarding of our reputation is paramount and is the responsibility of all members of staff, supported by a global risk management structure, underpinned by relevant policies and practices, readily available guidance and regular training. A fresh emphasis in 2011 on values made these more explicit, to ensure we meet the expectations of society, customers, regulators and investors.

#### Sustainability risk

Sustainability risks arise from the provision of financial services to companies or projects which run counter to the needs of sustainable development; in effect, this risk arises when the environmental and social effects outweigh economic benefits. Sustainability risk is implicitly covered for economic capital purposes in credit risk, where risks associated with lending to certain categories of customers and industries are embedded.

#### **Business risk**

The FSA specifies that banks, as part of their internal assessment of capital adequacy process, should review their exposure to business risk.

Business risk is the potential negative impact on profits and capital from the Group not meeting our strategic objectives, as a result of unforeseen

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HSBC HOLDINGS PLC

#### Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

changes in the business and regulatory environment, exposure to economic cycles and technological changes.

We manage and mitigate business risk through our business planning and stress testing processes, so that our business model and planned activities are resourced and capitalised consistent with the commercial, economic and risk environment in which the Group operates, and that any potential vulnerabilities of our business plans are identified at an early stage so that mitigating actions can be taken.

Details of our management of these risks may be found on the following pages of the Annual Report and Accounts 2011: liquidity and funding 157, structural foreign exchange 166, reputational 183 and sustainability 184.

#### Risk management

Overview

All our activities whether lending, payment transmission, trading business to support clients and markets, or maintenance of our infrastructure for delivering financial services involve to varying degrees the measurement, evaluation, acceptance and management of risks.

The objective of risk management, shared across the organisation, is to support Group strategies to build sustainably profitable business in the best long-term interests of our shareholders and other stakeholders. We aim to ensure that risk management is firmly embedded in how we run our business through:

- a historically strong risk culture, with personal accountability for decisions;
- a formal governance structure, with a clear, well understood framework of risk ownership, standards and policy;

the alignment of risk and business objectives, and integration of risk appetite and stress testing into business planning and capital management; and

an independent, integrated and specialist Global Risk function.

#### Risk culture

Our risk culture is a major strength of the Group, and fostering it is a key responsibility of senior executives assisted by the Global Risk function. All employees are held accountable for identifying, assessing and managing risks within the scope of their assigned responsibilities. A primary duty of the senior management in each country in which we

operate is to implement and maintain an effective risk strategy to address all risks in the business they manage, and we have a system of personal, not collective, authorities for lending decisions. Personal accountability, reinforced by learning and development, helps sustain a disciplined and constructive culture of risk management and control throughout HSBC.

#### Risk governance and risk appetite

Our risk governance structure and approach to risk appetite are set out in the description of the responsibilities of the GRC on page 233 of the *Annual Report and Accounts 2011*. Strong risk management and internal control systems are evidenced in an established framework of risk ownership and documented standards, policy and procedures.

Risk management objectives are integrated into the performance scorecards of the heads of regions, global businesses and key functions from the GMB down, and cascaded through the organisation. The objectives of the Global Risk function are also fully aligned in this process with strategic business objectives.

Risk appetite is a key component of our management of risk. Our approach is designed to reinforce the integration of risk considerations into key business goals and planning processes. Preserving our strong capital position remains a key priority for HSBC, and the level of integration of our risk and capital management helps to optimise our response to business demand for regulatory and economic capital.

#### Global Risk

As risk is not static, our risk profile continually alters as a result of change in the scope and impact of a wide range of factors, from geopolitical to transactional. The risk environment requires continual monitoring and holistic assessment in order to understand and manage its complex interactions across the Group.

The Global Risk function, headed by the Group Chief Risk Officer ( GCRO ), provides an expert, integrated and independent assessment of risks across the Group:

supporting our regions and global businesses in the development and achievement of strategic objectives;

partnering the business in risk appetite planning and operation;

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#### Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

carrying out central approvals, controls, risk systems leadership and the analysis and reporting of management information;

fostering development of the Global Risk function and the Group s risk culture; and

addressing risk issues in dealings with external stakeholders including regulators and analysts.

In addition to business as usual operations, the Global Risk function engages fully with business development activities such as new product approval and post-implementation review, and acquisition due diligence.

#### Diversification

Diversification is an important aspect of our management of risk. The diversification of our lending portfolio across the regions, together with our broad range of global businesses and products, ensures that we are not overly dependent on a few countries or markets to generate income and growth. Our geographical diversification also supports our strategies for growth in faster-growing markets and those with international connectivity. Diversification models are developed, together with the business, within the Global Risk function s quantitative analytics discipline.

#### Stress testing

Global Risk leads work on stress scenario development, testing and analysis, the outcomes of which are used to assess the potential impact of relevant scenarios on the demand for regulatory capital, compared with its supply. Integrated with our risk appetite, planning and capital management processes, stress scenario analysis highlights any vulnerabilities of our business and capital plans to the adverse effects of extreme but plausible events. It is central to the monitoring of our top and emerging risks including among others: macro-economic and geopolitical risks such as that of sovereign and counterparty default in the eurozone; macro-prudential and regulatory change risks to our business model; and risks to our business operations including internet crime and information security risk.

The Group s top and emerging risks and areas of special interest are described on pages 235 and 112 respectively of the Annual Report and Accounts 2011.

#### Risk measurement and reporting systems

The purpose of our risk measurement and reporting systems is to ensure that, as far as possible, risks are

comprehensively captured with all the attributes necessary to support well-founded decisions, that those attributes are accurately assessed and that information is delivered in a timely way to the right points in the organisation for those risks to be successfully managed and mitigated.

Risk measurement and reporting systems are also subject to a robust governance framework, to ensure that their design is fit for purpose and that they are functioning properly. Group risk information technology ( IT ) systems development is a key responsibility of the GCRO, while the operation and development of risk rating and management systems and processes are ultimately subject to the oversight of the Board.

We invest significant resources in IT systems and processes in order to maintain and improve our risk management capabilities. Group policy promotes the deployment of preferred technology where practicable. Group standards govern the procurement and operation of systems used in our subsidiaries, processing risk information within business lines and risk functions. The measurement and monitoring of the major risks we encounter, including credit, market and operational risks, are increasingly delivered by central systems or, where this is not the case for sound business reasons, through structures and processes that support comprehensive oversight by senior management.

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

In May 2011, we revised this model to further embed Compliance within Global Risk, to establish specific Chief Risk Officer roles for Retail Banking and Wealth Management (RBWM) and Commercial Banking (CMB) in alignment with other global businesses, and to broaden the responsibility of Security and Fraud Risk. The new global model is designed to enable the end-to-end management of risk to be carried out in a consistent manner.

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#### Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

#### Credit risk

#### Overview and objectives

Credit risk is the risk of financial loss if a customer or counterparty fails to meet a payment obligation under a contract. It arises principally from direct lending, trade finance and leasing business, but also from off-balance sheet products such as guarantees and derivatives, and from the Group s holdings of debt and other securities. Credit risk generates the largest regulatory capital requirement of the risks we incur. This includes a capital requirement for counterparty credit risk in the banking and trading books. Further details regarding our management of counterparty credit risk can be found on page 31.

The principal objectives of our credit risk management are:

to maintain across HSBC a strong culture of responsible lending, and a robust risk policy and control framework;

to both partner and challenge our businesses in defining, implementing and continually re-evaluating our risk appetite under actual and stress scenario conditions; and

to ensure there is independent, expert scrutiny of credit risks, their costs and their mitigation.

#### Organisation and responsibilities

The credit risk functions within Wholesale Credit and Market Risk and Global Retail Risk Management are the constituent parts of Group Risk that support the GCRO in overseeing credit risks at the highest level. For this, their major duties comprise: undertaking independent reviews of larger and higher-risk credit proposals, large exposure policy and reporting oversight of our wholesale and retail credit risk management disciplines, ownership of our credit policy and credit systems programmes, and reporting on risk matters to senior executive management and to regulators. These credit risk functions work closely with other parts of the Global Risk function, for example: with Security and Fraud Risk on enhancement of protection against retail product fraud, with Market Risk on complex transactions, with Operational Risk on the internal control framework and with Risk Strategy on developing our economic capital model, risk appetite process and stress testing.

The credit responsibilities of Group Risk are described on page 189 of the Annual Report and Accounts 2011. Group-wide, the credit risk functions comprise a network of credit risk management offices reporting

within regional, integrated risk functions. They fulfil an essential role as independent risk control units distinct from business line management in providing an objective scrutiny of risk rating assessments, credit proposals for approval and other risk matters.

For wholesale credit risk management, we operate through a hierarchy of personal credit limit approval authorities, not committee structures. Risk officers of individual operating companies, acting under authorities delegated by their boards and executive bodies within local and Group standards, are accountable for their recommendations and credit approval decisions. Each operating company is responsible for the quality and

performance of its credit portfolios, and for monitoring and controlling all credit risks in those portfolios in accordance with Group standards.

Above certain risk-based thresholds established in line with authorities delegated by the Board, Group Risk concurrence must be sought for locally-approved facilities before they are extended to the customer. Moreover, risk proposals in certain portfolios sovereign obligors, banks, some non-bank financial institutions and intra-Group exposures are approved centrally in Group Risk to facilitate efficient control and the reporting of regulatory large and cross-border exposures.

#### Risk analytics

Group Risk manages credit risk analytics activities among a number of analytics disciplines supporting rating and scoring models, economic capital and stress testing. It formulates technical responses to industry developments and regulatory policy in the field of credit risk analytics, develops HSBC s global credit risk models, and oversees local model development and use around the Group in progress toward our implementation targets for the IRB advanced approach.

The risk analytics models are governed by the Group Credit Risk Analytics Oversight Committee ( CRAOC ) which meets monthly and reports to Risk Management Meeting ( RMM ). Group CRAOC is chaired by the risk function, and its membership is drawn from Risk and global businesses. Its primary responsibilities are to oversee the governance of our risk rating models for both wholesale and retail business, to manage the development of global models and through its oversight of local CRAOCs, to monitor the development of local models.

Similarly structured model governance and decision-making arrangements are in place in the

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#### Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

Group s major subsidiaries. See also model governance on page 21.

#### Credit risk rating systems

Our exposure to credit risk arises from a very wide range of customer and product types, and the risk rating systems in place to measure and monitor these risks are correspondingly diverse. Each major subsidiary typically has some exposures across this range, and requirements differ from place to place.

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

Whatever the nature of the exposure, a fundamental principle of our policy and approach is that analytical risk rating systems and scorecards are all valuable tools at the disposal of management, informing judgemental decisions for which individual approvers are ultimately accountable. In the case of automated decision-making processes, as used in retail credit origination where risk decisions may be taken at the point of sale with no management intervention, that accountability rests with those responsible for the parameters built into those processes/systems and the governance and controls surrounding their use. For customers, the credit process provides for at least an annual review of facility limits granted. Review may be more

frequent, as required by circumstances, such as the emergence of adverse risk factors, and any consequent amendments to risk ratings must be promptly implemented.

We constantly seek to improve the quality of our risk management. For central management and reporting purposes, Group IT systems are deployed to process credit risk data efficiently and consistently. A central database is used, which covers substantially all our direct lending exposures and holds the output of risk rating systems Group-wide. This continues to be enhanced in order to deliver comprehensive management information in support of business strategy, and solutions to evolving regulatory reporting requirements, both at an increasingly granular level.

Group standards govern the process through which risk rating systems are initially developed, judged fit for purpose, approved and implemented; the conditions under which analytical risk model outcomes can be overridden by decision-takers; and the process of model performance monitoring and reporting. The emphasis is on an effective dialogue between business line and risk management, suitable independence of decision-takers, and a good understanding and robust challenge 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, the greater availability and quality of data and any deficiencies identified through internal and external regulatory review. Structured processes and metrics are in place to capture relevant data and feed this into continuous model improvement.

The following pages set out credit risk exposure values, RWAs and regulatory capital requirements.

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

Table 5: Credit risk summary

	At 31 December 2011 Average				At 31 December 2010 Average			
	Exposure	exposure		Capital	Exposure	exposure		Capital
Total credit risk capital	value US\$bn	value US\$bn	RWAs US\$bn	required <sup>1</sup> US\$bn	value US\$bn	value US\$bn	RWAs US\$bn	required <sup>1</sup> US\$bn
requirements Credit risk	2,183.1	2,107.3	958.2	76.7	1,998.7	1,923.4	890.6	71.3
Counterparty credit risk <sup>2</sup>	145.8	144.7	53.8	4.3	127.8	138.0	50.2	4.0
	2,328.9	2,252.0	1,012.0	81.0	2,126.5	2,061.4	940.8	75.3
Credit risk analysis by exposure class								
Exposures under the IRB advanced								
approach Retail:	1,575.4	1,532.9	577.6	46.2	1,458.0	1,416.3	557.2	44.7
secured on real estate property	300.0	298.5	153.6	12.3	291.7	280.6	154.2	12.4
qualifying revolving retail	142.6	143.9	55.5	4.4	138.6	142.7	57.6	4.6
SME's	13.0	13.4	7.0	0.6	13.2	12.7	7.4	0.6
other retail	63.0	67.0	23.0	1.8	69.0	68.5	27.9	2.2
Total retail	518.6	522.8	239.1	19.1	512.5	504.5	247.1	19.8
Central governments and central	400.0	242.0	40.2	2.2	201.5	265.7	21.0	2.5
banks	408.0 145.4	343.8 169.1	40.3 27.7	3.2 2.2	291.5 178.0	265.7 179.5	31.8 31.3	2.5 2.5
Institutions	145.4 444.2	435.0	240.7	19.3	413.7	179.5 397.7	228.3	18.4
Corporates Equity	0.4	0.2	1.6	0.1	415.7	391.1	226.3	10.4
Securitisation positions <sup>4</sup>	58.8	62.0	28.2	2.3	62.3	68.9	18.7	1.5
_	20.0	02.0	20.2	2.0	02.3	00.7	10.7	1.5
Exposures under the IRB foundation approach	16.5	11.4	8.5	0.7	7.8	7.6	4.1	0.3
Corporates	16.5	11.4	8.5	0.7	7.8	7.6	4.1	0.3
1	10.3	11.7	0.0	0.7	7.0	7.0	7.1	0.3
Exposures under the standardised approach Central governments and central	591.2	563.0	372.1	29.8	532.9	499.5	329.3	26.3
banks	104.6	91.9	1.3	0.1	82.4	76.3	0.9	0.1
Institutions	41.9	42.5	14.0	1.1	40.8	38.5	11.3	0.9
Corporates	250.1	230.9	233.9	18.7	210.3	192.2	197.5	15.9
Retail	55.5	55.8	41.9	3.4	54.9	52.3	41.7	3.3
Secured on real estate property	47.1	42.4	25.6	2.0	39.3	35.8	20.6	1.6
Past due items	4.0	4.0	5.3	0.4	4.0	4.4	5.6	0.4
Regional governments or local								_
authorities	1.0	1.5	0.8	0.1	1.6	1.4	1.4	0.1
Equity	6.5	6.4	8.4	0.7	5.5	7.3	6.1	0.5
Other items <sup>5</sup>	80.5	87.6	40.9	3.3	94.1	91.3	44.2	3.5
	2,183.1	2,107.3	958.2	76.7	1,998.7	1,923.4	890.6	71.3

- 1 The regulatory capital charge, calculated as 8% of RWAs.
- 2 For further details of counterparty credit risk, see page 31.
- 3 The FSA allows exposures to small and medium-sized enterprises (SME s) to be treated under the Retail IRB approach, where the total amount owed to the Group by the counterparty is less than EUR Im and the customer is not managed individually as a corporate counterparty.
- 4 Excludes trading book securitisation positions and positions deducted from regulatory capital (that would otherwise be risk-weighted at 1,250%).
- Primarily includes such items as fixed assets, prepayments, accruals and Hong Kong Government certificates of indebtedness.

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Exposure values are allocated to a region based on the country of incorporation of the HSBC subsidiary or associate where the exposure was originated.

Table 6: Credit risk exposure by geographical region

				Exposure va	lue				
			Rest of	zaposure , u					
		Hong	Asia-		North	Latin	Total		Average
	Europe US\$bn	Kong US\$bn	Pacific US\$bn	MENA US\$bn	America US\$bn	America US\$bn	exposure US\$bn	RWAs US\$bn	RW %
At 31 December 2011									
IRB advanced approach	557.8	300.2	240.9	25.3	413.3	37.9	1,575.4	577.6	37
Central governments and	400 =			10.4	00.	24.5	400.0	40.0	40
central banks	109.5	71.5	75.4	18.4	98.5	34.7	408.0	40.3	10
Institutions	32.8	48.3	35.2	6.7	19.2	3.2	145.4	27.7	19
Corporates	145.9 214.8	101.7 77.8	94.8 35.1	0.2	101.6 190.9		444.2 518.6	240.7 239.1	54 46
Retail	214.8 0.4	//.8	35.1		190.9		0.4	239.1 1.6	370
Equity Securitisation positions <sup>1</sup>	54.4	0.9	0.4		3.1		58.8	28.2	48
1		0.9	0.4		3.1				
IRB foundation approach	12.7			3.8			16.5	8.5	52
Corporates	12.7			3.8			16.5	8.5	52
Standardised approach Central governments and	150.8	42.9	255.6	43.4	21.9	76.6	591.2	372.1	63
central banks	54.1	0.7	47.5	1.9		0.4	104.6	1.3	1
Institutions	4.0	0.4	35.9	1.6			41.9	14.0	33
Corporates	53.8	2.4	121.6	30.3	2.5	39.5	250.1	233.9	94
Retail	6.0	2.4	17.4	4.2	3.4	22.1	55.5	41.9	75
Secured on real estate property	10.4	2.8	23.2	2.4	2.7	5.6	47.1	25.6	54
Past due items	0.7		0.3	1.2	0.1	1.7	4.0	5.3	133
Regional governments or local									
authorities				0.2		0.8	1.0	0.8	80
Equity	3.2	0.9	0.6	0.1	1.6	0.1	6.5	8.4	129
Other items <sup>2</sup>	18.6	33.3	9.1	1.5	11.6	6.4	80.5	40.9	51
	721.3	343.1	496.5	72.5	435.2	114.5	2,183.1	958.2	44
At 31 December 2010	5166	200.6	101.1	22.4	277.0	40.5	1 450 0	555.0	20
IRB advanced approach Central governments and	516.6	309.6	191.1	22.4	377.8	40.5	1,458.0	557.2	38
central banks	57.8	65.6	52.2	16.2	63.5	36.2	291.5	31.8	11
Institutions	44.7	75.1	30.1	6.1	17.7	4.3	178.0	31.3	18
Corporates	142.6	97.4	75.8	0.1	97.8		413.7	228.3	55
Retail	216.6	70.3	32.5		193.1		512.5	247.1	48
Securitisation positions <sup>1</sup>	54.9	1.2	0.5		5.7		62.3	18.7	30
IRB foundation approach	7.8						7.8	4.1	53
Corporates	7.8						7.8	4.1	53
Standardised approach	156.7	41.7	192.1	45.0	24.6	72.8	532.9	329.3	62

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Central governments and									
central banks	47.7	1.0	31.2	2.1		0.4	82.4	0.9	1
Institutions	9.6	0.2	29.2	1.7		0.1	40.8	11.3	28
Corporates	48.6	3.3	91.2	30.3	2.2	34.7	210.3	197.5	94
Retail	6.8	4.1	14.0	4.4	3.3	22.3	54.9	41.7	76
Secured on real estate property	11.0	4.5	15.0	2.2	2.1	4.5	39.3	20.6	52
Past due items	0.9		0.2	1.3	0.1	1.5	4.0	5.6	140
Regional governments or local									
authorities				0.2		1.4	1.6	1.4	88
Equity	1.2	1.0	1.0	0.2	2.0	0.1	5.5	6.1	111
Other items <sup>2</sup>	30.9	27.6	10.3	2.6	14.9	7.8	94.1	44.2	47
	681.1	351.3	383.2	67.4	402.4	113.3	1,998.7	890.6	45

<sup>1</sup> Excludes trading book securitisation positions and positions deducted from regulatory capital (that would otherwise be risk-weighted at 1,250%).

<sup>2</sup> Primarily includes such items as fixed assets, prepayments, accruals and Hong Kong Government certificates of indebtedness.

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

Table 7: Risk weightings by geographical region

			Rest of				
		Hong	Asia-		North	Latin	
	Europe US\$bn	Kong US\$bn	Pacific US\$bn	MENA US\$bn	America US\$bn	America US\$bn	Total US\$bn
At 31 December 2011 IRB advanced approach Total exposure value Total RWAs	557.8 150.4	300.2 68.0	240.9 82.3	25.3 10.5	413.3 254.5	37.9 11.9	1,575.4 577.6
Average RW (%)	150.4	23	34	42	254.5 62	31	37
IRB foundation approach Total exposure value Total RWAs	12.7 6.1			3.8 2.4			16.5 8.5
Average RW (%)	48			63			52
Standardised approach							
Total exposure value Total RWAs	150.8 77.4	42.9 12.9	255.6 159.2	43.4 37.4	21.9 19.0	76.6 66.2	591.2 372.1
Average RW (%)	51	30	62	86	87	86	63
Total credit risk Total exposure value Total RWAs	721.3 233.9	343.1 80.9	496.5 241.5	72.5 50.3	435.2 273.5	114.5 78.1	2,183.1 958.2
Average RW (%)	32	24	49	69	63	68	44
At 31 December 2010 IRB advanced approach Total exposure value Total RWAs	516.6 140.3	309.6 72.1	191.1 68.7	22.4 6.9	377.8 256.1	40.5 13.1	1,458.0 557.2
Average RW (%)	27	23	36	31	68	32	38
IRB foundation approach Total exposure value Total RWAs	7.8 4.1						7.8 4.1
Average RW (%)	53						53
Standardised approach Total exposure value Total RWAs	156.7 72.9	41.7 14.2	192.1 122.2	45.0 38.8	24.6 18.4	72.8 62.8	532.9 329.3
Average RW (%)	47	34	64	86	75	86	62
Total credit risk Total exposure value Total RWAs Average RW (%)	681.1 217.3 32	351.3 86.3 25	383.2 190.9 50	67.4 45.7 68	402.4 274.5 68	113.3 75.9 67	1,998.7 890.6 45
	32	20	50	00	00	07	1.5

## Industry sector analysis

The table below presents an analysis of credit risk exposures by industry sector. This replaces the former

counterparty sector table with a more granular distribution of exposures within their Basel II approaches and exposure classes across a wider range of sectors.

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

Table 8: Credit risk exposure by industry sector

					Exposure Va	llue			
					Govern-				
			Inter-	Property	ment and				
			national	and other	public			Non-	
		Manu-	trade and	business	admin-	Other		customer	
	Personal US\$bn	facturing US\$bn	services US\$bn	activities US\$bn	istration US\$bn	commercial US\$bn	Financial US\$bn	assets US\$bn	Total US\$bn
At 31 December 2011	OSBOII	USBIII	USBIII	USADII	CS\$DII	USBIII	USADII	USADII	USBIII
IRB advanced approach Central governments and	507.5	109.1	97.0	121.8	121.1	60.5	558.4		1,575.4
central banks					102.3	0.2	305.5		408.0
Institutions					0.7		144.7		145.4
Corporates	1.9	108.1	94.4	115.1	17.4	58.7	48.6		444.2
Retail	505.6	1.0	2.6	6.7	0.7	1.6	0.4		518.6
Equity							0.4		0.4
Securitisation positions <sup>1</sup>							58.8		58.8
IRB foundation approach		5.9	3.6	1.7	0.6	2.9	1.8		16.5
Corporates		5.9	3.6	1.7	0.6	2.9	1.8		16.5
Standardised approach Central governments and	88.9	62.8	58.2	52.5	82.1	51.9	119.4	75.4	591.2
central banks					52.6		52.0		104.6
Institutions							41.9		41.9
Corporates	2.6	60.7	54.1	42.1	25.5	49.3	15.8		250.1
Retail	45.4	1.6	3.6	1.7	1.3	1.2	0.7		55.5
Secured on real estate	20.0					0.0	0.4		
property	38.8 2.1	0.3	0.4	7.3	0.1	0.9 0.3	0.1 0.2		47.1 4.0
Past due items Regional governments or	2.1	0.3	0.4	0.6	0.1	0.3	0.2		4.0
local authorities					0.8		0.2		1.0
Equity		0.1	0.1	0.8	0.0	0.2	5.3		6.5
Other items <sup>2</sup>		0.1	<b></b>	0.0	1.8	<b>0.2</b>	3.2	75.4	80.5
					2.0				00.0
	596.4	177.8	158.8	176.0	203.8	115.3	679.6	75.4	2,183.1

<sup>1</sup> Excludes trading book securitisation positions and positions deducted from regulatory capital (that would otherwise be risk-weighted at 1,250%).

<sup>2</sup> Primarily includes such items as fixed assets, prepayments, accruals and Hong Kong Government certificates of indebtedness.

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

The following is an analysis of exposures by period outstanding from the reporting date to the maturity date. The full exposure value is allocated to a residual maturity band based on the contractual end date.

Table 9: Credit risk exposure by residual maturity

			Exposure valu	e		
	Less		•			
	than	Between	More		Total	
		1 and 5	than 5			
	1 year <sup>1</sup>	years	years	Undated	exposure	RWAs
	US\$bn	US\$bn	US\$bn	US\$bn	US\$bn	US\$bn
At 31 December 2011						
IRB advanced approach	765.1	399.8	410.0	0.5	1,575.4	577.6
Central governments and central banks	273.3	93.5	41.2		408.0	40.3
Institutions	111.6	32.2	1.5	0.1	145.4	27.7
Corporates	186.9	207.0	50.3		444.2	240.7
Retail	153.5	64.0	301.1	0.4	518.6	239.1
Equity Securitisation positions <sup>2</sup>	39.8	3.1	15.9	0.4	0.4 58.8	1.6 28.2
•						
IRB foundation approach	10.5	5.3	0.7		16.5	8.5
Corporates	10.5	5.3	0.7		16.5	8.5
Standardised approach	105.9	327.4	72.8	85.1	591.2	372.1
Central governments and central banks	8.9	81.6	14.1		104.6	1.3
Institutions	3.7	38.1	0.1		41.9	14.0
Corporates	65.0	166.9	18.0	0.2	250.1	233.9
Retail	22.3	28.4	4.8		55.5	41.9
Secured on real estate property	2.6	10.5	34.0		47.1	25.6
Past due items	2.8	0.9	0.3		4.0	5.3
Regional governments or local authorities	2.8 0.4	0.9 0.2	0.3 0.4	-	1.0	0.8
Regional governments or local authorities Equity	0.4	0.2	0.4	6.5 78.4	1.0 6.5	0.8 8.4
Regional governments or local authorities				6.5 78.4	1.0	0.8
Regional governments or local authorities Equity	0.4	0.2	0.4		1.0 6.5	0.8 8.4
Regional governments or local authorities Equity	0.4	0.2	0.4 1.1	78.4	1.0 6.5 80.5	0.8 8.4 40.9
Regional governments or local authorities Equity Other items <sup>3</sup>	0.4	0.2	0.4 1.1	78.4	1.0 6.5 80.5	0.8 8.4 40.9
Regional governments or local authorities Equity Other items <sup>3</sup> At 31 December 2010	0.4	0.2	0.4 1.1	78.4	1.0 6.5 80.5	0.8 8.4 40.9
Regional governments or local authorities Equity Other items <sup>3</sup>	0.4 0.2 881.5	0.2 0.8 732.5	0.4 1.1 483.5	78.4 85.6	1.0 6.5 80.5	0.8 8.4 40.9 958.2
Regional governments or local authorities Equity Other items <sup>3</sup> At 31 December 2010 IRB advanced approach	0.4 0.2 881.5	0.2 0.8 732.5	0.4 1.1 483.5	78.4 85.6	1.0 6.5 80.5 2,183.1	958.2 0.8 8.4 40.9
Regional governments or local authorities Equity Other items <sup>3</sup> At 31 December 2010 IRB advanced approach Central governments and central banks	0.4 0.2 881.5 667.0 177.4	0.2 0.8 732.5	0.4 1.1 483.5 380.8 42.4	78.4 85.6 2.7 0.5	1.0 6.5 80.5 2,183.1 1,458.0 291.5	958.2 557.2 31.8
Regional governments or local authorities Equity Other items <sup>3</sup> At 31 December 2010 IRB advanced approach Central governments and central banks Institutions	0.4 0.2 881.5 667.0 177.4 128.9 186.1 133.7	0.2 0.8 732.5 407.5 71.2 44.3	0.4 1.1 483.5 380.8 42.4 3.6	78.4 85.6 2.7 0.5 1.2	1.0 6.5 80.5 2,183.1 1,458.0 291.5 178.0	0.8 8.4 40.9 958.2 557.2 31.8 31.3
Regional governments or local authorities Equity Other items <sup>3</sup> At 31 December 2010 IRB advanced approach Central governments and central banks Institutions Corporates	0.4 0.2 881.5 667.0 177.4 128.9 186.1	0.2 0.8 732.5 407.5 71.2 44.3 179.1	0.4 1.1 483.5 380.8 42.4 3.6 47.5	78.4 85.6 2.7 0.5 1.2	1.0 6.5 80.5 2,183.1 1,458.0 291.5 178.0 413.7	0.8 8.4 40.9 958.2 557.2 31.8 31.3 228.3
Regional governments or local authorities Equity Other items <sup>3</sup> At 31 December 2010 IRB advanced approach Central governments and central banks Institutions Corporates Retail Securitisation positions <sup>2</sup>	0.4 0.2 881.5 667.0 177.4 128.9 186.1 133.7	0.2 0.8 732.5 407.5 71.2 44.3 179.1 109.6 3.3	380.8 42.4 3.6 47.5 269.2 18.1	78.4 85.6 2.7 0.5 1.2	1.0 6.5 80.5 2,183.1 1,458.0 291.5 178.0 413.7 512.5 62.3	958.2 557.2 31.8 31.3 228.3 247.1
Regional governments or local authorities Equity Other items <sup>3</sup> At 31 December 2010 IRB advanced approach Central governments and central banks Institutions Corporates Retail	0.4 0.2 881.5 667.0 177.4 128.9 186.1 133.7 40.9	0.2 0.8 732.5 407.5 71.2 44.3 179.1 109.6	380.8 42.4 3.6 47.5 269.2	78.4 85.6 2.7 0.5 1.2	1.0 6.5 80.5 2,183.1 1,458.0 291.5 178.0 413.7 512.5	958.2 557.2 31.8 31.3 228.3 247.1 18.7
Regional governments or local authorities Equity Other items <sup>3</sup> At 31 December 2010 IRB advanced approach Central governments and central banks Institutions Corporates Retail Securitisation positions <sup>2</sup> IRB foundation approach	0.4 0.2 881.5 667.0 177.4 128.9 186.1 133.7 40.9 3.6	0.2 0.8 732.5 407.5 71.2 44.3 179.1 109.6 3.3 3.7	380.8 42.4 3.6 47.5 269.2 18.1 0.5	78.4 85.6 2.7 0.5 1.2	1.0 6.5 80.5 2,183.1 1,458.0 291.5 178.0 413.7 512.5 62.3 7.8	958.2 557.2 31.8 31.3 228.3 247.1 18.7 4.1
Regional governments or local authorities Equity Other items <sup>3</sup> At 31 December 2010 IRB advanced approach Central governments and central banks Institutions Corporates Retail Securitisation positions <sup>2</sup> IRB foundation approach Corporates	0.4 0.2 881.5 667.0 177.4 128.9 186.1 133.7 40.9 3.6 3.6	0.2 0.8 732.5 407.5 71.2 44.3 179.1 109.6 3.3 3.7 3.7	380.8 42.4 3.6 47.5 269.2 18.1 0.5 0.5	78.4 85.6 2.7 0.5 1.2 1.0	1.0 6.5 80.5 2,183.1 1,458.0 291.5 178.0 413.7 512.5 62.3 7.8 7.8	958.2 557.2 31.8 31.3 228.3 247.1 18.7 4.1 4.1
Regional governments or local authorities Equity Other items <sup>3</sup> At 31 December 2010 IRB advanced approach Central governments and central banks Institutions Corporates Retail Securitisation positions <sup>2</sup> IRB foundation approach Corporates Standardised approach	0.4 0.2 881.5 667.0 177.4 128.9 186.1 133.7 40.9 3.6 3.6 117.1 14.1 8.1	0.2 0.8 732.5 407.5 71.2 44.3 179.1 109.6 3.3 3.7 3.7 247.7 51.0 32.5	380.8 42.4 3.6 47.5 269.2 18.1 0.5 0.5 69.5 17.3 0.2	78.4 85.6 2.7 0.5 1.2 1.0	1.0 6.5 80.5 2,183.1 1,458.0 291.5 178.0 413.7 512.5 62.3 7.8 7.8 532.9 82.4 40.8	958.2 557.2 31.8 31.3 228.3 247.1 18.7 4.1 4.1 329.3 0.9 11.3
Regional governments or local authorities Equity Other items <sup>3</sup> At 31 December 2010 IRB advanced approach Central governments and central banks Institutions Corporates Retail Securitisation positions <sup>2</sup> IRB foundation approach Corporates Standardised approach Central governments and central banks	0.4 0.2 881.5 667.0 177.4 128.9 186.1 133.7 40.9 3.6 3.6 117.1 14.1	0.2 0.8 732.5 407.5 71.2 44.3 179.1 109.6 3.3 3.7 3.7 247.7 51.0	380.8 42.4 3.6 47.5 269.2 18.1 0.5 0.5 69.5 17.3	78.4 85.6 2.7 0.5 1.2 1.0	1.0 6.5 80.5 2,183.1 1,458.0 291.5 178.0 413.7 512.5 62.3 7.8 7.8 532.9 82.4	958.2 557.2 31.8 31.3 228.3 247.1 18.7 4.1 4.1 329.3 0.9

Secured on real estate property	2.0	6.8	30.5		39.3	20.6
Past due items	3.0	0.6	0.4		4.0	5.6
Regional governments or local authorities	0.6	0.3	0.7		1.6	1.4
Equity				5.5	5.5	6.1
Other items <sup>3</sup>	2.7		0.2	91.2	94.1	44.2
	787.7	658.9	450.8	101.3	1,998.7	890.6

<sup>1</sup> Revolving exposures such as overdrafts are considered to have a residual maturity of less than one year.

<sup>2</sup> Excludes trading book securitisation positions and positions deducted from regulatory capital (that would otherwise be risk-weighted at 1,250%).

<sup>3</sup> Primarily includes such items as fixed assets, prepayments, accruals and Hong Kong Government certificates of indebtedness.

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

## Application of the IRB approach

This section sets out our overall risk rating systems, a description of the population of credit risk analytical models and our approaches to model governance and the use of IRB metrics.

Risk rating systems

Our Group-wide credit risk rating framework incorporates the PD of an obligor and loss severity expressed in terms of EAD and LGD. These measures are used to calculate regulatory expected loss and capital requirements. 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.

Appropriate PD, EAD and LGD estimation requires strong governance, rigorous and well understood monitoring and the use of all information available, from the macro-economic down to individual client information, in order to assess risk correctly. The PD, EAD and LGD models that are described in more detail below are built to incorporate these requirements. While the model build process can ensure consistency, and that all factors which data demonstrates to be significant can be taken into account in assessing risk, judgmental and other exogenous factors will commonly also play a part. To ensure that this does not lead to distortions, our model outcomes are subject to formal internal challenge by risk and business practitioners to ensure that all factors are taken into account in the determination of final risk ratings.

Under our Basel II rollout plans for Group reporting purposes, a number of our Group companies and portfolios are in transition to advanced IRB approaches. At the end of 2011, portfolios in much of Europe, Hong Kong, Rest of Asia-Pacific and North America were on advanced IRB approaches. Others remain on the standardised or foundation approaches under Basel II, pending the definition of local regulations or model approval, or under exemptions from IRB treatment.

The narrative explanations that follow relate to the IRB approaches: advanced and foundation IRB for distinct customers and Retail IRB for the portfolio-managed retail business. Details of our use of the standardised approach can be found on page 29.

#### Wholesale business

PD for wholesale customer segments (Central Governments and Central Banks (sovereigns), Institutions, Corporates) and for certain individually

assessed personal customers 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 credit risk rating model for the individual obligor 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 information relevant to the risk rating determination, including external ratings and market data where available. The finally approved CRR is mapped to a PD value range of which the mid-point is used in the regulatory capital calculation. For clarity of presentation, the 23-grade scale is summarised at Table 11.

IRB equity exposures are treated under the simple risk weight approach.

EAD and LGD estimation for the wholesale business is subject to a Group framework of basic principles which permits flexibility in the definition of parameters by our operating entities to suit conditions in their own jurisdictions. Group Risk provides co-ordination, benchmarks and the sharing and promotion of best practice. EAD is estimated to a 12-month time 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 such factors as 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.

#### **Retail business**

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

Global and local models

Global PD models have been developed for asset classes or clearly identifiable sub-classes where the customer relationship is managed on a global basis: sovereigns, banks, certain non-bank financial

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

institutions and the largest corporate clients, typically operating internationally. Such global management facilitates consistent implementation by Group Risk and our operating subsidiaries worldwide of standards, policies, systems, approval procedures and other controls, reporting, pricing, performance guidelines and comparative analysis.

Local PD models are developed where the risk profile of obligors is specific to a country, sector or other non-global factor. This applies to large corporate clients having distinct characteristics in a particular geography, middle market corporates, corporate and retail small and medium-sized enterprises (SME s) and all other retail segments. There are several hundred such models in use or under development within HSBC.

Our approach to EAD and LGD, the framework which is described under Risk rating systems above, similarly encompasses both global and local models. The former include EAD and LGD models for each of sovereigns and banks, as exposures to these two customer types are managed centrally by Group Risk. All local EAD and LGD models fall within the scope and principles of the Group EAD and LGD framework, subject to dispensation from Group Risk.

#### Model governance

Model governance is under the general oversight of Group CRAOC, whose responsibilities are set out in Risk Analytics on page 13. Group CRAOC has regional and entity-level counterparts with comparable terms of reference. The development and use of data and models to meet local requirements are the responsibility of regional and/or local entities under the governance of their own management, subject to overall Group policy and oversight.

The Group s global models require FSA approval for IRB accreditation and fall directly under the remit of Group CRAOC. Locally developed models must be referred for approval to Group CRAOC if they cover exposures generating RWA exceeding a prescribed threshold or are otherwise deemed material on grounds of risk, portfolio size, or business type, and must be referred to Group Risk if they fall within the criteria of the FSA s approval process for IRB models. The threshold for referral of material local models to Group CRAOC is a portfolio coverage of US\$20bn or more by RWAs.

Group Risk utilises Group standards for the development, validation, independent review, approval, implementation and performance monitoring of credit risk rating models, and

oversight of respective local standards for local models. All models must be reviewed at least annually, or more frequently as the need arises.

Compliance with Group standards is subject to examination both by risk oversight and review from within the Risk function itself, and by internal audit. While the standards set out minimum general requirements, Group Risk has discretion to approve dispensations exceptionally, and fosters best practice between offices.

#### Use of internal estimates

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

**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;

**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 RMM and the Board contain analyses of risk exposures, e.g. by customer segment and quality grade, employing IRB metrics;

pricing: Basel II 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 HSBC 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.

The following tables provide an analysis of the IRB risk measures used to calculate RWAs under the IRB approach and set out the distribution of IRB exposures by credit quality.

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

Tables 10 to 12 cover advanced and foundation exposures to central governments and central banks, institutions and corporates. Table 13 presents the

analysis of retail exposures, and the risk weighting analysis of securitisation exposures can be found at Table 27.

Table 10: IRB advanced exposure by risk components

		Undrawn				
	Exposure	commit-	Exposure weighted average	Exposure weighted average	Exposure weighted average	
	value	ments	PD	LGD	risk weight	RWAs
	US\$bn	US\$bn	%	%	%	US\$bn
At 31 December 2011						
Central governments and central banks	408.0	2.4	0.11	20.3	10	40.3
Institutions	145.4	14.9	0.46	32.5	19	27.7
Corporates	432.9	260.2	2.57	39.2	54	233.1
At 31 December 2010						
Central governments and central banks	291.5	3.9	0.11	20.9	11	31.8
Institutions	178.0	10.9	0.11	29.5	18	31.3
Corporates	409.4	227.3	2.82	38.4	55	226.0

<sup>1</sup> Excludes securitisation and equity exposures, and specialised lending exposures subject to the supervisory slotting approach. Table 11: IRB advanced exposure by obligor grade<sup>2</sup>

Central governments and central banks
Minimal default risk
Low default risk
Satisfactory default risk
Fair default risk
Moderate default risk
Significant default risk
High default risk
Special management

		At 31 December :	2011	
Exposure value US\$bn	Exposure weighted average PD %	Exposure weighted average LGD %	Exposure weighted average risk weight %	RWAs US\$bn
302.1 82.8	0.02 0.07	13.5 38.0	3 17	7.8 13.9
13.6	0.39	43.7	52	7.1
4.1 4.8	1.27 3.20	43.6 45.0	95 125	3.9 6.0
0.2 0.3	7.46 9.74	45.0 88.0	150 367	0.3 1.1
0.1	53.88	61.2	200	0.2

### Institutions

Minimal default risk Low default risk Satisfactory default risk Fair default risk Moderate default risk Significant default risk High default risk Special management Default<sup>3</sup>

### Corporates

Minimal default risk Low default risk Satisfactory default risk Fair default risk Moderate default risk Significant default risk High default risk Special management Default<sup>3</sup>

408.0	0.11	20.3	10	40.3
37.1	0.03	28.6	7	2.5
82.9	0.09	32.8	14	11.6
18.1	0.29	34.5	33	5.9
4.8	1.10	39.5	73	3.5
0.9	3.18	45.6	122	1.1
0.6	5.95	50.1	183	1.1
0.6	11.50	62.0	283	1.7
0.2	74.69	45.6	150	0.3
0.2	100.00	70.0		
145.4	0.46	32.5	19	27.7
11011	0.10	32.0	17	2
42.9	0.04	40.5	14	6.0
99.4	0.10	41.6	26	25.8
151.5	0.39	39.4	49	74.5
73.9	1.20	37.4	79	58.1
42.9	2.93	35.6	101	43.3
8.8	6.57	33.9	122	10.7
4.5	10.70	36.6	171	7.7
2.7	32.41	36.3	181	4.9
6.3	100.00	40.7	33	2.1
432.9	2.57	39.2	54	233.1

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

At 31 December 2010

				Exposure	
		Exposure	Exposure	weighted	
	Exposure	weighted	weighted	average risk	
	value	average PD	average LGD	weight	RWAs
	US\$bn	%	%	%	US\$bn
Central governments and central banks					
Minimal default risk	210.9	0.01	13.8	3	5.8
Low default risk	62.2	0.08	37.6	17	10.6
Satisfactory default risk	9.3	0.42	44.7	59	5.5
Fair default risk	7.0	1.24	44.7	91	6.4
Moderate default risk	1.3	2.88	47.8	131	1.7
Significant default risk	0.6	5.75	44.7	150	0.9
High default risk	0.2	9.52	87.4	350	0.7
Special management		19.00	88.0	456	0.2
	291.5	0.11	20.9	11	31.8
Institutions					
Minimal default risk	44.6	0.03	26.8	6	2.7
Low default risk	104.8	0.10	29.1	13	13.8
Satisfactory default risk	20.3	0.31	31.3	30	6.1
Fair default risk	5.5	1.29	41.9	82	4.5
Moderate default risk	1.3	2.82	44.6	115	1.5
Significant default risk	0.7	6.20	44.3	143	1.0
High default risk	0.6	12.27	60.8	267	1.6
Special management		18.17	30.2	170	
Default <sup>3</sup>	0.2	100.00	62.7	50	0.1
	178.0	0.36	29.5	18	31.3
Corporates					
Minimal default risk	34.5	0.04	39.7	13	4.4
Low default risk	94.0	0.10	40.2	23	21.4
Satisfactory default risk	137.8	0.39	39.0	49	67.2
Fair default risk	76.4	1.28	36.5	78	59.5
Moderate default risk	39.6	2.98	35.3	99	39.3
Significant default risk	9.1	6.57	35.4	129	11.7
High default risk	8.0	10.58	36.8	171	13.7
Special management	3.8	32.05	35.9	184	7.0
Default <sup>3</sup>	6.2	100.00	44.9	29	1.8
	409.4	2.82	38.4	55	226.0

<sup>1</sup> See glossary for definition of obligor grade.

Table 12: IRB foundation exposure<sup>1,2</sup>

Exposure	Exposure	RWAs
value	weighted	
	average risk	

<sup>2</sup> Excludes securitisation and equity exposures, and specialised lending exposures subject to the supervisory slotting approach.

<sup>3</sup> There is a requirement to hold additional capital for unexpected losses on defaulted exposures where LGD exceeds best estimate of EL. As a result, in some cases, RWAs arise for exposures in default.

Corporates
At 31 December 2011
At 31 December 2010

	weight	
US\$bn	%	US\$bn
16.5	52	8.5
7.8	53	4.1

- 1 Exposures have not been disclosed by obligor grade as the amounts are not significant at Group level.
- 2 Excludes securitisation and equity exposures, and specialised lending exposures subject to the supervisory slotting approach.

The variations between different jurisdictions definitions underlying retail PD and LGD preclude the use of either measure as a global comparator. Our EL bandings for the retail business summarise a more granular EL scale for these customer segments, which combines obligor and facility/product risk

factors in a composite measure of PD and LGD. This enables the diverse risk profiles of retail portfolios across the Group to be assessed on a more comparable scale than through the direct use of disparate PD and LGD measures.

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

Table 13: Retail IRB exposure by geographical region

#### At 31 December 2011 Secured on real estate property

Expected loss band

less than 1%

greater than or equal to 1% and less than 5% greater than or equal to 5% and less than 10% greater than or equal to 10% and less than 20% greater than or equal to 20% and less than 40% greater than or equal to 40% or exposures in default

## Qualifying revolving retail exposures

Expected loss band

less than 1%

greater than or equal to 1% and less than 5% greater than or equal to 5% and less than 10% greater than or equal to 10% and less than 20% greater than or equal to 20% and less than 40% greater than or equal to 40% or exposures in default

## $SMEs^2$

Expected loss band

less than 1% greater than or equal to 1% and less than 5% greater than or equal to 5% and less than 10% greater than or equal to 10% and less than 20% greater than or equal to 20% and less than 40% greater than or equal to 40% or exposures in default

#### Other retail

Expected loss band

less than 1%

greater than or equal to 1% and less than 5% greater than or equal to 5% and less than 10% greater than or equal to 10% and less than 20% greater than or equal to 20% and less than 40% greater than or equal to 40% or exposures in default

		Exposure valu Rest of	e	
	Hong	Asia	North	Total
Europe US\$bn	Kong US\$bn	Pacific US\$bn	America US\$bn	exposure US\$bn
1267	44.9	21.4	44.4	247.2
126.7 2.0	44.8 0.5	31.4 0.6	44.4 22.1	247.3 25.2
0.4	0.5	0.0	5.7	6.1
0.5			5.8	6.3
0.7			3.5	4.2
0.3	0.1	0.3	10.2	10.9
130.6	45.4	32.3	91.7	300.0
28.0	17.8		57.4	103.2
6.4	3.1		15.7	25.2
1.0	0.5		6.3	7.8
0.3	0.1		2.1	2.5
0.2	0.1		1.6	1.9
0.4			1.6	2.0
36.3	21.6		84.7	142.6
4.8	0.8		0.6	6.2
4.5			0.2	4.7
0.6				0.6
0.2				0.2
0.2				0.2
1.1				1.1
11.4	0.8		0.8	13.0
21.7	0.4	2.0		70.5
31.7	9.4 0.4	2.8	6.7 3.8	50.6
3.3 0.6	0.4		3.8 1.2	7.5 1.9
0.6	0.1		0.9	1.9
0.2			0.4	0.5
0.6	0.1		0.7	1.4
0.0	0.1		0.7	2.7

### Total retail

Expected loss band less than 1% greater than or equal to 1% and less than 5% greater than or equal to 5% and less than 10% greater than or equal to 10% and less than 20% greater than or equal to 20% and less than 40%

greater than or equal to 40% or exposures in default

36.5	10.0	2.8	13.7	63.0
191.2	72.8	34.2	109.1	407.3
16.2	4.0	0.6	41.8	62.6
2.6	0.6		13.2	16.4
1.2	0.1		8.8	10.1
1.2	0.1		5.5	6.8
2.4	0.2	0.3	12.5	15.4
214.8	77.8	35.1	190.9	518.6

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# Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

			Exposure values Rest of	ie	
		Hong	Asia-	North	Total
	Europe US\$bn	Kong US\$bn	Pacific US\$bn	America US\$bn	exposure <sup>1</sup> US\$bn
At 31 December 2010	СБФОП	СБфен	СБфон	СБфен	СБФОП
Secured on real estate property					
Expected loss band					
less than 1%	116.3	40.4	29.1	51.3	237.1
greater than or equal to 1% and less than 5%	2.0	0.3	0.6	21.5	24.4
greater than or equal to 5% and less than 10%	0.5			8.2	8.7
greater than or equal to 10% and less than 20% greater than or equal to 20% and less than 40%	0.2 0.1			5.7 4.8	5.9 4.9
greater than or equal to 40% or exposures in default	1.1	0.1	0.3	9.2	10.7
greater than of equal to 10% of exposures in details					
	120.2	40.8	30.0	100.7	291.7
Qualifying revolving retail exposures					
Expected loss band					
less than 1%	33.3	15.4		47.2	95.9
greater than or equal to 1% and less than 5%	6.8	3.2 0.6		16.4	26.4
greater than or equal to 5% and less than 10% greater than or equal to 10% and less than 20%	1.4 0.6	0.0		6.6 2.9	8.6 3.7
greater than or equal to 20% and less than 40%	0.0	0.1		0.9	1.2
greater than or equal to 40% or exposures in default	0.8	V.1		2.0	2.8
Seemen and a square of the seemen	43.1	19.5		76.0	138.6
	43.1	19.3		70.0	136.0
SMEs <sup>2</sup>					
Expected loss band	4.1	0.6		0.7	
less than 1% greater than or equal to 1% and less than 5%	4.1 5.6	0.6		0.7 0.2	5.4 5.8
greater than or equal to 5% and less than 10%	0.5			0.2	0.5
greater than or equal to 10% and less than 20%	0.4				0.3
greater than or equal to 20% and less than 40%	0.1				0.1
greater than or equal to 40% or exposures in default	1.0				1.0
	11.7	0.6		0.9	13.2
04	11.7	0.0		0.7	13.2
Other retail Expected loss band					
less than 1%	34.2	8.9	2.5	5.9	51.5
greater than or equal to 1% and less than 5%	4.7	0.3	2.3	4.7	9.7
greater than or equal to 5% and less than 10%	1.1	0.1		1.7	2.9
greater than or equal to 10% and less than 20%	0.4			1.4	1.8
greater than or equal to 20% and less than 40%	0.2			0.7	0.9
greater than or equal to 40% or exposures in default	1.0	0.1		1.1	2.2
	41.6	9.4	2.5	15.5	69.0
Total retail					
Expected loss band					
less than 1%	187.9	65.3	31.6	105.1	389.9
greater than or equal to 1% and less than 5%	19.1	3.8	0.6	42.8	66.3
greater than or equal to 5% and less than 10%	3.5	0.7		16.5	20.7
greater than or equal to 10% and less than 20%	1.6	0.2		10.0	11.8
greater than or equal to 20% and less than 40%	0.6	0.1		6.4	7.1

greater than or equal to 40% or exposures in default	3.9	0.2	0.3	12.3	16.7
	216.6	70.3	32.5	193.1	512.5

<sup>1</sup> The MENA and Latin America regions are not included in this table as retail exposures in these regions are calculated under the standardised approach.

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The FSA allows exposures to SMEs to be treated under the Retail IRB approach, where the total amount owed to the Group by the counterparty is less than EUR Im and the customer is not managed individually as a corporate counterparty.

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

## Risk mitigation

Our approach when granting credit facilities is to do so on the basis of capacity to repay rather than place primary reliance on credit risk mitigants. Depending on a customer s standing and the type of product, facilities may be provided unsecured. Mitigation of credit risk is nevertheless a key aspect of effective risk management and, in a diversified financial services organisation such as HSBC, takes many forms.

Our 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. Usually, in our residential and commercial real estate businesses a mortgage over the property is taken to help secure claims. Physical collateral is also taken in various forms of specialised lending and leasing transactions where income from the physical assets that are financed is also the principal source of facility repayment. In the commercial and industrial sectors, charges are created over business assets such as premises, stock and debtors. Loans to private banking clients may be made against the pledge of eligible marketable securities, cash (known as Lombard lending) or real estate. Facilities to SMEs are commonly granted against guarantees given by their owners and/or directors. Guarantees from third parties can arise where the Group extends facilities without the benefit of any alternative form of security, e.g. where it issues a bid or performance bond in favour of a non-customer at the request of another bank.

In the institutional sector, trading facilities are supported by charges over financial instruments such as cash, debt securities and equities. Financial collateral in the form of marketable securities is used in much of the Group's over-the-counter (OTC) derivatives activities and in securities financing transactions (SFT s) such as repos, reverse repos, securities lending and borrowing. Netting is used extensively and is a prominent feature of market standard documentation. Further information regarding collateral held for trading exposures can be found on page 32.

Our Global Banking and Markets business utilises credit risk mitigation to actively manage the credit risk of its portfolios, with the goal of reducing concentrations in individual names, sectors or portfolios. The techniques in use include credit default swap (CDS) purchases, structured credit notes and securitisation structures. Buying credit protection creates credit exposure against the protection provider, which is monitored as part of the overall credit exposure to the relevant protection provider. Our exposure to CDS protection providers is diversified among mainly higher-rated bank counterparties.

Policies and procedures govern the protection of our position from the outset of a customer relationship, for instance in requiring standard terms and conditions or specifically agreed documentation permitting the offset of credit balances against debt obligations, and through controls over the integrity, current valuation and, if necessary, realisation of collateral security.

Valuation strategies are established to monitor collateral mitigants to ensure that they will continue to provide the anticipated secure secondary repayment source. Where collateral is subject to high volatility, valuation is frequent; where stable, less so. Market trading activities such as collateralised OTC derivatives and SFTs typically carry out daily valuations in support of margining arrangements. In the residential mortgage business, Group policy prescribes re-valuation at intervals of up to three years, or more frequently as the need arises, for example where market conditions are subject to significant change. Residential property collateral values are determined through a combination of professional appraisals, house price indices or statistical analysis.

Due to the complexity and customer cost associated with collateral valuations for Commercial Real Estate ( CRE ), local valuation policies determine the frequency of review, based on local market conditions. Revaluations are sought with greater frequency where, as part of the regular credit assessment of the obligor, material concerns arise in relation to the performance of the collateral. CRE revaluation also occurs commonly in circumstances where an obligor s credit quality has declined sufficiently to cause concern that the principal payment source may

not fully meet the obligation.

Within an IRB approach, risk mitigants are considered in two broad categories: first, those which reduce the intrinsic probability of default of an obligor and therefore operate as determinants of PD; and second, those which affect the estimated

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### Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

recoverability of obligations and require adjustment of LGD or, in certain circumstances, EAD.

The first typically include full parental guarantees—where one obligor within a group of companies guarantees another. This is usually factored into the estimate of the latter—s PD, as it is assumed that the guaranter—s performance materially informs the PD of the guaranteed entity. PD estimates are also subject to supplementary methodologies in respect of a—sovereign ceiling—, constraining the risk ratings assigned to obligors in countries of higher risk, and where only partial parental support exists.

In the second category, LGD estimates are affected by a wider range of collateral including cash, charges over real estate property, fixed assets, trade goods, receivables and floating charges such as mortgage debentures. Unfunded mitigants, such as third party guarantees, are also taken into consideration in LGD estimates where there is evidence they reduce loss expectation.

EAD and LGD values, in the case of individually assessed exposures, are determined by reference to regionally approved internal risk parameters based on the nature of the exposure. For retail portfolios, credit risk mitigation data is incorporated into the internal risk parameters for exposures and feeds into the calculation of the EL band value summarising both customer delinquency and product or facility risk. Credit and credit risk mitigation data form inputs submitted by all Group offices to centralised databases and processing, including performance of calculations to apply the

relevant Basel II rules and approach. A range of collateral recognition approaches are applied to IRB capital treatments:

unfunded protection, which includes credit derivatives and guarantees, is reflected through adjustment or determination of PD, or LGD. Under the IRB advanced approach, recognition may be through PD (as a significant factor in grade determination) or LGD, or both;

eligible financial collateral under the IRB advanced approach is taken into account in LGD models. Under the IRB foundation approach, regulatory LGD values are adjusted. The adjustment to LGD is based on the degree to which the exposure value would be adjusted notionally if the Financial Collateral Comprehensive Method were applied; and

for all other types of collateral, including real estate, the LGD for exposures calculated under the IRB advanced approach will be calculated by models. For IRB foundation, base regulatory LGDs are adjusted depending on the value and type of the asset taken as collateral relative to the exposure. The types of eligible mitigant recognised under the FIRB approach are also more limited. The table below sets out for IRB exposures the exposure value and the effective value of credit risk mitigation expressed as the exposure value covered by the credit risk mitigant.

Further information on credit risk mitigation may be found on page 144 of the Annual Report and Accounts 2011.

Table 14: IRB exposure credit risk mitigation

**At 31 December 2011** At 31 December 2010

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	Exposure value covered	Vä	Exposure	
	by credit		by credit	
	derivatives	Exposure	derivatives	Exposure
	or guarantees US\$bn	value on US\$bn	r guarantees US\$bn	value US\$bn
Exposures under the IRB advanced approach Central governments and central banks Institutions Corporates Retail Equity Securitisation positions	0.3 6.2 50.0 29.5	408.0 145.4 444.2 518.6 0.4 58.8	0.3 18.4 48.8 23.9	291.5 178.0 413.7 512.5
Exposures under the IRB foundation approach Corporates <sup>1</sup>	0.2	1,575.4	0.1	1,458.0 7.8

<sup>1</sup> The value of exposures under the IRB foundation approach covered by eligible financial and other collateral was US\$0.2bn (2010: US\$0.3bn).

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

Loss experience and model validation

We analyse credit loss experience in order to assess the performance of our risk measurement and control processes, and to inform corrective measures. This analysis includes validation of the outputs of predictive risk analytical models, compared with other reported measures of risk and losses.

The disclosures below set out commentary on the relationship between regulatory EL and impairment allowances recognised in our financial statements and EL and impairment charges by exposure class (within Retail IRB, also by sub-class) and by region; and model performance: projected and actual IRB metrics for major global models in our portfolio.

### EL and impairment

EL is calculated on IRB portfolios other than Securitisations, and FSA rules require that, to the extent that EL exceeds individual and collective impairment allowances, it is to be deducted from capital. When comparing EL with accounting impairment allowances on the related assets, differences need to be taken into account between the definition of EL under Basel II principles and impairment allowances within financial statements prepared under IFRSs. For example:

EL is generally based on through-the-cycle PD estimates over a one-year future horizon, determined via statistical analysis of historical default experience, while impairment allowances in the financial statements means losses that have incurred at the reporting date. Further detail of policy on the impairment of loans and advances is provided on page 297 of the *Annual Report and Accounts 2011*;

EL is based on downturn estimates of LGD while impairment allowances are based on loss experience at the balance sheet date; and

EL is based on exposure values that incorporate expected future drawings of committed credit lines, while impairment allowances are, generally, based on on-balance sheet assets.

These and other technical differences influence the way in which the impact of business and economic drivers is expressed in the accounting and regulatory measures, which include the impairment charge that is the subject of the Pillar 3 disclosure. The following tables set out, for IRB credit exposures, the EL and the actual loss experience reflected in impairment charges.

Table 15: IRB expected loss and impairment charges by exposure class

Expec	ted		Expected	
los	s at	Impairment charge	loss at	Impairment charge
1 Janu	ary	for	1 January	for
20	011	2011	2010	2010
USS	Sbn	US\$bn	US\$bn	US\$bn

IRB exposure classes				
Central governments and central banks	0.1		0.2	
Institutions	0.3		0.4	
Corporates	4.8	1.3	5.9	1.4
Retail	15.7	7.4	19.8	9.3
secured on real estate property	8.4	4.9	8.5	4.5
qualifying revolving retail	4.3	1.9	6.7	2.8
SMEs	0.8		0.7	
other retail	2.2	0.6	3.9	2.0
	20.0	8.7	26.2	10.7
	20.9	ð./	26.3	10.7

<sup>1</sup> Excludes securitisation exposures because EL is not calculated for this exposure class. Table 16: IRB expected loss and impairment charges by geographical region

			Expected	
	Expected loss at	Impairment charge	loss at	Impairment charge
	1 January	for	1 January	for
	2011	2011	$2010^{1}$	2010
	US\$bn	US\$bn	US\$bn	US\$bn
Europe	5.6	1.6	6.7	2.3
Hong Kong	0.9	0.2	0.9	0.1
Rest of Asia-Pacific	1.0		0.9	0.1
MENA	0.1		0.1	
North America	13.2	6.9	17.6	8.2
Latin America	0.1		0.1	
	20.9	8.7	26.3	10.7

<sup>1</sup> Excludes securitisation exposures because EL is not calculated for this exposure class.

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

Impairment charges reflect loss events which arose during the financial year and changes in estimates of losses arising on events which occurred prior to the current year. The majority of EL at 1 January 2011 and the impairment charge through the year ended 31 December 2011 relate to our Retail exposures in North America. The drivers of the impairment allowances and charges for 2011 in North America, including delinquency experience and loss severities, are discussed on pages 124 and 131 of the *Annual Report and Accounts 2011*.

The levels of delinquency and loan loss allowances are reducing across North America as we continue to write down or write off an increasing number of loans upon either modification or foreclosure. The EL for North America decreased by US\$4.4bn or 25% at 1 January 2011. This reflected the continuing reduction of Retail exposures in US portfolios which were US\$22.2bn or 10% lower at 1 January 2011 than at 1 January 2010. Despite these reductions, the EL for North America remained elevated as the delinquency and losses resulting from prolonged US economic weakness and delays in completing foreclosures increased our loss severities and were progressively captured in the various Basel II model parameters.

Full details of the Group s impaired loans and advances, past due but not impaired assets and

impairment allowances and charges are set out from page 127 of the *Annual Report and Accounts 2011*. These figures are prepared on an accounting consolidation basis but are not significantly different from those calculated on a regulatory consolidation basis.

Our approach for determining impairment allowances is explained on page 297 of the Annual Report and Accounts 2011.

#### Model performance

A large number of models are used within the Group, and data at individual model level is in most cases immaterial in the context of the Group overall. Disclosure of such specific data could place proprietary information at risk, while aggregation of it would greatly reduce its usefulness. We therefore currently disclose model performance data only for the major global IRB portfolio models in use.

The table below shows projected values at 1 January of each year, and subsequent actual values, of key Basel II metrics for the central governments and central banks, institutions and global large corporate models. The latter covers the segment of larger, often multinational companies with a minimum annual turnover of US\$0.7bn and its PD analysis exceptionally includes foundation IRB exposures.

Table 17: IRB advanced models projected and actual values

2011
Central governments and central banks model
Institutions model
Global large corporates model
2010

P	$\mathbf{D}^1$	$\mathbf{LGD}^{1,2}$		$EAD^{2,3}$	
Projected	Actual	Projected	Actual	Actual	
%	%	%	%	%	
0.11		17.6			
0.30	0.01	28.4	29.0	100.0	
0.67	0.48	39.2	15.5	30.8	

Central governments and central banks model	0.11		17.2		
Institutions model	0.36		28.8		
Global large corporates model	0.75	0.09	32.6	11.7	65.0

- 1 All PD and LGD values are calculated on a facility-weighted basis. Projected values represent the whole portfolio subject to the respective model, while actuals represent the obligors that defaulted during the reported year.
- 2 The LGD and EAD analyses include IRB advanced exposures only because, under the IRB foundation approach, regulatory parameters are applied. For the global large corporates model, LGD and EAD are sourced from local corporate models.
- 3 Actual EAD is the average observed EAD of defaulted obligors as a percentage of their total facility limits at the time of default. Projected EAD figures for defaulted obligors are not disclosed, this population having been undefined at the start of the period.

### Application of the standardised approach

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

Agencies 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:

Central governments and central banks;

Institutions;

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## Capital and Risk Management Pillar 3 Disclosures at 31 December 2011 (continued)

Corporates;

Securitisation positions;

Short-term claims on institutions and corporates;

Regional governments and local authorities; and

Multilateral development banks.

We have nominated three FSA-recognised ECAIs for this purpose Moody s Investors Service (Moodys), Standard & Poor s Ratings Group (S&P) and Fitch Group (Fitch). We have not nominated any Export Credit Agencies.

Credit			
quality	Moody s	S&P s	Fitch s
step	assessments	assessments	assessments
1	Aaa to Aa3	AAA to AA	AAA to AA
2	A1 to A3	A+ to A	A+ to A
3	Baa1 to Baa3	BBB+ to BBB	BBB+ to BBB
4	Ba1 to Ba3	BB+ to BB	BB+ to BB
5	B1 to B3	B+ to B	B+ to B
6	Caa1		
	and below	CCC+ and below	CCC+ and below

Data files of external ratings from the nominated ECAIs are matched with customer records in our centralised credit database.

When calculating the risk-weighted value of an exposure using ECAI risk assessments, risk systems identify the customer in question and look

up the available ratings in the central database according to the FSA s rating selection rules. The systems then apply the FSA s prescribed credit quality step mapping to derive from the rating the relevant risk weight.

All other exposure classes are assigned risk weightings as prescribed in the FSA s rulebook.

Exposures to, or guaranteed by, central governments of EEA States are risk-weighted at 0% using the Standardised approach, provided they would be eligible under that approach for a 0% risk weighting.

Banking associates exposures are calculated under the standardised approach and, at 31 December 2011, represented approximately 16% (2010: 13%) of Group credit risk RWAs.

The table below sets out the distribution of standardised exposures across credit quality steps. This analysis excludes regional governments or local authorities, short-term claims, securitisation positions, collective investment undertakings and multilateral development banks, as these exposures continue to be immaterial as a percentage of total standardised exposures. Also excluded, because the credit quality step methodology does not apply, are retail, equity, past due items and exposures secured on real estate property.

Table 18: Standardised exposure by credit quality step

Central governments and central banks

Credit quality step 1 Credit quality step 2 Credit quality step unrated

At 31 Decem	ber 2011	At 31 December 2010	
Exposure		Exposure	
value US\$bn	RWAs US\$bn	value US\$bn	RWAs US\$bn
57.2 46.0 1.4		51.6 29.6 1.2	&nbs