HSBC Holdings plc
Capital and Risk Management Pillar 3 Disclosures as at 31 December 2009

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Certain defined terms

Unless the context requires otherwise, 'HSBC Holdings' means HSBC Holdings plc and 'HSBC' or the 'Group' means 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.

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Cautionary Statement

Cautionary statement regarding forward-looking statements

These *Capital and Risk Management Pillar 3 Disclosures as at 31 December 2009 ('Pillar 3 Disclosures 2009')* contain certain forward-looking statements with respect to the financial condition, results of operations and business of HSBC. 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 similar 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, and it should not be assumed that they have been revised or updated in the light of new information or future events. Written and/or oral forward-looking statements may also be made in the periodic reports to the United States 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 HSBC operates, changes in government policy and regulation and factors specific to HSBC. A more detailed cautionary statement is provided on pages 6 to 7 of the *Annual Report and Accounts 2009*.

Introduction

HSBC is one of the largest banking and financial services organisations in the world, with a market capitalisation of US$199 billion at 31 December 2009.

Through its subsidiaries and associates, HSBC provides a comprehensive range of banking and related financial services. Headquartered in London, HSBC operates through long-established businesses and has an international network of some 8,000 properties in 88 countries and territories in six geographical regions: Europe; Hong Kong; Rest of Asia-Pacific; the Middle East; North America and Latin America. Previously, the Middle East was reported as part of Rest of Asia-Pacific. Within these regions, a comprehensive range of financial services is offered to personal, commercial, corporate, institutional, investment and private banking clients. Services are delivered primarily by domestic banks, typically with large retail deposit bases, and by consumer finance operations.

Details of the Group's principal activities and its strategic direction can be found on page 12 of the *Annual Report and Accounts 2009.*

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, HSBC as a whole. Individual banking subsidiaries are directly regulated by their local banking supervisors, who set and monitor their capital adequacy requirements.

HSBC calculates capital at a Group level using the Basel II framework of the Basel Committee on Banking Supervision ('Basel Committee'); local regulators are at different stages of implementation and local rules 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 2009

Pillar 3 complements the minimum capital requirements and the supervisory review process. Its aim is to encourage market discipline by developing a set of disclosure requirements which allow market participants to assess certain specified information on the scope of application of Basel II, capital, particular risk exposures and risk assessment processes, and hence the capital adequacy of the institution. Disclosures consist of both quantitative and qualitative information and are provided at the consolidated level.

Banks are required to disclose all their material risks as part of the pillar 3 framework. All material and non-proprietary information required by pillar 3 is included in the *Pillar 3 Disclosures 2009*. The FSA permits certain pillar 3 requirements to be satisfied by inclusion within the financial statements. Where this is the case, page references are provided to the relevant sections in the *Annual Report and Accounts 2009*.

Future developments

The regulation and supervision of financial institutions is currently undergoing a period of significant change in response to the global financial crisis. An overview of the risks associated with regulatory reform is presented on page 16 of the *Annual Report and Accounts 2009*.

Increased capital requirements and pillar 3 disclosures for market risk and securitisations have already been announced by the Basel Committee and are due for implementation in the EU in 2011. The Basel Committee issued further proposals in a Consultative Document 'Strengthening the resilience of the banking sector' on 17 December 2009. The Committee's proposals are part of global initiatives to strengthen the financial regulatory system, and have been endorsed by the Financial Stability Board and the G20 leaders. A comprehensive impact assessment will be carried out on the proposals in the first half of 2010, with the aim of developing a fully calibrated set of standards by the end of 2010. The proposals will be phased in as financial conditions improve and the economic recovery is assured, with the aim of implementation by the end of 2012. Within this context, the Basel Committee will also consider appropriate transition and grandfathering arrangements. The consultation period for these proposals closes on 16 April 2010.

Frequency

In accordance with FSA requirements, the Group intends to publish comprehensive pillar 3 disclosures

annually. Capital structure, capital requirements and capital ratios will next be disclosed at the half year in the *Interim Report 2010*.

Comparison with the *Annual Report and Accounts 2009*

The *Pillar 3 Disclosures 2009* have been prepared in accordance with regulatory capital adequacy concepts and rules, rather than in accordance with International Financial Reporting Standards ('IFRSs'). Therefore, some information in the *Pillar 3 Disclosures 2009* is not directly comparable with the financial information in the *Annual Report and Accounts 2009*. This is most pronounced for the credit risk disclosures, where credit exposure is defined as the maximum loss the Group has estimated under specified Basel II parameters. This differs from similar information in the *Annual Report and Accounts 2009*, which is mainly reported as at the balance sheet date and, therefore, does not reflect the likelihood of future drawings of committed credit lines.

Verification

The *Pillar 3 Disclosures 2009* 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 HSBC's investor relations website page www.hsbc.com/investor-relations/financial-results/hsbc-group-companies.

Consolidation basis

The basis of consolidation for financial accounting purposes is described on page 367 of the *Annual Report and Accounts 2009* and differs from that used for regulatory purposes. Investments in banking associates, which are equity accounted in the financial accounting consolidation, 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 treated as securitisation positions for regulatory purposes and are either risk-weighted or deducted from capital.

Scope of Basel II permissions

Credit risk

Basel II provides three approaches of increasing sophistication to the calculation of pillar 1 credit risk capital requirements. The most basic, the standardised approach, requires banks to use external credit ratings to determine the risk weightings applied to rated counterparties and group other counterparties into broad categories and apply standardised risk weightings 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 the probability that a counterparty will 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 these factors 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 accounting impairment allowances.

For credit risk, with the FSA's approval, HSBC has adopted the IRB advanced approach for the majority of its business, with the remainder on either IRB foundation or standardised approaches.

For consolidated group reporting, the FSA's rules permit the use of other regulators' standardised approaches where they are considered equivalent. The use of other regulators' IRB approaches is subject to the agreement of the FSA. Under the Group's Basel II rollout plans, a number of Group companies are in transition to advanced IRB approaches. At December 2009, corporate portfolios in France, Hong Kong and Rest of Asia-Pacific completed the transition from foundation to advanced IRB approaches. Other Group companies and portfolios remain on the standardised or foundation approaches under Basel II, pending definition of local regulations or model approval, or under exemptions from IRB treatment.

Counterparty credit risk

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.

HSBC uses the mark-to-market and IMM approaches for counterparty credit risk. Its longer-term aim is to migrate more positions from the mark-to-market to the IMM approach.

Market risk

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 HSBC's income or the value of its portfolios. Market risk is measured, with FSA permission, using Value at Risk ('VAR') models or the standard rules prescribed by the FSA.

HSBC uses both VAR and standard rules approaches for market risk. Its longer-term aim is to migrate more positions from standard rules to VAR.

Operational risk

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.

HSBC has adopted the standardised approach in determining its Group operational risk capital requirements.

Capital

Table 1: Capital structure at 31 December 2009

	2009 US$bn	2008 US$bn
Composition of regulatory capital[1]		
Tier 1 capital		
Shareholders' equity	**135.3**	106.3
Shareholders' equity per balance sheet[2]	**128.3**	93.6
Preference share premium	**(1.4)**	(1.4)
Other equity instruments	**(2.1)**	(2.1)
Deconsolidation of special purpose entities[3]	**10.5**	16.2
Minority interests	**3.9**	3.6
Minority interests per balance sheet	**7.4**	6.6
Preference share minority interests	**(2.4)**	(2.1)
Minority interest transferred to tier 2 capital	**(0.7)**	(0.6)
Minority interest in deconsolidated subsidiaries	**(0.4)**	(0.3)
Regulatory adjustments to the accounting basis	**0.2**	0.4
Unrealised losses on available-for-sale debt securities[4]	**0.9**	5.2
Own credit spread	**(1.0)**	(5.7)
Defined benefit pension fund adjustment[5]	**2.5**	1.8
Reserves arising from revaluation of property and unrealised gains on available-for-sale equities	**(2.2)**	(1.7)
Cash flow hedging reserve	**–**	0.8
Deductions	**(33.1)**	(30.0)
Goodwill capitalised and intangible assets	**(28.6)**	(26.8)
50% of securitisation positions	**(1.6)**	(1.0)
50% of tax credit adjustment for expected losses	**0.5**	0.5
50% of excess of expected losses over impairment allowances	**(3.4)**	(2.7)
Core tier 1 capital	**106.3**	80.3
Other tier 1 capital before deductions	**15.8**	14.9
Preference share premium	**1.4**	1.4
Preference share minority interests	**2.4**	2.1
Innovative tier 1 securities	**12.0**	11.4
Deductions	**0.1**	0.1
Unconsolidated investments[6]	**(0.4)**	(0.4)
50% of tax credit adjustment for expected losses	**0.5**	0.5
Tier 1 capital	**122.2**	95.3
Tier 2 capital		
Total qualifying tier 2 capital before deductions	**50.0**	49.4
Reserves arising from revaluation of property and unrealised gains on available-for-sale equities	**2.2**	1.7
Collective impairment allowances[7]	**4.1**	3.2
Perpetual subordinated debt	**3.0**	3.0
Term subordinated debt	**40.4**	41.2
Minority interest in tier 2 capital	**0.3**	0.3
Total deductions other than from tier 1 capital	**(16.5)**	(13.3)
Unconsolidated investments[6]	**(11.5)**	(9.6)
50% of securitisation positions	**(1.6)**	(1.0)
50% of excess of expected losses over impairment allowances	**(3.4)**	(2.7)
Total regulatory capital	**155.7**	131.4
Total tier 1 capital excluding innovative tier 1 securities	**110.2**	83.9
Total tier 2 capital before deductions plus innovative tier 1 securities	**62.0**	60.8

	At 31 December 2009		At 31 December 2008	
	RWAs US$bn	**Capital required[8] US$bn**	RWAs US$bn	Capital required[8] US$bn
Capital requirements				
Credit risk	**903.5**	**72.3**	882.6	70.6
Counterparty credit risk	**51.9**	**4.2**	74.0	5.9
Market risk	**51.9**	**4.1**	70.3	5.6
Operational risk	**125.9**	**10.1**	121.1	9.7
Total capital requirements	**1,133.2**	**90.7**	1,148.0	91.8

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	2009 %	2008 %
Capital ratios		
Core tier 1 ratio	**9.4**	7.0
Tier 1 ratio	**10.8**	8.3
Total capital ratio	**13.7**	11.4

1 *The terms and conditions of capital securities issued by the Group are detailed in the Appendix on page 47.*
2 *Includes externally verified profits for the year to 31 December 2009.*
3 *Mainly comprises unrealised losses on available-for-sale debt securities within special purpose entities which are excluded from the regulatory consolidation.*
4 *Under FSA rules, unrealised gains/losses on debt securities net of tax must be excluded from capital resources.*
5 *Under FSA rules, 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.*
6 *Mainly comprise investments in insurance entities.*
7 *Under FSA rules, collective impairment allowances on loan portfolios on the standardised approach are included in tier 2 capital.*
8 *Calculated as 8 per cent of risk-weighted assets ('RWA's).*

Table 2: Risk-weighted assets – analysis by geographical region

	Europe US$bn	Hong Kong US$bn	Rest of Asia-Pacific[1] US$bn	Middle East[1] US$bn	North America US$bn	Latin America US$bn	Total RWAs[2] US$bn
At 31 December 2009							
Credit risk	**237.5**	**99.0**	**150.2**	**46.7**	**306.3**	**63.8**	**903.5**
Counterparty credit risk	**26.6**	**2.1**	**3.7**	**1.1**	**16.9**	**1.5**	**51.9**
Market risk[2]	**33.5**	**2.4**	**3.3**	**1.0**	**14.7**	**2.1**	**51.9**
Operational risk	**42.1**	**16.0**	**16.7**	**5.5**	**31.3**	**14.3**	**125.9**
Total RWAs[2]	**339.7**	**119.5**	**173.9**	**54.3**	**369.2**	**81.7**	**1,133.2**
At 31 December 2008							
Credit risk	259.3	78.1	130.1	51.1	310.0	54.0	882.6
Counterparty credit risk	38.2	4.4	8.6	0.8	19.5	2.5	74.0
Market risk[2]	49.5	4.6	3.3	0.6	12.6	2.1	70.3
Operational risk	41.2	15.0	13.6	4.7	33.5	13.1	121.1
Total RWAs[2]	388.2	102.1	155.6	57.2	375.6	71.7	1,148.0

1 *The Middle East is disclosed as a separate geographical region with effect from 1 January 2009. Previously, it formed part of Rest of Asia-Pacific. Comparative data have been restated accordingly.*
2 *RWAs are non-additive across geographical regions due to market risk diversification effects within the Group.*

Capital management and allocation

HSBC's capital management approach is driven by its strategic and organisational requirements, taking into account the regulatory, economic and commercial environment in which it operates.

It is HSBC's objective to maintain a strong capital base to support the development of its business and to meet regulatory capital requirements at all times. To achieve this, the Group's policy is to hold capital in a range of different forms and from diverse sources and all capital raising is agreed with major subsidiaries as part of their individual and the Group's capital management processes.

The Group's policy is underpinned by the Capital Management Framework, which enables HSBC to manage its capital in a consistent and aligned manner. The framework, which is approved by the Group Management Board ('GMB'), 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 its structured internal governance processes, HSBC maintains discipline over its investment and capital allocation decisions, seeking to ensure that returns on investment are adequate after taking account of capital costs. HSBC's 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

HSBC Holdings is the primary provider of equity capital to its subsidiaries. Each subsidiary 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 HSBC's Capital Management Framework, capital generated by

subsidiaries in excess of planned requirements is returned to HSBC Holdings, normally by way of dividends. During 2009 and 2008, none of the Group's subsidiaries experienced significant restrictions on paying dividends or repaying inter-company loans and advances.

Internal assessment of capital adequacy

HSBC assesses the adequacy of its capital by considering the resources necessary to cover unexpected losses arising from discretionary risks, being those which it accepts such as credit risk and market risk, or non-discretionary risks, being those which arise by virtue of its operations, such as operational risk and reputational risk. The HSBC Capital Management Principles, which are approved by GMB, together with related policies define the Internal Capital Adequacy Assessment Process ('ICAAP') by which GMB examines the Group's risk profile from both regulatory and economic capital viewpoints and ensures that the Group's level of capital:

- remains sufficient to support the Group's risk profile and outstanding commitments;
- exceeds the Group's formal minimum regulatory capital requirements by an agreed margin;
- is capable of withstanding a severe economic downturn stress scenario; and
- remains consistent with the Group's 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 the Group's management of risk. Economic capital is the internally calculated capital requirement which is deemed necessary by HSBC to support the risks to which it is exposed, and is set at a confidence level consistent with a target credit rating of AA. The minimum regulatory capital that HSBC is required to hold is determined by the rules established by the FSA for the consolidated Group and by HSBC's 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 the Group's operations. HSBC's 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 per cent level of confidence for its banking activities and to a 99.5 per cent level of confidence for its insurance activities and pension risks. HSBC's approach to capital management is aligned to the Group's corporate structure, business model and strategic direction. The Group's discipline around capital allocation is maintained within established processes and benchmarks, in particular the approved annual Group capital plan, of which further details can be found on page 286 of the *Annual Report and Accounts 2009*.

Economic capital is the metric by which risk is measured and linked to capital within the Group's risk appetite framework. The framework, which expresses the types and quantum of risks to which HSBC wishes to be exposed, is approved annually by the Board of Directors of HSBC Holdings ('the Board'), and its implementation is overseen by GMB. Further details on the risk appetite framework may be found on page 14.

HSBC's 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 assessed via capital and those that are not are compared below:

Risks assessed via capital

Credit (including counterparty credit), market and operational risk

HSBC assesses 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 HSBC's strategic goals (99.95 per cent); and
- internal assessments of diversification of risks within the Group's portfolios and, similarly, any concentrations of risk that arise.

The Group's economic capital assessment operates alongside the Group's 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, the Group maintains a prudent stance on capital coverage, ensuring that any model risk is mitigated. Economic capital requirements are used to monitor the Group's risks against its risk appetite.

Interest rate risk in the banking book

Interest rate risk in the banking book ('IRRBB') is defined as the exposure of the non-trading products

of the Group to interest rates. Non-trading portfolios include positions that arise from the interest rate management of HSBC's retail and commercial banking assets and liabilities, and financial investments designated as available for sale and held to maturity. IRRBB arises principally from mismatches between the future yields 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 the Group's non-trading products over one year to a 99.95 per cent level of confidence.

Insurance risk

HSBC operates a bancassurance model which provides insurance products for customers with whom the Group has a banking relationship. Many of these insurance products are manufactured by HSBC subsidiaries but, where the Group considers it operationally more effective, third parties are engaged to manufacture and provide insurance products which HSBC sells through its banking network. The Group works with a limited number of market-leading partners to provide these products. When manufacturing products, the Group underwrites the insurance risk and retains the risks and rewards associated with writing insurance contracts.

Significant progress has been made in the finalisation of a risk-based capital methodology for the Group's insurance businesses. While this is being implemented across HSBC, a Net Asset Value capital deduction methodology is being employed for Group economic capital assessment purposes.

Pension risk

HSBC operates a number of pension plans throughout the world. Some of these pension plans are defined benefit plans, of which the largest is the HSBC Bank (UK) Pension Scheme. The benefits payable under the defined benefit plans are typically a function of salary and length of service. In order to fund the benefits, 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). 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, which could include:

- 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 a VAR model.

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. HSBC conducts economic capital assessments of such risks on a regular, forward-looking basis to ensure that their impact is adequately covered by the Group's capital base.

Risks not explicitly assessed via capital

Liquidity risk

Liquidity and funding risk management is described in detail on page 244 of the *Annual Report and Accounts 2009.*

The Group uses cash-flow stress testing as part of its control processes to assess liquidity risk. HSBC does 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, HSBC recognises 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 the Group's 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.

HSBC's structural foreign exchange exposures are managed with the primary objective of ensuring, where practical, that HSBC's 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 risk-weighted assets ('RWA's) denominated in that currency is broadly equal to the capital ratio of the subsidiary in question. The Group evaluates residual structural foreign exchange exposures using a VAR model, but typically does not assign any economic capital for these since they are managed within appropriate economic capital buffers.

Details of the Group's management of structural foreign exchange risk can be found on page 257 of the *Annual Report and Accounts 2009.*

Reputational risk

Details of the Group's management of reputational risk can be found on page 263 of the *Annual Report and Accounts 2009.*

As a banking group, HSBC's reputation depends upon the way in which it conducts its business, but it can also be affected by the way in which clients to whom it provides financial services conduct themselves. A Group Reputational Risk Committee was established in 2008, at which Group functions with responsibility for activities that attract reputational risk are represented.

Sustainability risk

Sustainability (environmental and social) risks arise from the provision of financial services to companies or projects which run counter to the needs of sustainable development. Details of the Group's management of sustainability risk can be found on page 264 of the *Annual Report and Accounts 2009.*

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 its strategic objectives, as set out in the rolling operating plan, as a result of unforeseen changes in the business and regulatory environment, exposure to economic cycles and technological changes. HSBC does not explicitly set aside capital against business risk, as a distinct category, as it believes that this risk is effectively covered by the capital set aside for other major risks such as credit risk, market risk and operational risk.

Scenario analysis and stress testing

Scenario analysis and stress testing are important mechanisms in understanding the sensitivities of the Group capital and business plans to the adverse effects of extreme, but plausible, events. As well as considering the potential financial effect on plans, a key output of this tool is the consideration and establishment of management action plans for mitigating such events should they, or similar events, arise.

HSBC's scenario analysis and stress testing framework and processes are overseen by the Group Stress Testing Oversight Forum ('GSTOF'). GSTOF meets regularly to monitor and review scenario analysis and stress testing reports. Membership comprises representatives of Group and regional risk and capital management functions.

Regulatory capital supply is regularly assessed against demand under a range of stress scenarios, including projected global and local economic downturns. Qualitative and quantitative techniques are used to estimate the potential impact on HSBC's capital position under such scenarios. HSBC also participates, where appropriate, in standard scenario analyses requested by regulatory bodies.

In addition to macro-economic analysis, a suite of event-driven scenarios, including operational, market and credit events, are regularly formulated and analysed in detail, ensuring that management has considered the potential impact, and what actions would be necessary, should a range of risks materialise.

In particular, this framework has aided management in mitigating some of the effects of the global financial crisis. While the prediction of future events cannot cover all eventualities, nor precisely

identify future events, a number of the scenarios analysed in the past provided additional management insight into the actions necessary to mitigate the risks when similar events occurred.

In addition to the suite of risk scenarios considered for the HSBC Group, each major subsidiary conducts regular macro-economic and event-driven scenario analyses specific to that region under the Group governance framework. Executive managers from across HSBC meet regularly to consider and debate the outcome of these scenarios and formulate recommended management actions. Macro-economic analyses are considered by GMB.

As part of the Group's risk appetite process, business and capital plans are supported by forecasts of the risk parameters that drive the Group's capital requirements. The Group and regional macro-economic stress tests consider sensitivities of these drivers under a variety of potential economic forecasts in order to examine the possible capital positions that could arise. In any material economic downturn, proactive and structured intervention by management is both an inevitable and necessary consequence. Therefore, HSBC incorporates the effect of such management actions in determining whether or not the Group is likely to be able to withstand such an event.

Risk management objectives and policies

Overview

All HSBC's activities involve, to varying degrees, the measurement, evaluation, acceptance and management of the previously noted risks or combinations of those risks.

As risk is not static, the risk profiles of HSBC and its individual entities change continually as the scope and impact of a range of factors, from transactional to geopolitical, change. The risk environment requires continual monitoring and assessment in an integrated manner in order to understand and manage the complex risk interactions across the Group. The risk management framework that HSBC has put in place is designed to meet these challenges and is described below in terms of its organisational structure, governance, risk strategies and appetite, and supporting, monitoring and reporting processes.

Organisational structure

Principal governing bodies

A well established risk governance and ownership structure ensures oversight of, and accountability for, the effective management of risk at Group, regional, customer group and operating entity levels.

The Board is the Group's senior 'governing body' as defined by the FSA's rules. It approves HSBC's risk appetite framework, plans and performance targets for the Group and its principal operating subsidiaries, the appointment of senior officers, the delegation of authorities for credit and other risks and the establishment of effective control procedures.

The Board delegates authority for the day-to-day management of the Group to GMB, the Group's senior executive committee. Chaired by the Group Chief Executive, GMB's members include the Chief Financial Officer, Executive Director, Risk and Regulation; the Group Chief Technology and Services Officer; the Group Chief Risk Officer ('GCRO') and other executives appointed by the Board. GMB exercises the powers and authorities of the Board in so far as they concern the management and day-to-day running of the Group in accordance with policies and directions determined by the Board. GMB's performance is assessed against the achievement of HSBC's strategy, medium-term outlook and rolling operating plans, building sustainable business and brand value around its customers, and a strong competitive performance in earnings per share growth and efficiency.

When considering risk matters, GMB convenes as the Risk Management Meeting ('RMM'), chaired by the Chief Financial Officer, Executive Director, Risk and Regulation. RMM is the Group's senior 'designated committee' as defined by the FSA's rules, and has responsibility for setting risk appetite and approving definitive risk policies and controls. It formulates high-level Group risk management policy, exercises delegated risk authorities and oversees the implementation of risk appetite and controls. It monitors all categories of risk, receives reports on actual performance and emerging issues, determines action to be taken and reviews the efficacy of HSBC's risk management framework.

The Group Audit Committee, which is formed of non-executive directors, meets regularly with HSBC's senior financial, internal audit, risk, legal and compliance management and the external auditor to consider HSBC Holdings' financial reporting, the nature and scope of audit reviews and the effectiveness of the systems of internal control, compliance and risk management. The Committee has discussed the risk management recommendations of the Walker Review. Following the Committee's recommendation of appropriate terms of reference, a separate Group Risk

Committee was established by the Board on 26 February 2010.

The terms of reference of HSBC Holdings' committees serve as models for those of Group companies. Further details on principal governing bodies are provided on pages 310 to 313 of the *Annual Report and Accounts 2009*.

The Global Risk function

Primary responsibility for managing risk at operating entity level lies with the respective boards and Chief Executive Officers ('CEO's), as custodians of their balance sheets and, at the most senior level, members of GMB. In their oversight and stewardship of risk management at Group level, however, GMB and RMM are supported by a dedicated Global Risk function, headed by the GCRO, who is a member of both bodies and reports to the Chief Financial Officer, Executive Director, Risk and Regulation.

Global Risk has functional responsibility for the principal financial risk types, namely retail and wholesale credit, market, operational, security and fraud risks. For these it establishes Group policy, exercises Group-wide oversight and provides reporting and analysis of portfolio composition and trends on a global and regional basis to senior management. Accountability and consistent control across the Global Risk function is provided through the Global Risk Management Board, chaired by the GCRO, the members of which include the Chief Risk Officers of HSBC's regions and the heads of risk disciplines within Group Management Office ('GMO'). Regional Chief Risk Officers report both within the business line to their local CEOs and also functionally to the GCRO, who has joint responsibility with CEOs for the appointment of the most senior risk officers and the setting of their performance objectives.

Group Risk works closely with its functional colleagues across the Group to develop and communicate global strategies and to guide the setting of consistent performance measures, targets and key performance indicators. It also co-ordinates the continued development of the Group's risk appetite, economic capital and stress testing frameworks and participates in discussions with regulators and in industry fora on risk and regulatory policy developments, assesses their implications and makes recommendations accordingly.

The Global Risk function also works closely with Asset and Liability Management Committees ('ALCO's) across the Group to harmonise capital management disciplines across risk types.

Geographical regions, global businesses and customer groups

The Group is organised into six geographical regions: Europe; Hong Kong; Rest of Asia-Pacific; Middle East (previously, Middle East was reported as part of Rest of Asia-Pacific); North America and Latin America, within which country managers are the Group's principal representatives in their respective jurisdictions.

Regional heads and country managers are responsible for growing and controlling Group businesses in line with Group standards, policies and procedures, and for ensuring that the Group's corporate responsibilities are met in the communities in which it operates.

The Group manages its business around its customers through two global businesses, Global Banking and Markets and Private Banking, and two customer groups, Personal Financial Services, which incorporates the Group's consumer finance businesses, and Commercial Banking.

Group policy

HSBC's risk management policies are encapsulated in the Group Standards Manual and cascaded in a hierarchy of policy manuals throughout the Group to communicate standards, instructions and guidance to employees. They support the formulation of risk appetite and establish procedures for monitoring and controlling risks, with timely and reliable reporting to management.

The principal risk categories to which the Group is exposed have each been assigned to 'risk owners' within GMO functions for the purposes of general oversight and the development of risk measures, key risk indicators and stress testing processes at Group level, to ensure that the Group's risk appetite is adhered to and that RMM is kept abreast of emerging risk issues. Risk ownership extends to Group policies and procedures documented in the policy manuals which all Group offices must observe, subject to dispensations agreed by the risk owner and reviewed by internal audit.

HSBC regularly reviews and updates its risk management policies, systems and methodologies to reflect changes in law, regulation, markets, products and emerging best practice.

It is a responsibility of all Group officers to identify, assess and manage risks within the scope of their assigned responsibilities. Personal accountability, reinforced by the Group's governance structure and instilled by training and experience, helps to foster a disciplined and constructive culture

of risk management and control. Risk management is emphasised within the Group Remuneration policy and requirements are in place to ensure remuneration is consistent with effective risk management. Further details of the Group Remuneration policy are set out on page 318 of the *Annual Report and Accounts 2009*.

Risk appetite

HSBC's risk appetite framework describes the quantum and types of risk that HSBC is prepared to take in executing its strategy. It is central to an integrated approach to risk, capital and business management and supports the Group in achieving its return on equity objectives, as well as being a key element of meeting the Group's obligations under the supervisory review process of Basel II.

The formulation of risk appetite considers HSBC's risk capacity, its financial position, the strength of its core earnings and the resilience of its reputation and brand. It is expressed both qualitatively, describing which risks are taken and why, and quantitatively. HSBC's senior management attaches quantitative metrics to individual risk types to ensure that:

- underlying business activity may be guided and controlled so it continues to be aligned to the risk appetite framework;
- key assumptions underpinning risk appetite can be monitored and, as necessary, adjusted through subsequent business planning cycles; and
- business decisions expected to be necessary to mitigate risk are flagged and acted upon promptly.

The Group's risk appetite framework is also maintained at regional and customer group levels. It operates through two key mechanisms:

- the framework itself defines the governance bodies, processes, metrics and other features of how HSBC addresses risk appetite as part of its ongoing business; and
- periodic risk appetite statements define, at various levels in the business, the desired level of risk commensurate with return and growth targets and in line with the corporate strategy and stakeholder objectives.

The risk appetite framework covers both the beneficial and adverse aspects of risk. Within it, economic capital is a common currency by means of which risk is measured. It is used as the basis for risk evaluation, capital allocation and performance measurement across regions and customer groups. Risk appetite is executed through the operational limits that control the levels of risk run by the Group, regions and customer groups and is measured using risk-adjusted performance metrics.

Scope and nature of risk measurement and reporting systems

The purpose of HSBC's risk measurement and reporting systems is to ensure that risks are comprehensively captured with all the attributes necessary to support well-founded decisions, that those attributes are accurately assessed and that information is delivered in a timely 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 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 RMM and the Board.

HSBC invests significant resources in information technology systems and processes to maintain and improve its risk management capabilities. Group policy promotes the deployment of preferred technology where practicable. Group standards govern the procurement and operation of systems used in the Group's subsidiaries, processing risk information within business lines and risk functions. The measurement and monitoring of the major risks encountered by the Group, 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 nevertheless support comprehensive oversight by senior management. Much of this is being progressed within the formalised structure of a wide-reaching transformation programme ('One HSBC') designed to integrate products, processes and systems.

Risk measurement, monitoring and reporting structures deployed at GMO level are replicated in global businesses and subsidiaries through a common operating model for integrated risk management and control. This model, the regional implementation of which was substantially completed during 2009, 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.

There is regular reporting on risk to business line management, to specialist functions and to the senior governance bodies of the Group. In the case of credit risk, this includes portfolio reporting using key risk indicators. Examples of credit risk portfolio reporting are detailed on page 202 of the *Annual Report and Accounts 2009*.

Credit risk

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 counterparty risk guarantees and credit derivatives, and from the Group's holdings of debt securities. Among the risks the Group engages in, credit risk generates the largest regulatory capital requirement. This includes a capital requirement for counterparty credit risk in the banking and trading books. Further details regarding the Group's management of counterparty credit risk can be found on page 33 below.

Objectives

The objectives of credit risk management, underpinning sustainably profitable business, are principally:

- to maintain a strong culture of responsible lending, supported by a robust risk policy and control framework;
- to both partner and challenge business originators effectively in defining and implementing risk appetite, and its re-evaluation under actual and scenario conditions; and
- to ensure independent, expert scrutiny and approval of credit risks, their costs and their mitigation.

Organisation and responsibilities

Group Risk supports the GCRO in overseeing credit risks at the highest level. Its major duties comprise: undertaking independent reviews of larger and higher-risk credit proposals, oversight of the Group's wholesale and retail credit risk management disciplines, ownership of the Group's credit policy and credit systems programmes, and reporting on risk matters to senior executive management and to regulators. It works closely with other parts of the Risk function, for example: with Fraud/Security 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 the Group's economic capital model, risk appetite process and stress testing. The responsibilities of Group Risk are set out in detail on pages 201 to 203 of the *Annual Report and Accounts 2009*.

Group-wide, the Credit Risk function comprises a network of credit risk management offices reporting within regional, integrated risk functions. Together with Group Risk, 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.

HSBC operates 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, to Group standards.

Above certain risk-based thresholds established in line with authorities delegated by the Board, GMO 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 GMO to facilitate efficient control and the reporting of regulatory large and cross-border exposures; most approval authorities for these exposures are delegated by the local CEO to the GCRO, with only limited levels of authority being maintained locally.

Credit Analytics

The Group Credit Analytics function is located within Group Risk as part of a wider analytics discipline supporting credit, economic capital and stress testing. Group Credit Analytics formulates technical responses to industry developments and regulatory policy in the field of credit risk analytics. It develops HSBC's global credit risk models and maintains a directory of local models in use around the Group in order to facilitate governance, prioritise resources for independent review and inform the monitoring of progress toward the Group's implementation targets for the IRB advanced

approach. It also provides support for the Group Credit Risk Analytics Oversight Committee ('CRAOC') which meets monthly and reports to RMM. Group CRAOC is chaired by the GCRO, and its membership is drawn from Global Risk, Group global businesses and customer groups and major Group subsidiaries; its primary responsibilities are to oversee the governance of HSBC's risk rating models for both wholesale and retail business, to manage the development of global models and to oversee the development of local models.

Parallel model governance and decision-making arrangements are in place in the Group's major subsidiaries.

Measurement and monitoring – credit risk rating systems

HSBC's 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 distinct customer types or product categories. Risk rating systems for the former are designed to assess the default risk of, and loss severity associated with, customers who are typically managed as individual relationships; these rating systems tend to have a higher subjective content. Risk ratings systems for the latter are generally more purely analytical, 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 the Group's policy and approach is that analytical risk rating systems and scorecards are all merely tools at the disposal of management, serving ultimately judgemental decisions for which individual approvers are accountable. In the case of automated decision making processes, therefore, 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 controls surrounding their use. For distinct customers, the credit process provides for at least annual review of facility limits granted. Review may be more frequent, as required by circumstances, such as the development of adverse risk factors, and any consequent amendments to risk ratings must be promptly implemented.

HSBC seeks constantly to improve the quality of its risk management. Thus, for central management and reporting purposes, Group information technology systems have been deployed to process credit risk data efficiently and consistently; a database has been constructed within GMO Finance and Risk covering substantially all the Group's direct lending exposures and holding the output of risk rating systems Group-wide, to support regulatory reporting and to deliver comprehensive management information 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 here 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 and the greater availability and quality of data. 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 as at 31 December 2009 along with 31 December 2008 comparatives.

Table 3: Credit risk – summary

	At 31 December 2009				At 31 December 2008			
	Exposure value US$bn	**Average exposure value US$bn**	**RWAs US$bn**	**Capital required[1] US$bn**	Exposure value US$bn	Average exposure value US$bn	RWAs US$bn	Capital required[1] US$bn
Total credit risk capital requirements								
Credit risk	**1,887.2**	**1,846.7**	**903.5**	**72.3**	1,809.1	1,919.5	882.6	70.6
Counterparty credit risk[2]	**130.2**	**147.3**	**51.9**	**4.2**	184.4	179.6	74.0	5.9
Total	**2,017.4**	**1,994.0**	**955.4**	**76.5**	1,993.5	2,099.1	956.6	76.5
Credit risk analysis by exposure class								
Exposures under the IRB advanced approach	**1,405.0**	**1,215.8**	**598.1**	**47.9**	1,179.6	1,295.2	480.2	38.4
Retail:								
– secured on real estate property[3]	**277.6**	**269.2**	**136.6**	**11.0**	256.6	266.0	110.2	8.8
– qualifying revolving retail	**148.8**	**147.2**	**77.4**	**6.2**	142.4	163.3	75.5	6.0
– SMEs[4]	**12.3**	**13.3**	**6.8**	**0.5**	14.5	17.6	7.1	0.6
– other retail[5]	**71.8**	**79.7**	**40.2**	**3.2**	89.0	102.7	55.3	4.4
Total retail	**510.5**	**509.4**	**261.0**	**20.9**	502.5	549.6	248.1	19.8
Central governments and central banks	**237.6**	**195.6**	**33.4**	**2.7**	143.5	130.3	22.7	1.8
Institutions	**180.3**	**187.2**	**40.0**	**3.2**	182.5	246.2	39.3	3.1
Corporates[6]	**399.5**	**239.2**	**244.7**	**19.6**	261.3	280.7	155.6	12.5
Securitisation positions[7]	**77.1**	**84.4**	**19.0**	**1.5**	89.8	88.4	14.5	1.2
Exposures under the IRB foundation approach	**7.9**	**163.4**	**4.3**	**0.3**	171.3	186.0	103.8	8.3
Corporates[6]	**7.9**	**163.4**	**4.3**	**0.3**	171.3	186.0	103.8	8.3
Exposures under the standardised approach	**474.3**	**467.5**	**301.1**	**24.1**	458.2	438.3	298.6	23.9
Central governments and central banks	**64.6**	**57.5**	**0.9**	**0.1**	59.4	39.5	5.9	0.5
Institutions	**41.8**	**48.3**	**9.9**	**0.8**	48.2	37.1	15.1	1.2
Corporates	**180.5**	**175.0**	**165.1**	**13.2**	168.5	170.1	150.8	12.1
Retail	**53.7**	**58.2**	**40.4**	**3.2**	61.2	66.2	45.7	3.7
Secured on real estate property	**32.3**	**27.9**	**17.1**	**1.4**	28.4	29.0	14.8	1.2
Past due items	**4.6**	**3.9**	**6.5**	**0.5**	3.4	2.5	4.3	0.4
Regional governments or local authorities	**1.3**	**0.9**	**1.2**	**0.1**	0.8	0.4	0.8	0.1
Equity	**8.8**	**8.1**	**15.3**	**1.2**	8.0	8.2	12.4	0.9
Other items[8]	**86.7**	**87.7**	**44.7**	**3.6**	80.3	85.3	48.8	3.8
Total	**1,887.2**	**1,846.7**	**903.5**	**72.3**	1,809.1	1,919.5	882.6	70.6

1 *Calculated as 8 per cent of RWAs.*
2 *For further details of counterparty credit risk, see page 33.*
3 *Exposure values in the Retail IRB 'Secured on real estate property' exposure class for North America include balances that have been reduced due to partial write-offs, as described on page 205 of the* Annual Report and Accounts 2009.
4 *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 1 million and the customer is not managed as individually as a corporate counterparty.*
5 *Includes overdrafts and personal lending.*
6 *At December 2009, corporate portfolios in France, Hong Kong and Rest of Asia-Pacific completed the transition from foundation to advanced IRB. Comparative data have not been restated.*
7 *Excludes securitisation positions deducted from capital (that would otherwise be risk-weighted at 1,250 per cent). Securitisation positions deducted from capital are shown in Table 1 and Table 26.*
8 *Primarily includes such items as fixed assets, prepayments, accruals and Hong Kong Government certificates of indebtedness. Also includes immaterial exposures to Regulatory high-risk categories, Short-term claims, Securitisation positions, Collective investment undertakings, Administrative bodies and non-commercial undertakings, and Multilateral development banks under the standardised approach.*

Capital and Risk Management Pillar 3 Disclosures as at 31 December 2009 (continued)

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

Table 4: Credit risk exposure – analysis by geographical region

	Exposure value								
	Europe US$bn	Hong Kong US$bn	Rest of Asia-Pacific[1] US$bn	Middle East[1] US$bn	North America[2] US$bn	Latin America US$bn	Total exposure US$bn	RWAs US$bn	Average RW %
At 31 December 2009									
IRB advanced approach	**512.2**	**292.5**	**154.9**	**20.5**	**396.8**	**28.1**	**1,405.0**	**598.1**	**43**
Central governments and central banks	**25.5**	**80.5**	**42.1**	**13.7**	**53.4**	**22.4**	**237.6**	**33.4**	**14**
Institutions	**47.4**	**80.0**	**27.4**	**6.6**	**13.2**	**5.7**	**180.3**	**40.0**	**22**
Corporates[3]	**157.3**	**73.2**	**62.5**	**0.2**	**106.3**	**–**	**399.5**	**244.7**	**61**
Retail	**216.3**	**57.3**	**22.6**	**–**	**214.3**	**–**	**510.5**	**261.0**	**51**
Securitisation positions[4]	**65.7**	**1.5**	**0.3**	**–**	**9.6**	**–**	**77.1**	**19.0**	**25**
IRB foundation approach	**7.9**	**–**	**–**	**–**	**–**	**–**	**7.9**	**4.3**	**54**
Corporates[3]	**7.9**	**–**	**–**	**–**	**–**	**–**	**7.9**	**4.3**	**54**
Standardised approach	**154.9**	**40.9**	**146.3**	**48.5**	**25.8**	**57.9**	**474.3**	**301.1**	**63**
Central governments and central banks	**33.3**	**–**	**27.8**	**3.5**	**–**	**–**	**64.6**	**0.9**	**1**
Institutions	**17.3**	**–**	**20.6**	**3.6**	**0.2**	**0.1**	**41.8**	**9.9**	**24**
Corporates	**50.5**	**0.6**	**73.0**	**30.1**	**2.5**	**23.8**	**180.5**	**165.1**	**91**
Retail	**9.0**	**5.5**	**10.1**	**5.5**	**4.3**	**19.3**	**53.7**	**40.4**	**75**
Secured on real estate property	**10.5**	**3.1**	**10.3**	**2.2**	**1.9**	**4.3**	**32.3**	**17.1**	**53**
Past due items	**1.1**	**–**	**0.3**	**1.1**	**–**	**2.1**	**4.6**	**6.5**	**141**
Regional governments or local authorities	**–**	**–**	**–**	**0.2**	**–**	**1.1**	**1.3**	**1.2**	**92**
Equity	**3.3**	**1.3**	**0.9**	**–**	**3.2**	**0.1**	**8.8**	**15.3**	**174**
Other items[5]	**29.9**	**30.4**	**3.3**	**2.3**	**13.7**	**7.1**	**86.7**	**44.7**	**52**
Total	**675.0**	**333.4**	**301.2**	**69.0**	**422.6**	**86.0**	**1,887.2**	**903.5**	**48**
At 31 December 2008									
IRB advanced approach	452.3	166.7	81.7	16.9	436.1	25.9	1,179.6	480.2	41
Central governments and central banks	24.0	28.3	40.8	11.2	18.2	21.0	143.5	22.7	16
Institutions	56.6	72.6	25.0	5.7	17.7	4.9	182.5	39.3	22
Corporates[3]	119.3	0.1	0.1	–	141.8	–	261.3	155.6	60
Retail	184.7	56.7	15.6	–	245.5	–	502.5	248.1	49
Securitisation positions[4]	67.7	9.0	0.2	–	12.9	–	89.8	14.5	16
IRB foundation approach	48.6	67.7	54.7	0.3	–	–	171.3	103.8	61
Corporates[3]	48.6	67.7	54.7	0.3	–	–	171.3	103.8	61
Standardised approach	158.8	34.6	127.6	56.0	26.8	54.4	458.2	298.6	65
Central governments and central banks	32.3	–	23.0	3.9	–	0.2	59.4	5.9	10
Institutions	23.5	0.5	20.6	3.4	–	0.2	48.2	15.1	31
Corporates	51.2	2.7	52.0	37.2	2.8	22.6	168.5	150.8	89
Retail	11.1	4.0	16.4	6.6	4.2	18.9	61.2	45.7	75
Secured on real estate property	9.9	2.1	7.7	2.3	2.2	4.2	28.4	14.8	52
Past due items	0.4	0.1	0.6	0.6	0.1	1.6	3.4	4.3	126
Regional governments or local authorities	–	–	–	0.3	–	0.5	0.8	0.8	100
Equity	3.0	2.6	0.2	0.2	2.0	–	8.0	12.4	155
Other items[5]	27.4	22.6	7.1	1.5	15.5	6.2	80.3	48.8	61
Total	659.7	269.0	264.0	73.2	462.9	80.3	1,809.1	882.6	49

1 *The Middle East is disclosed as a separate geographical region with effect from 1 January 2009. Previously, it formed part of Rest of Asia-Pacific. Comparative data have been restated accordingly.*

2 *Exposure values in the Retail IRB 'Secured on real estate property' exposure class for North America include balances that have been reduced due to partial write-offs, as described on page 205 of the* Annual Report and Accounts 2009.

3 *At December 2009, corporate portfolios in France, Hong Kong and Rest of Asia-Pacific completed the transition from foundation to advanced IRB. Comparative data have not been restated.*

4 *Excludes Securitisation positions deducted from capital (that would otherwise be risk-weighted at 1,250 per cent). Securitisation positions deducted from capital are shown in Table 1 and Table 26.*

5 *Primarily includes such items as fixed assets, prepayments, accruals and Hong Kong Government certificates of indebtedness. Also includes immaterial exposures to Regulatory high-risk categories, Short-term claims, Securitisation positions, Collective investment undertakings, Administrative bodies and non-commercial undertakings, and Multilateral development banks under the standardised approach.*

Table 5: Risk weightings – analysis by geographical region

	Europe US$bn	Hong Kong US$bn	Rest of Asia-Pacific[1] US$bn	Middle East[1] US$bn	North America[2] US$bn	Latin America US$bn	Total US$bn
At 31 December 2009							
IRB advanced approach[3]							
Total exposure value	**512.2**	**292.5**	**154.9**	**20.5**	**396.8**	**28.1**	**1,405.0**
Total RWAs	**152.3**	**79.9**	**58.9**	**7.4**	**285.3**	**14.3**	**598.1**
Average RW (%)	**30**	**27**	**38**	**36**	**72**	**51**	**43**
IRB foundation approach[3]							
Total exposure value	**7.9**	–	–	–	–	–	**7.9**
Total RWAs	**4.3**	–	–	–	–	–	**4.3**
Average RW (%)	**54**	–	–	–	–	–	**54**
Standardised approach							
Total exposure value	**154.9**	**40.9**	**146.3**	**48.5**	**25.8**	**57.9**	**474.3**
Total RWAs	**80.9**	**19.1**	**91.3**	**39.3**	**21.0**	**49.5**	**301.1**
Average RW (%)	**52**	**47**	**62**	**81**	**81**	**85**	**63**
Total credit risk							
Total exposure value	**675.0**	**333.4**	**301.2**	**69.0**	**422.6**	**86.0**	**1,887.2**
Total RWAs	**237.5**	**99.0**	**150.2**	**46.7**	**306.3**	**63.8**	**903.5**
Average RW (%)	**35**	**30**	**50**	**68**	**72**	**74**	**48**
At 31 December 2008							
IRB advanced approach[3]							
Total exposure value	452.3	166.7	81.7	16.9	436.1	25.9	1,179.6
Total RWAs	138.7	24.3	15.8	4.9	287.3	9.2	480.2
Average RW (%)	31	15	19	29	66	36	41
IRB foundation approach[3]							
Total exposure value	48.6	67.7	54.7	0.3	–	–	171.3
Total RWAs	33.0	39.5	31.2	0.1	–	–	103.8
Average RW (%)	68	58	57	33	–	–	61
Standardised approach							
Total exposure value	158.8	34.6	127.6	56.0	26.8	54.4	458.2
Total RWAs	87.6	14.3	83.1	46.1	22.7	44.8	298.6
Average RW (%)	55	41	65	82	85	82	65
Total credit risk							
Total exposure value	659.7	269.0	264.0	73.2	462.9	80.3	1,809.1
Total RWAs	259.3	78.1	130.1	51.1	310.0	54.0	882.6
Average RW (%)	39	29	49	70	67	67	49

1 *The Middle East is disclosed as a separate geographical region with effect from 1 January 2009. Previously, it formed part of Rest of Asia-Pacific. Comparative data have been restated accordingly.*

2 *Exposure values in the Retail IRB 'Secured on real estate property' exposure class for North America include balances that have been reduced due to partial write-offs, as described on page 205 of the* Annual Report and Accounts 2009.

3 *At December 2009, corporate portfolios in France, Hong Kong and Rest of Asia-Pacific completed the transition from foundation to advanced IRB. Comparative data have not been restated.*

Capital and Risk Management Pillar 3 Disclosures as at 31 December 2009 (continued)

Table 6: Credit risk exposure – analysis by counterparty sector

	Exposure value						
	Personal US$bn	Corporate and Commercial US$bn	Government US$bn	Financial[1] US$bn	Banks US$bn	Total exposure US$bn	RWAs US$bn
At 31 December 2009							
IRB advanced approach	**498.2**	**401.7**	**237.6**	**90.1**	**177.4**	**1,405.0**	**598.1**
Central governments and central banks	**–**	**–**	**237.6**	**–**	**–**	**237.6**	**33.4**
Institutions	**–**	**–**	**–**	**2.9**	**177.4**	**180.3**	**40.0**
Corporates[2]	**–**	**389.4**	**–**	**10.1**	**–**	**399.5**	**244.7**
Retail[3]	**498.2**	**12.3**	**–**	–	**–**	**510.5**	**261.0**
Securitisation positions[4]	**–**	**–**	**–**	**77.1**	**–**	**77.1**	**19.0**
IRB foundation approach	**–**	**7.3**	–	**0.6**	–	**7.9**	**4.3**
Corporates[2]	–	**7.3**	–	**0.6**	–	**7.9**	**4.3**
Standardised approach	**79.6**	**193.2**	**65.9**	**5.2**	**43.7**	**387.6**	**256.4**
Central governments and central banks	**–**	**–**	**64.6**	**–**	**–**	**64.6**	**0.9**
Institutions	**–**	**–**	**–**	**0.1**	**41.7**	**41.8**	**9.9**
Corporates	**–**	**178.7**	**–**	**1.8**	**–**	**180.5**	**165.1**
Retail	**49.0**	**4.7**	**–**	**–**	**–**	**53.7**	**40.4**
Secured on real estate property	**27.9**	**4.4**	**–**	**–**	**–**	**32.3**	**17.1**
Past due items	**2.7**	**1.9**	**–**	**–**	**–**	**4.6**	**6.5**
Regional governments or local authorities	**–**	**–**	**1.3**	**–**	**–**	**1.3**	**1.2**
Equity	**–**	**3.5**	**–**	**3.3**	**2.0**	**8.8**	**15.3**
Total	**577.8**	**602.2**	**303.5**	**95.9**	**221.1**	**1,800.5**	**858.8**
Other items[5]						**86.7**	**44.7**
Total exposures						**1,887.2**	**903.5**
At 31 December 2008							
IRB advanced approach	488.0	268.7	141.3	101.9	179.7	1,179.6	480.2
Central governments and central banks	–	–	141.3	–	2.2	143.5	22.7
Institutions	–	–	–	5.0	177.5	182.5	39.3
Corporates[2]	–	254.2	–	7.1	–	261.3	155.6
Retail[3]	488.0	14.5	–	–	–	502.5	248.1
Securitisation positions[4]	–	–	–	89.8	–	89.8	14.5
IRB foundation approach	–	161.4	–	9.9	–	171.3	103.8
Corporates[2]	–	161.4	–	9.9	–	171.3	103.8
Standardised approach	82.7	183.8	60.1	0.9	50.4	377.9	249.8
Central governments and central banks	–	–	59.3	–	0.1	59.4	5.9
Institutions	–	–	–	–	48.2	48.2	15.1
Corporates	–	167.6	–	0.9	–	168.5	150.8
Retail	56.2	5.0	–	–	–	61.2	45.7
Secured on real estate property	24.1	4.3	–	–	–	28.4	14.8
Past due items	2.4	1.0	–	–	–	3.4	4.3
Regional governments or local authorities	–	–	0.8	–	–	0.8	0.8
Equity	–	5.9	–	–	2.1	8.0	12.4
Total	570.7	613.9	201.4	112.7	230.1	1,728.8	833.8
Other items[5]						80.3	48.8
Total						1,809.1	882.6

1 *Includes non-bank financial institutions and corporates.*

2 *At December 2009, corporate portfolios in France, Hong Kong and Rest of Asia-Pacific completed the transition from foundation to advanced IRB. Comparative data have not been restated.*

3 *Exposure values in the Retail IRB 'Secured on real estate property' exposure class for North America include balances that have been reduced due to partial write-offs, as described on page 205 of the* Annual Report and Accounts 2009.

4 *Excludes Securitisation positions deducted from capital (that would otherwise be risk-weighted at 1,250 per cent). Securitisation positions deducted from capital are shown in Table 1 and Table 26.*

5 *Primarily includes such items as fixed assets, prepayments, accruals and Hong Kong Government certificates of indebtedness for which a counterparty sector split is not appropriate. Also includes immaterial exposures to Regulatory high-risk categories, Short-term claims, Securitisation positions, Collective investment undertakings, Administrative bodies and non-commercial undertakings, and Multilateral development banks under the standardised approach.*

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 7: Credit risk exposure – analysis by residual maturity

	Exposure value					
	Less than 1 year[1] US$bn	Between 1 and 5 years US$bn	More than 5 years US$bn	Undated US$bn	Total exposure US$bn	RWAs US$bn
At 31 December 2009						
IRB advanced approach	**622.0**	**414.2**	**365.7**	**3.1**	**1,405.0**	**598.1**
Central governments and central banks	**154.4**	**61.8**	**21.2**	**0.2**	**237.6**	**33.4**
Institutions	**105.9**	**70.6**	**2.0**	**1.8**	**180.3**	**40.0**
Corporates[2]	**167.7**	**168.4**	**62.3**	**1.1**	**399.5**	**244.7**
Retail[3]	**140.4**	**110.9**	**259.2**	**–**	**510.5**	**261.0**
Securitisation positions[4]	**53.6**	**2.5**	**21.0**	**–**	**77.1**	**19.0**
IRB foundation approach	**4.2**	**3.1**	**0.6**	**–**	**7.9**	**4.3**
Corporates[2]	**4.2**	**3.1**	**0.6**	**–**	**7.9**	**4.3**
Standardised approach	**116.8**	**213.8**	**49.1**	**94.6**	**474.3**	**301.1**
Central governments and central banks	**20.7**	**39.7**	**4.2**	**–**	**64.6**	**0.9**
Institutions	**16.9**	**24.9**	**–**	**–**	**41.8**	**9.9**
Corporates	**51.2**	**114.7**	**14.1**	**0.5**	**180.5**	**165.1**
Retail	**21.6**	**27.3**	**4.8**	**–**	**53.7**	**40.4**
Secured on real estate property	**1.7**	**5.8**	**24.8**	**–**	**32.3**	**17.1**
Past due items	**3.2**	**0.9**	**0.5**	**–**	**4.6**	**6.5**
Regional governments or local authorities	**0.5**	**0.2**	**0.6**	**–**	**1.3**	**1.2**
Equity	**–**	**–**	**–**	**8.8**	**8.8**	**15.3**
Other items[5]	**1.0**	**0.3**	**0.1**	**85.3**	**86.7**	**44.7**
Total	**743.0**	**631.1**	**415.4**	**97.7**	**1,887.2**	**903.5**
At 31 December 2008						
IRB advanced approach	457.8	393.7	324.0	4.1	1,179.6	480.2
Central governments and central banks	74.3	52.5	15.4	1.3	143.5	22.7
Institutions	97.7	79.7	2.6	2.5	182.5	39.3
Corporates[2]	77.7	118.0	65.3	0.3	261.3	155.6
Retail[3]	136.4	140.5	225.6	–	502.5	248.1
Securitisation positions[4]	71.7	3.0	15.1	–	89.8	14.5
IRB foundation approach	80.5	64.2	25.1	1.5	171.3	103.8
Corporates[2]	80.5	64.2	25.1	1.5	171.3	103.8
Standardised approach	111.7	217.9	44.6	84.0	458.2	298.6
Central governments and central banks	0.6	58.7	0.1	–	59.4	5.9
Institutions	18.2	29.7	0.2	0.1	48.2	15.1
Corporates	61.1	91.2	15.1	1.1	168.5	150.8
Retail	24.0	31.2	6.0	–	61.2	45.7
Secured on real estate property	1.2	5.6	21.6	–	28.4	14.8
Past due items	2.0	0.9	0.5	–	3.4	4.3
Regional governments or local authorities	0.2	0.4	0.2	–	0.8	0.8
Equity	–	–	–	8.0	8.0	12.4
Other items[5]	4.4	0.2	0.9	74.8	80.3	48.8
Total	650.0	675.8	393.7	89.6	1,809.1	882.6

1 *Revolving exposures such as overdrafts are considered to have a residual maturity of less than one year.*
2 *At December 2009, corporate portfolios in France, Hong Kong and Rest of Asia-Pacific completed the transition from foundation to advanced IRB. Comparative data have not been restated.*
3 *Exposure values in the Retail IRB 'Secured on real estate property' exposure class for North America include balances that have been reduced due to partial write-offs, as described on page 205 of the* Annual Report and Accounts 2009.
4 *Excludes Securitisation positions deducted from capital (that would otherwise be risk-weighted at 1,250 per cent). Securitisation positions deducted from capital are shown in Table 1 and Table 26.*
5 *Primarily includes such items as fixed assets, prepayments, accruals and Hong Kong Government certificates of indebtedness. Also includes immaterial exposures to Regulatory high-risk categories, Short-term claims, Securitisation positions, Collective investment undertakings, Administrative bodies and non-commercial undertakings, and Multilateral development banks under the standardised approach.*

Application of the IRB approach for credit risk

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

Risk rating systems

HSBC's 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 ('EL') 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.

The narrative explanations that follow relate to the advanced IRB approaches, that is advanced IRB for distinct customers and Retail IRB for the portfolio-managed retail business. Under the Group's Basel II roll-out plans, a number of Group companies are in transition to advanced IRB approaches. At December 2009, corporate portfolios in France, Hong Kong and Rest of Asia-Pacific completed the transition from foundation to advanced IRB approaches. Other Group companies and portfolios 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. Further details of HSBC's use of the standardised approach can be found on page 31.

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 22 grades, of which 20 are non-default grades representing varying degrees of strength of financial condition and two are default grades. A score generated by a model for the individual 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 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.

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 HSBC's 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 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 10 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 institutions and the largest corporate clients, typically operating internationally. Such global management facilitates consistent implementation by Group Risk and HSBC's operating subsidiaries worldwide of standards, policies, systems, approval procedures and other controls, reporting, pricing, performance guidelines and comparative analysis. All global models require FSA approval for IRB accreditation and fall directly under the remit of the Group CRAOC.

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.

The Group's approach to EAD and LGD, the framework for 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 'Credit Analytics' on page 16 above. Group CRAOC has regional and entity-level counterparts with comparable terms of reference, because the development, validation and monitoring of local models to meet local requirements and using local data are the responsibility of regional and/or local entities under the governance of their own management, subject to overall Group policy and oversight. Such models are typically approved by national or regional regulators and need to be passed to Group CRAOC only if they apply to exposures exceeding a prescribed monetary threshold or are otherwise deemed material.

Group Risk publishes Group standards for the development, independent review, maintenance and performance monitoring of credit risk analytical models, including governance over the successive stages of a model's life-cycle. Group governance standards cover such topics as the delineation of responsibilities at various stages of model development: ownership, development/validation, independent review and performance monitoring. The standards provide for monetary and/or qualitative thresholds above which decisions must be escalated to higher authority, and establish minimum intervals at which activities must be carried out, e.g. all models must be reviewed at least annually, or more frequently as the need arises. The threshold for referral via Group CRAOC to RMM is a portfolio coverage of US$20 billion or more by risk-weighted assets. Group CRAOC may deem a model material, due to the higher-risk nature of the customer sector in question.

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, and fosters best practice between offices by means of regular risk and finance team contact, internet-based instruction, business centres of excellence, a Group Risk expert forum and associated seminars.

Use of internal estimates

Internal estimates 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. Such uses continue to develop and become more embedded in management practice, as experience grows and the repository of quality data increases.

These uses include:

- **credit approval**: authorities, including those for specific counterparty types and transactions, are delegated to HSBC's operating companies using a risk-based approach with authorities graded according to CRR;
- **credit risk analytical tools**: IRB models, scorecards and other methodologies are valuable tools deployed in the assessment of customer and portfolio risk;
- **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;
- **portfolio management**: regular reports to the Board, RMM and Group Audit Committee contain analyses of risk exposures, e.g. by customer segment and quality grade, employing IRB metrics;
- **pricing**: customer relationship managers apply an IRB Risk-Adjusted Return on Capital ('RAROC') methodology in RWA and profitability calculators; 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. The exposure weighted average PD (or LGD) is calculated as the sum of PD (or LGD) multiplied by the exposure value, divided by the total exposure value for the IRB advanced exposure class. The exposure weighted average risk weight is the average risk weight for the exposure class.

Capital and Risk Management Pillar 3 Disclosures as at 31 December 2009 (continued)

Table 8: IRB advanced exposure – analysis of risk components

	Exposure value US$bn	Exposure weighted average PD %	Exposure weighted average LGD %	Exposure weighted average risk weight %	Undrawn commit-ments US$bn	RWAs US$bn
IRB advanced exposure classes						
At 31 December 2009						
Central governments and central banks	**237.6**	**0.16**	**19.9**	**14**	**4.7**	**33.4**
Institutions	**180.3**	**0.49**	**32.5**	**22**	**9.0**	**40.0**
Corporates[1, 2]	**395.3**	**3.32**	**38.9**	**61**	**203.0**	**242.2**
At 31 December 2008						
Central governments and central banks	143.5	0.20	20.3	16	6.2	22.7
Institutions	182.5	0.47	29.6	22	6.8	39.3
Corporates[1,2]	261.3	2.17	37.8	60	43.9	155.6

1 *Excludes Specialised Lending exposures subject to the supervisory slotting approach.*
2 *At December 2009, corporate portfolios in France, Hong Kong and Rest of Asia-Pacific completed the transition from foundation to advanced IRB. Comparative data have not been restated.*

Table 9: IRB advanced exposure – analysis by obligor grade[1]

	At 31 December 2009				
	Exposure value US$bn	Exposure weighted average PD %	Exposure weighted average LGD %	Exposure weighted average risk weight %	RWAs US$bn
Central governments and central banks					
Minimal default risk	**164.8**	**0.02**	**13.2**	**3**	**5.1**
Low default risk	**46.1**	**0.07**	**31.4**	**18**	**8.2**
Satisfactory default risk	**14.6**	**0.24**	**36.9**	**40**	**5.9**
Fair default risk	**5.3**	**1.03**	**45.4**	**83**	**4.4**
Moderate default risk	**5.8**	**2.18**	**44.1**	**122**	**7.1**
Significant default risk	**0.7**	**6.42**	**45.1**	**186**	**1.3**
High default risk	**0.3**	**9.69**	**85.7**	**400**	**1.2**
Special management	**–**	**22.85**	**79.5**	**419**	**0.2**
	237.6	**0.16**	**19.9**	**14**	**33.4**
Institutions					
Minimal default risk	**38.2**	**0.03**	**27.1**	**6**	**2.3**
Low default risk	**89.2**	**0.09**	**32.2**	**13**	**12.0**
Satisfactory default risk	**40.6**	**0.27**	**34.3**	**31**	**12.5**
Fair default risk	**7.9**	**0.99**	**42.5**	**76**	**6.0**
Moderate default risk	**1.6**	**2.93**	**49.9**	**131**	**2.1**
Significant default risk	**0.8**	**6.11**	**52.8**	**163**	**1.3**
High default risk	**1.5**	**12.22**	**59.7**	**220**	**3.3**
Special management	**0.2**	**20.60**	**47.3**	**250**	**0.5**
Default	**0.3**	**100.00**	**50.2**	**–**	**–**
	180.3	**0.49**	**32.5**	**22**	**40.0**
Corporates[2, 3]					
Minimal default risk	**32.3**	**0.03**	**40.3**	**15**	**4.7**
Low default risk	**74.8**	**0.10**	**40.6**	**25**	**18.4**
Satisfactory default risk	**124.5**	**0.40**	**38.0**	**48**	**60.1**
Fair default risk	**92.3**	**1.26**	**38.8**	**79**	**73.1**
Moderate default risk	**38.7**	**3.00**	**37.0**	**107**	**41.6**
Significant default risk	**12.0**	**6.41**	**35.3**	**133**	**15.9**
High default risk	**8.7**	**10.89**	**39.7**	**190**	**16.5**
Special management	**5.2**	**32.00**	**38.7**	**190**	**9.9**
Default[4]	**6.8**	**100.00**	**51.2**	**29**	**2.0**
	395.3	**3.32**	**38.9**	**61**	**242.2**

	At 31 December 2008				
	Exposure value US$bn	Exposure weighted average PD %	Exposure weighted average LGD %	Exposure weighted average risk weight %	RWAs US$bn
Central governments and central banks					
Minimal default risk	106.6	0.03	14.1	5	4.8
Low default risk	19.9	0.08	30.6	18	3.6
Satisfactory default risk	7.1	0.34	44.2	59	4.2
Fair default risk	5.1	1.56	59.8	89	4.5
Moderate default risk	4.0	1.90	39.2	105	4.2
Significant default risk	0.6	3.43	30.5	133	0.8
High default risk	0.1	9.54	45.5	200	0.2
Special management	0.1	19.76	86.0	400	0.4
	143.5	0.20	20.3	16	22.7
Institutions					
Minimal default risk	57.2	0.03	23.9	6	3.4
Low default risk	85.9	0.08	29.9	13	11.1
Satisfactory default risk	24.7	0.27	34.6	34	8.5
Fair default risk	9.9	1.28	39.1	79	7.8
Moderate default risk	2.5	2.60	50.6	156	3.9
Significant default risk	0.5	5.61	57.2	200	1.0
High default risk	1.2	12.78	51.0	242	2.9
Special management	0.3	24.18	39.1	233	0.7
Default	0.3	100.00	27.2	–	–
	182.5	0.47	29.6	22	39.3
Corporates[2, 3]					
Minimal default risk	42.7	0.03	34.9	16	6.7
Low default risk	38.5	0.10	41.4	28	10.7
Satisfactory default risk	83.1	0.39	38.7	49	41.0
Fair default risk	57.5	1.21	36.5	81	46.4
Moderate default risk	18.6	2.82	35.6	101	18.7
Significant default risk	11.3	6.26	37.7	144	16.3
High default risk	3.9	11.36	37.3	162	6.3
Special management	3.8	26.19	39.6	205	7.8
Default[4]	1.9	100.00	41.8	89	1.7
	261.3	2.17	37.8	60	155.6

1 *See glossary for definition of obligor grades.*
2 *Excludes Specialised Lending exposures subject to the supervisory slotting approach.*
3 *At December 2009, corporate portfolios in France, Hong Kong and Rest of Asia-Pacific completed the transition from foundation to advanced IRB. Comparative data have not been restated.*
4 *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.*

Table 10: IRB foundation exposure – analysis by obligor grade

	Exposure value US$bn	**Exposure weighted average risk weight %**	**RWAs US$bn**
At 31 December 2009			
Corporates[1,2]	**7.9**	**54**	**4.3**
At 31 December 2008			
Corporates[1,2]			
Minimal default risk	20.7	15	3.2
Low default risk	41.7	26	10.8
Satisfactory default risk	61.3	55	33.8
Fair default risk	28.7	106	30.3
Moderate default risk	13.0	131	17.0
Significant default risk	4.1	166	6.8
High default risk	0.5	180	0.9
Special management	0.5	200	1.0
Default	0.8	–	–
	171.3	61	103.8

1 *Excludes Specialised Lending exposures subject to the supervisory slotting approach.*
2 *At December 2009, corporate portfolios in France, Hong Kong and Rest of Asia-Pacific completed the transition from foundation to advanced IRB. The residual exposures have not been disclosed by obligor grade as the amounts are not significant at Group level. Comparative data have not been restated.*

Capital and Risk Management Pillar 3 Disclosures as at 31 December 2009 (continued)

The EL bandings for the retail business summarise a more granular EL scale for these customer segments which combine obligor and facility/product risk factors in a composite measure of PD and LGD. The definitions of PD and LGD for retail portfolios are both subject to degrees of national regulators' discretion and the international variability of the measures preclude their direct use as global comparators. The composite EL measure enables the diverse risk profiles of retail portfolios across the Group to be assessed on a more comparable scale than through the direct utilisation of PD and LGD measures. The Middle East and Latin America are not included in this table as retail exposures in these regions are calculated under the standardised approach.

Table 11: Retail IRB exposure – analysis by geographical region

	Exposure value				
	Europe US$bn	Hong Kong US$bn	Rest of Asia-Pacific US$bn	North America[1] US$bn	Total exposure US$bn
At 31 December 2009					
Secured on real estate property					
Expected loss band					
– less than 1%	**110.9**	**34.1**	**19.3**	**63.2**	**227.5**
– greater than or equal to 1% and less than 5%	**2.6**	**0.3**	**0.6**	**14.4**	**17.9**
– greater than or equal to 5% and less than 10%	**0.5**	**–**	**–**	**9.9**	**10.4**
– greater than or equal to 10% and less than 20%	**0.2**	**–**	**–**	**5.7**	**5.9**
– greater than or equal to 20% and less than 40%	**0.1**	**–**	**–**	**3.1**	**3.2**
– greater than or equal to 40% and exposures in default	**1.2**	**0.1**	**0.3**	**11.1**	**12.7**
Total retail secured on real estate property exposures	**115.5**	**34.5**	**20.2**	**107.4**	**277.6**
Qualifying revolving retail exposures					
Expected loss band					
– less than 1%	**35.8**	**11.9**	**–**	**46.6**	**94.3**
– greater than or equal to 1% and less than 5%	**7.7**	**2.6**	**–**	**21.1**	**31.4**
– greater than or equal to 5% and less than 10%	**1.6**	**0.5**	**–**	**8.9**	**11.0**
– greater than or equal to 10% and less than 20%	**0.7**	**0.2**	**–**	**4.8**	**5.7**
– greater than or equal to 20% and less than 40%	**0.2**	**0.1**	**–**	**1.5**	**1.8**
– greater than or equal to 40% and exposures in default	**0.9**	**–**	**–**	**3.7**	**4.6**
Total qualifying revolving retail exposures	**46.9**	**15.3**	**–**	**86.6**	**148.8**
SMEs[2]					
Expected loss band					
– less than 1%	**4.1**	**0.1**	**–**	**0.8**	**5.0**
– greater than or equal to 1% and less than 5%	**5.3**	**–**	**–**	**0.2**	**5.5**
– greater than or equal to 5% and less than 10%	**0.4**	**–**	**–**	**–**	**0.4**
– greater than or equal to 10% and less than 20%	**0.3**	**–**	**–**	**–**	**0.3**
– greater than or equal to 20% and less than 40%	**0.1**	**–**	**–**	**–**	**0.1**
– greater than or equal to 40% and exposures in default	**1.0**	**–**	**–**	**–**	**1.0**
Total SMEs exposures	**11.2**	**0.1**	**–**	**1.0**	**12.3**
Other retail[3]					
Expected loss band					
– less than 1%	**33.2**	**6.1**	**2.3**	**4.3**	**45.9**
– greater than or equal to 1% and less than 5%	**6.0**	**0.9**	**0.1**	**6.0**	**13.0**
– greater than or equal to 5% and less than 10%	**1.3**	**0.2**	**–**	**2.8**	**4.3**
– greater than or equal to 10% and less than 20%	**0.6**	**0.1**	**–**	**2.8**	**3.5**
– greater than or equal to 20% and less than 40%	**0.2**	**–**	**–**	**1.3**	**1.5**
– greater than or equal to 40% and exposures in default	**1.4**	**0.1**	**–**	**2.1**	**3.6**
Total other retail exposures	**42.7**	**7.4**	**2.4**	**19.3**	**71.8**
Total retail					
Expected loss band					
– less than 1%	**184.0**	**52.2**	**21.6**	**114.9**	**372.7**
– greater than or equal to 1% and less than 5%	**21.6**	**3.8**	**0.7**	**41.7**	**67.8**
– greater than or equal to 5% and less than 10%	**3.8**	**0.7**	**–**	**21.6**	**26.1**
– greater than or equal to 10% and less than 20%	**1.8**	**0.3**	**–**	**13.3**	**15.4**
– greater than or equal to 20% and less than 40%	**0.6**	**0.1**	**–**	**5.9**	**6.6**
– greater than or equal to 40% and exposures in default	**4.5**	**0.2**	**0.3**	**16.9**	**21.9**
Total retail exposures	**216.3**	**57.3**	**22.6**	**214.3**	**510.5**

	Exposure value				
	Europe US$bn	Hong Kong US$bn	Rest of Asia-Pacific US$bn	North America[1] US$bn	Total exposure US$bn
At 31 December 2008					
Secured on real estate property					
Expected loss band					
– less than 1%	87.2	31.7	12.7	81.4	213.0
– greater than or equal to 1% and less than 5%	2.4	0.5	0.3	15.7	18.9
– greater than or equal to 5% and less than 10%	0.5	–	–	5.9	6.4
– greater than or equal to 10% and less than 20%	0.2	–	–	3.9	4.1
– greater than or equal to 20% and less than 40%	–	–	–	3.7	3.7
– greater than or equal to 40% and exposures in default	0.8	0.2	0.2	9.3	10.5
Total retail secured on real estate property exposures	91.1	32.4	13.2	119.9	256.6
Qualifying revolving retail exposures					
Expected loss band					
– less than 1%	26.8	12.2	–	48.9	87.9
– greater than or equal to 1% and less than 5%	5.1	2.4	–	23.6	31.1
– greater than or equal to 5% and less than 10%	1.1	0.4	–	8.7	10.2
– greater than or equal to 10% and less than 20%	0.5	0.1	–	5.6	6.2
– greater than or equal to 20% and less than 40%	0.2	0.1	–	1.8	2.1
– greater than or equal to 40% and exposures in default	0.7	–	–	4.2	4.9
Total qualifying revolving retail exposures	34.4	15.2	–	92.8	142.4
SMEs[2]					
Expected loss band					
– less than 1%	6.0	–	–	0.5	6.5
– greater than or equal to 1% and less than 5%	6.8	–	–	–	6.8
– greater than or equal to 5% and less than 10%	0.5	–	–	–	0.5
– greater than or equal to 10% and less than 20%	0.2	–	–	–	0.2
– greater than or equal to 20% and less than 40%	0.1	–	–	–	0.1
– greater than or equal to 40% and exposures in default	0.4	–	–	–	0.4
Total SMEs exposures	14.0	–	–	0.5	14.5
Other retail[3]					
Expected loss band					
– less than 1%	34.6	7.5	2.4	6.4	50.9
– greater than or equal to 1% and less than 5%	6.7	1.1	–	11.8	19.6
– greater than or equal to 5% and less than 10%	1.5	0.3	–	4.1	5.9
– greater than or equal to 10% and less than 20%	0.9	0.1	–	3.8	4.8
– greater than or equal to 20% and less than 40%	0.3	–	–	2.2	2.5
– greater than or equal to 40% and exposures in default	1.2	0.1	–	4.0	5.3
Total other retail exposures	45.2	9.1	2.4	32.3	89.0
Total retail					
Expected loss band					
– less than 1%	154.6	51.4	15.1	137.2	358.3
– greater than or equal to 1% and less than 5%	21.0	4.0	0.3	51.1	76.4
– greater than or equal to 5% and less than 10%	3.6	0.7	–	18.7	23.0
– greater than or equal to 10% and less than 20%	1.8	0.2	–	13.3	15.3
– greater than or equal to 20% and less than 40%	0.6	0.1	–	7.7	8.4
– greater than or equal to 40% and exposures in default	3.1	0.3	0.2	17.5	21.1
Total retail exposures	184.7	56.7	15.6	245.5	502.5

1 *Exposure values in the Retail IRB 'Secured on real estate property' exposure class for North America include balances that have been reduced due to partial write-offs, as described on page 205 of the* Annual Report and Accounts 2009.

2 *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 1 million and the customer is not managed as individually as a corporate counterparty.*

3 *Includes overdrafts and personal lending.*

Capital and Risk Management Pillar 3 Disclosures as at 31 December 2009 (continued)

Risk mitigation

HSBC's approach when granting credit facilities is to do so on the basis of capacity to repay, rather than place primary reliance on credit risk mitigation. Depending on a customer's standing and the type of product, 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. There is no material concentration of credit risk mitigation held.

The Group's general policy is to promote the use of credit risk mitigation, justified by commercial prudence and good practice as well as capital efficiency. Specific, detailed policies cover the acceptability, structuring and terms of various types of business with regard to the availability of credit risk mitigation, for example in the form of collateral security, and 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. In HSBC's residential and commercial real estate businesses, a mortgage over the property is usually taken to help secure claims. Physical collateral is also typically taken in vehicle financing in some jurisdictions, and in various forms of specialised lending and leasing transactions where physical assets form 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 or 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 its securities financing business (securities lending and borrowing or repos and reverse repos). Netting is extensively used and is a prominent feature of market standard documentation.

HSBC's 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 swaps, 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 against the relevant name (see also 'Collateral arrangements' on page 34).

Settlement risk arises in any situation where a payment in cash, securities or equities is made in the expectation of a corresponding receipt of cash, securities or equities. Daily settlement limits are established to cover the aggregate of HSBC's transactions with a counterparty on any single day. Settlement risk on many transactions, particularly those involving securities and equities, is substantially mitigated by settling through assured payment systems or on a delivery-versus-payment basis.

Policies and procedures govern the protection of the Group's 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.

The valuation of credit risk mitigants seeks to monitor and ensure that they will continue to provide the secure repayment source anticipated at the time they were taken. Where collateral is subject to high volatility, valuation is frequent; where stable, less so. Trading businesses typically carry out daily valuations. In the residential mortgage business, on the other hand, Group policy prescribes valuation at intervals of up to three years, or more frequently as the need may arise, at the discretion of the business line, by a variety of methods ranging from use of market indices to individual professional inspection.

In terms of their application within an IRB approach (for the standardised approach, see page 31), risk mitigants are considered in two broad categories: first, those which reduce the intrinsic probability of default of an obligor and therefore operate as adjustments to PD estimation; secondly, those which affect the estimated recoverability of obligations and require adjustment of LGD or, in certain circumstances, EAD. The first include, typically, full parental guarantees; the second, collateral security of various kinds such as cash or mortgages over residential property.

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

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 mitigation data is incorporated into the internal risk parameters for risk exposures and feeds continuously into the calculation of the EL band value summarising both customer delinquency and product or facility risk. Credit and risk mitigation data form the inputs submitted to a centralised database by all Group offices, upon which a risk engine then performs calculations applying the relevant Basel II rules and approach.

The table below details the effective value of credit risk mitigation. Under the IRB advanced approach, financial collateral is taken into account in the LGD. Under the IRB foundation approach, for financial collateral, an adjustment (or 'haircut') is applied to the collateral to take account of price volatility. This adjusted collateral value is then subtracted from the exposure value to create an 'adjusted exposure value'. The exposure value covered by collateral is the difference between original exposure value and adjusted exposure value. An adjustment is then applied to LGD to reflect the credit risk mitigation. Similarly, for physical collateral, the LGD of an exposure will be adjusted depending on certain factors, including the value and type of the asset taken as collateral. For unfunded protection, which includes credit derivatives and guarantees, a 'substitution method' is applied. The exposure value covered by collateral is substituted by a similar exposure to the protection provider. Under the IRB foundation approach, the PD of the obligor is substituted by the PD of the protection provider. Under the IRB advanced approach the recognition is more complicated and may involve a PD or LGD adjustment or both.

Table 12: IRB exposure – credit risk mitigation analysis

	At 31 December 2009			At 31 December 2008		
	Exposure value covered by eligible financial and other collateral US$bn	**Exposure value covered by credit derivatives or guarantees US$bn**	**Exposure value US$bn**	Exposure value covered by eligible financial and other collateral US$bn	Exposure value covered by credit derivatives or guarantees US$bn	Exposure value US$bn
Exposures under the IRB advanced approach[1]						
Central governments and central banks	**n/a**	–	**237.6**	n/a	0.2	143.5
Institutions	**n/a**	**25.1**	**180.3**	n/a	20.0	182.5
Corporates[2]	**n/a**	**43.3**	**399.5**	n/a	8.2	261.3
Retail[3]	**n/a**	**23.7**	**510.5**	n/a	25.0	502.5
Exposures under the IRB foundation approach						
Corporates[2]	**0.4**	**0.2**	**7.9**	18.3	22.8	171.3

1 *Under the IRB advanced approach eligible financial collateral is reflected in the Group's loss given default (LGD) model. As such, separate disclosure of exposures covered by eligible financial collateral is not applicable.*

2 *At December 2009, corporate portfolios in France, Hong Kong and Rest of Asia-Pacific completed the transition from foundation to advanced IRB. Comparative data have not been restated.*

3 *Exposure values in the Retail IRB 'Secured on real estate property' exposure class for North America include balances that have been reduced due to partial write-offs, as described on page 205 of the* Annual Report and Accounts 2009.

Loss experience and model validation

HSBC analyses credit loss experience in order to assess the performance of its 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 expected loss ('EL') and impairment allowances recognised in the Group's financial statements;
- EL and impairment charges by exposure class (within Retail IRB, also by sub-class) and by region (Tables 13 and 14); and

- model performance: projected and actual IRB metrics for major global models in the Group's portfolio (Table 15).

EL and impairment allowances

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 1-year future horizon, determined via statistical analysis of historical default experience, while impairment assesses incurred loss at a point in time, including losses that have not yet been identified. Further detail of policy on the impairment of loans and advances is provided on pages 371 to 374 of the *Annual Report and Accounts 2009*;
- 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. The following tables 13 and 14 set out EL and actual loss experience for IRB credit risk exposures.

Table 13: IRB credit risk expected loss and impairment charges – analysis by exposure class

	Expected loss[1,2,3] as at 1 January		Impairment charge for year ended 31 December	
	2010 US$bn	**2009 US$bn**	**2009 US$bn**	2008 US$bn
IRB exposure classes				
Central governments and central banks	0.2	**0.1**	–	–
Institutions	0.4	**0.3**	**0.1**	0.1
Corporates	5.9	**3.4**	**3.7**	2.4
Retail	19.8	**20.9**	**16.0**	17.3
– secured on real estate property	8.5	**7.7**	**5.8**	5.0
– qualifying revolving retail	6.7	**6.6**	**5.8**	5.8
– other retail	3.9	**6.0**	**4.4**	6.5
– SMEs	0.7	**0.6**	–	–
Total	26.3	**24.7**	**19.8**	19.8

1 *EL comparatives as at 1 January 2008 are not disclosed since Basel II figures were compiled on a pro-forma basis only.*
2 *EL is not calculated for Securitisation positions so this IRB exposure class is not included in the analysis above.*
3 *Exposure values in the Retail IRB 'Secured on real estate property' exposure class for North America include balances that have been reduced due to partial write-offs, as described on page 205 of the* Annual Report and Accounts 2009.

Table 14: IRB credit risk expected loss and impairment charges – analysis by geographical region

	Expected loss[1,2,3] as at 1 January		Impairment charge for year ended 31 December	
	2010 US$bn	**2009 US$bn**	**2009 US$bn**	2008 US$bn
Europe	6.7	**4.8**	**3.9**	2.7
Hong Kong	0.9	**0.8**	**0.4**	0.6
Rest of Asia-Pacific	0.9	**0.4**	**0.2**	0.1
Middle East	0.1	**0.1**	**0.1**	–
North America	17.7	**18.6**	**15.2**	16.4
Total	26.3	**24.7**	**19.8**	19.8

1 *EL comparatives as at 1 January 2008 are not disclosed since Basel II figures were compiled on a pro-forma basis only.*
2 *EL is not calculated for Securitisation positions so this IRB exposure class is not included in the analysis above.*
3 *Exposure values in the Retail IRB 'Secured on real estate property' exposure class for North America include balances that have been reduced due to partial write-offs, as described on page 205 of the* Annual Report and Accounts 2009.

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 2009 and of the impairment charge for the year ended 31 December 2009 relates to Retail exposures in North America. The drivers of the impairment allowances and charges for 2009 in North America, including delinquency experience and loss severities, are discussed on page 239 of the *Annual Report and Accounts 2009*.

Full details of the Group's impaired loans and advances, past due but not impaired assets and impairment allowances and charges are set out on pages 227 to 243 of the *Annual Report and Accounts 2009*. These figures are prepared on an accounting consolidation basis but are not significantly different from those calculated on a regulatory consolidation basis. The Group's approaches for determining impairment allowances are explained on pages 203 to 205 of the *Annual Report and Accounts 2009*. Details of the Group's past due but not impaired assets are provided on pages 229 to 230 of the *Annual Report and Accounts 2009*.

Model performance

The large number of models operated by HSBC in most exposure classes results in data at individual model level being in most cases immaterial in the context of the whole Group. Disclosure of such data could place proprietary information at risk, whilst aggregation of it would greatly reduce its usefulness.

HSBC has therefore chosen to disclose model performance data only for the major global models in use at the present time (see Table 15 below).

The table below shows projected and actual values for key Basel II metrics in respect of the models for Central governments and central banks, Institutions and Global Large Corporate models. The projections represent opening values at 1 January 2009, and actuals represent the defaults and losses experienced during the year as a percentage of total facility limits.

Table 15: IRB advanced models – projected and actual values

	2009				
	PD		LGD		EAD[1]
	Projected %	Actual %	Projected %	Actual %	Actual %
Central governments and central banks model	**0.20**	–	**20.3**	–	**–**
Institutions model	**0.47**	**0.05**	**29.6**	**8.7**	**73.0**
Global Large Corporates model[2]	**0.46**	**0.06**	**33.8**	**44.1**	**100.0**

1 *Exposure at default of defaulted counterparties as a percentage of their total facility limits. Projected EAD figures for defaulted borrowers are not disclosed, this population having been undefined at the start of the period.*

2 *The Global Large Corporates model covers the segment of the largest, and generally lower-risk, corporates whose annual turnover exceeds US$700 million. The PD analysis includes all IRB advanced or foundation exposures. The LGD and EAD analyses include IRB advanced exposures only because, under the IRB foundation approach, regulatory LGD parameters are applied. Actual LGD percentage for the Global Large Corporates model reflects additional conservatism applied to estimates of recoveries over time from specific defaults within the large corporate portfolio.*

Application of the standardised approach for credit risk

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 by HSBC as part of the determination of risk weightings for the following classes of exposure:

- Central governments and central banks;
- Institutions;
- Corporates;
- Securitisation positions;
- Short-term claims on institutions and corporates;
- Regional governments and local authorities; and
- Multilateral development banks.

HSBC has nominated three FSA-recognised ECAIs for this purpose – Moody's Investors Service, Standard & Poor's Ratings Group and the Fitch Group. HSBC has not nominated any Export Credit Agencies.

Credit quality step	Moody's assessments	S&P's assessments	Fitch's 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 the Group's 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.

Under guidance from the FSA, bank exposures guaranteed under the UK Government guarantee scheme are eligible to be treated under the standardised approach and therefore benefit from a zero per cent risk weighting.

Banking associates' exposures are calculated under the standardised approach and, at 31 December 2009, represented approximately 10 per cent of total Group RWAs.

The tables below set out the distribution of standardised exposures across credit quality steps. Due to their aggregate proportion of the total standardised approach exposure value being 1 per cent or less, an analysis of credit quality step allocations for Regional governments or local authorities, Short-term claims, Securitisation positions, Collective investment undertakings and Multilateral development banks is not set out below.

Table 16: Standardised approach exposure – analysis by credit quality step

	At 31 December 2009		At 31 December 2008	
	Exposure value US$bn	**RWAs US$bn**	Exposure value US$bn	RWAs US$bn
Central governments and central banks				
Credit quality step 1	**33.2**		32.2	
Credit quality step 2	**30.6**		26.6	
Credit quality step unrated	**0.8**		0.6	
	64.6	**0.9**	59.4	5.9
Institutions				
Credit quality step 1	**16.0**		18.9	
Credit quality step 2	**–**		0.1	
Credit quality step 3	**0.7**		0.1	
Credit quality step 4	**–**		0.7	
Credit quality step 5	**0.1**		0.2	
Credit quality step 6	**–**		0.1	
Credit quality step unrated	**25.0**		28.1	
	41.8	**9.9**	48.2	15.1
Corporates				
Credit quality step 1	**6.5**		10.3	
Credit quality step 2	**6.8**		4.1	
Credit quality step 3	**27.2**		27.1	
Credit quality step 4	**5.1**		3.8	
Credit quality step 5	**1.6**		0.9	
Credit quality step 6	**0.5**		0.2	
Credit quality step unrated	**132.8**		122.1	
	180.5	**165.1**	168.5	150.8

Risk mitigation

For exposures subject to the standardised approach – covered by an eligible guarantee, non-financial collateral, or credit derivatives – the exposure is divided into covered and uncovered portions. The covered portion, determined after applying an appropriate 'haircut' for currency and maturity mismatch (and for omission of restructuring clauses for credit derivatives, where appropriate) to the amount of protection provided, attracts the risk weight of the protection provider, while the uncovered portion attracts the risk weight of the

obligor. For exposures fully or partially covered by eligible financial collateral, the value of the exposure is adjusted under the Financial Collateral Comprehensive Method using supervisory volatility adjustments, including those arising from currency mismatch, which are determined by the specific type of collateral (and, in the case of eligible debt securities, their credit quality) and its liquidation period. The adjusted exposure value is subject to the risk weight of the obligor.

The table below sets out the effective value of credit risk mitigation for exposures under the standardised approach, expressed as the exposure value covered by the credit risk mitigant.

Table 17: Standardised approach exposure – credit risk mitigation analysis

	At 31 December 2009			At 31 December 2008		
	Exposure value covered by eligible financial and other collateral US$bn	**Exposure value covered by credit derivatives or guarantees US$bn**	**Exposure value US$bn**	Exposure value covered by eligible financial and other collateral US$bn	Exposure value covered by credit derivatives or guarantees US$bn	Exposure value US$bn
Exposures under the standardised approach						
Central governments and central banks	–	**0.8**	**64.6**	–	0.2	59.4
Institutions	–	**14.9**	**41.8**	–	17.3	48.2
Corporates	**6.8**	**1.4**	**180.5**	3.9	4.7	168.5
Retail	**0.8**	**0.2**	**53.7**	0.8	0.7	61.2
Secured on real estate property	–	–	**32.3**	–	0.5	28.4
Past due items	**0.1**	–	**4.6**	0.1	–	3.4
Other items[1]	**0.2**	**0.2**	**86.7**	0.3	–	80.3

1 *Primarily includes such items as fixed assets, prepayments, accruals and Hong Kong Government certificates of indebtedness. Also includes immaterial exposures to Regulatory high-risk categories, Short-term claims, Securitisation positions, Collective investment undertakings, Administrative bodies and non-commercial undertakings, and Multilateral development banks under the standardised approach.*

Counterparty credit risk

Counterparty credit risk arises for OTC derivatives and securities financing transactions. It is calculated in both the trading and non-trading book, and is the risk that a counterparty to a transaction may default before completing the satisfactory settlement of the transaction. An economic loss occurs if the transaction or portfolio of transactions with the counterparty has a positive economic value at the time of default.

There are three approaches under Basel II to calculating exposure values for counterparty credit risk: the standardised, the mark-to-market and the IMM. Exposure values calculated under these methods are used to determine RWAs using one of the credit risk approaches. Across the Group, HSBC uses both the mark-to-market method and the IMM for counterparty credit risk. Under the IMM, the EAD is calculated by multiplying the effective expected positive exposure with a multiplier called alpha. Alpha accounts for several portfolio features that increase the expected loss in the event of default above that indicated by effective expected positive exposure: co-variance of exposures, correlation between exposures and default, concentration risk and model risk. It also accounts for the level of volatility/correlation that might coincide with a downturn. The default alpha value of 1.4 is used. Limits for counterparty credit risk exposures are assigned within the overall credit process for distinct customer limit approval. The measure used for counterparty credit risk management – both limits and utilisations – is the 95th percentile of potential future exposure.

The models and methodologies used in the calculation of counterparty risk are approved by the Counterparty Risk Methodology Committee which operates under delegated authority of the RMM. In line with the IMM governance standards models are subject to independent review when they are first developed and ongoing, annual review.

Credit risk adjustment

HSBC adopts a credit risk adjustment (also frequently known as a ‘credit valuation adjustment’) against OTC derivative transactions to reflect within fair value the possibility that the counterparty may default, and HSBC may not receive the full market value of the transactions. HSBC calculates a separate credit risk adjustment for each HSBC legal entity, and within each entity for each counterparty to which the entity has exposure. The adjustment

aims to calculate the potential loss arising from the portfolio of derivative transactions against each third party, based upon a modelled expected positive exposure profile, including allowance for credit risk mitigants such as netting agreements and Credit Support Annexes ('CSA's). The scenario analyses used to generate exposure profiles are consistent with the analysis tools and methodological approach used to generate the exposure profiles used by the Group's risk functions for exposure management purposes or, where applicable, as the basis for portfolios where exposures are calculated under the IMM. Details of the Group credit risk adjustment methodology are provided on page 170 of the *Annual Report and Accounts 2009*.

Collateral arrangements

To calculate a counterparty's net risk position, for counterparty credit risk, HSBC revalues all financial instruments and associated collateral positions on a daily basis. A dedicated Collateral Management function independently monitors counterparties' associated collateral positions and manages a process which ensures that calls for collateral top-ups or exposure reductions are made promptly. Processes exist for the resolution of situations where the level of collateral is disputed or the collateral sought is not received.

Eligible collateral types are documented by a CSA of the International Swaps and Derivatives Association ('ISDA') Master Agreement and are controlled under a policy which ensures the collateral agreed to be taken exhibits characteristics such as price transparency, price stability, liquidity, enforceability, independence, reusability and eligibility for regulatory purposes. A valuation 'haircut' policy reflects the fact that collateral may fall in value between the date the collateral was called and the date of liquidation or enforcement. In practice at least 95 per cent of collateral held as credit risk mitigation under CSAs is either cash or government securities.

Credit ratings downgrade

It has increasingly become the practice for market participants to employ credit ratings downgrade language clauses in industry standard master agreements such as the ISDA Master Agreement as a form of risk control. These clauses are designed to trigger a series of events which may include the termination of transactions by the non-affected party, or assignment by the affected party, if its credit rating falls below a specified level.

HSBC controls the inclusion of credit ratings downgrade language in industry standard master agreements by requiring each Group office to obtain the endorsement of a senior member of the Treasury function and the relevant local Credit authority prior to obtaining approval from Group Risk.

HSBC's position with regard to credit ratings downgrade language is monitored through reports which are produced on a regular basis. A report is produced which identifies the trigger ratings and individual details for documentation where credit ratings downgrade language exists within an ISDA Master Agreement. A further report is produced which identifies the additional collateral requirements where credit ratings downgrade language affects the threshold levels within a collateral agreement. At 31 December 2009, the additional collateral required to be posted for a one notch downgrade was US$996 million (2008: US$426 million) and for a two notch downgrade was US$1,261 million (2008: US$789 million).

Wrong-way risk

Wrong-way risk is an aggravated form of concentration risk and arises when there is a strong correlation between the counterparty's probability of default and the mark-to-market value of the underlying transaction. Wrong-way risk can be seen in the following examples:

- where the counterparty is resident and/ or incorporated in an emerging market and seeks to sell a non-domestic currency in exchange for its home currency;
- where the trade involves the purchase of an equity put option from a counterparty whose shares are the subject of the option;
- the purchase of credit protection from a counterparty who is closely associated with the reference entity of the credit default swap or total return swap; and
- the purchase of credit protection on an asset type which is highly concentrated in the exposure of the counterparty selling the credit protection.

HSBC uses a range of tools to control and monitor wrong-way risk, including requiring entities to obtain prior approval before undertaking wrong-way risk transactions outside pre-agreed guidelines. The Credit Risk Management functions undertake control and monitoring processes and a regular meeting of a committee comprising senior management from Global Markets, Credit, Market Risk Management and Finance is responsible for reviewing and actively managing wrong-way risk, including allocating capital.

Table 18: Counterparty credit risk – net derivative credit exposure[1]

	At 31 December	
	2009	2008
	US$bn	US$bn
Counterparty credit risk[2]		
Gross positive fair value of contracts	**250.9**	494.9
Less: netting benefits	**(168.5)**	(355.9)
Netted current credit exposure	**82.4**	139.0
Less: collateral held	**(21.1)**	(27.4)
Net derivative credit exposure	**61.3**	111.6

1 *This table provides a further breakdown of totals reported in the* Annual Report and Accounts 2009 *on an accounting consolidation basis. The same figures are not significantly different when consolidated on a regulatory basis.*
2 *Excludes add-on for potential future exposures.*

Table 19: Counterparty credit risk exposure – analysis by exposure class

	IMM		**Mark-to-market method**[1]		**Total counterparty credit risk**	
	Exposure value US$bn	**RWAs US$bn**	**Exposure value US$bn**	**RWAs US$bn**	**Exposure value US$bn**	**RWAs US$bn**
At 31 December 2009						
IRB advanced approach	**20.2**	**8.1**	**101.7**	**39.1**	**121.9**	**47.2**
Central governments and central banks	**3.2**	**0.2**	**4.8**	**0.5**	**8.0**	**0.7**
Institutions	**7.6**	**2.2**	**57.8**	**13.7**	**65.4**	**15.9**
Corporates	**9.4**	**5.7**	**39.1**	**24.9**	**48.5**	**30.6**
IRB foundation approach	–	–	**4.3**	**2.4**	**4.3**	**2.4**
Corporates	–	–	**4.3**	**2.4**	**4.3**	**2.4**
Standardised approach	–	–	**4.0**	**2.3**	**4.0**	**2.3**
Institutions	–	–	**1.7**	**0.8**	**1.7**	**0.8**
Corporates	–	–	**1.5**	**1.4**	**1.5**	**1.4**
Retail	–	–	**0.5**	–	**0.5**	–
Short-term claims	–	–	**0.1**	**0.1**	**0.1**	**0.1**
Multilateral development banks	–	–	**0.1**	–	**0.1**	–
Administrative bodies and non-commercial undertakings	–	–	**0.1**	–	**0.1**	–
Total	**20.2**	**8.1**	**110.0**	**43.8**	**130.2**	**51.9**
At 31 December 2008						
IRB advanced approach	31.3	10.6	115.2	43.3	146.5	53.9
Central governments and central banks	4.6	0.4	4.5	0.3	9.1	0.7
Institutions	11.8	3.4	31.6	6.6	43.4	10.0
Corporates	14.9	6.8	79.1	36.4	94.0	43.2
IRB foundation approach	–	–	9.8	3.8	9.8	3.8
Corporates	–	–	9.8	3.8	9.8	3.8
Standardised approach	–	–	28.1	16.3	28.1	16.3
Central governments and central banks	–	–	0.7	–	0.7	–
Institutions	–	–	14.1	5.2	14.1	5.2
Corporates	–	–	12.6	10.6	12.6	10.6
Short-term claims	–	–	0.5	0.4	0.5	0.4
Multilateral development banks	–	–	0.1	–	0.1	–
Regional governments or local authorities	–	–	0.1	0.1	0.1	0.1
Total	31.3	10.6	153.1	63.4	184.4	74.0

1 *Includes add-on for potential future exposure.*

Table 20: Counterparty credit risk exposure – analysis by product

	IMM		Mark-to-market method[1]		Total counterparty credit risk	
	Exposure value US$bn	**RWAs US$bn**	**Exposure value US$bn**	**RWAs US$bn**	**Exposure value US$bn**	**RWAs US$bn**
At 31 December 2009						
OTC derivatives[1]	**20.2**	**8.1**	**94.3**	**40.9**	**114.5**	**49.0**
Securities financing transactions	**–**	**–**	**14.7**	**2.6**	**14.7**	**2.6**
Other[2]	**–**	**–**	**1.0**	**0.3**	**1.0**	**0.3**
Total	**20.2**	**8.1**	**110.0**	**43.8**	**130.2**	**51.9**
At 31 December 2008						
OTC derivatives[1]	31.3	10.6	137.7	59.6	169.0	70.2
Securities financing transactions	–	–	10.3	2.5	10.3	2.5
Other[2]	–	–	5.1	1.3	5.1	1.3
Total	31.3	10.6	153.1	63.4	184.4	74.0

1 *OTC derivatives under the mark-to-market method include add-on for potential future exposure.*
2 *Includes free deliveries not deducted from capital.*

Table 21: Credit derivative transactions[1]

	At 31 December 2009		At 31 December 2008	
	Protection bought US$bn	**Protection sold US$bn**	Protection bought US$bn	Protection sold US$bn
Credit derivative products used for own credit portfolio				
Credit default swaps	**6.9**	**0.1**	8.0	0.2
Total return swaps	**–**	**–**	0.4	–
Total notional value	**6.9**	**0.1**	8.4	0.2
Credit derivative products used for intermediation				
Credit default swaps	**590.3**	**601.2**	750.8	779.1
Total return swaps	**15.6**	**19.6**	16.4	22.8
Credit spread options	**0.3**	**0.2**	1.0	1.1
Other	**1.6**	**1.3**	1.0	2.6
Total notional value	**607.8**	**622.3**	769.2	805.6

1 *This table provides a further breakdown of totals reported in the* Annual Report and Accounts 2009 *on an accounting consolidation basis. The same figures are not significantly different when consolidated on a regulatory basis.*

Securitisation

Group securitisation strategy

HSBC acts as originator, sponsor, liquidity provider and derivative counterparty to its own originated and sponsored securitisations, as well as those of third party securitisations. HSBC's strategy is to use securitisations to meet the needs of the Group for aggregate funding, to the extent that market, regulatory treatments and other conditions are suitable, and for customer facilitation. The Group has senior exposures to the securities investment conduits ('SIC's), Mazarin Funding Limited, Barion Funding Limited, Malachite Funding Limited and Solitaire Funding Limited, which are not considered core businesses, and resulting exposures are being repaid as the securities held by the SICs amortise.

Group securitisation roles

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

- **Originator**: where HSBC originates the assets being securitised, either directly or indirectly;
- **Sponsor**: where HSBC establishes and manages a securitisation programme that purchases exposures from third parties; and
- **Investor**: where HSBC invests in a securitisation transaction directly or provides derivatives or liquidity facilities to a securitisation.

HSBC as Originator

HSBC uses SPEs to securitise customer loans and advances that it has originated, mainly in order to

diversify its sources of funding for asset origination and for capital efficiency purposes. In such cases, the loans and advances are transferred by HSBC to the SPEs for cash, and the SPEs issue debt securities to investors to fund the cash purchases, commonly known as a traditional securitisation. This activity is conducted in a number of regions and across a number of asset classes listed below in Table 22. HSBC also acts as a derivative counterparty. Credit enhancements to the underlying assets may be used to obtain investment grade ratings on the senior debt issued by the SPEs. The majority of these securitisations are consolidated for accounting purposes by HSBC. HSBC has also established multi-seller conduit securitisation programmes for the purpose of providing access to flexible market-based sources of finance for HSBC's clients to finance discrete pools of third-party originated trade and vehicle finance loan receivables.

In addition, HSBC uses SPEs to mitigate the capital absorbed by some of the customer loans and advances it has originated. Credit derivatives are used to transfer the credit risk associated with such customer loans and advances to an SPE, using securitisations commonly known as synthetic securitisations. These SPEs are consolidated for accounting purposes when HSBC is exposed to the majority of risks and rewards of ownership.

HSBC as Sponsor

HSBC is sponsor to a number of types of securitisation entity:

- HSBC sponsors three active multi-seller conduit vehicles which were established to provide finance to clients – Regency Assets Ltd in Europe, Bryant Park Funding LLC in the US and Performance Trust Ltd in Canada – to which HSBC provides senior liquidity facilities and programme wide credit enhancement.
- HSBC sponsors four SICs set up to take advantage of spread differentials between the long-term underlying assets and shorter term funding costs. Solitaire Funding Limited and Mazarin Funding Limited are asset backed commercial paper conduits to which HSBC provides transaction-specific liquidity facilities; Barion Funding Limited and Malachite Funding Limited are vehicles to which HSBC provides senior term funding. HSBC also provides a first loss letter of credit to Solitaire Funding Limited.

Full details of these entities can be found on page 182 of the *Annual Report and Accounts 2009*.

HSBC as Investor

HSBC has exposure to third party securitisations across a wide range of sectors in the form of investments, liquidity facilities and as a derivative counterparty.

Valuation of securitisation positions

The performance of a securitisation position is primarily driven by the performance of the assets underlying that securitisation position. HSBC uses a combination of market standard systems and third party data providers to monitor the performance data for securitisation exposures.

The valuation process of HSBC's investments in securitisation exposures primarily focuses on quotations from third parties, observed trade levels and calibrated valuations from market standard models. This process did not change in 2009. Further details can be found on page 166 of the *Annual Report and Accounts 2009*.

Group securitisation activities in 2009

HSBC's securitisation activities in 2009 mainly consisted of transactions entered into with customers, as both sponsor and investor, in the normal course of business. The other main securitisation activity conducted in the period was the repurchase of a proportion of outstandings in Metrix Funding Ltd and Metrix Securities plc which were vehicles representing pools of securitised loans.

There has been a migration to lower securitisation ratings during 2009. This is a result of the performance of the underlying assets being outside the expectations established at inception of the original securitisations, and changes to the ratings methodology of the principal credit rating agencies. During the first quarter of 2009, credit rating agencies reassessed their rating models for US sub-prime and Alt-A residential mortgaged-backed securities which resulted in significant downgrades. In response to this, HSBC has undertaken a number of re-securitisations so that the ratings inputs into the regulatory capital calculation are a more granular reflection of the underlying risk profile. As a result, the regulatory capital required to be held in respect of these assets is more closely aligned to the underlying risk profile of the assets.

Securitisation accounting treatment

For accounting purposes, HSBC consolidates SPEs when the substance of the relationship indicates that HSBC controls them. In assessing control, all relevant factors are considered, including qualitative and quantitative aspects. Full details of these

assessments can be found on pages 181 to 182 of the *Annual Report and Accounts 2009.*

HSBC reassesses the required consolidation accounting tests whenever there is a change in the substance of the relationship between HSBC and an SPE, for example, when the nature of HSBC's involvement or the governing rules, contractual arrangements or capital structure of the SPE change.

The transfer of assets to an SPE may give rise to the full or partial derecognition of the financial assets concerned. Only in the event that derecognition is achieved are sales and any resultant gains on sales recognised in the financial statements. In a traditional securitisation, assets are sold to an SPE and no gain or loss on sale is recognised at inception.

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

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

Loans, credit cards, debt securities and trade receivables that have been securitised under arrangements by which HSBC retains a continuing involvement in such transferred assets do not generally qualify for derecognition. Continuing involvement may entail retaining the rights to future cash flows arising from the assets after investors have received their contractual terms (for example, interest rate strips); providing subordinated interest; liquidity support; continuing to service the underlying asset; or entering into derivative transactions with the securitisation vehicles. As such, HSBC continues to be exposed to risks associated with these transactions.

Where assets have been derecognised in whole or in part, the rights and obligations that HSBC retains from its continuing involvement in securitisations are initially recorded as an allocation of the fair value of the financial asset between the part that is derecognised and the part that continues to be recognised on the date of transfer.

Securitisation regulatory treatment

For regulatory purposes, SPEs are not consolidated where significant risk has been transferred to third parties. Exposure to these SPEs are risk weighted as securitisation positions for regulatory purposes, including any derivatives or liquidity facilities. Of the US$11.4 billion (2008: US$21.4 billion) of unrealised losses on available-for-sale ('AFS') debt securities disclosed in the *Annual Report and Accounts 2009*, US$10.5 billion (2008: US$16.2 billion) relates to assets within SPEs that are not consolidated for regulatory purposes. The remaining US$0.9 billion (2008: US$5.2 billion) is subject to the FSA's prudential filter that removes unrealised gains and losses on AFS debt securities from capital and also adjusts the exposure value of the positions by the same amount before the relevant risk weighting is applied.

At September 2009, Metrix Funding Ltd and Metrix Securities plc ceased to be treated under the securitisation methodology following the natural evolution of the underlying pools and the arm's length repurchase by HSBC of a portion of the notes. As this no longer meets the requirement of significant transfer of risk to be treated as securitisations under regulatory rules, the pool of underlying commercial loans is now risk weighted.

Calculation of risk-weighted assets for securitisation exposures

Basel II specifies two methods for calculating credit risk requirements for securitisation positions in the non-trading book, being the standardised and IRB approaches. Both approaches rely on the mapping of rating agency credit ratings to risk weights, which range between 7 per cent and 1,250 per cent. Positions that would be weighted at 1,250 per cent are deducted from capital. HSBC has nominated three FSA-recognised ECAIs for this purpose – Moody's Investors Service, Standard and Poors' Ratings Group and the Fitch Group.

Within the IRB approach, HSBC uses the Ratings Based Method ('RBM') for the majority of its non-trading book securitisation positions, and the Internal Assessment Approach ('IAA') for unrated liquidity facilities and programme wide enhancements for asset-backed securitisations.

HSBC uses the IRB approach for the majority of its non-trading book securitisation positions, while those in the trading book are treated like other market risk positions.

Securitisation exposures analysed below are on a regulatory consolidated basis and include those deducted from capital, rather than risk weighted. Movement in the year represents any purchase or sale of securitisation assets, the repayment of capital on amortising or maturing securitisation assets, the inclusion of trading book assets when their credit ratings fall below investment grade and the revaluation of these assets. Movements in the year also reflect the re-assessment of assets no longer treated under the securitisation framework. When assets within re-securitisations are re-securitised to achieve a more granular rating, there is no change in the exposure value, and so no movement in the year is reported.

Table 22: Securitisation exposures – movement in the year

	Total at	Movement in year			Total at
	1 January	As originator	As sponsor	As investor	31 December
2009	**US$bn**	**US$bn**	**US$bn**	**US$bn**	**US$bn**
Aggregate amount of securitisation exposures (retained or purchased)					
Residential mortgages	**5.7**	**–**	**–**	**(0.3)**	**5.4**
Commercial mortgages	**3.0**	**–**	**0.1**	**0.9**	**4.0**
Credit cards	**0.1**	**–**	**–**	**(0.1)**	**–**
Leasing	**0.7**	**–**	**(0.5)**	**(0.1)**	**0.1**
Loans to corporates or SMEs	**8.9**	**(1.8)**	**(0.4)**	**(6.4)**	**0.3**
Consumer loans	**1.4**	**–**	**(0.5)**	**0.1**	**1.0**
Trade receivables	**17.3**	**–**	**(2.5)**	–	**14.8**
Re-securitisations[1]	**54.3**	**–**	**(4.9)**	**5.4**	**54.8**
Total	**91.4**	**(1.8)**	**(8.7)**	**(0.5)**	**80.4**
2008					
Aggregate amount of securitisation exposures (retained or purchased)					
Residential mortgages	4.9	–	–	0.8	5.7
Commercial mortgages	2.9	–	0.1	–	3.0
Credit cards	0.1	–	–	–	0.1
Leasing	0.7	–	–	–	0.7
Loans to corporates or SMEs	5.4	–	3.5	–	8.9
Consumer loans	1.4	–	–	–	1.4
Trade receivables	16.8	–	0.5	–	17.3
Re-securitisations	47.8	–	4.8	1.7	54.3
Total	80.0	–	8.9	2.5	91.4

1 *Re-securitisations principally include exposures to Solitaire Funding Limited, Mazarin Funding Limited, Barion Funding Limited and Malachite Funding Limited.*

Table 23: Securitisation exposures – analysis by transaction type

	At 31 December 2009			At 31 December 2008		
	Traditional transactions US$bn	**Synthetic transactions US$bn**	**Total US$bn**	Traditional transactions US$bn	Synthetic transactions US$bn	Total US$bn
As originator[1]	–	**0.1**	**0.1**	0.9	1.0	1.9
Commercial mortgages	–	**0.1**	**0.1**	–	0.1	0.1
Loans to corporates or SMEs	–	–	–	0.9	0.9	1.8
As sponsor	**58.6**	–	**58.6**	67.3	–	67.3
Commercial mortgages	**0.3**	–	**0.3**	0.2	–	0.2
Leasing	–	–	–	0.5	–	0.5
Loans to corporates or SMEs	–	–	–	0.4	–	0.4
Consumer loans	–	–	–	0.5	–	0.5
Trade receivables	**14.8**	–	**14.8**	17.3	–	17.3
Re-securitisations	**43.5**	–	**43.5**	48.4	–	48.4
As investor	**21.7**	–	**21.7**	22.2	–	22.2
Residential mortgages	**5.4**	–	**5.4**	5.7	–	5.7
Commercial mortgages	**3.6**	–	**3.6**	2.7	–	2.7
Credit cards	–	–	–	0.1	–	0.1
Leasing	**0.1**	–	**0.1**	0.2	–	0.2
Loans to corporates or SMEs	**0.3**	–	**0.3**	6.7	–	6.7
Consumer loans	**1.0**	–	**1.0**	0.9	–	0.9
Re-securitisations	**11.3**	–	**11.3**	5.9	–	5.9
Total	**80.3**	**0.1**	**80.4**	90.4	1.0	91.4

1 *For securitisations in which HSBC acts as both originator and sponsor, the exposure is disclosed under originator only.*

Capital and Risk Management Pillar 3 Disclosures as at 31 December 2009 (continued)

Table 24: Securitisation exposures – analysis by method

	At 31 December 2009				At 31 December 2008			
	Standardised US$bn	**Ratings based US$bn**	**IAA US$bn**	**Total US$bn**	Standardised US$bn	Ratings based US$bn	IAA US$bn	Total US$bn
As originator[1]	–	**0.1**	–	**0.1**	–	1.9	–	1.9
Commercial mortgages	–	**0.1**	–	**0.1**	–	0.1	–	0.1
Loans to corporates or SMEs	–	–	–	–	–	1.8	–	1.8
As sponsor	–	**50.5**	**8.1**	**58.6**	–	60.6	6.7	67.3
Commercial mortgages	–	**0.3**	–	**0.3**	–	0.2	–	0.2
Leasing	–	–	–	–	–	0.5	–	0.5
Loans to corporates or SMEs	–	–	–	–	–	0.4	–	0.4
Consumer loans	–	–	–	–	–	–	0.5	0.5
Trade receivables	–	**6.7**	**8.1**	**14.8**	–	11.1	6.2	17.3
Re-securitisations	–	**43.5**	–	**43.5**	–	48.4	–	48.4
As investor	**0.2**	**21.5**	–	**21.7**	–	22.2	–	22.2
Residential mortgages	–	**5.4**	–	**5.4**	–	5.7	–	5.7
Commercial mortgages	–	**3.6**	–	**3.6**	–	2.7	–	2.7
Credit cards	–	–	–	–	–	0.1	–	0.1
Leasing	–	**0.1**	–	**0.1**	–	0.2	–	0.2
Loans to corporates or SMEs	**0.1**	**0.2**	–	**0.3**	–	6.7	–	6.7
Consumer loans	–	**1.0**	–	**1.0**	–	0.9	–	0.9
Re-securitisations	**0.1**	**11.2**	–	**11.3**	–	5.9	–	5.9
Total	**0.2**	**72.1**	**8.1**	**80.4**	–	84.7	6.7	91.4

1 *For securitisations in which HSBC acts as both originator and sponsor, the exposure is disclosed under originator only.*

Table 25: Securitisation exposures – asset values and impairment charges

	At 31 December 2009			At 31 December 2008		
	Underlying assets[1,2]		**Securitisation exposures impairment charge US$bn**	Underlying assets[1,2]		Securitisation exposures impairment charge US$bn
	Total US$bn	**Impaired and past due US$bn**		Total US$bn	Impaired and past due US$bn	
As originator	**2.6**	–	–	8.4	–	–
Residential mortgages	**0.9**	–	–	1.0	–	–
Commercial mortgages	**1.3**	–	–	1.3	–	–
Credit cards	**0.4**	–	–	1.7	–	–
Loans to corporates or SMEs	–	–	–	4.4	–	–
As sponsor	**51.1**	**3.2**	**1.0**	55.0	0.7	0.1
Commercial mortgages	**1.8**	–	–	1.9	–	–
Loans to corporates or SMEs	–	–	–	–	–	0.1
Trade receivables	**10.9**	–	–	13.4	–	–
Re-securitisations[2]	**38.4**	**3.2**	**1.0**	39.7	0.7	–
As investor[3]			**0.5**			–
Residential mortgages			**0.1**			–
Re-securitisations			**0.4**			–
Total			**1.5**			0.1

1 *Securitisation exposures may exceed the underlying asset values when HSBC provides liquidity facilities while also acting as derivative counterparty and a note holder in the SPE.*
2 *For re-securitisations where HSBC has derived regulatory capital based on the underlying pool of assets, the asset value used for the regulatory capital calculation is used in the disclosure of Total underlying assets. For other re-securitisations the carrying value of the assets per the* Annual Report and Accounts 2009 *is disclosed.*
3 *For securitisations where HSBC acts as investor, information on third party underlying assets is not available.*

Table 26: Securitisation exposures – analysis by risk weighting

	Exposure value			Exposure value		
	Movement in the year 2009 US$bn	**Total at 31 December 2009 US$bn**	**Capital required 2009 US$bn**	Movement in the year 2008 US$bn	Total at 31 December 2008 US$bn	Capital required 2008 US$bn
Long-term category – risk weights						
– less than or equal to 10%	**(16.4)**	**50.9**	**0.3**	9.4	67.3	0.4
– greater than 10% and less than or equal to 20%	**6.1**	**19.4**	**0.2**	1.3	13.3	0.2
– greater than 20% and less than or equal to 50%	**(1.0)**	**1.6**	**0.1**	–	2.6	0.1
– greater than 50% and less than or equal to 100%	**2.0**	**2.7**	**0.2**	–	0.7	0.1
– greater than 100% and less than or equal to 650%	**1.4**	**2.3**	**0.7**	–	0.9	0.4
Deductions from regulatory capital[1]	**1.6**	**3.2**	**3.2**	0.7	1.6	1.6
Total	**(6.3)**	**80.1**	**4.7**	11.4	86.4	2.8
Short-term category – risk weights						
– less than or equal to 10%	**(4.7)**	**0.3**	–	–	5.0	–
Total	**(4.7)**	**0.3**	–	–	5.0	–

1 *Values reported at 31 December 2008 did not include trading book securitisation positions.*

When securitising a revolving pool of exposures, the originator transfers a pool of exposures to an SPE. The SPE then issues notes to external investors backed by a portion of this pool. The originator's interest is the proportion of the pool which is not in use as collateral backing for notes issued to investors. The originator's interest has increased in 2009 as notes have matured and been repaid.

Table 27: Securitisation exposures – securitised revolving exposures

	At 31 December 2009		At 31 December 2008	
	Originator's interest US$bn	**Investor's interest US$bn**	Originator's interest US$bn	Investor's interest US$bn
Average outstanding amount of securitised revolving exposures	**3.4**	**0.3**	1.8	1.7

Market risk

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

HSBC separates exposures to market risk into trading and non-trading portfolios. Trading portfolios include those positions arising from market-making, position-taking and other marked-to-market positions so designated. Non-trading portfolios include positions that arise from the interest rate management of HSBC's retail and commercial banking assets and liabilities, financial investments designated as available for sale and held to maturity.

Where appropriate, HSBC applies similar risk management policies and measurement techniques to both trading and non-trading portfolios. The application of these to the trading portfolios is described in the section below.

Objectives

The objective of HSBC's market risk management is to manage and control market risk exposures in order to optimise return on risk while maintaining a market profile consistent with the Group's status as one of the world's largest banking and financial services organisations.

Organisation and responsibilities

The management of market risk is principally undertaken in Global Banking and Markets using risk limits approved by the GMB. Limits are set for portfolios, products and risk types, with market liquidity being a principal factor in determining the level of limits set.

Group Risk develops the Group's market risk management policies and measurement techniques. Each major operating entity has an independent market risk management and control function which is responsible for measuring market risk exposures in accordance with the policies defined by Group Risk, and monitoring and reporting these exposures against the prescribed limits on a daily basis.

Each operating entity is required to assess the market risks which arise on each product in its business. It is the responsibility of each operating unit to ensure that market risk exposures remain within the limits specified for that entity. The nature of the hedging and risk mitigation strategies performed across the Group corresponds to the market instruments available within each operating jurisdiction. These strategies range from the use of traditional market instruments, such as interest rate swaps, to more sophisticated hedging strategies to address a combination of risk factors arising at portfolio level.

Measurement and monitoring

HSBC uses a range of tools to monitor and limit market risk exposures within its trading portfolios. These include sensitivity analysis, VAR and stress testing.

Table 28: Market risk capital requirements

	At 31 December 2009		At 31 December 2008	
	Capital required[1] US$bn	**RWAs US$bn**	Capital required[1] US$bn	RWAs US$bn
Market risk				
Interest rate position risk requirement[2]	**1.1**	**14.0**	1.4	17.1
Foreign exchange position risk requirement[2]	**0.1**	**0.8**	0.1	0.6
VAR requirement	**1.0**	**13.0**	1.8	23.2
Capital requirement calculated under local regulatory rules[3]	**1.9**	**23.9**	2.3	29.2
Equity position risk[2]	–	**0.1**	–	0.1
Commodity position risk[2]	–	**0.1**	–	0.1
Total market risk	**4.1**	**51.9**	5.6	70.3

1 *Calculated as 8 per cent of RWAs.*
2 *FSA Standard rules.*
3 *Includes requirements calculated under local VAR models and other calculation rules.*

Sensitivity analysis

Sensitivity measures are used to monitor the market risk positions within each risk type, for example, the present value of a basis point movement in interest rates, for interest rate risk. Sensitivity limits are set for portfolios, products and risk types, with the depth of the market being one of the principal factors in determining the level of limits set.

VAR

VAR is a technique that estimates the potential losses that could occur on risk positions as a result of movements in market rates and prices over a specified time horizon and to a given level of confidence.

The VAR models used by HSBC are based predominantly on historical simulation. These models derive plausible future scenarios from past series of recorded market rates and prices, taking into account inter-relationships between different markets and rates such as interest rates and foreign exchange rates. The models also incorporate the effect of option features on the underlying exposures.

The historical simulation models used by HSBC incorporate the following features:

- potential market movements are calculated with reference to data from the past two years;
- historical market rates and prices are calculated with reference to foreign exchange rates and commodity prices, interest rates, equity prices and the associated volatilities; and
- VAR is calculated to a 99 per cent confidence level and for a one-day holding period.

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

HSBC routinely validates the accuracy of its VAR models by back-testing the actual daily profit and loss results, adjusted to remove non-modelled items such as fees and commissions, against the corresponding VAR numbers. Statistically, HSBC

would expect to see losses in excess of VAR only 1 per cent of the time over a one-year period. The actual number of excesses over this period can therefore be used to gauge how well the models are performing.

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

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

Stress testing

In recognition of the limitations of VAR, HSBC augments VAR with stress testing to evaluate the potential impact on portfolio values of more extreme, although plausible, events or movements in a set of financial variables.

The process is governed by the Stress Testing Review Group forum. This coordinates the Group's stress testing scenarios in conjunction with regional risk managers, considering actual market risk exposures and market events in determining the scenarios to be applied at portfolio and consolidated levels, as follows:

- sensitivity scenarios, which consider the effect of market moves on any single risk factor or a set of factors that are unlikely to be captured within the VAR models, such as the break of a currency peg;
- technical scenarios, which consider the largest move in each risk factor, without consideration of any underlying market correlation;
- hypothetical scenarios, which consider potential macro economic events, for example, a global flu pandemic; and
- historical scenarios, which incorporate historical observations of market movements during previous periods of stress which would not be captured within VAR.

Stress testing results provide senior management with an assessment of the financial impact such events would have on HSBC's profit. The daily losses experienced during 2009 were within the stress loss scenarios reported to senior management.

Interest rate risk

Interest rate risk arises within the trading portfolios, principally from mismatches between the future yield on assets and their funding cost, 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 prepayments.

HSBC aims, through its management of interest rate risk, to mitigate the effect of prospective interest rate movements which could reduce its net income, balanced against the cost of associated hedging activities.

Interest rate risk arising within the trading portfolios is measured, where practical, on a daily basis. HSBC uses a range of tools to monitor and limit interest rate risk exposures. These include the present value of a basis point movement in interest rates, VAR, stress testing and sensitivity analysis.

Foreign exchange risk

Foreign exchange risk arises as a result of movements in the relative value of currencies. In addition to VAR and stress testing, HSBC controls the foreign exchange risk within the trading portfolio by limiting the open exposure to individual currencies, and on an aggregate basis.

Specific issuer risk

Specific issuer (credit spread) risk arises from a change in the value of debt instruments due to a perceived change in the credit quality of the issuer or underlying assets. As well as VAR and stress testing, HSBC manages the exposure to credit spread movements within the trading portfolios through the use of limits referenced to the sensitivity of the present value of a basis point movement in credit spreads.

Equity risk

Equity risk arises from the holding of open positions, either long or short, in equities or equity based instruments, which create exposure to a change in the market price of the equities or underlying equity instruments. As well as VAR and stress testing, HSBC controls the equity risk within its trading portfolios by limiting the size of the net open equity exposure.

Interest rate and equity risk in the non-trading book

Non-trading book exposures in equities

At 31 December 2009, on a regulatory consolidation basis, the Group had equity investments in the non-trading book of US$9.1 billion (2008: US$7.2 billion). These consist of investments held for the following purposes:

Table 29: Non-trading book equity investments

	At 31 December 2009			At 31 December 2008		
	Available for sale US$bn	**Designated at fair value US$bn**	**Total US$bn**	Available for sale US$bn	Designated at fair value US$bn	Total US$bn
Strategic investments	**3.2**	**0.4**	**3.6**	2.7	0.2	2.9
Private equity investments	**3.7**	**0.1**	**3.8**	2.5	–	2.5
Business facilitation[1]	**1.1**	**–**	**1.1**	1.0	–	1.0
Short-term cash management	**0.6**	**–**	**0.6**	0.8	–	0.8
Total	**8.6**	**0.5**	**9.1**	7.0	0.2	7.2

1 *Includes holdings in government-sponsored enterprises and local stock exchanges.*

Investments in private equity are primarily made through managed funds that are subject to limits on the amount of investment. Potential new commitments are subject to risk appraisal to ensure that industry and geographical concentrations remain within acceptable levels for the portfolio as a whole. Regular reviews are performed to substantiate the valuation of the investments within the portfolio. A detailed description of the valuation techniques applied to private equity can be found on page 171 of the *Annual Report and Accounts 2009*.

Exchange traded investments amounted to US$0.9 billion (2008: US$0.4 billion), with the remainder being unlisted. These investments are held at fair value in line with market prices.

On a regulatory consolidation basis, net gain from disposal of equity securities amounted to US$0.4bn (2008: US$1.2 billion), while impairment of available-for-sale equity securities amounted to US$0.2bn (2008: US$0.8 billion).

Unrealised gains on available-for-sale equity included in Tier 2 capital equated to US$1.4 billion (2008: US$0.9 billion).

Details of the Group's accounting policy for available-for-sale equity investments and the valuation of financial instruments are detailed on pages 375 and 63, respectively, of the *Annual Report and Accounts 2009*.

Non-trading book interest rate risk

Interest rate risk in non-trading portfolios is known as IRRBB, as defined on page 9. This risk arises principally from mismatches between the future yield on assets and their funding cost, as a result of interest rate changes. The prospective change in future net interest income from non-trading portfolios will be reflected in the current realisable value of positions, should they be sold or closed prior to maturity.

In order to manage this risk optimally, market risk in non-trading portfolios is transferred to Global Markets or to separate books managed under the supervision of the local ALCO. This transfer is usually achieved by a series of internal deals between the business units and these books. When the behavioural characteristics of a product differ from its contractual characteristics, the behavioural characteristics are assessed to determine the true underlying interest rate risk. Local ALCOs are required to regularly monitor all such behavioural assumptions and interest rate risk positions to ensure they comply with interest rate risk limits established by GMB.

In certain cases, the non-linear characteristics of products cannot be adequately captured by the risk transfer process. For example, both the flow from customer deposit accounts to alternative investment products and the precise prepayment speeds of mortgages will vary at different interest rate levels, and where expectations about future moves in interest rates change. In such circumstances,

simulation modelling is used to identify the impact of varying scenarios on valuations and net interest income.

For more details of the Group's monitoring of the sensitivity of projected net interest income under varying interest rate scenarios please see pages 256 to 257 of the *Annual Report and Accounts 2009*.

Operational risk

Operational risk is defined as 'the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events, including legal risk'.

Operational risk is relevant to every aspect of the Group's business and covers a wide spectrum of issues. Losses arising through fraud, unauthorised activities, errors, omission, inefficiency, systems failure or from external events all fall within the definition of operational risk.

The Group has historically experienced operational risk losses in the following major categories:

- fraudulent and other external criminal activities;
- breakdowns in processes/procedures due to human error, misjudgement or malice;
- terrorist attacks;
- system failure or non-availability; and
- in certain parts of the world, vulnerability to natural disasters.

The Group recognises that operational risk losses can be incurred for a wide variety of reasons, including rare but extreme events.

Objectives

The objective of HSBC's operational risk management is to manage and control operational risk in a cost-effective manner within targeted levels of operational risk consistent with the Group's risk appetite, as defined by GMB.

Organisation and responsibilities

Operational risk management is primarily the responsibility of employees and business management. The Group Operational Risk function and the operational risk management framework assist business management with discharging this responsibility. Designated Operational Risk Co-ordinators work within key business units and have responsibility for ensuring that the operational risk management framework is effectively implemented in their assigned business units.

A formal governance structure provides oversight over the management of operational risk across the Group's geographical regions and its global businesses.

The Global Operational Risk and Control Committee which reports to RMM and meets at least quarterly discusses key risk issues and reviews the effective implementation of the Group's operational risk management framework.

Operational risk is organised as an independent risk discipline within Group Risk. The Group Operational Risk function reports to the GCRO and supports the Global Operational Risk and Control Committee. It is responsible for establishing and maintaining the operational risk framework, monitoring the level of operational losses and the effectiveness of the control environment. It is also responsible for operational risk reporting at Group level, including preparation of reports for consideration by RMM and Group Audit Committee.

Measurement and monitoring

HSBC has codified its operational risk management framework in a high level standard, supplemented by detailed policies. The detailed policies explain HSBC's approach to identifying, assessing, monitoring and controlling operational risk and give guidance on mitigating action to be taken when weaknesses are identified.

In each of HSBC's subsidiaries, business managers are responsible for maintaining an acceptable level of internal control, commensurate with the scale and nature of operations. They are responsible for identifying and assessing risks, designing controls and monitoring the effectiveness of these controls. The operational risk management framework helps managers to fulfil these responsibilities by defining a standard risk assessment methodology and providing a tool for the systematic reporting of operational loss data.

Operational risk capital requirements are calculated under the standardised approach, as a percentage of the average of the last three financial years' gross revenues. The table below sets out a geographical analysis of the Group's operational risk capital requirement as at 31 December 2009 along with 31 December 2008 comparatives.

Capital and Risk Management Pillar 3 Disclosures as at 31 December 2009 (continued)

Table 30: Operational risk capital requirements

	At 31 December 2009		At 31 December 2008	
	Capital required[1] US$bn	**RWAs US$bn**	Capital required[1] US$bn	RWAs US$bn
Operational risk				
Europe	**3.5**	**42.1**	3.3	41.2
Hong Kong	**1.3**	**16.0**	1.2	15.0
Rest of Asia-Pacific[2]	**1.3**	**16.7**	1.1	13.6
Middle East[2]	**0.4**	**5.5**	0.4	4.7
North America	**2.5**	**31.3**	2.7	33.5
Latin America	**1.1**	**14.3**	1.0	13.1
Total	**10.1**	**125.9**	9.7	121.1

1 *Calculated as 8 per cent of RWAs.*
2 *The Middle East is disclosed as a separate geographical region with effect from 1 January 2009. Previously, it formed part of Rest of Asia-Pacific. Comparative data have been restated accordingly.*

Operational risk assessment approach

Operational risk self-assessments are performed by individual business units and functions. The risk assessment process is designed to support the management rather than total avoidance of risk. Each business and function carries out a risk identification and assessment process at least annually. Where risk is assessed as high, business management either proposes a cost-effective action plan to mitigate the risk or provide a rationale as to why the risk is acceptable at the current level.

All appropriate means of mitigation and controls are considered. These include:

- making specific changes to strengthen the internal control environment;
- investigating whether cost-effective insurance cover is available to mitigate the risk; and
- other means of protecting the Group from loss.

Recording

HSBC has constructed a centralised database ('the Group Operational Risk Database') to record the results of its operational risk management processes. Operational risk self-assessments as described above, comprising the identified risks, related scoring, action plans and proposed implementation dates, are input and maintained at business unit level in the Group Operational Risk Database. Business management and Operational Risk Business Co-ordinators monitor and follow up the progress of documented action plans.

Operational risk loss reporting

To ensure that operational risk losses can be monitored at a Group level, all Group companies are required to report individual losses when the net loss is expected to exceed US$10,000 and to aggregate all other operational risk losses under US$10,000. Losses are entered into the Group Operational Risk Database and are reported to the Group Operational risk function on a quarterly basis.

Appendix – Terms and Conditions of Capital Securities

Capital securities issued by the Group

All capital securities included in the capital base of HSBC have been issued in accordance with the rules and guidance in the FSA's General Prudential Sourcebook ('GENPRU'). For regulatory purposes, HSBC's capital base is divided into two categories, or tiers, depending on the degree of permanency and loss absorbency exhibited. These are tier 1 and tier 2.

The main features of capital securities issued by the Group are described below. The balances disclosed in the tables below are the balance sheet carrying amounts under IFRSs from the *Annual Report and Accounts 2009* and are not the amounts that the instruments contribute to regulatory capital. The regulatory treatment of these instruments and the accounting treatment under IFRSs differ, for example, in the treatment of issuance costs or regulatory amortisation. Therefore, the balances disclosed will not reconcile to other amounts disclosed in this document.

Tier 1 capital

Tier 1 capital is comprised of shareholders' funds and related minority interests and qualifying hybrid capital instruments such as non-innovative preference shares and innovative tier 1 securities, after the deduction of certain regulatory adjustments.

	At 31 December	
	2009	2008
	US$m	US$m
Called up share capital		
HSBC Holdings ordinary shares (of nominal value US$0.50 each)[1]	**8,705**	6,053

1 *All ordinary shares in issue confer identical rights in respect of capital, dividends, voting and otherwise.*

Non-innovative preference shares

Non-innovative preference shares are issues of securities for which there is no obligation to pay a dividend and if not paid, the dividend is not cumulative. Such shares do not generally carry voting rights and rank higher than ordinary shares for dividend payments and in the event of a winding-up. The instruments have no stated maturity date but may be called and redeemed by the issuer, subject to the prior notification of the FSA, and, where relevant, the consent of the local banking regulator. Dividends on the floating rate preference shares are generally related to interbank offer rates. The following table lists the qualifying non-innovative preference shares in issue as at 31 December 2009 along with 31 December 2008 comparatives:

		At 31 December	
		2009	2008
		US$m	US$m
Non-innovative preference shares			
US$1,450m	6.20% dollar preference shares, Series A , callable from December 2010[1]	**1,450**	1,450
US$575m	6.36 % preferred stock, Series B, callable from June 2010	**559**	559
US$518m	Floating rate preferred stock, Series F, callable from April 2010	**518**	518
US$374m	Floating rate preferred stock, Series G, callable from January 2011	**374**	374
US$374m	6.50% preferred stock, Series H, callable from July 2011	**374**	374
CAD250m	5 year rate reset class 1 preferred shares, Series E, callable from June 2014	**238**	–
Other non-innovative preference shares each less than US$200m		**334**	286

1 *These preference shares have a nominal value of US$0.01 each. The amount disclosed denotes the aggregate redemption price. For detailed description of these preference shares, refer to page 458 of the* Annual Report and Accounts 2009*.*

Appendix – Terms and Conditions of Capital Securities (continued)

Innovative tier 1

Innovative tier 1 capital securities are deeply subordinated securities, with some equity features that can be included as tier 1 capital. Innovative tier 1 securities are issues of securities for which there is no obligation to pay a coupon and if not paid, the coupon is not cumulative. Such securities do not generally carry voting rights and rank higher than ordinary shares for coupon payments and in the event of a winding-up. Coupons on the floating rate innovative tier 1 securities are generally related to interbank offer rates. The securities may be called and redeemed by the issuer, subject to the prior notification of the FSA, and, where relevant, the consent of the local banking regulator. If not redeemed, coupons payable may step-up and become floating rate or, fixed rate for a further five years based on the relevant reference security plus a margin. The following table lists the qualifying innovative tier 1 securities in issue as at 31 December 2009 along with 31 December 2008 comparatives:

		At 31 December	
		2009	2008
		US$m	US$m
Innovative tier 1 securities			
US$2,200m	8.125% capital securities, callable April 2013[1]	**2,133**	2,133
US$1,350m	9.547% preferred securities, Series 1, callable June 2010, steps to 3 month LIBOR plus 4.06 per cent[2]	**1,339**	1,337
US$1,250m	4.61% preferred securities, callable June 2013, steps to 3 month LIBOR plus 1.995 per cent[2]	**1,077**	745
US$900m	10.176% preferred securities, Series 2 , callable June 2030, steps to 3 month LIBOR plus 4.98 per cent[2]	**900**	900
€1,400m	5.3687% preferred securities, callable March 2014, steps to 3 month EURIBOR plus 2 per cent[2]	**1,804**	1,532
€750m	5.13% preferred securities, callable March 2016, steps to 3 month EURIBOR plus 1.9 per cent[2]	**960**	790
€600m	8.03% preferred securities, callable June 2012, steps to 3 month EURIBOR plus 3.65 per cent[2]	**862**	834
£700m	5.844% preferred securities, callable November 2031, steps to 6 month LIBOR plus 1.76 per cent[2]	**1,136**	1,021
£500m	8.208% preferred securities, callable June 2015, steps to 5 year UK Gilts yield plus 4.65 per cent[2]	**806**	724
£300m	5.862% preferred securities, callable April 2020, steps to 6 month LIBOR plus 1.85 per cent[2]	**412**	333

1 *For detailed description of these capital securities, refer to page 459 of the* Annual Report and Accounts 2009.
2 *For detailed description of these preferred securities, refer to page 452 of the* Annual Report and Accounts 2009.

Tier 2 capital

Tier 2 capital comprises qualifying subordinated loan capital, related minority interests, allowable collective impairment allowances, unrealised gains arising on the fair valuation of equity instruments held as available-for-sale and reserves arising from the revaluation of properties. Tier 2 capital is divided into two tiers: upper and lower tier 2.

Upper tier 2 capital

Upper tier 2 securities are subordinated loan capital that do not have a stated maturity date but may be called and redeemed by the issuer, subject to the prior notification of the FSA, and, where relevant, the consent of the local banking regulator. Interest coupons on the floating rate upper tier 2 securities are generally related to interbank offer or mid rates and in some cases may be subject to a minimum rate payable. Upper tier 2 capital may also include, for regulatory purposes, some preference share securities not meeting the full GENPRU requirements for inclusion in the tier 1 capital base. The following table lists the qualifying upper tier 2 securities in issue as at 31 December 2009 along with 31 December 2008 comparatives:

		At 31 December	
		2009	2008
		US$m	US$m
Perpetual subordinated loan capital and other Upper Tier 2 instruments			
US$750m	Undated floating rate primary capital notes, callable since June 1990	**750**	750
US$500m	Undated floating rate primary capital notes, callable since September 1990	**500**	500
US$400m	Primary capital undated floating rate notes, callable since August 1990	**407**	410
US$400m	Primary capital undated floating rate notes (second series), callable since December 1990	**404**	404
US$400m	Primary capital undated floating rate notes (third series), callable since August 1991	**400**	400
US$300m	Undated floating rate primary capital notes, series 3, callable since June 1992	**300**	300
Other perpetual subordinated loan capital each less than US$200m		**512**	542

Lower tier 2 capital

Lower tier 2 capital comprises dated subordinated loan capital repayable at par on maturity (in certain cases at a premium over par) and which have an original maturity of at least five years. Some subordinated loan capital may be called and redeemed by the issuer, subject to the prior notification of the FSA, and, where relevant, the consent of the local banking regulator. If not redeemed, interest coupons payable may step-up or become floating rate related to interbank offer rates and in some cases may be subject to a floor. Lower tier 2 capital may also include, for regulatory purposes, some preference share or undated capital securities not meeting the full GENPRU requirements for inclusion in the capital base as either tier 1 or upper tier 2 capital. For regulatory purposes, it is a requirement that lower tier 2 securities be amortised on a straight-line basis in their final five years of maturity thus reducing the amount of capital that is recognised for regulatory purposes. The following table lists the qualifying lower tier 2 securities in issue as at 31 December 2009 along with 31 December 2008 comparatives:

		At 31 December	
		2009	2008
		US$m	US$m
Subordinated loan capital and other Tier 2 instruments			
US$2,500m	6.5% subordinated notes due September 2037	**2,659**	2,669
US$2,000m	6.5% subordinated notes due May 2036	**2,052**	2,052
US$1,500m	6.8% subordinated notes due June 2038	**1,484**	1,484
US$1,400m	5.25% subordinated notes due December 2012	**1,488**	1,455
US$1,000m	7.5% subordinated notes due July 2009	**–**	1,068
US$1,000m	4.625% subordinated notes due April 2014	**1,002**	1,001
US$1,000m	5.911% trust preferred securities due November 2035, callable November 2015, steps to 3 month LIBOR plus 1.926 per cent	**993**	992
US$1,000m	5.875% subordinated notes due November 2034	**950**	953
US$750m	Subordinated floating rate notes due March 2015, callable March 2010, 0.5 per cent interest margin step[1]	**750**	750
US$750m	Subordinated floating rate notes due October 2016, callable October 2011, 0.5 per cent interest margin step	**750**	750
US$750m	5.625% subordinated notes due August 2035	**712**	715
US$700m	7.00% subordinated notes due January 2039	**688**	694
US$500m	6.00% subordinated notes due August 2017	**521**	498
US$488m	7.625% subordinated notes due May 2032	**587**	609

Appendix – Terms and Conditions of Capital Securities (continued)

		At 31 December 2009 US$m	2008 US$m
Subordinated loan capital and other Tier 2 instruments (continued)			
US$450m	Subordinated floating rate notes due July 2016, callable July 2011, 0.5 per cent interest margin step	**449**	449
US$300m	6.95% subordinated notes due March 2011	**321**	324
US$300m	7.65% subordinated notes due May 2025	**312**	384
US$300m	Subordinated floating rate notes due July 2017, callable July 2012, 0.5 per cent interest margin step	**299**	299
US$222m	7.35% subordinated notes due November 2032	**260**	269
US$250m	7.20% subordinated notes due July 2097	**213**	218
US$200m	7.808% capital securities due December 2026, callable since December 2006	**200**	200
US$200m	8.38% capital securities due May 2027, callable since May 2007	**200**	200
US$200m	7.75% subordinated notes due 2009	**–**	203
US$200m	6.625% subordinated notes due 2009	**–**	198
€2,000m	Subordinated floating rate notes due September 2014, callable September 2009, 0.5 per cent interest margin step[2]	**–**	2,805
€1,750m	6.0% subordinated notes due June 2019	**2,835**	–
€1,600m	6.25% subordinated notes due March 2018	**2,306**	2,231
€1,000m	5.375% subordinated notes due December 2012	**1,549**	1,403
€800m	Subordinated floating rate notes due March 2016, callable March 2011, 0.5 per cent interest margin step	**1,152**	1,116
€700m	3.625% subordinated notes due June 2020, callable June 2015, steps to 3 months EURIBOR plus 0.93 per cent	**1,005**	840
€600m	4.25% subordinated notes due March 2016, callable March 2011, steps to 3 month EURIBOR plus 1.05 per cent	**904**	831
€500m	Subordinated floating rate notes due September 2020, callable September 2015, 0.5 per cent interest margin step	**639**	567
€300m	5.5% subordinated notes due July 2009	**–**	432
£900m	6.375% subordinated notes due October 2022, callable October 2017, steps to 3 month LIBOR plus 1.3 per cent	**1,517**	1,330
£750m	7.0% subordinated notes due April 2038	**1,267**	1,140
£650m	6.75% subordinated notes due September 2028	**1,043**	938
£650m	5.75% subordinated notes due December 2027	**1,000**	878
£600m	4.75% subordinated notes due March 2046	**961**	863
£500m	4.75% subordinated notes due September 2020, callable September 2015, steps to 3 month LIBOR plus 0.82 per cent	**785**	675
£500m	5.375% subordinated notes due August 2033	**776**	659
£350m	Subordinated variable coupon notes due June 2017, callable June 2012, steps to sum of gross redemption yield on the then prevailing 5 year UK gilt plus 1.7 per cent	**608**	518
£350m	5% subordinated notes due March 2023, callable March 2018, steps to sum of gross redemption yield on the then prevailing 5 year UK gilt plus 1.8 per cent	**550**	481
£350m	5.375% subordinated step-up notes due November 2030, callable November 2025, steps to 3 month LIBOR plus 1.5 per cent	**531**	461
£300m	6.5% subordinated notes due July 2023	**483**	436
£250m	9.875% subordinated bonds due April 2018, callable April 2013, steps to higher of (i) 9.875 per cent or (ii) sum of the yield on the relevant benchmark treasury stock plus 2.5 per cent	**496**	441
£225m	6.25% subordinated notes due January 2041	**363**	325
CAD400m	4.80% subordinated notes due April 2022, callable April 2017, steps to 90-day Bankers' Acceptance Rate plus 1 per cent	**382**	277
CAD200m	4.94% subordinated debentures due March 2021	**190**	163
BRL500m	Subordinated floating rate certificates of deposit due December 2016	**287**	215
BRL383m	Subordinated certificates of deposit due February 2015	**220**	–
Other term subordinated loan capital each less than US$200m		**2,965**	2,996

1 *On 11 February 2010, HSBC Holdings gave notice to holders of its US$750 million callable subordinated floating rate notes due 2015 and called and redeemed the notes at par on 16 March 2010.*
2 *In September 2009, HSBC Holdings redeemed its €2,000 million callable subordinated floating rate notes due 2014 at par.*

Glossary

Term	Definition
ALCO	Asset and Liability Management Committee
Alt-A	A US description of loans regarded as lower risk than sub-prime, but with higher risk characteristics than lending under normal criteria.
Asset-backed securities	Securities that represent an interest in an underlying pool of referenced assets. The referenced pool can comprise any assets which attract a set of associated cash flows but are commonly pools of residential or commercial mortgages.
Available-for-sale financial assets	Those non-derivative financial assets that are designated as available for sale or are not classified as a) loans and receivables b) held-to-maturity investments or c) financial assets at fair value through profit or loss.
Back-testing	A statistical technique used to monitor and assess the accuracy of a model, and how that model would have performed had it been applied in the past.
Basel II	The capital adequacy framework issued by the Basel Committee on Banking Supervision in June 2006 in the form of the 'International Convergence of Capital Measurement and Capital Standards'.
Basel Committee	Basel Committee on Banking Supervision
Commercial paper	An unsecured, short-term debt instrument issued by a corporation, typically for the financing of accounts receivable, inventories and meeting short-term liabilities. The debt is usually issued at a discount, reflecting prevailing market interest rates.
Commercial real estate	Any real estate investment, comprising buildings or land, intended to generate a profit, either from capital gain or rental income.
Conduits	A vehicle that holds asset-backed securities such as mortgages, vehicle finance loans and credit card loans which is financed by issued short-term debt normally in the form of commercial paper which is collateralised by the asset-backed debt.
Core tier 1 capital	The highest quality form of regulatory capital that comprises total shareholders' equity and related minority interests, less goodwill and intangible assets, and certain other regulatory adjustments.
Credit default swap	A derivative contract whereby a buyer pays a fee to a seller in return for receiving a payment in the event of a defined credit event (e.g. bankruptcy, payment default on a reference asset or assets, or downgrades by rating agency) on an underlying obligation (which may or may not be held by the buyer).
Credit enhancements	Facilities used to enhance the creditworthiness of financial obligations and cover losses due to asset default.
Credit quality step	A step in the FSA credit quality assessment scale which is based on the credit ratings of External Credit Assessment Institutions ('ECAI's). It is used to assign risk weights under the standardised approach.
Credit risk	Risk of financial loss if a customer or counterparty fails to meet an obligation under a contract. It arises mainly from direct lending, trade finance and leasing business, but also from products such as guarantees, derivatives and debt securities.
Credit risk adjustment	An adjustment to the valuation of the OTC derivatives contracts to reflect the creditworthiness of OTC derivative counterparties.

Glossary (continued)

Credit risk mitigation	A technique to reduce the credit risk associated with an exposure by application of credit risk mitigants such as collateral, guarantees and credit protection.
Credit spread option	A derivative that transfers risk from one party to another. The buyer pays an initial premium in exchange for potential cash flows if the credit spread changes from its current level.
CSA	Credit Support Annex
Customer risk rating ('CRR')	A scale of 22 grades measuring internal obligor probability of default.
Delinquency	Customers are said to be in a state of delinquency when they are behind in fulfilling their obligations with the result that an outstanding loan is unpaid or overdue. When a customer is in state of delinquency, the total outstanding loans on which payments are overdue are described as delinquent.
Derivatives	A derivative is a financial instrument whose value is based on the performance of one or more underlying assets, for example bonds or currencies.
ECAI	External Credit Assessment Institution, such as Moody's Investors Service, Standard & Poor's Ratings Group or Fitch Group.
Economic capital	The internally calculated capital requirement which is deemed necessary by HSBC to support the risks to which it is exposed at a confidence level consistent with a target credit rating of AA.
Economic profit	The difference between the return on financial capital invested by shareholders ('return on invested capital') and the cost of that capital. Economic profit may be expressed as a whole number or as a percentage.
Equity risk	The risk arising from positions, either long or short, in equities or equity-based instruments, which create exposure to a change in the market price of the equities or equity instruments.
Expected loss ('EL') (regulatory)	A regulatory calculation of the amount expected to be lost on an exposure using a 12-month time horizon and downturn loss estimates. EL is calculated by multiplying the Probability of Default (a percentage) by the Exposure at Default (an amount) and Loss Given Default (a percentage).
Exposure	A claim, contingent claim or position which carries a risk of financial loss.
Exposure at default ('EAD')	The amount expected to be outstanding after any credit risk mitigation, if and when a counterparty defaults. EAD reflects drawn balances as well as allowance for undrawn amounts of commitments and contingent exposures.
Exposure value	Exposure at default ('EAD').
Fair value	Fair value is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.
FSA	Financial Services Authority (UK)
Funding risk	A form of liquidity risk arising when the liquidity needed to fund illiquid asset positions cannot be obtained at the expected terms when required.
GCRO	Group Chief Risk Officer
GENPRU	The FSA's rules, as set out in the General Prudential Sourcebook.
Global Markets	HSBC's treasury and capital markets services in Global Banking and Markets
GMB	Group Management Board
GMO	Group Management Office
Group	HSBC Holdings together with its subsidiary undertakings

GSTOF	Group Stress Testing Oversight Forum
Haircut	With respect to credit risk mitigation, an adjustment to collateral value to reflect any currency or maturity mismatches between the credit risk mitigant and the underlying exposure to which it is being applied. Also a valuation adjustment to reflect any fall in value between the date the collateral was called and the date of liquidation or enforcement.
Held-to-maturity	An accounting classification for investments acquired with the intention of being held until they mature.
High risk (regulatory)	Standardised approach exposures that have been defined by the FSA as 'high risk exposures'. These include exposures arising out of venture capital business (whether or not the firm itself carries on the venture capital business) and any high risk positions in Collective Investment Undertakings that are illiquid and held with a view to long-term sale or realisation.
Hong Kong	The Hong Kong Special Administrative Region of the People's Republic of China
HSBC	HSBC Holdings together with its subsidiary undertakings.
HSBC Bank	HSBC Bank plc, formerly Midland Bank plc
HSBC Holdings	HSBC Holdings plc, the parent company of HSBC
IFRSs	International Financial Reporting Standards
Impaired loans	Loans where the Group does not expect to collect all the contractual cash flows or expects to collect them later than they are contractually due.
Impairment allowances	Management's best estimate of losses incurred in the loan portfolios at the balance sheet date.
Institutions	Under the standardised approach, Institutions are classified as credit institutions or investment firms. Under the IRB approach, Institutions also include regional governments and local authorities, public sector entities and multilateral development banks.
Insurance risk	A risk, other than financial risk, transferred from the holder of a contract to the insurance provider. The principal insurance risk is that, over time, the combined cost of claims, administration and acquisition of the contract may exceed the aggregate amount of premiums received and investment income.
Internal Assessment Approach ('IAA')	One of three calculation methods defined under the IRB approach to securitisations. The IAA is limited to exposures arising from asset backed commercial paper programmes, mainly related to liquidity facilities and credit enhancement. The approach consists of mapping an internal rating methodology for credit exposures to those of an external credit assessment institution (ECAI). Those ratings are used to determine the appropriate risk weights to determine the notional amount of the exposures.
Internal Capital Adequacy Assessment Process ('ICAAP')	The Group's own assessment of the levels of capital that it needs to hold through an examination of its risk profile from regulatory and economic capital viewpoints.
Internal Model Method ('IMM')	One of three approaches defined by Basel II to determine exposure values for counterparty credit risk.
Internal ratings-based approach ('IRB')	A method of calculating credit risk capital requirements using internal, rather than supervisory, estimates of risk parameters.
Invested capital	Equity capital invested in HSBC by its shareholders.

Glossary (continued)

IRB advanced approach — The IRB advanced approach is a method of calculating credit risk capital requirements using internal PD, LGD and EAD models.

IRB foundation approach — The IRB foundation approach is a method of calculating credit risk capital requirements using internal PD models but with supervisory estimates of LGD and conversion factors for the calculation of EAD.

ISDA — International Swaps and Derivatives Association

ISDA Master agreement — Standardised contracts developed by ISDA International Swaps and Derivatives Association used as an umbrella under which bilateral derivative contracts are entered into.

Liquidity risk — The risk that HSBC does not have sufficient financial resources to meet its obligations as they fall due, or will have to do so at an excessive cost. This risk arises from mismatches in the timing of cash flows.

Loss given default ('LGD') — The estimated ratio (percentage) of the loss on an exposure to the amount outstanding at default (EAD) upon default of a counterparty.

Market risk — The risk that movements in market risk factors, including foreign exchange rates and commodity prices, interest rates, credit spreads and equity prices will reduce income or portfolio values.

Mark-to-market approach — One of three approaches defined by Basel II to determine exposure values for counterparty credit risk.

Net interest income — The amount of interest received or receivable on assets net of interest paid or payable on liabilities.

Obligor grade — Obligor grades, summarising a more granular underlying counterparty risk rating scale for estimates of probability of default, are defined as follows:

- '*Minimal Default Risk':* The strongest credit risk, with a negligible probability of default.
- '*Low Default Risk':* A strong credit risk, with a low probability of default.
- '*Satisfactory Default Risk':* A good credit risk, with a satisfactory probability of default.
- '*Fair Default Risk*': The risk of default remains fair, but identified weaknesses may warrant more regular monitoring.
- '*Moderate Default Risk':* The overall position will not be causing any immediate concern, but more regular monitoring will be necessary as a result of sensitivities to external events that give rise to the possibility of risk of default increasing.
- '*Significant Default Risk':* Performance may be limited by one or more troublesome aspect, known deterioration, or the prospect of worsening financial status. More regular monitoring required.
- '*High Default Risk':* Continued deterioration in financial status, that requires frequent monitoring and ongoing assessment. The probability of default is of concern but the borrower currently has the capacity to meet its financial commitments.
- '*Special Management':* The probability of default is of increasing concern and the borrower's capacity to fully meet its financial commitments is becoming increasingly less likely.

	• *'Default':* A default is considered to have occurred with regard to a particular obligor when either or both of the following events has taken place: the bank considers that the obligor is unlikely to pay its credit obligations in full, without recourse by the bank to actions such as realising security, or the obligor is past due more than 90 days on any material credit obligation to the banking group.
Operational risk	The risk of loss resulting from inadequate or failed internal processes, people and systems or from external events, including legal risk.
Over-the-counter ('OTC')	A bilateral transaction (e.g. derivatives) that is not exchange traded and valued using valuation models.
Private equity investments	Equity securities in operating companies not quoted on a public exchange, often involving the investment of capital in private companies or the acquisition of a public company that results in the delisting of public equity.
Probability of default ('PD')	The probability that an obligor will default within a one-year time horizon.
Qualifying revolving retail exposures	Retail IRB exposures that are revolving, unsecured, and, to the extent they are not drawn, immediately and unconditionally cancellable, such as credit cards.
RAROC	Risk-Adjusted Return on Capital
Ratings Based Method ('RBM')	One of three calculation methods defined under the IRB approach to securitisations. The approach uses risk weightings based on external credit assessment institution ('ECAI') ratings, the granularity of the underlying pool and the seniority of the position.
Regulatory capital	The capital which HSBC holds, determined in accordance with rules established by the FSA for the consolidated Group and by local regulators for individual Group companies.
Repo	Sale and repurchase transaction
Reverse repo	Security purchased under commitments to sell.
Re-securitisation	A securitisation of a securitisation exposure, where the risk associated with an underlying pool of exposures is tranched and at least one of the underlying exposure is a securitisation exposure.
Residential mortgage backed securities ('RMBS's)	Securities that represent interests in a group of residential mortgages. Investors in these securities have the right to cash received from future mortgage payments (interest and/or principal). Where an RMBS references mortgages with different risk profiles, the RMBS is classified according to highest risk class.
Residual maturity	The period outstanding from the reporting date to the maturity or end date of an exposure.
Retail IRB	Retail exposures that are treated under the IRB approach.
Return on equity	Profit attributable to ordinary shareholders divided by average invested capital.
Risk appetite	An assessment of the types and quantum of risks to which HSBC wishes to be exposed.
Risk-weighted assets ('RWA's)	Calculated by assigning a degree of risk expressed as a percentage (risk weight) to an exposure in accordance with the applicable standardised or IRB approach rules.

Glossary (continued)

RMM
The Risk Management Meeting ('RMM') is a meeting of GMB to consider risk matters, chaired by the Chief Financial Officer, Executive Director Risk and Regulation. RMM is the Group's senior 'designated committee' as defined by the FSA's rules, and has responsibility for setting risk appetite and approving definitive risk policies and controls. It formulates high-level Group risk management policy, exercises delegated risk authorities and oversees the implementation of risk appetite and controls.

Securitisation
A transaction or scheme whereby the credit risk associated with an exposure, or pool of exposures, is tranched and where payments to investors in the transaction or scheme are dependent upon the performance of the exposure or pool of exposures.

A traditional securitisation involves the transfer of the exposures being securitised to an SPE which issues securities. In a synthetic securitisation, the tranching is achieved by the use of credit derivatives and the exposures are not removed from the balance sheet of the originator.

Securitised revolving exposure
The securitisation of revolving exposures. Revolving exposures are those where the balance fluctuates depending on customers' decisions to borrow or repay, such as credit cards.

SIC
Securities investment conduit

SME
Small and medium-sized enterprise

S&P
Standard and Poor's rating agency

Specialised lending
Specialised lending exposures are defined by the FSA as exposures to an entity which was created specifically to finance and/or operate physical assets, where the contractual arrangements give the lender a substantial degree of control over the assets and the income that they generate and the primary source of repayment of the obligation is the income generated by the assets being financed, rather than the independent capacity of a broader commercial enterprise.

Special Purpose Entity ('SPE')
A corporation, trust or other non-bank entity, established for a narrowly defined purpose, including for carrying on securitisation activities. The structure of the entity and activities are intended to isolate the obligations of the SPE from those of the originator and the holders of the beneficial interests in the securitisation.

Specific issuer risk
Specific issuer (credit spread) risk arises from a change in the value of debt instruments due to a perceived change in the credit quality of the issuer or underlying assets.

Standardised approach
In relation to credit risk, a method for calculating credit risk capital requirements using ECAI ratings and supervisory risk weights.

In relation to operational risk, a method of calculating the operational capital requirement by the application of a supervisory defined percentage charge to the gross income of eight specified business lines.

Sub-prime (mortgage)
A US description for customers with high credit risk, for example those who have limited credit histories, modest incomes, high debt-to-income ratios, high loan-to-value ratios (for real estate secured products) or have experienced credit problems caused by occasional delinquencies, prior charge-offs, bankruptcy or other credit-related actions.

Supervisory slotting approach	A method for calculating capital requirements for Specialised Lending exposures where the internal rating of the obligor is mapped to one of five supervisory categories, each associated with a specific supervisory risk weight.
Tier 1 capital	A component of regulatory capital, comprising core tier 1 capital and other tier 1 capital. Other tier 1 capital includes qualifying hybrid capital instruments such as non-cumulative perpetual preference shares and innovative tier 1 securities.
Tier 2 capital	A component of regulatory capital, comprising qualifying subordinated loan capital, related minority interests, allowable collective impairment allowances and unrealised gains arising on the fair valuation of equity instruments held as available-for-sale. Tier 2 capital also includes reserves arising from the revaluation of properties.
Total return swap	A credit derivative transaction that swaps the total return on a financial instrument, cash flows and capital gains and losses, for a guaranteed interest rate, such as an inter-bank rate, plus a margin.
UK	United Kingdom
US	United States
Value at risk ('VAR')	A technique that measures the loss that could occur on risk positions as a result of adverse movements in market risk factors (e.g. rates, prices, volatilities) over a specified time horizon and to a given level of confidence.
Write-down	Reduction in the carrying value of an asset due to impairment or fair value movements.
Wrong-way risk	An adverse correlation between the counterparty's probability of default and the mark-to-market value of the underlying transaction.

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