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# **Standard Chartered PLC**

## **Pillar 3 Disclosures**

### **31 December 2008**

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Incorporated in England with registered number 966425  
*Registered Office: 1 Aldermanbury Square, London, EC2V 7SB, England*

# Standard Chartered

## Pillar 3 Disclosures

### 31 December 2008

## Overview

The Basel Committee on Banking Supervision introduction of a new three pillar concept to regulatory capital requirements aligns more clearly with the economic principles of risk management. The new Accord, more commonly known as Basel II, was in 2007 adopted by the European Union into its Capital Requirements Directive (CRD). In the UK, the CRD has been implemented by the Group's lead regulator, the Financial Services Authority (FSA).

Basel II improves the soundness of the banking system by aligning regulatory capital more closely with the risks in banks' portfolios. While the previous Accord, Basel I, increased the overall level of capital in financial markets, Basel II aims to redistribute capital with the overall capital in the banking system maintained at the same level on average.

Basel II introduces a more risk-based approach to regulatory capital with a distinct charge for operational risk in addition to the existing credit and market risk capital charges.

Basel II is designed to be a catalyst for more advanced risk management techniques, enterprise-wide cultures of risk management and improved corporate governance and public disclosure.

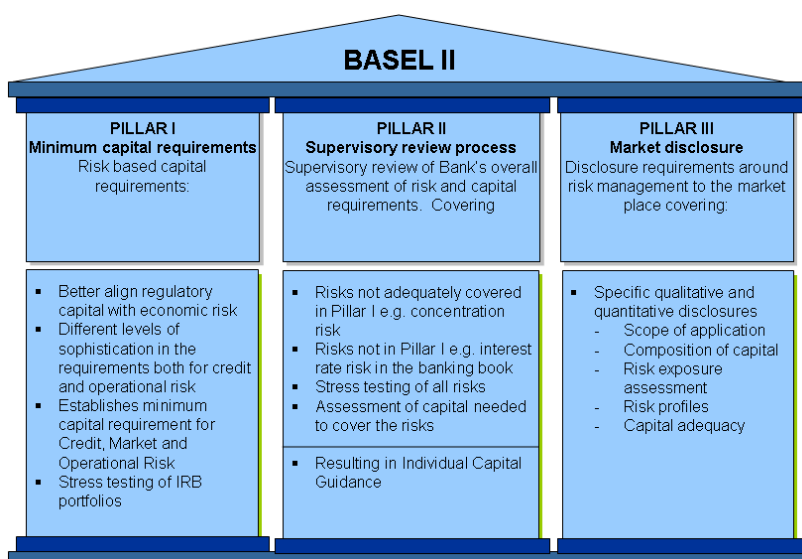
The Basel II approach based on the 3 pillars is displayed diagrammatically below:

Basel II provides an incentive scheme encouraging banks to adopt more advanced risk management practices. To achieve this, Pillar 1 presents banks with a number of options, intended to result in smaller capital charges when the more sophisticated approaches are used, for a given level of risk in a portfolio.

Pillar 2 sets out the requirements for banks to assess aggregate risks. It presents a high level framework for the regulators to review the banks' own assessments of capital required to match these risks; the Group's <sup>(1)</sup> 'risk appetite'. The Pillar 2 framework also provides the supervisors with powers to increase the regulatory capital charge over and above a bank's own estimates, if they feel that risks are understated.

Pillar 3, covered in this report, aims to provide a consistent and comprehensive disclosure framework that enhances comparability between banks and further promotes improvements in risk practices

Under Basel II, Standard Chartered has achieved Advanced Internal Ratings Based (AIRB) approach status for the measurement of credit risk capital. The Group applies the standardised approach for determining the capital requirements for operational risk and uses a Value at Risk (VaR) model for the measurement of market risk capital.



Using these approaches the Group has calculated the Risk Weighted Assets (RWA) as at 31 December 2008 presented in the table below, comprising 85 per cent credit risk, 10 per cent operational risk and 5 per cent market risk. The minimum regulatory capital requirement is shown below as 8 per cent of RWA.

	31.12.08	
	Regulatory Capital Requirement \$million	Risk Weighted Assets \$million
Credit Risk	12,902	161,276
Operational Risk	1,467	18,340
Market Risk	735	9,205
Total	15,104	188,821

(1) The 'Group' refers to Standard Chartered PLC together with its subsidiary undertakings, as detailed on page 3, note 2.

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(1) Standard Chartered PLC is headquartered in London where it is regulated by the UK's Financial Services Authority.

(2) Within this document 'the Group' refers to Standard Chartered PLC together with its subsidiary undertakings. The Hong Kong Special Administrative Region of the People's Republic of China is referred to as Hong Kong and includes Macau; India includes Nepal; The Republic of Korea is referred to as Korea; Middle East and Other South Asia (MESA) includes, amongst others: Afghanistan, Bahrain, Bangladesh, Egypt, Jordan, Lebanon, Oman, Pakistan, Qatar, Sri Lanka, United Arab Emirates (UAE); and Other Asia Pacific includes, amongst others: Australia, Brunei, Cambodia, China, Indonesia, Japan, Laos, Mauritius, the Philippines, Taiwan, Thailand and Vietnam.

(3) Throughout this document, unless another currency is specified, the word 'dollar' or symbol \$ means United States dollar.

(4) Throughout this document AIRB and IRB are interchangeable terms and refer to internal ratings based models used. The Group does not use the Foundation IRB approach.

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## 1. Scope of Basel II framework

### Pillar 1

Since 2003, the Group has undertaken a broad range of activities under the Basel II Programme. The Programme has overseen a significant investment in risk analytics, now providing Internal Ratings Based (IRB) models for over 80 per cent of the Group's credit RWA. It has built a supporting infrastructure of data warehouses and reporting platforms and delivered major improvements in processes and governance, both for regulatory compliance and to use the new capabilities for business benefit.

The Group's lead supervisor, the FSA, formally approved the Group's use of the AIRB approach for calculating regulatory capital in 2007 and since 1 January 2008, the Group has been using the AIRB approach for the measurement of credit risk capital. Although the FSA's approval covers the Group's global operations, in several jurisdictions the Group is required to apply separately to adopt AIRB approach for local reporting. Wherever the Group has chosen to do this to date, the application has been successful. The Group continues to work closely with other regulators and anticipate making further AIRB applications to local regulators as and when permitted, and where it is considered appropriate to do so.

The Group applies a Value at Risk (VaR) model for the measurement of market risk capital in accordance with the scope of the permission to use such a model granted by the FSA. Where the Group's market risk exposures are not approved for inclusion in its VaR model, capital requirements are based on standard rules provided by the regulator which are less risk sensitive.

The Group is also required to calculate a capital charge to cover operational risk for which the Group applies the standardised approach.

During the initial years of Basel II implementation, the minimum capital requirements must not be less than 90 per cent of the Basel I capital requirements in 2008 reducing to 80 per cent in 2009.

### Pillar 2

Pillar 2 requires banks to undertake a comprehensive assessment of their risks and to determine the appropriate amounts of capital to be held against these risks where other suitable mitigants are not available. This risk and capital assessment is commonly referred to as an Internal Capital Adequacy Assessment Process (ICAAP). The range of risks that need to be covered by the ICAAP is much broader than Pillar 1, which covers only credit risk, market risk and operational risk.

The Group has developed an ICAAP framework which closely integrates the risk and capital assessment processes, and ensures that adequate levels of capital are maintained to support the Group's current and projected demand for capital under expected and stressed conditions.

The Group Asset and Liability Committee (GALCO), through its authority delegated by the Standard Chartered Bank Court (Court), is responsible for the management of capital ratios and the establishment of, and compliance with, policies relating to balance sheet management.

The Group Risk Committee (GRC), through its authority delegated by the Court, is responsible for the management of all other risks and for defining the Group's overall risk management framework.

The ICAAP framework has been designed to be applied consistently across the organisation to meet the Pillar 2 requirements of local regulators. A description of the Risk Management Framework is set out in section 3 Risk Management.

Under Pillar 2, regulators are required to undertake a review of banks' ICAAPs. This is referred to as the Supervisory Review and Evaluation Process (SREP). The SREP forms part of the FSA's Advanced Risk Response Operating Framework (ARROW) which determines the minimum regulatory capital requirements of the Group, referred to as the Individual Capital Guidance (ICG).

### Pillar 3

Pillar 3 aims to provide a consistent and comprehensive disclosure framework that enhances comparability between banks and further promotes improvements in risk practices. The Group has implemented a Pillar 3 policy and procedure framework to address the requirements laid down for Pillar 3 disclosure. The information provided here has been reviewed and validated by senior management and is in accordance with the rules laid out in the FSA Handbook and The Prudential Sourcebook for Banks, Building Societies and Investment Firms (BIPRU) chapter 11 covering both the qualitative and quantitative items. Further details and disclosure of risk, liquidity and capital management are presented in the Annual Report. The full Pillar 3 disclosures will be made annually as at 31 December, and will be published on the Standard Chartered PLC website [www.standardchartered.com](http://www.standardchartered.com) as soon as is practical after the Group announces its annual results.

### Accounting and prudential treatment

The full Pillar 3 disclosures are made for the consolidated Standard Chartered PLC Group. Additional disclosures of the capital requirements of the Group's significant subsidiaries are shown in section 2.1.

The accounting policy for consolidation is provided in the notes to the financial statements, published in the Annual Report and Accounts. All subsidiaries are fully consolidated and the treatment is the same for both regulatory and accounting purposes. For associates, the regulatory treatment differs from the accounting policy, which applies the equity accounting method. Investments in associates that are between 20 and 50 per cent owned are proportionally consolidated for regulatory purposes and the investment in associates that are between 10 and 20 per cent owned are deducted from capital resources. Joint ventures are proportionally consolidated for both accounting and regulatory purposes.

Appendix 1 lists the entities where regulatory treatment differs from the accounting treatment. The Group's principal subsidiary undertakings are also detailed in Appendix 1.

## **2. Capital management**

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### **Objectives**

The Group's capital management approach is driven by its desire to maintain a strong capital base to support the development of its business, to meet regulatory capital requirements at all times and to maintain appropriate credit ratings.

### **Approach**

Strategic business and capital plans are drawn up annually covering a three year horizon and approved by the board. These plans are underpinned by the Group's risk appetite and ensure that the forecast capital requirements are based on an explicit assessment of the Group's risk profile. The plans also ensure that adequate levels of capital and an optimum mix of the different components of capital are maintained by the Group to support its strategy. This is integrated with the Group's annual planning process which takes into consideration business growth assumptions across products and geographies, and the related impact on capital resources.

The capital plan takes the following into account:

- Regulatory capital requirements;
- Forecast demand for capital to support the credit ratings;
- Increases in demand for capital due to business growth, market shocks or stresses;
- Available supply of capital and capital raising options; and
- Internal controls and governance for managing the Group's risk, performance and capital.

The Group uses internal models and other quantitative techniques in its internal risk and capital assessment. The models help to estimate potential future losses arising from credit, market and other risks, and hence the amount of capital required to support them. In addition, the models enable the Group to gain a deeper understanding of its risk profile, e.g. by identifying potential concentrations, assessing the impact of portfolio management actions and performing what-if analysis.

Stress testing and scenario analysis are used to ensure that the Group's internal capital assessment considers the impact of extreme but plausible scenarios on its risk profile and capital position. They provide an insight into the potential impact of significant adverse events on the Group and how these could be mitigated. The Group's target levels are set taking into account its risk appetite and its risk profile under future expected and stressed economic scenarios.

The risk assessment is closely integrated with the Group's strategy, business planning and capital assessment processes,

and is used to inform senior management's views on the level of capital required to support the Group's business activities.

The Group uses a model to assess the capital demand for material risks, and support its internal capital adequacy assessment. Each material risk is assessed, relevant mitigants considered, and appropriate levels of capital determined. The capital model is a key part of the Group's management disciplines.

The capital that the Group is required to hold by the FSA is determined by its balance sheet, off-balance sheet and market risk positions after applying collateral and other mitigants, based on the Group's risk rating methodologies and systems.

The Group operates processes and controls to monitor and manage capital adequacy across the organisation. At a country level, capital is maintained on the basis of the local regulator's requirements. It is overseen by the local Asset and Liability Committee (ALCO), which is responsible for managing the country level balance sheet, capital and liquidity.

### **Governance and target setting**

A strong governance and process framework is in place around the capital planning and assessment processes.

The GALCO has set internal target ranges for capital management and oversees adherence with these. These ranges are seven to nine per cent for the Tier 1 capital ratio and 12 to 14 per cent for the Total capital ratio.

The Group Treasury function is responsible for the ongoing assessment of the demand for capital and the updating of the Group's capital plan.

The issues discussed at the key capital management committees are reviewed by the Audit and Risk Committee (ARC).

### **Mobility of capital resources**

Appropriate policies are in place governing the transfer of capital within the Group. These ensure that capital is remitted as appropriate, subject to complying with the local regulatory requirements and statutory and contractual restrictions.

There are no current or foreseen material, practical or legal impediments to the prompt transfer of capital resources in excess of those required for regulatory purposes or repayment of liabilities between the parent company, Standard Chartered PLC, and its subsidiaries when due.

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## 2.1. Capital structure

### Group's capital resources

The Group is required to report capital resources and risk-weighted assets to the FSA under the Basel II Pillar 1 framework, as shown in the following table. The main features and terms of the various components of the capital resources are described after the table.

On a Basel II basis, total capital increased by \$1,328 million during the year. The rights issue completed in December 2008 increased ordinary share capital by \$2,680 million. The issuance of preference shares in May and September 2008 increased capital by \$925 million. Qualifying subordinated liabilities increased following the issue of £700 million, €400 million, KRW 350 billion, SGD 450 million and JPY 10 billion of Lower Tier 2 subordinated debt. The increase attributable to qualifying securities is offset by the repurchase of \$1,025 million Upper Tier 2 capital which took place in December 2008.

The Group is well capitalised with a Tier 1 capital ratio of 10.1 per cent and a total capital ratio of 15.6 per cent.

	31.12.08 \$million
<b>Tier 1 capital</b>	
Called up ordinary share capital and preference shares	12,478
Eligible reserves	11,191
Minority interests	228
Innovative Tier 1 securities	1,974
Less: restriction of Innovative Tier 1 securities	–
Less: excess expected losses*	(483)
Goodwill and other intangible assets	(6,361)
Other regulatory adjustments	5
<b>Total Tier 1 capital</b>	<b>19,032</b>
<b>Tier 2 capital</b>	
Eligible revaluation reserves	107
Portfolio impairment provision	251
Less: excess expected losses*	(483)
Qualifying subordinated liabilities:	
Perpetual subordinated debt	1,823
Other eligible subordinated debt	10,520
Less: amortisation of qualifying subordinated liabilities	(1,126)
Restricted Innovative Tier 1 securities	–
<b>Total Tier 2 capital</b>	<b>11,092</b>
Investments in other banks	(431)
Other deductions	(251)
<b>Total deductions from Tier 1 and Tier 2 capital</b>	<b>(682)</b>
<b>Tier 3 capital</b>	<b>–</b>
<b>Total capital base</b>	<b>29,442</b>
<b>Risk weighted assets</b>	
Credit risk	161,276
Operational risk	18,340
Market risk	9,205
<b>Total risk weighted assets</b>	<b>188,821</b>
<b>Capital ratios</b>	
Tier 1 capital	10.1%
<b>Total capital ratio</b>	<b>15.6%</b>

\* Excess expected losses are shown gross. The tax benefit on excess expected losses is included in eligible reserves.

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Under Pillar 3 disclosure requirements, the Group is required to present 50 per cent of material holdings and securitisations deducted from Tier 1 capital, and 50 per cent of material holdings and securitisations deducted from Tier 2 capital.

The Group is also required to deduct Innovative Tier 1 securities from Tier 1 capital and include them under Tier 2 capital. The total capital for the Group remains unchanged. The following table displays the Group's capital position adjusted for Pillar 3 disclosure requirements:

	31.12.08 \$million
Total Tier 1 capital	19,032
Less: Innovative Tier 1 securities	(1,974)
Material holdings and securitisations	(301)
Tier 1 capital including Pillar 3 adjustments	16,757
Total Tier 2 capital	11,092
Add: Innovative Tier 1 securities	1,974
Less: Material holdings and securitisations	(301)
Tier 2 capital including Pillar 3 adjustments	12,765
Other deductions	(80)
Total deductions from Tier 1 and Tier 2 capital	(80)
Tier 3 capital	–
Total capital base	29,442

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#### Capital instruments issued by the Group

All capital instruments included in the capital base have been issued in accordance with the rules and guidance in BIPRU. For regulatory purposes, capital is categorised into three main categories, or tiers, depending on the degree of permanency and loss absorbency exhibited. These are Tier 1, Tier 2 and Tier 3 capital which are described further in the following paragraphs.

#### Tier 1 capital

Tier 1 capital is comprised of permanent share capital, profit and loss account and other eligible reserves, equity minority interests, perpetual non-cumulative preference shares and innovative Tier 1 instruments, after the deduction of certain regulatory adjustments.

Permanent share capital is an item of capital issued by an organisation to an investor, which is fully paid-up and where the proceeds of issue are immediately and fully available. There is no obligation to pay a coupon or dividend to the shareholder. The

capital is available for unrestricted and immediate use to cover risks and losses, and enable the organisation to continue trading. It can only be redeemed on the winding-up of the organisation.

Profit and loss account and other eligible reserves are accumulated resources generally referred to as shareholders' funds in an organisation's balance sheet, with certain regulatory adjustments applied.

Equity minority interests represent the equity stakes held by minority shareholders in the Group's undertakings.

Perpetual non-cumulative preference shares are permanent holdings for which there is no obligation to pay a dividend, and the dividend payment is not cumulative. Such shares do not generally carry voting rights, but rank higher than ordinary shares for dividend payments and in the event of a winding-up or other return of capital. The following table sets out details of the preference shares in issue and their primary terms:

Description	Terms	31.12.08 \$million
£100 million 8.25 per cent Preference shares	Perpetual, non-cumulative, irredeemable	130
\$750 million 7.014 per cent Preference shares	Perpetual, non-cumulative, redeemable, callable July 2037, step-up 3 month LIBOR plus 1.46 per cent	747
\$750 million 6.409 per cent Preference shares	Perpetual, non-cumulative, redeemable callable January 2017, step-up 3 month LIBOR plus 1.51 per cent	747
£100 million 7.375 per cent Preference shares	Perpetual, non-cumulative, irredeemable	125
\$925 million 8.125 per cent Preference shares	Perpetual, non-cumulative, redeemable	915
		2,664

Innovative Tier 1 securities are deeply subordinated debt instruments which despite their legal form, have loss absorbency qualities equivalent to equity and can therefore be included as Tier 1 capital. The following table sets out the Innovative Tier 1 securities in issue and their primary terms:

Description	Terms	31.12.08 \$million
£600 million 8.103 per cent Preferred securities	Perpetual, callable May 2016 and annually thereafter, step-up 5 year UK gilts plus 4.275 per cent	952
€500 million 8.16 per cent Preferred securities	Non cumulative, redeemable March 2010, step up 3 month EURIBOR plus 3.8 per cent, exchangeable March 2045	694
\$300 million 7.267 per cent Hybrid tier 1 securities	Redeemable 2014 and can be extended for 30 year periods, 7.267 per cent to March 2014, step-up 3 month LIBOR plus 4.29 per cent	328
		1,974

#### Tier 2 capital

Tier 2 capital is comprised of Upper Tier 2 and Lower Tier 2 capital. The main components are subordinated debt instruments.

Upper Tier 2 capital includes perpetual subordinated debt instruments, revaluation reserves and general provisions. The following table sets out the Upper Tier 2 instruments in issue and their primary terms:

Description	Terms	31.12.08 \$million
\$400 million Primary capital floating rate notes	Perpetual, Either 6 month LIBOR plus 0.125 per cent or Residual Period LIBOR plus 0.0625 per cent	58
£150 million Primary capital floating rate notes	Perpetual, 3 month LIBOR plus 0.1875 per cent	217
\$300 million Primary capital floating rate notes	Perpetual, 6 month LIBOR plus 0.25 per cent	82
\$400 million Primary capital floating rate notes	Perpetual, 6 month LIBOR plus 0.275 per cent	84
\$200 million Primary capital floating rate notes	Perpetual, 6 month LIBOR plus 0.15 per cent	52
£675 million Subordinated notes	Perpetual, callable July 2020, 5.375 per cent coupon with step up 3 month LIBOR plus 1.89 per cent	968
£200 million Subordinated notes	Perpetual, callable January 2022, 7.75 per cent coupon with step-up 5 year benchmark gilt plus 3.8 per cent	362
		1,823



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Lower Tier 2 capital consists of dated capital instruments i.e. of a fixed term, which are normally of medium to long-term maturity with an original maturity of at least five years. For regulatory purposes, it is a requirement that these instruments be amortised on a straight-line basis in their final five years of maturity. This deduction is shown in the table on page 6 as 'amortisation of qualifying subordinated liabilities' and reduce the amount of capital that is recognised for regulatory purposes. The following table sets out the Lower Tier 2 instruments in issue net of amortisation and their primary terms:

Description	Terms	31.12.08 \$million
£30 million Floating rate notes	Maturing March 2009, coupon 6 month \$ LIBOR plus 1.35 per cent, 365 day basis	2
£300 million 6.75 per cent notes	Maturing April 2009, coupon in arrears 30/365 day basis	19
£300 million 6 per cent Floating rate notes	Maturing January 2018, callable 2013	434
£700 million Subordinated debt	Maturing April 2018, coupon 7.750 per cent	1,010
€600 million Subordinated notes	Maturing May 2009, coupon 5.375 per cent	38
€750 million Fixed rate bonds	Maturing February 2017, callable February 2012, coupon 3.625 per cent, step up 3 month EURIBOR plus 0.87 per cent	1,040
€675 million Floating rate notes	Maturing March 2018, callable March 2013, coupon 3 month EURIBOR plus 0.30 per cent	936
€1,100 million Fixed rate notes	Maturing September 2017, coupon 5.875 per cent	1,529
\$ 500 million Floating rate notes	Maturing February 2015, callable February 2010, coupon 3 month LIBOR plus 0.30 per cent, step-up 3 month LIBOR plus 0.8 per cent	499
\$700 million Subordinated notes	Maturing March 2031, coupon 8 per cent	619
\$100 million Floating rate notes	Maturing March 2018, callable March 2013, coupon 3 month LIBOR plus 0.30 per cent, step-up 3 month LIBOR plus 0.75 per cent	100
\$1,000 million Fixed rate notes	Maturing September 2017, coupon 6.4 per cent	995
\$500 million Floating rate notes	Maturing June 2016, coupon 3 month LIBOR 0.30 per cent	500
\$350 million Fixed to floating notes	Maturing December 2014, callable December 2009, coupon fixed rate 4.375 per cent to December 2009 then floating 3 month LIBOR plus 0.86 per cent	350
\$300 million Floating rate notes	Maturing April 2017, callable April 2012, coupon 3 month LIBOR plus 0.25 per cent, step-up 3 month LIBOR plus 0.75 per cent	297
BWP 75 million Fixed term floating rate notes	Undated, callable November 2017	9
BWP 50 million Fixed and floating rate notes	Maturing December 2015, callable December 2010, coupon 91 day BOBC plus 0.70 per cent, step-up 91 day BOBC plus 1.20 per cent	7
HKD 500 million Fixed rate notes	Maturing December 2014, callable December 2009, coupon 3.5 per cent to December 2009 then floating HIBOR plus 0.87 per cent	64
HKD 670 million Floating rate notes	Maturing December 2014, callable December 2009, coupon HIBOR plus 0.37 per cent to December 2009 then floating HIBOR plus 0.87 per cent	77
JPY 10,000 million Subordinated debt	Maturing April 2023, callable April 2018, coupon 3.35 per cent, step-up 4.35 per cent	110
KRW 90 billion Fixed rate notes	Maturing March 2018, coupon 6.050 per cent	80
KRW 260 billion Fixed rate notes	Maturing March 2018, callable April 2013, coupon 6.08 per cent	218
MYR 500 million Subordinated bonds	Maturing November 2017, callable November 2012, coupon 4.28 per cent, step-up	144
SGD 450 million Subordinated debt	Maturing April 2023, callable April 2018, coupon 5.25 per cent, step-up 6 month SGDSOR plus 3.1025 per cent	311
TZS 8,000 million Floating rates notes	Maturing August 2015, callable August 2010, coupon 182 T-bill rate plus 0.40 per cent, step up 182 T-bill rate plus 0.80 per cent	6
		9,394

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#### **Tier 3 capital**

Tier 3 capital is generally comprised of short-term subordinated debt and higher tiers of capital which are recognised in Tier 3 when they exceed certain regulatory limits. These regulatory limits were not reached at 31 December 2008 and the Group's Tier 3 capital was therefore nil.

#### **Regulatory deductions**

The FSA requires deductions and prudential filters to be applied in calculating capital for regulatory purposes. The main items deducted to arrive at Tier 1 capital are:

- Goodwill, which is the accounting adjustment recognised in the preparation of a group's consolidated accounts arising on an acquisition;
- Intangible assets such as software licences; and
- Investments in own shares.

The main deductions from the total of Tier 1 and Tier 2 capital are:

- Investments in qualifying holdings in a non-financial undertaking which represents 10 per cent or more of the capital or the voting rights or where it is possible to exercise a significant influence over the management of the undertaking;
- Investments in material holdings where a holding of shares and any other interest in the capital of an individual credit institution or financial institution exceeds 10 per cent of the share capital of the issuer. Any holdings of subordinated debt are also included as a material holding deduction; and
- Lending of a capital nature to a connected party or guarantees provided to such a party.

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#### Capital resources of significant subsidiaries

For local capital adequacy purposes, a range of approaches are currently being applied in accordance with the regulatory requirements in force in each jurisdiction. Wherever possible, the approaches adopted at the Group level are applied locally.

The capital resources of the Group's more significant subsidiaries are presented in the following sections. These subsidiaries are

Standard Chartered Bank (a UK incorporated banking entity including overseas branches, and certain subsidiaries which are permitted to be consolidated for capital adequacy purposes), Standard Chartered Bank (Hong Kong) Limited and Standard Chartered First Bank Korea Limited. The capital resources of these subsidiaries are presented in accordance with the regulatory requirements applicable in the countries in which they are incorporated.

The capital resources of the Group's significant subsidiaries are set out in the following table:

	31.12.08		
	Standard Chartered Bank \$million	Standard Chartered Bank (HK) Ltd \$million	Standard Chartered First Bank Korea Ltd \$million
<b>Tier 1 capital</b>			
Called up ordinary share capital and preference shares	11,465	1,622	1,043
Eligible reserves	4,879	2,470	2,027
Minority interests	–	1	–
Innovative Tier 1 securities	1,646	–	–
Less: restriction of Innovative Tier 1 securities	–	–	–
Less: excess expected losses	(227)	(24)	–
Goodwill and other intangible assets	(1,321)	(154)	(31)
Other regulatory adjustments	71	(404)	(82)
<b>Total Tier 1 capital</b>	<b>16,513</b>	<b>3,511</b>	<b>2,957</b>
<b>Tier 2 capital</b>			
Eligible revaluation reserves	60	15	–
Portfolio impairment provision	67	16	421
Less: excess expected losses	(227)	(24)	–
Qualifying subordinated liabilities:			
Perpetual subordinated debt	2,848	797	–
Other eligible subordinated debt	9,267	–	552
Less: amortisation of qualifying subordinated liabilities	(1,127)	–	(167)
Restricted Innovative Tier 1 securities	–	–	–
<b>Total Tier 2 capital</b>	<b>10,888</b>	<b>804</b>	<b>806</b>
Investments in other banks	(24)	–	–
Other deductions*	(14,464)	(404)	(36)
<b>Total deductions from Tier 1 and Tier 2 capital</b>	<b>(14,488)</b>	<b>(404)</b>	<b>(36)</b>
<b>Total Tier 3 capital</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Total capital base</b>	<b>12,913</b>	<b>3,911</b>	<b>3,727</b>

\* Other deductions for Standard Chartered Bank includes investments in subsidiaries of \$12.1 billion and lending of a capital nature of \$2.0 billion.

### 3. Risk management

The management of risk lies at the heart of Standard Chartered's business. One of the main risks the Group incurs arises from extending credit to customers through its trading and lending operations. Beyond credit risk, it is also exposed to a range of other risk types such as country, market, liquidity, operational, regulatory, pension and reputational risks which are inherent to Standard Chartered's strategy, product range and geographical coverage.

#### Risk management framework

Effective risk management is fundamental to being able to generate profits consistently and sustainably – and is thus a central part of the financial and operational management of the Group.

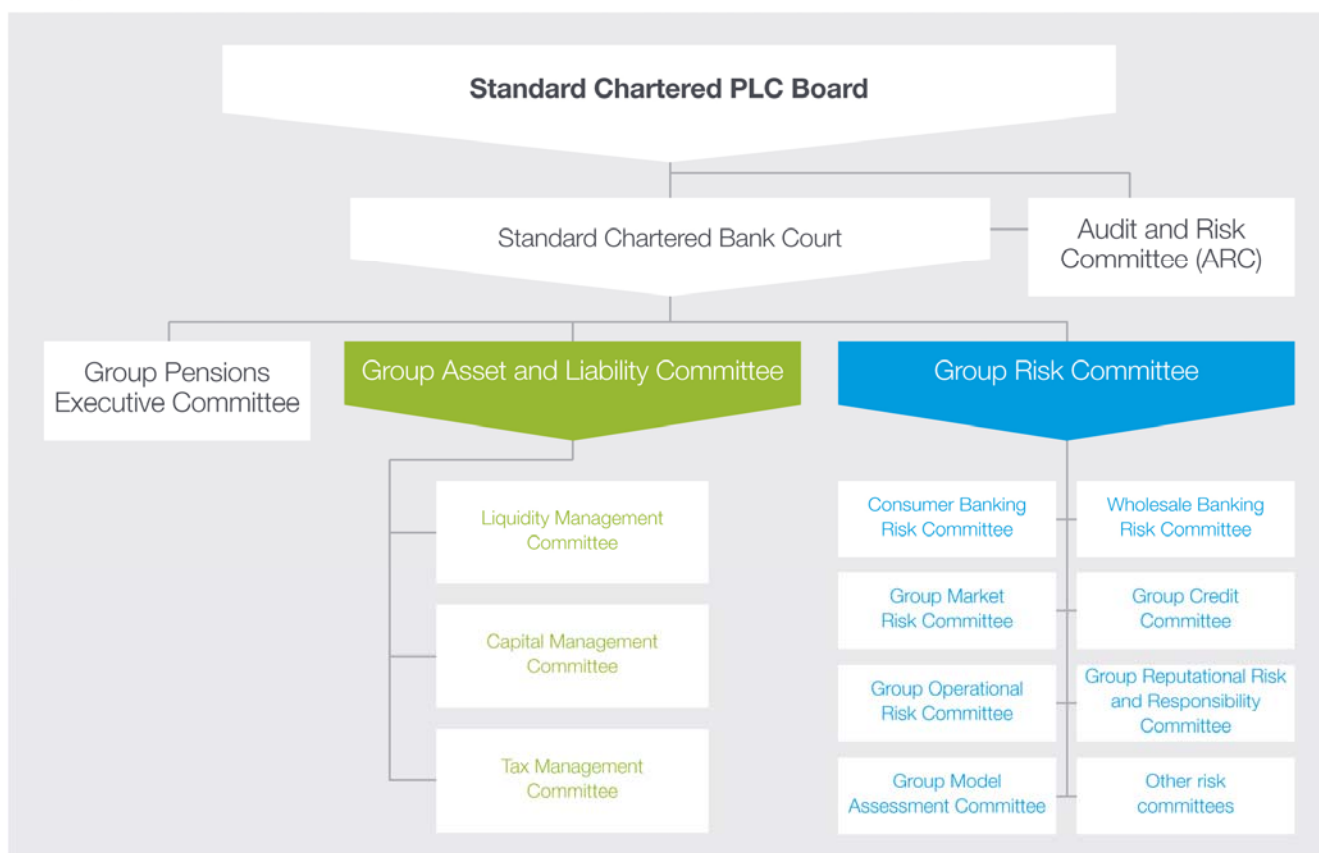
Through its Risk Management Framework (RMF) the Group manages enterprise-wide risks, with the objective of maximising risk-adjusted returns while remaining within its risk appetite.

As part of this framework, the Group uses a set of principles that describe the risk management culture the Group wishes to sustain:

- **Balancing risk and reward:** risk is taken in support of the requirements of the Group's stakeholders, in line with the Group's strategy and within its risk appetite;
- **Responsibility:** it is the responsibility of all employees to ensure that risk-taking is disciplined and focused. The Group takes account of its social, environmental and ethical responsibilities in taking risk to produce a return;
- **Accountability:** risk is taken only within agreed authorities and where there is appropriate infrastructure and resource. All risk-taking must be transparent, controlled and reported;
- **Anticipation:** the Group looks to anticipate future risks and maximise awareness of all risks; and
- **Competitive advantage:** the Group seeks competitive advantage through efficient and effective risk management and control.

The following diagram illustrates the high level risk committee structure.

#### Group risk committee structure



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#### Risk governance

Ultimate responsibility for setting the Group's risk appetite and for the effective management of risk rests with the Board of Standard Chartered PLC (the board). Executive responsibility for risk management is delegated to the Court which comprises the Group executive directors and other directors of Standard Chartered Bank.

The Group Asset and Liability Committee (GALCO), through its authority delegated by the Court, is responsible for the management of capital ratios and the establishment of, and compliance with, policies relating to balance sheet management, including management of the Group's liquidity, capital adequacy and structural foreign exchange rate risk. The Group Pensions Executive Committee, through its authority delegated by the Court, is responsible for the management of pension risk.

The Group Risk Committee (GRC), through its authority delegated by the Court, is responsible for the management of all other risks, including the establishment of, and compliance with, policies relating to credit risk, country risk, market risk, operational risk, regulatory risk and reputational risk. The GRC is also responsible for defining the Group's overall risk management framework.

Members of the Court are also members of both the GRC and GALCO. The GRC is chaired by the Group chief risk officer (GCRO). The GALCO is chaired by the Group finance director.

Acting within an authority delegated by the board, the ARC, whose members are all non-executive directors of the Company, reviews specific risk areas and monitors the activities of the GRC and GALCO. The ARC receives regular reports on risk management, including the Group's portfolio trends, policies and standards, adherence with internal controls, regulatory compliance, liquidity and capital adequacy, and is authorised to investigate or seek any information relating to an activity within its terms of reference.

The committee governance structure ensures that risk-taking authority and risk management policies are cascaded down through the organisation from the board through to the appropriate functional, divisional and country-level committees. Information regarding material risk issues and compliance with policies and standards is communicated through the country, business and functional committees up to the Group-level committees.

Risk limits and risk exposure approval authority frameworks are set by the GRC in respect of credit risk, country risk and market risk. The GALCO sets the approval authority framework in respect of liquidity risk. Risk approval authorities may be exercised by risk committees or authorised individuals.

Business governance and functional heads are accountable for risk management in their businesses and functions, and for countries where they have governance responsibilities. This includes:

- Implementing across all business activities the policies and standards as agreed by the Group level risk committees;
- Managing risk in line with appetite levels agreed by the Group level risk committees; and
- Developing and maintaining appropriate risk management infrastructure and systems to facilitate compliance with risk policies.

The GCRO chairs the GRC and is a member of the Group Management Committee. The GCRO directly manages a risk function which is separate from the origination, trading and sales functions of the businesses. Chief risk officers for both the Wholesale and Consumer Banking businesses have their primary reporting lines into the GCRO. Country chief risk officers take overall responsibility for risk within the Group's principal countries.

The Risk function performs the following core activities:

- Informs and challenges business strategy in order to encourage rigour, quality, optimisation and transparency in relation to the deployment of risk capital;
- Controls risk management processes separately from the businesses and seeks to ensure discipline and consistency with risk standards, policy and appetite;
- Advises on risk management frameworks, the structuring of products and transactions and on the assessment and measurement of risk;
- Facilitates and manages risk processes and seeks to ensure operational efficiency, effectiveness and best practice; and
- Communicates with stakeholders to demonstrate compliance with requirements in relation to risk management.

#### Risk policy framework



The Group's RMF identifies the risk types to which the Group is exposed, each of which is controlled by a designated risk type owner (RTO). The major risk types are described individually in the sections below. The RTOs, who are all approved persons under the FSA regulatory framework, have responsibility for establishing minimum standards and governance and for implementing governance and assurance processes. The RTOs report up through specialist risk committees to the GRC or GALCO.

Group Internal Audit is a separate Group function that reports to the chairman of the ARC and to the Group chief executive officer. It provides independent confirmation of compliance with Group and business standards, policies and procedures. Where necessary, it will recommend corrective action to restore or maintain such standards.

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#### Risk appetite

Risk appetite is an expression of the amount of risk the Group is willing to take in pursuit of its strategic objectives. Risk appetite reflects the Group's capacity to sustain potential losses arising from a range of potential outcomes under different stress scenarios.

The Group defines its risk appetite in terms of both volatility of earnings and the maintenance of minimum regulatory capital requirements under stress scenarios.

The Group's risk profile is assessed through a 'bottom-up' analytical approach covering all of the Group's major businesses, countries and products. The risk appetite is approved by the board and forms the basis for establishing the risk parameters within which businesses must operate, including policies, concentration limits and business mix.

The GRC is responsible for ensuring that the Group's risk profile is managed in compliance with the risk appetite set by the board.

#### Stress testing

Stress testing and scenario analysis are used to assess the financial and management capability of the Group to continue operating effectively under extreme but plausible trading conditions. Such conditions may arise from economic, legal, political, environmental and social factors.

The Group has a stress testing framework designed to:

- Contribute to the setting and monitoring of risk appetite;
- Identify key risks to the Group's strategy, financial position, and reputation;

- Examine the nature and dynamics of the risk profile and assess the impact of stresses on the Group's profitability and business plans;
- Ensure effective governance, processes and systems are in place to co-ordinate and integrate stress testing;
- Inform senior management; and
- Ensure adherence to regulatory requirements.

A stress testing forum is led by the Risk function with participation from the businesses, Finance and Group Treasury. Its primary objective is to ensure that the Group understands the earnings and capital implications of specific stress scenarios. The stress testing forum generates and considers pertinent and plausible scenarios that have the potential to affect the Group adversely.

In view of recent market turbulence, stress testing activity has been intensified at country, business and Group levels, with specific focus on certain asset classes, customer segments and the potential impact of macroeconomic factors. Stress tests have taken into consideration possible future scenarios that could arise as a result of the development of prevailing market conditions.

Business stress testing themes such as high inflation, low inflation or declines in asset values are coordinated by the stress testing forum to ensure consistency of impacts on different risk types or countries. Specific stress tests for country or risk type are also performed. Examples of risk type stress testing are covered in the section on Market risk.

#### Credit risk mitigation

The Group's credit risk mitigation policy, processes and amounts of collateral held are discussed in section 4.5 Credit Risk Mitigation.

### Stress testing framework





## **4. Credit risk**

Credit risk is the risk that the counterparty to a financial transaction will fail to discharge an obligation, resulting in financial loss to the Group. Credit exposures may arise from both the banking book and the trading book.

Credit risk is managed through a framework which sets out policies and procedures covering the measurement and management of credit risk. There is a clear segregation of duties between transaction originators in the businesses and the approvers in the Risk function. All credit exposure limits are approved within a defined credit approval authority framework.

### **Credit policies**

Group-wide credit policies and standards are considered and approved by the GRC, which also oversees the delegation of credit approval and loan impairment provisioning authorities.

Policies and procedures that are specific to each business are established by authorised risk committees within Wholesale and Consumer Banking. These are consistent with the Group-wide credit policies, but are more detailed and adapted to reflect the different risk environments and portfolio characteristics.

### **Risk reporting and measurement systems**

Risk measurement plays a central role, along with judgement and experience, in informing risk-taking and portfolio management decisions. It is a primary target for sustained investment and senior management attention.

Various risk measurement systems are available to risk officers to enable them to assess and manage the credit portfolio. These include systems to calculate Probability of Default (PD), Loss Given Default (LGD) and Exposure at Default (EAD), RWA and Capital requirements on a transaction, counterparty and portfolio basis. The Group has implemented a single risk reporting system to aggregate risk data. This is used to generate regulatory returns and management information to assist business and Risk users with risk monitoring and management.

A number of internal risk management reports are produced on a regular basis, providing information on; individual counterparty, counterparty group, portfolio exposure, credit grade migration, the status of accounts or portfolios showing signs of weakness or financial deterioration, models performance and updates on credit markets. AIRB portfolio metrics are widely used in these reports. Regular portfolio risk reports are made available at senior management committee meetings including ARC, GRC and functional business and country level risk committees.

Risk measurement models are approved by the responsible risk committee, on the recommendation of the Group Model Assessment Committee (MAC). The MAC supports risk committees in ensuring risk identification and measurement capabilities are objective and consistent, so that risk control and risk origination decisions are properly informed. Prior to review by the MAC, all AIRB models are validated in detail by a model validation team, which is separate from the teams which develop and maintain the models. Models undergo a detailed review at least annually. Such reviews are also triggered if the performance of a model deteriorates materially.

### **Credit approval**

Major credit exposures to individual counterparties, groups of connected counterparties and portfolios of retail exposures are reviewed and approved by the Group Credit Committee (GCC). The GCC derives its authority from the GRC.

All other credit approval authorities are delegated by the GRC to individuals based on their judgement and experience, and based on a risk-adjusted scale which takes account of the estimated maximum potential loss from a given customer or portfolio. Credit origination and approval roles are segregated in all but a very few authorised cases. In those very few exceptions where they are not, originators can only approve limited exposures within defined risk parameters.

### **Concentration risk**

Credit concentration risk is managed within concentration caps set by counterparty or groups of connected counterparties, industry sector and country in Wholesale Banking; and by product and country in Consumer Banking. Additional targets are set and monitored for concentrations by credit rating.

Credit concentrations are monitored by the responsible risk committees in each of the businesses and concentration limits that are material to the Group are reviewed and approved at least annually by the GCC.

### **Credit monitoring**

The Group regularly monitors credit exposures and external trends which may impact risk management outcomes.

Internal risk management reports are presented to risk committees, containing information on key environmental, political and economic trends across major portfolios and countries; portfolio delinquency and loan impairment performance; as well as AIRB portfolio metrics including migration across credit grades.

In Wholesale Banking, accounts or portfolios are placed on Early Alert when they display signs of weakness or financial deterioration, for example where there is a decline in the customer's position within the industry, a breach of covenants, non-performance of an obligation, or there are issues relating to ownership or management.

Such accounts and portfolios are subjected to a dedicated process overseen by Group Special Assets Management (GSAM), the specialist recovery unit. Account plans are re-evaluated and remedial actions are agreed and monitored. Remedial actions include, but are not limited to, exposure reduction, security enhancement, exit of the account or immediate movement of the account into the control of GSAM.

In Consumer Banking, portfolio delinquency trends are monitored continuously at a detailed level. Individual customer behaviour is also tracked and informs lending decisions. Accounts which are past due are subject to a collections process, managed independently by the Risk function. Charged-off accounts are managed by a specialist recovery team. In some countries, aspects of collections and recovery functions are outsourced. Medium Enterprise and Private Banking past due accounts are managed by GSAM.

The Small and Medium Enterprise (SME) business is managed within Consumer Banking in two distinct segments: Small Businesses, and Medium Enterprises, differentiated by the annual turnover of the counterparty. Medium Enterprise accounts are monitored in line with Wholesale Banking procedures, while Small Business accounts are monitored in line with other Consumer Banking accounts.

## **4.1. Internal Ratings Based Approach to credit risk**

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The Group uses the AIRB approach to manage credit risk for the majority of its portfolios. This allows the Group to use its own internal estimates of PD, LGD, EAD and Credit Conversion Factor (CCF) to determine an asset risk weighting.

PD is the likelihood that an obligor will default on an obligation. All banks must produce an internal estimate of PD for all borrowers in each borrower grade. LGD is the percentage of an exposure that a lender expects to lose in the event of obligor default. EAD is the expected amount of exposure to a particular obligor at the point of default and CCF is an internally modeled parameter based on historical experience to determine the amount that is expected to be further drawn down from the undrawn portion in a committed facility.

All assets under the AIRB approach have sophisticated PD, LGD and EAD/CCF models developed to support the credit decision making process. RWA under the AIRB approach is determined by regulatory specified formulae dependent on the Group's estimates of PD, LGD, EAD and CCF. The development, use and governance of models under the AIRB approach is covered in more detail in section 4.6 Internal Ratings Based Models.

Regulation BIPRU 4.2.30 requires AIRB banks to cover 85 per cent of credit RWA under AIRB approaches. The Group targets a coverage ratio of 90 per cent by 2010, with 10 per cent of the credit RWA remaining permanently exempted.

The permanent exemptions for Consumer Banking include:

- Africa – all retail portfolios;
- Private banking; and

- Portfolios where the size or nature makes application of the advanced approach inefficient; mainly in the Middle East.

For Wholesale Banking, permanent exemptions apply to:

- Alternative investments;
- Private equity;
- Jordan & Lebanon; and
- Purchase receivables.

The Group applies the standardised approach to portfolios classified as permanent exemptions and portfolios in the process of being transitioned to the AIRB approach.

At 31 December 2008, the following portfolios are being transitioned to the AIRB approach. These portfolios are due to be incorporated fully into the AIRB coverage within the next 24 months.

- Credit cards portfolios in Indonesia;
- Mortgages and personal loans in Taiwan;
- A portion of the retail mortgages, credit cards and instalment loans in Pakistan;
- Instalment loan and corporate loan portfolio in Korea;
- SME mortgages in Singapore, Hong Kong and Malaysia;
- A portion of the Permata Bank Wholesale Banking portfolio in Indonesia; and
- A portion of the commercial real estate book in Wholesale Banking.

## **4.2. Standardised Approach to credit risk**

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The Group applies the standardised approach to portfolios that are classified as permanently exempt from the AIRB approach, and those portfolios that are currently under transition to the AIRB approach in accordance with the Group's 'AIRB Roll Out Plan'. Section 4.1 provides details of such portfolios.

The standardised approach to credit risk measures credit risk pursuant to fixed risk weights and is the least sophisticated of the capital calculation methodologies. The risk weight applied under the standardised approach is given by the FSA and is based on the asset class to which the exposure is assigned.

For Sovereigns, Corporates and Institutions, external ratings are used to assign risk weights. These external ratings must come

from FSA approved rating agencies, known as External Credit Assessment Institutions (ECAI); namely Moody's, Standard & Poor's and Fitch. The Group uses ratings from these agencies as part of its day to day business. External ratings for the counterparty are determined as soon as a relationship is established and these ratings are tracked and kept updated. Assessments provided by approved ECAI are mapped to credit quality steps as prescribed by the FSA.

The Group currently does not use assessments provided by export credit agencies for the purpose of evaluating RWA in the standardised approach.



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#### 4.3. Regulatory capital requirements

The below table presents the minimum regulatory credit risk capital requirements as at 31 December 2008, calculated as 8 per cent of RWA based on the approaches described above in sections 4.1 and 4.2.

	31.12.08 Regulatory Capital Requirement \$million
<b>Credit Risk Capital</b>	
<b>AIRB Exposure Class</b>	
Central governments or central banks	404
Institutions	1,335
Corporates	5,001
Retail, of which	1,436
Secured by real estate collateral	519
Qualifying revolving retail	406
Retail SME	68
Other retail	443
Equity	–
Securitisation positions	198
Non-credit obligation assets	17
<b>Total AIRB</b>	<b>8,391</b>
<b>Standardised Exposure Class</b>	
Central governments or central banks	3
Regional government or local authorities	–
Administrative bodies and non-commercial undertakings	–
Multilateral development banks	–
International organisations	–
Institutions	109
Corporates	617
Retail	840
Secured on real estate property	370
Past due items	135
Items belonging to regulatory high risk categories	35
Covered bonds	–
Securitisation positions	–
Short term claims on institutions and corporates	–
Collective investment undertakings	–
Other items**	1,014
<b>Total Standardised</b>	<b>3,123</b>
Counterparty credit risk capital component (credit risk in the trading book)	1,388
Concentration Risk capital component*	–
<b>Total</b>	<b>12,902</b>

\* The concentration risk capital component is the additional capital requirement to be held where exposure to an individual counterparty exceeds 25 per cent of capital resources.

\*\* 'Other items' includes cash equity holdings, fixed assets, prepayments and accrued income.

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The minimum credit risk capital requirements of the Group's significant subsidiaries are presented below in accordance with the regulatory requirements applicable in the countries in which they are incorporated. Although, for local regulatory requirements, Standard Chartered First Bank Korea is obliged to using the standardised approach to credit risk, under FSA guidelines it is treated under the AIRB approach.

	31.12.08		
	Standard Chartered Bank \$million	Standard Chartered Bank (HK) Ltd \$million	Standard Chartered First Bank Korea \$million
<b>Credit Risk Capital</b>			
<b>AIRB Exposure Class</b>			
Central governments or central banks	167	6	–
Institutions	1,213	230	–
Corporates	2,712	887	–
Retail, of which	350	331	–
Secured by real estate collateral	163	101	–
Qualifying revolving retail	110	171	–
Retail SME	–	–	–
Other retail	77	59	–
Equity	–	–	–
Securitisation positions	223	2	–
Non-credit obligation assets	–	–	–
Other*	–	104	–
<b>Total AIRB</b>	<b>4,665</b>	<b>1,560</b>	<b>–</b>
<b>Standardised Exposure Class</b>			
Central governments or central banks	2	–	1
Regional government or local authorities	–	–	–
Administrative bodies and non-commercial undertakings	–	–	–
Multilateral development banks	–	–	–
International organisations	–	–	–
Institutions	46	1	55
Corporates	294	89	862
Retail	313	35	548
Secured on real estate property	39	32	251
Past due items	19	29	–
Items belonging to regulatory high risk categories	2	–	49
Covered bonds	–	–	–
Securitisation positions	–	–	80
Short term claims on institutions and corporates	–	–	–
Collective investment undertakings	–	–	–
Other items	345	27	568
<b>Total Standardised</b>	<b>1,060</b>	<b>213</b>	<b>2,414</b>
Counterparty credit risk capital component (credit risk in the trading book)	981	1	–
Concentration Risk capital component**	–	–	–
<b>Total</b>	<b>6,706</b>	<b>1,774</b>	<b>2,414</b>

\* The AIRB exposure class 'Other' is an asset class under the Hong Kong Monetary Authority regulations

\*\* The concentration risk capital component is the additional capital requirement to be held where exposure to an individual counterparty exceeds 25 per cent of capital resources.

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## 4.4. Exposure values

The following tables detail the Group's Exposure at Default (EAD) before the effect of credit risk mitigation, broken down by the relevant exposure class against the relevant industry, maturity and geography. EAD is based on the current outstandings and accrued interest and fees, plus a proportion of the undrawn component of the facility. The amount of the undrawn facility included is dependant on the product type, and for AIRB exposure classes this amount is modelled internally.

### Geographical analysis

The below table provides EAD analysed by the booking location of the exposure. The Group's exposure to credit risk is concentrated in Hong Kong, Korea, Singapore, Other Asia Pacific region and Americas, UK & Europe. The Group is affected by the general economic conditions in the territories in which it operates. The Group sets limits on the exposure to any counterparty and credit risk is spread over a variety of different personal and commercial customers. For corporates and institutions the undrawn component of a global facility is generally booked in Americas, UK & Europe region. The Wholesale Banking portfolio is well diversified across geography. Single borrower concentration risk has been mitigated by active distribution of assets to banks and institutional investors, some of which is achieved through credit-default swaps and synthetic risk transfer structures.

	31.12.08										
	Asia Pacific										
	Hong Kong \$million	Singapore \$million	Malaysia \$million	Korea \$million	Other Asia Pacific \$million	India \$million	Middle East & Other S Asia \$million	Africa \$million	Americas UK & Europe \$million	Period end Total \$million	Average Total \$million
<b>AIRB Exposure Class</b>											
Central governments or central banks	8,482	4,959	3,890	7,062	15,933	3,858	3,636	1,936	14,875	64,631	54,573
Institutions	27,110	14,904	1,947	9,062	9,445	3,025	5,575	1,187	54,212	126,467	118,592
Corporates	12,549	9,138	3,090	12,545	14,985	8,138	17,257	3,398	39,014	120,114	111,542
Retail	21,035	8,232	4,097	25,179	1,373	2,139	856	–	–	62,911	64,854
Equity	–	–	–	–	–	–	–	–	–	–	–
Securitisation positions	–	–	–	–	–	–	–	–	18,533	18,533	14,248
Non-credit obligation assets	–	–	–	25	–	–	–	–	–	25	13
Total AIRB	69,176	37,233	13,024	53,873	41,736	17,160	27,324	6,521	126,634	392,681	363,822
<b>Standardised Exposure Class</b>											
Central governments or central banks	–	–	–	1	–	45	–	–	134	180	91
Regional governments or local authorities	–	–	–	–	–	–	–	–	–	–	–
Administrative bodies and non-commercial undertakings	–	–	–	–	–	–	–	–	–	–	–
Multilateral development banks	–	–	–	–	–	–	–	–	7	7	4
International organisations	–	–	–	–	–	–	–	–	–	–	–
Institutions	7	129	–	–	7	167	–	–	3,305	3,615	1,809
Corporates	1,107	3,673	262	1,413	1,037	410	367	18	3,976	12,263	9,404
Retail	1,090	1,248	1,340	2,166	3,730	978	3,257	762	553	15,124	17,291
Secured on real estate	353	612	154	616	6,950	254	41	34	130	9,144	8,409
Past due items	460	18	54	130	614	53	111	27	2	1,469	1,305
Items belong to regulatory high risk category	162	–	–	–	91	21	–	–	22	296	148
Covered bonds	–	–	–	–	–	–	–	–	–	–	–
Securitisation positions	–	–	–	–	–	–	–	–	–	–	–
Short term claims on institutions and corporates	–	–	–	–	–	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–	–	–	–	–	–	–
Other items	2,174	574	143	2,334	2,546	1,049	1,109	685	3,692	14,306	13,893
Total Standardised	5,353	6,254	1,953	6,660	14,975	2,977	4,885	1,526	11,821	56,404	52,354
<b>Total</b>	<b>74,529</b>	<b>43,487</b>	<b>14,977</b>	<b>60,533</b>	<b>56,711</b>	<b>20,137</b>	<b>32,209</b>	<b>8,047</b>	<b>138,455</b>	<b>449,085</b>	<b>416,176</b>

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#### Industry analysis

The Wholesale Banking portfolio is well diversified across industry, with no significant concentration within the industry classifications of Manufacturing; Financing, insurance and business services; Commerce; or Transport, storage and communication.

	31.12.08										
	Loans to Individuals – Mortgage \$million	Loans to Individuals – Other \$million	SME \$million	Commerce \$million	Manufacturing \$million	Commercial Real Estate \$million	Government \$million	Financing Insurance & Business Services \$million	Transport & Storage & Communication \$million	Other \$million	Total \$million
<b>AIRB Exposure Class</b>											
Central governments or central banks	–	–	–	–	–	–	63,766	157	–	708	64,631
Institutions	–	4	–	9	5	328	118	116,505	7	9,491	126,467
Corporates	32	17	1,568	26,309	34,765	5,954	594	14,684	8,953	27,238	120,114
Retail	42,787	19,490	634	–	–	–	–	–	–	–	62,911
Equity	–	–	–	–	–	–	–	–	–	–	–
Securitisation positions	–	–	–	–	–	–	–	448	–	18,085	18,533
Non-credit obligation assets	–	–	–	–	–	–	–	–	–	25	25
<b>Total AIRB</b>	<b>42,819</b>	<b>19,511</b>	<b>2,202</b>	<b>26,318</b>	<b>34,770</b>	<b>6,282</b>	<b>64,478</b>	<b>131,794</b>	<b>8,960</b>	<b>55,547</b>	<b>392,681</b>
<b>Standardised Exposure Class</b>											
Central governments or central banks	–	–	–	–	–	–	–	–	–	180	180
Regional governments or local authorities	–	–	–	–	–	–	–	–	–	–	–
Administrative bodies and non-commercial undertakings	–	–	–	–	–	–	–	–	–	–	–
Multilateral development banks	–	–	–	–	–	–	–	–	–	7	7
International organisations	–	–	–	–	–	–	–	–	–	–	–
Institutions	–	–	–	–	–	–	–	572	–	3,043	3,615
Corporates	–	–	7,498	1,312	1,084	–	–	18	101	2,250	12,263
Retail	–	8,609	6,515	–	–	–	–	–	–	–	15,124
Secured on real estate	7,618	–	1,523	–	–	–	–	–	–	3	9,144
Past due items	4	577	800	8	30	3	–	1	–	46	1,469
Items belonging to regulatory high risk category	–	–	–	–	41	129	–	–	–	126	296
Covered bonds	–	–	–	–	–	–	–	–	–	–	–
Securitisation positions	–	–	–	–	–	–	–	–	–	–	–
Short term claims on institutions and corporates	–	–	–	–	–	–	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–	–	–	–	–	–	–
Other items	–	–	–	279	198	–	–	835	50	12,944	14,306
<b>Total Standardised</b>	<b>7,622</b>	<b>9,186</b>	<b>16,336</b>	<b>1,599</b>	<b>1,353</b>	<b>132</b>	<b>–</b>	<b>1,426</b>	<b>151</b>	<b>18,599</b>	<b>56,404</b>
<b>Total</b>	<b>50,441</b>	<b>28,697</b>	<b>18,538</b>	<b>27,917</b>	<b>36,123</b>	<b>6,414</b>	<b>64,478</b>	<b>133,220</b>	<b>9,111</b>	<b>74,146</b>	<b>449,085</b>

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#### Maturity analysis

Approximately 64 per cent of the Group's exposure to customers is short term, having contractual maturity of one year or less. The Wholesale Banking portfolio is predominately short term with 75 per cent of EAD having a remaining contractual maturity of one year or less. In Consumer Banking the longer maturity profile of the AIRB portfolio is driven by the mortgage book which makes up 68 per cent of the portfolio and is traditionally longer term in nature and well secured.

The following tables show the maturity of EAD by each principal category of exposure class.

	31.12.08			
	One year or less \$million	One to five years \$million	Over five years \$million	Total \$million
<b>AIRB Exposure Class</b>				
Central governments or central banks	56,572	7,556	503	64,631
Institutions	106,072	17,122	3,273	126,467
Corporates	83,927	27,640	8,547	120,114
Retail	6,898	15,803	40,210	62,911
Equity	–	–	–	–
Securitisation positions	701	15,760	2,072	18,533
Non-credit obligation assets	25	–	–	25
Total AIRB	254,195	83,881	54,605	392,681
<b>Standardised Exposure Class</b>				
Central governments or central banks	180	–	–	180
Regional governments or local authorities	–	–	–	–
Administrative bodies and non-commercial undertakings	–	–	–	–
Multilateral development banks	7	–	–	7
International organisations	–	–	–	–
Institutions	3,070	524	21	3,615
Corporates	10,139	275	1,849	12,263
Retail	7,244	3,874	4,006	15,124
Secured on real estate	784	290	8,070	9,144
Past due items	433	173	863	1,469
Items belonging to regulatory high risk category	154	142	–	296
Covered bonds	–	–	–	–
Securitisation positions	–	–	–	–
Short term claims on institutions and corporates	–	–	–	–
Collective investment undertakings	–	–	–	–
Other items	10,720	–	3,586	14,306
Total Standardised	32,731	5,278	18,395	56,404
<b>Total</b>	286,926	89,159	73,000	449,085

## 4.5. Credit risk mitigation

Potential credit losses from any given account, customer or portfolio are mitigated using a range of tools such as collateral, credit insurance, credit derivatives and other guarantees. The reliance that can be placed on these mitigants is carefully assessed in light of issues such as legal enforceability, market value and counterparty risk of the guarantor.

Collateral types which are eligible for risk mitigation include: cash; residential, commercial and industrial property; fixed assets such as motor vehicles, aircraft, plant and machinery; marketable securities; commodities; bank guarantees and letters of credit. The Group also enters into collateralised reverse repurchase agreements. Risk mitigation policies control the approval of collateral types.

Where guarantees or credit derivatives are used as Credit Risk Mitigation (CRM) the creditworthiness is assessed and established using the credit approval process in addition to that of the obligor or main counterparty. The main types of guarantors include bank guarantees, insurance companies, parent companies, shareholders and Export Credit Agencies.

Collateral is valued in accordance with the Group's risk mitigation policy, which prescribes the frequency of valuation for different collateral types. The valuation frequency is driven by the level of

price volatility of each type of collateral and the nature of the underlying product or risk exposure. Collateral held against impaired loans is maintained at fair value.

Certain credit exposures are mitigated using credit default insurance.

Where appropriate, credit derivatives are used to reduce credit risks in the portfolio. Due to their potential impact on income volatility, such derivatives are used in a controlled manner with reference to their expected volatility.

The Group uses bilateral and multilateral netting to reduce pre-settlement and settlement counterparty risk. Pre-settlement risk exposures are normally netted using the bilateral netting documentation in legally approved jurisdictions. Settlement exposures are generally netted using Delivery vs Payments or Payment vs Payments systems.

The following table discloses the amount of exposure after the effect of CRM (excluding the impact of guarantees and credit derivatives) in the AIRB portfolio. For the AIRB portfolios, there is no requirement to disclose the value of collateral as this is typically captured within the LGD models. The amount of the exposure that is covered by guarantees/credit derivatives is also shown by asset class.

	31.12.08	
AIRB Exposure Class	EAD after the effect of CRM \$million	EAD covered by guarantees/credit derivatives \$million
Central governments or central banks	63,753	26
Institutions	116,105	1,913
Corporates	105,764	3,820
Retail	23,368	–
Equity	–	–
Securitisation positions	18,152	2,863
Non-credit obligation assets	25	–
Total AIRB	327,167	8,622

### Wholesale Banking

The process of managing and recognising credit risk mitigation is governed by policies which set out the eligibility criteria that must be met. The credit risk mitigation policy sets out clear criteria that must be satisfied if the mitigation is to be considered effective:

- Excessive exposure to any particular risk mitigants or counterparties should be avoided. Collateral concentration mitigation standards are maintained at both the portfolio and counterparty level;
- Risk mitigants should not be correlated with the underlying assets such that default would coincide with a lowering of the Forced Sale Value (FSV) of the collateral;
- Where there is a currency mismatch, haircuts should be applied to protect against currency fluctuations;
- Legal opinions and documentation must be in place; and
- Ongoing review and controls exist where there is a maturity mismatch between the collateral and exposure.

For all credit risk mitigants that meet the policy criteria, a clear set of procedures are applied to ensure that the value of the underlying collateral is appropriately recorded and updated regularly.

### Consumer Banking

The effective use of collateral is a key tool by which credit risk is mitigated in Consumer Banking. All eligible collateral accepted by Consumer Banking is covered by a product proposal approved by senior credit officers delegated with the relevant authority. New collateral types have to be vetted through a stringent 'New Business Approval' process and approved by the Consumer Banking Risk Committee.

In order to be recognised as security and for the loan to be classified as secured, all items pledged must be valued and there must exist an active secondary resale market for the collateral. Documentation must be held to enable Consumer Banking to realise the asset without the cooperation of the asset owner in the event that this is necessary.

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Regular valuation of collateral is required in accordance with the Group's risk mitigation policy, which prescribes both the process of valuation and the frequency of valuation for different collateral types. The valuation frequency is driven by the level of price volatility of each type of collateral and the nature of the underlying product or risk exposure. Stress tests are performed on changes in collateral values for key portfolios to assist senior management in managing the risks in our portfolios. Where applicable, collateral is required to be insured at all times and against all risks, with Standard Chartered as the loss payee under the insurance policy.

Detailed procedures over collateral management must be in place for each business at the country level.

The table below identifies the effect of credit risk mitigation on EAD for the standardised portfolio. Eligible financial collateral consists primarily of cash, debt securities, equities and gold. All collateral shown below meets FSA Handbook BIPRU Chapter 5 eligibility rules.

The main type of collateral for the Group's standardised portfolio is real estate property which accounts for 65 per cent of all credit risk mitigants.

	31.12.08				
	EAD before the effect of CRM \$million	EAD covered by eligible financial collateral \$million	EAD covered by other eligible collateral \$million	EAD after the effect of CRM \$million	EAD covered by guarantees/credit derivatives \$million
<b>Standardised Exposure Class</b>					
Central governments or central banks	180	–	–	180	1
Regional government or local authorities	–	–	–	–	–
Administrative bodies and non-commercial undertakings	–	–	–	–	–
Multilateral development banks	7	–	–	7	–
International organisations	–	–	–	–	–
Institutions	3,615	26	–	3,589	48
Corporates	12,263	3,212	–	9,051	–
Retail	15,124	1,013	–	14,111	1
Secured on real estate property	9,144	48	8,920	176	–
Past due items	1,469	47	525	897	–
Items belonging to regulatory high risk categories	296	1	–	295	–
Covered bonds	–	–	–	–	–
Securitisation positions	–	–	–	–	–
Short term claims on institutions and corporates	–	–	–	–	–
Collective investment undertakings	–	–	–	–	–
Other items	14,306	–	–	14,306	–
<b>Total Standardised</b>	<b>56,404</b>	<b>4,347</b>	<b>9,445</b>	<b>42,612</b>	<b>50</b>

## 4.6. Internal Ratings Based models

### Model governance

The AIRB models used by the Group calculate a conservative Probability of Default (PD), Loss Given Default (LGD) and Exposure at Default (EAD), as borne out by the model performance data contained in this section. The product of this is a conservative view of Regulatory Expected Loss, which is considered necessary for the prudent calculation of regulatory capital.

Models are developed by analytics teams within Group Risk and the Consumer Banking and Wholesale Banking risk functions. The model development process is conducted and documented in line with specific criteria setting out the minimum standards for model development. All AIRB models are validated annually by a model validation team reporting to the Group Chief Credit Officer, thereby maintaining independence from the model build processes. Model validation findings are presented to the Group Model Assessment Committee (MAC) which in turn makes approval recommendations to the Consumer Banking and Wholesale Banking Risk Committees. These decision making bodies are comprised of divisional senior management whose role is to challenge model assumptions and performance and agree on appropriate model use for business decision making. The GRC and ARC periodically review overall model performance.

The model validation process involves a qualitative and quantitative assessment of the model, data, systems and governance. This would typically include an assessment of the:

- Model assumptions;
- Validity of the technical approach used;
- Statistical and empirical measures of performance;
- Appropriateness of intended model use;
- Model application and infrastructure;
- Data integrity and history;
- Model response to changes in internal and external environment: i.e., the extent to which the model provides point in time or through the cycle measures of risk;
- Model monitoring standards and triggers; and
- Levels of conservatism applied.

Statistical testing is used to determine a model's discriminatory power, predicted versus actual performance and stability over time with pre-defined thresholds for passing such tests. The model development teams also conduct annual model reviews, which are informed by regular monitoring, to ascertain whether the model is fit for purpose and performing within acceptable boundaries or whether there are potential improvements in performance.

### PD model development

The Group employs a variety of techniques to develop its Probability of Default (PD) models. In each case the appropriate approach is dictated by the availability and appropriateness of both internal and external data.

In all cases, where there is a perceived weakness in the data – for example shorter histories or fewer instances of default, an appropriate amount of conservatism is applied to predicted default rates.

The general approaches fall into three categories:

Default History Based ('Good-Bad') – where a sufficient number of defaults is available, the Group deploys a variety of statistical methods to determine the likelihood of default on existing exposures. These methods afford very high discriminatory power

by identifying exposure characteristics that have a significant predictive ability. The majority of the Group's consumer and corporate exposures are rated under such an approach.

Shadow Rating Approach – if it is determined that the Group's internal data does not provide a sufficient default history (for example, so called 'low default portfolios'), then the Group develops models which are designed to reflect ratings made by established external credit assessment institutions, those agencies having access to large databases of defaults on a variety of credit obligations. These external ratings are customised to develop the Group's own customer rating systems.

Constrained Expert Judgement – for certain types of exposure there is little or no internal or external default history, and therefore no reliable external ratings. In such rare cases, the Group develops quantitative frameworks which include the expert opinions of the Group's credit risk management personnel. These frameworks are called 'knowledge based systems' and are regularly reviewed with respect to historical outcomes.

### LGD model development

The Group develops Loss Given Default (LGD) models by assessing unsecured recoveries and the forced sale value of collateral together with the economic costs in securing these recoveries, and the timing with which such cash flows occur. All such cash values are then measured at net present value using a suitable discount rate to derive a recovery rate. Loss given default is therefore the EAD less these estimated recoveries.

Unsecured recoveries are estimated based upon empirical evidence which has shown that factors such as customer segment, product and geography have predictive content.

All LGD models are conservatively calibrated to a 'downturn' – with lower assumed collateral values and lower recoveries on unsecured exposures than would normally prevail.

### EAD model development

An EAD model is developed for uncertain exposure products such as lines of credit, credit cards, overdrafts and other commitments. Based on the Group's experience (and supplemented by external data), EAD models assess changes to limits and the likely draw-down of committed and uncommitted limits as an exposure approaches default. The factor generated by the model and applied to the undrawn limit is referred to as the credit conversion factor (CCF).

The Group has used conservative assumptions in assessing EAD, in keeping with the expected experience in an economic downturn.

### Model use

In addition to supporting credit decisions, AIRB models also support risk-based pricing methodologies and measures used to assess business performance such as Economic Capital, Economic Revenue and Economic Profit.

The use of models is governed by a suite of policies:

- Each model is governed by a separate policy and procedure which defines the applicability of that model and details the procedure for use;
- The model review policy governs the regular review of models and specifies statistical thresholds and other triggers which determine when models need to be redeveloped;
- The model override policy sets the conditions and approval authority required to override model output; and



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- The parental support policy, for Wholesale Banking, determines the extent to which parental support may be utilised to adjust the credit grade of corporates' and financial institutions' subsidiaries.

#### Wholesale Banking model results

Wholesale Banking models have been developed from a dataset which runs to over a decade, including default and recovery experience from the 1997 Asian financial crisis. These data have been used to calibrate estimates of PD to the Group's long run experience. Actual ('point in time') default rates will typically differ from this 'through the cycle' experience as economies move above or below cyclical norms.

AIRB PD estimates are computed as of 1 January 2008 and are compared with default observations through 31 December 2008. The observed default rate is higher than estimated PD for Institutions due to a handful of unexpected defaults in this sector during the year. For central governments or central banks, there were no defaults during 2008. The actual default rate among Corporate exposures was maintained below AIRB model predictions.

The calculation of actual versus predicted LGD presents the difficulty that it takes a number of years for the workout process to complete. The recovery process on defaults in 2008 is too immature to compute meaningful actual versus realised outcomes.

To obviate this difficulty the predicted LGD is based on the most recently deployed model outputs as of 31 December 2008 compared with long run actual realisations of LGD including downturn periods, since 1995. The predicted LGD estimate takes into account the impact of enhanced risk mitigation techniques in use today, and as a result LGD estimates for Institutions are lower than the long run actual.

To be consistent with the approach taken for LGD, the predicted CCF is computed based on model outputs as of 31 December 2008. Actual CCFs are similarly based on long run realisations of CCF since 1995. Estimated CCF is higher than actual owing to the regulatory requirement to assign conservatism to certain exposure types.

AIRB Exposure Class	Wholesale Banking PD		Wholesale Banking LGD		Wholesale Banking CCF <sup>1</sup>	
	Predicted PD %	Actual PD %	Predicted LGD %	Actual LGD %	Predicted CCF %	Actual CCF %
Central governments or central banks	0.09	0.00	26.34	0.00	15.35	0.00
Institutions	0.18	0.27	18.91	32.45	17.73	0.00
Corporates	1.23	0.69	45.38	46.99	14.07	1.52

#### Consumer Banking model results

Seven years of performance data is held for the majority of Consumer Banking portfolios and this history has been used to develop the AIRB model suite. These data include 'credit bubbles' in Taiwan and Hong Kong as well as stress that arose during the avian flu outbreak. This experience therefore features in the calibration of the models.

The comparisons of predicted against actual outcomes are shown at an asset class level for each of the PD, LGD and EAD model suites. For LGD, the predicted value reflects estimates of LGD for defaults over the period 2006 and 2007, compared with

realised LGDs in 2008 when the recoveries process was terminated.

Asset class results below comprise many individual portfolios which during the year were affected by a number of influencing factors including changes in underwriting policies, business mix, economic conditions and modelling approach. The tables below exclude analysis of Retail SME risk parameters due to the recent implementation of AIRB models meaning there is insufficient historical data to compare predicted rates against actual outcomes.

AIRB Exposure Class	Consumer Banking PD	
	31.12.07 Predicted PD %	31.12.08 Actual PD %
Secured by real estate collateral	1.16	0.70
Qualifying revolving retail exposures	3.86	2.76
Other retail	5.67	3.85

Across the various asset classes, the actual default rate experienced during the 12 months from December 2007 is lower than the predicted PD. With any rating system, there is a tendency to over predict or under predict based on different economic conditions. Economic conditions in 2008 were not as severe as the long run average that the Group has used to

calibrate its models. A measure of conservatism is also built into rating systems where empirical default histories are insufficient to satisfy the Group's statistical measures of accuracy. This conservatism together with prevailing economic conditions over last year leads the prediction to over estimate the actual default rate.

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AIRB Exposure Class	Consumer Banking LGD 2008	
	Predicted LGD %	Actual LGD %
Secured by real estate collateral	20.54	7.21
Qualifying revolving retail exposures	81.05	64.33
Other retail	78.81	56.94

Actual LGDs are lower than predicted values as the model LGDs use 'Downturn' parameter settings. This is most evident in the mortgage portfolios where the predicted LGDs include both a

significant assumed reduction in property values in addition to the application of the regulatory minimum LGD floor of 10 per cent.

AIRB Exposure Class	Consumer Banking EAD 2008	
	Predicted EAD \$million	Actual EAD \$million
Secured by real estate collateral	203	198
Qualifying revolving retail exposures	223	216
Other retail	135	123

There is only a small variance between the predicted and actual EAD for the year 2008. The predicted EAD for revolving products is based on limit utilisation whilst for loans the outstanding balance at the time of prediction is used. Since there is very close control of credit limit increases (using AIRB models), the EAD for revolving products tends to be very close to outstanding balance also.

#### Regulatory Expected Loss versus Individual Impairment charges

The table below shows regulatory expected loss as at 31 December 2007 and net individual impairment charges raised

during the 2008 financial year for the AIRB exposure classes. It should be noted that these measures are calculated using different methodologies and from different internal systems and cannot be necessarily compared. The Regulatory Expected Loss is calculated by Risk models using a through-the-cycle methodology based on risk parameters and observations over a period of time, as previously described in this section. Individual impairment charges and actual losses are made based on accounting standards that require the Group to either provide for or write-off debts when certain conditions are met as described in section 4.8 Problem Credit Management and Provisioning.

AIRB Exposure Class	31.12.07	31.12.08
	Regulatory Expected Loss \$million	Net Individual Impairment Charge \$million
Central governments or central banks	26	–
Institutions	83	19
Corporates	915	286
Retail, of which	721	381
Secured by real estate collateral	110	8
Qualifying revolving retail	317	204
Retail SME	–	–
Other retail	294	169
Equity	–	–
Securitisation positions	–	–
Non-credit obligation assets	–	–
Total AIRB	1,745	686

## 4.7. Risk grade profile

### Exposures by internal credit grading

A standard alphanumeric credit risk-grading system is used in both Wholesale and Consumer Banking. The grading is based on the Group's internal estimate of probability of default, with customers or portfolios assessed against a range of quantitative and qualitative factors. The numeric grades run from one to 14 and the grades are sub-classified A, B or C. Lower credit grades are indicative of a lower likelihood of default. Credit grades 1A to 12C are assigned to performing customers or accounts, while credit grades 13 and 14 are assigned to non-performing or defaulted customers.

There is no direct relationship between the Group's internal credit grades and those used by external rating agencies. The Group's credit grades are not intended to replicate external credit grades although, as the factors used to grade a borrower may be similar, a borrower rated poorly by an external rating agency is typically rated in the lower rank of the Group's internal credit grades. As a guide the table below maps the Group's credit grades to that of Standard and Poor's credit ratings.

Credit Grade	Standard and Poor's Mapping	
	Corp/NBFIs	Banks
1A	AAA	AAA, AA+
1B	AA+	AA, AA-
2A	AA	A+
2B	AA-	A
3A	A+	A-
3B	A	BBB+
4A	A-	BBB+, BBB
4B	BBB+	BBB
5A	BBB	BBB-
5B	BBB-	BB+
6A	BB+	BB+, BB
6B		BB
7A	BB	BB, BB-
7B		BB-
8A	BB-	B+
8B		B+, B
9A	B+	B
9B		B, B-
10A	B	B-
10B		B-, CCC
11A - C	B-	CCC
12A - C	N/A	N/A

Credit grades for the majority of Consumer Banking accounts are based on a probability of default calculated using AIRB models. These models are based on application and behavioural scorecards which make use of credit bureau information as well as the Group's own data. For Consumer Banking portfolios where AIRB models have not yet been developed, the probability of default is calculated using historical portfolio delinquency flow rates and expert judgement, where applicable.

AIRB models cover a substantial majority of the Group's loans and are used extensively in assessing risks at customer and portfolio level, setting strategy and optimising the Group's risk-return decisions.

Standard Chartered makes use of internal risk estimates of PD, LGD and EAD extensively in the areas of:

- Credit Approval and Decision – The level of authority required for the sanctioning of credit requests and the decision made is based on a combination of PD, LGD and EAD of the obligor;
- Pricing – In Wholesale Banking a pre-deal pricing calculator is used which takes into consideration PD, LGD and EAD in the calculation of expected loss and economic capital for the proposed transactions to ensure appropriate return. In Consumer Banking a scorecard approach is taken to assess the level of risk using PD, LGD and EAD;
- Limit Setting – In Wholesale Banking concentration limits for some portfolios, as counterparty limits are determined by PD, LGD and EAD. The limits operate on a sliding scale to ensure that the Group does not have over concentration of low credit quality assets. This process operates similarly in Consumer Banking;
- Provisioning – Portfolio Impairment Provisions (PIP) are raised at the portfolio level and are set with reference to expected loss which is based on PD, LGD and EAD amongst other quantitative and qualitative factors;
- Risk Appetite – PD, LGD and EAD models provide some of the key inputs into the risk-based methodologies used in the assessment of business and market variables which in turn are key components in the approach taken to Risk Appetite; and
- Economic Capital – These metrics are key components of the model used to calculate Economic Capital which is used in the strategic planning, budgeting, pricing and performance measurement processes at business unit, portfolio and client relationship level.

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The following table sets out analysis of EAD within the AIRB portfolios by internal credit grading and Basel II exposure classes. EAD has been calculated after taking into account the impact of credit risk mitigation. 75 per cent of exposures are classified as credit grades 1 to 5.

	31.12.08					
	Grades 1-5 \$million	Grades 6-8 \$million	Grades 9-11 \$million	Grade 12 \$million	Grades 13-14 \$million	Total \$million
<b>Total exposure</b>						
Central government and central banks	61,213	1,924	616	–	–	63,753
Institutions	103,047	9,967	2,609	65	417	116,105
Corporates	59,404	36,206	8,812	647	695	105,764
Retail, of which	11,391	6,439	4,526	597	415	23,368
Retail exposures secured by real estate collateral	1,852	1,099	237	12	44	3,244
Qualifying revolving retail	6,871	2,970	2,037	326	224	12,428
Retail SME	–	464	103	29	38	634
Other retail	2,668	1,906	2,149	230	109	7,062
Equity	–	–	–	–	–	–
Securitisation positions	11,690	15	6,437	–	10	18,152
Non-credit obligation assets	–	–	–	–	25	25
<b>Total AIRB</b>	<b>246,745</b>	<b>54,551</b>	<b>23,000</b>	<b>1,309</b>	<b>1,562</b>	<b>327,167</b>

The following table sets out analysis of undrawn commitments by internal credit grading and Basel II exposure classes.

	31.12.08					
	Grades 1-5 \$million	Grades 6-8 \$million	Grades 9-11 \$million	Grade 12 \$million	Grades 13-14 \$million	Total \$million
<b>Undrawn commitments</b>						
Central government and central banks	47	15	–	–	–	62
Institutions	4,977	900	146	–	–	6,023
Corporates	23,365	11,915	2,937	23	160	38,400
Retail, of which	2,435	1,216	597	15	4	4,267
Retail exposures secured by real estate collateral	1,478	708	455	2	2	2,645
Qualifying revolving retail	–	–	–	–	–	–
Retail SME	–	–	–	–	–	–
Other retail	957	508	142	13	2	1,622
Equity	–	–	–	–	–	–
Securitisation positions	–	–	–	–	–	–
Non-credit obligation assets	–	–	–	–	–	–
<b>Total AIRB</b>	<b>30,824</b>	<b>14,046</b>	<b>3,680</b>	<b>38</b>	<b>164</b>	<b>48,752</b>

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The following tables set out exposure weighted average LGD and exposure weighted average risk weight of the credit risk trading and non-trading books. These weighted averages have been calculated using EAD before taking into account the impact of credit risk mitigation. The average exposure weighted LGD across the AIRB portfolio is 31.6 per cent.

31.12.08						
	Grades 1-5 %	Grades 6-8 %	Grades 9-11 %	Grade 12 %	Grades 13-14 %	Total %
<b>Exposure weighted average LGD</b>						
Central government and central banks	25.8	39.5	40.0	–	–	26.3
Institutions	25.8	39.3	28.1	34.7	26.6	26.8
Corporates	48.2	44.8	35.2	49.0	50.1	46.0
Retail, of which	34.7	38.5	60.8	71.9	54.4	38.8
Retail exposures secured by real estate collateral	18.4	17.5	19.9	21.6	23.0	17.8
Qualifying revolving retail	86.5	82.9	84.2	87.2	83.4	85.3
Retail SME	–	100.0	100.0	100.0	100.0	100.0
Other retail	78.2	79.5	79.3	78.6	79.5	78.9
Equity	–	–	–	–	–	–
Securitisation positions	97.2	95.5	99.0	–	95.5	95.3
Non-credit obligation assets	–	–	–	–	70.0	70.0
Total AIRB	36.5	50.6	58.2	63.8	47.4	31.6

31.12.08						
	Grades 1-5 %	Grades 6-8 %	Grades 9-11 %	Grade 12 %	Grades 13-14 %	Total %
<b>Exposure weighted average risk weight</b>						
Central government and central banks	4.7	80.6	120.2	–	–	8.1
Institutions	10.1	60.9	83.4	207.9	185.9	17.1
Corporates	35.7	80.8	104.6	269.7	201.1	59.4
Retail, of which	7.9	36.0	106.0	213.9	110.5	28.5
Retail exposures secured by real estate collateral	6.9	23.6	69.5	129.4	110.6	15.2
Qualifying revolving retail	7.1	35.7	120.0	256.6	108.1	40.8
Retail SME	–	120.0	160.5	251.6	155.8	134.7
Other retail	22.2	86.7	127.0	202.6	90.4	78.4
Equity	–	–	–	–	–	–
Securitisation positions	11.6	315.8	19.3	–	597.4	18.9
Non-credit obligation assets	–	–	–	–	849.5	849.5
Total AIRB	13.4	67.4	81.9	240.4	178.0	31.3

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#### 4.8. Problem credit management and provisioning

##### Consumer Banking

Within Consumer Banking an account is considered to be delinquent when payment is not received on the due date. For delinquency reporting purposes the Group follows industry standards, measuring delinquency as of 1, 30, 60, 90, 120 and 150 days past due. Accounts that are overdue by more than 30 days are more closely monitored and subject to specific collections processes.

The process used for raising individual impairment provisions (IIP) is dependent on the product. For unsecured products and loans secured by automobiles, individual provisions are raised for the entire outstanding amount at 150 days past due. For mortgages, IIP are generally raised at 150 days past due based on the difference between the outstanding amount of the loan, and the present value of the estimated future cash flows which includes the realisation of collateral. For other secured loans (excluding those secured by mortgage and automobiles), IIP are raised at 90 days past due based on the forced sale value of the collateral without further discounting, as the collateral value is typically realised in less than 12 months. For all products there are certain situations where the individual impairment provisioning process is accelerated, such as in cases involving bankruptcy, fraud and death.

A portfolio impairment provision (PIP) is held to cover the inherent risk of losses which, although not specifically identified, are known through experience to be present in the loan portfolio. PIP is calculated with reference to past flow-rate and recovery rate experience, and is adjusted to take account of a number of forward looking factors. These include the economic and business environment in the Group's markets, and trends in a range of portfolio indicators such as portfolio loss severity, collections and recovery performance trends.

The procedures for managing problem credits for the Medium Enterprises in the SME segment of Consumer Banking are similar to those adopted in Wholesale Banking. For unsecured loans to Small Businesses within the SME segment, the problem credit management process is similar to that of other unsecured products in Consumer Banking.

The following table shows impaired loans and advances, and the movement in impairment provisions by each principal category of borrowers' business or industry for Consumer Banking. This section follows International Financial Reporting Standards (IFRS) definitions used in the Annual Report and Accounts.

	Impaired Loans and Advances as at 31.12.08 \$million	Individual Impairment Provision held as at 01.01.08 \$million	Net individual impairment charge 2008 \$million	Amounts written off/other movements 2008 \$million	Individual Impairment Provision held as at 31.12.08 \$million
Loans to individuals					
Mortgages	302	99	23	(34)	88
Other	175	200	705	(713)	192
Small and medium enterprises	585	356	170	(263)	263
Consumer Banking	1,062	655	898	(1,010)	543

##### Wholesale Banking

Loans are classified as impaired and considered non-performing where analysis and review indicates that full payment of either interest or principal is questionable, or as soon as payment of interest or principal is 90 days overdue. Impaired accounts are managed by GSAM, which is separate from the main businesses of the Group. Where any amount is considered irrecoverable, an individual impairment provision is raised, being the difference between the loan carrying amount and the present value of estimated future cash flows.

Future cash flows are estimated by taking into account the individual circumstances of each customer and can arise from operations, sales of assets or subsidiaries, realisation of collateral, or payments under guarantees. Cash flows from all available sources are considered. In any decision relating to the raising of

provisions, the Group attempts to balance economic conditions, local knowledge and experience, and the results of independent asset reviews.

Where it is considered that there is no realistic prospect of recovering an element of an exposure against which an impairment provision has been raised, then that amount will be written off.

As with Consumer Banking, a PIP is held to cover the inherent risk of losses which, although not identified, are known through experience to be present in any loan portfolio. In Wholesale Banking, the PIP is set with reference to past experience using loss rates, and judgemental factors such as the economic environment and the trends in key portfolio indicators.

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### 31 December 2008

The following table shows impaired loans and advances, and the movement in impairment provisions during the reporting period by each principal category of borrowers' business or industry for Wholesale Banking.

	Impaired Loans and Advances 31 December 2008 \$million	Individual Impairment Provision 1 January 2008 \$million	Net individual impairment charge/(release) \$million	Amounts written off/other movements \$million	Individual Impairment Provision 31 December 2008 \$million
Agriculture, forestry and fishing	158	33	20	(14)	39
Banks	35	2	15	–	17
Construction	47	10	3	5	18
Commerce	229	152	15	(33)	134
Electricity, gas and water	6	25	(5)	8	28
Financing, insurance and business services	286	27	2	2	31
Mining and quarrying	–	12	–	(12)	–
Manufacturing	756	290	231	(63)	458
Commercial real estate	40	23	2	(4)	21
Transport, storage and communication	22	22	15	(13)	24
Other	32	22	7	(18)	11
Wholesale Banking	1,611	618	305	(142)	781

#### Impaired loans and advances by geography

The following table shows a geographical breakdown of the impaired loans and advances net of individual impairment provisions for the Group by geography, along with loans and advances that are past due but not individually impaired by geography. Past due but not individually impaired loans total \$5,235 million, of which over 70 per cent are 30 days or less past due.

	31.12.08									
	Asia Pacific									
	Hong Kong \$million	Singapore \$million	Malaysia \$million	Korea \$million	Other Asia Pacific \$million	India \$million	Middle East & Other S Asia \$million	Africa \$million	Americas UK & Europe \$million	Total \$million
Gross Impaired Loans	272	54	148	357	907	85	368	102	380	2,673
Individual impairment provision	(164)	(20)	(57)	(154)	(548)	(44)	(170)	(54)	(113)	(1,324)
Net Impaired Loans	108	34	91	203	359	41	198	48	267	1,349
Total past due but not individually impaired	386	476	587	1,075	812	392	1,257	193	57	5,235
Total past due & impaired loans net of individual impairment provisions	494	510	678	1,278	1,171	433	1,455	241	324	6,584

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### 31 December 2008

#### Movement in Group Impairment provisions

The following table sets out the movements in the Group's total individual and portfolio impairment provisions against loans and advances

	2008 \$million
At 1 January	1,809
Exchange translation differences	(179)
Acquisitions	109
Amounts written off	(1,119)
Recoveries of acquisition fair values	(78)
Recoveries of amounts previously written off	180
Discount unwind	(40)
Other	13
New provisions	1,796
Recoveries/provisions no longer required	(510)
Net charge against profit	1,286
Provisions held at 31 December	1,981
Of which:	
Individual Impairment Provision	1,324
Portfolio Impairment Provision	657

#### Loans and advances past due

The following table sets out the industry analysis of loans and advances which are past due including those assets on which an individual impairment provision has been raised. A loan is considered to be past due when the counterparty has failed to make a principal or interest payment when contractually due. Past due does not necessarily mean that the counterparty is impaired. Past due but not individually impaired loans total \$5,235 million, of which over 70 per cent are 30 days or less past due.

	31.12.08 \$million
Loans to individuals	
Mortgages	2,301
Other	1,945
Small and medium enterprises	1,207
Consumer Banking	5,453
Agriculture, forestry and fishing	195
Banks	88
Construction	80
Commerce	315
Electricity, gas and water	6
Financing, insurance and business services	542
Governments	–
Mining and quarrying	11
Manufacturing	1,048
Commercial real estate	43
Transport, storage and communication	95
Other	32
Wholesale Banking	2,455
Total	7,908



## **4.9. Counterparty credit risk in the trading book**

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Counterparty credit risk (CCR) is the risk that the Group's counterparty in a foreign exchange, interest rate, commodity, equity or credit derivative contract defaults prior to maturity date of the contract and that the Group at the time has a claim on the counterparty. CCR arises predominately in the trading book, but also arises in the non-trading book due to hedging of external funding.

The credit risk arising from all financial derivatives is managed as part of the overall lending limits to banks and corporate customers.

The Group will seek to negotiate Credit Support Annexes (CSA) with counterparties on a case by case basis, where collateral is deemed a necessary or desirable mitigant to the exposure. The credit terms of the CSA are specific to each legal document and determined by the credit risk approval unit responsible for the counterparty. The nature of the collateral will be specified in the legal document and will typically be cash or highly liquid securities.

The Group further reduces its credit exposures to counterparties by entering into contractual netting agreements which result in a single amount owed by or to the counterparty through netting the sum of the positive (amounts owed by the counterparty) and negative (amounts owed by the Group) mark-to-market (MTM) values of these transactions. Following International Accounting Standard (IAS) 32 requirements, exposures are however presented on a gross basis in the financial statements as such transactions are not intended to be settled net in the ordinary course of business.

A daily operational process takes place to calculate the MTM on all trades captured under the CSA. Additional collateral will be called from the counterparty if total uncollateralised MTM exposure exceeds the threshold and minimum transfer amount specified in the CSA. Additional collateral may be required from the counterparty to provide an extra buffer to the daily variation margin process.

### **Credit reserves**

Using risk factors such as PD and LGD a Regulatory Expected Loss is calculated for each counterparty across the CCR portfolio, and based on this calculation credit reserves are set aside for

traded products. The reserve is a dynamic calculation based on the EAD risk profile for each counterparty, alongside PD and LGD factors.

In line with market convention, the Group negotiates CSA terms for certain counterparties where the thresholds related to each party are dependent on their ECAI long term rating. Such clauses are typically mutual in nature. It is therefore recognised that a downgrade in the Group's rating could result in counterparties seeking additional collateral calls to cover negative MTM portfolios where thresholds are lowered.

### **Wrong way risk**

Wrong way risk occurs where the EAD is positively correlated to the PD of the counterparty or general market conditions. So as the credit worthiness of the counterparty deteriorates the exposure to this counterparty increases. The Group employs various policies and procedures to ensure that deterioration in credit grading is alerted to management.

In Wholesale Banking where Early Alert symptoms are detected, Wholesale Banking's scorecard will be used to immediately re-assess credit grade. The account plan is reassessed and remedial action agreed and monitored. Remedial actions include, but are not limited to: exposure reduction; security enhancement; exit of the account or immediate movement of the account into the control of GSAM.

### **Exposure value calculation**

Exposure values for regulatory capital purposes on over the counter traded products are calculated according to the CCR mark to market method. This is calculated as a sum of the current replacement cost and the potential future credit exposure. The current replacement cost is the USD equivalent amount owed by the counterparty to the Group for various financial derivative transactions. The potential future credit exposure is an add-on based on a percentage of the notional principal of each transaction. Such percentages are prescribed by the FSA in the BIPRU guidelines and vary according to the underlying asset class and tenor of each trade. The benefit from master netting agreements is applied to the portfolio of counterparty trades in the CCR calculation according to the Net to Gross Ratio rules provided in the FSA Handbook BIPRU 13 guidelines.

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### 31 December 2008

The following tables cover the credit exposure on derivative transactions after taking into account the benefits from legally enforceable netting agreements and collateral arrangements.

	31.12.08				
	Gross Positive Fair Value of Contracts \$million	Netting Benefits \$million	Netted Current Credit Exposure \$million	Collateral Held \$million	Net Derivatives Credit Exposure \$million
Derivative contracts	89,463	50,998	38,465	1,545	36,920
Repo style transactions	9,429	–	9,429	7,199	2,230
Credit derivatives*	1,820	1,020	800	–	800
<b>Total</b>	<b>100,712</b>	<b>52,018</b>	<b>48,694</b>	<b>8,744</b>	<b>39,950</b>

	31.12.08		
	Notional Value \$million	Current credit exposures \$million	Regulatory Capital requirement \$million
Derivative contracts:			
Interest rate contracts	1,502,801	8,602	372
Foreign exchange contracts	1,361,872	28,118	861
Equity and stock index options	1,075	–	–
Commodity contracts	16,200	1,745	108
Repo style transactions:			
Repo	n/a	5,086	12
Reverse repo	n/a	4,343	18
Credit derivatives*:			
Credit default swaps	28,944	787	17
Total return swaps	89	13	–
Credit linked notes	–	–	–
<b>Total</b>	<b>2,910,981</b>	<b>48,694</b>	<b>1,388</b>

\* Of the \$800 million credit derivatives, \$791 million of protection has been purchased, and \$9 million of protection has been sold during the year.

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#### 4.10. Securitisation

Securitisation is defined as a structure where the cash flow from a pool of assets is used to service obligations to at least two different tranches or classes of creditors.

Securitisations may be categorised as either:

- Traditional securitisation: assets are sold to a Special Purpose Entity (SPE), which finances the purchase by issuing notes in different tranches with different risk and return profiles. Cash flow arising from those assets is used by the SPE to service its debt obligations.; or
- Synthetic transaction: a securitisation whereby only the credit risk, or part of the credit risk of a pool of assets is transferred to a third party via credit derivatives. The pool of assets remains on the Group's balance sheet.

Securitisation activities undertaken by the Group are for a variety of purposes, by various businesses acting in a different capacity;

- Risk Mitigation, Funding and Capital Management (as Originator)
- Fee Generation (as Arranger/ Lead Manager)
- Risk Taking (as Investor)
- Liquidity (as Account Bank)

The Group has \$18.5 billion of EAD classified as securitisation positions, as detailed in section 4.4 Exposure Values. These qualify for recognition under the FSA's securitisation framework and the particulars of these transactions are discussed below. In addition to these positions, the Group has originated Residential Mortgage Backed Securities (RMBS) with a face value of \$4.2 billion, which do not qualify and are not detailed within this section. The Group's securitisation positions are rated by Moody's, Standard & Poor's and Fitch.

##### Asset Backed Securities

Wholesale Banking through the Capital Markets unit has purchased as investments or arranged for clients and held Asset

Backed Securities (ABS) of \$4.45 billion, the carrying value of which represents 0.9 per cent of the Group's total assets.

The credit quality of the ABS exposures remains strong. With the exception of those securities which have been subject to an impairment charge, 81 per cent of the overall portfolio is rated A, or better, and 67 per cent of the overall portfolio is rated as AAA.

The portfolio is broadly diversified across asset classes and geographies, and there is no direct exposure to the US sub-prime market.

25 per cent of the overall portfolio is invested in RMBS, with a weighted average credit rating of AA+. 58 per cent of the RMBS exposures were originated in 2005 or earlier.

18 per cent of the overall portfolio is in Commercial Mortgage Backed Securities (CMBS), of which \$147 million is in respect of US CMBS with a weighted average credit grade of AAA. The weighted average credit rating of the remaining CMBS exposure is AA.

14 per cent of the overall portfolio is in Collateralised Debt Obligations (CDOs). This includes \$208 million of exposures to CDOs of ABS (Mezzanine and High Grade), of which \$173 million have been impaired. The remainder of the other CDOs amounting to \$378 million has a weighted average credit rating of AA+.

43 per cent of the overall portfolio is in Other ABS, which includes securities backed by credit card receivables, loans to corporates or corporate SMEs, student loans, auto loans, and diversified payment types, with a weighted credit rating of AA.

The notional and carrying value of the asset backed securities purchased or retained by the Group are shown in the table below analysed by underlying asset type, alongside any recognised net gain or loss on sale in the period.

	31.12.08			
		Notional amount		
	Carrying Value of asset backed securities \$million	Traditional Securitisation Programs \$million	Synthetic securitisation Programs \$million	Recognised net gain/(loss) on sale \$million
Residential mortgages	1,027	1,110	—	(1)
Commercial mortgages	654	786	32	(5)
CDOs of ABS – RMBS	32	209	—	(28)
CDOs Other: Leveraged loans/Trust preferred/Real Estate	306	367	11	—
Credit card receivables	343	356	—	(1)
Loans to corporates or corporate SMEs	169	52	139	(1)
Student loans	237	263	—	(1)
Auto loans	391	400	—	—
Diversified payment types	442	515	—	(2)
Other assets	158	210	—	—
Total	3,759	4,268	182	(39)

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ABS are accounted for as financial assets, for further details regarding recognition and impairment refer to Note 1 of the financial statements. Following an amendment to IAS 39 in 2008, the Group reclassified certain of its asset backed securities from trading and available-for-sale to loans and receivables. The securities were reclassified at their fair value on the date of reclassification. On disposal, where proceeds differ from carrying value the gain or loss is recognised in the income statement during the period.

At 31 December 2008 the total recognised loss on disposal was \$39 million. The ABS portfolio is assessed frequently for objective evidence of impairment. At 31 December 2008 \$173 million of CDOs (RMBS) and \$10 million of CMBS were deemed impaired.

Valuation of retained interest is initially and subsequently determined using market price quotations where available or internal pricing models that utilise variables such as yield curves, prepayment speeds, default rates, loss severity, interest rate volatilities and spreads. The assumptions used for valuation are based on observable transactions in similar securities and are verified by external pricing sources, where available.

The ABS portfolio is closely managed by a centralised dedicated team. This team has all the capabilities (Legal, Risk, GSAM, Credit Analysis, Asset Surveillance, Trading and Distribution) and authority to manage this portfolio effectively. The team has developed a detailed analysis and reporting framework of the underlying portfolio to allow senior management to make an informed holding decision with regards to specific assets, asset classes or parts of an asset class.

#### Portfolio management

Wholesale Banking via its Portfolio Management unit buys synthetic protection for its banking book credit portfolio. Securitisation provides capacity for client-focused growth and

improves efficiency of economic and regulatory capital. The Group as the originator performs multiple roles, including Protection Buyer, Calculation Agent and Credit Event Monitor Agent. The Protection Buyer executes and maintains securitisation transactions. The Calculation Agent computes periodic coupon payments and loss payouts. The Credit Event Monitor Agent validates and provides notifications of credit events.

The Asset & Liability Management unit (ALM), performs a different role, and acts as deposit taker for funds collected from the credit protection provider for certain funded securitisation transactions. Deposits collected enhance the liquidity position of the Group and eliminates counterparty risk for deals where the Group is the protection buyer.

Wholesale Banking has eight securitisation transactions listed in the table below, with an aggregate hedge capacity of \$15.6 billion. Of the eight transactions, three are private deals with bilateral investors and five are public deals distributed to a broad spectrum of investors and rated by Moody's, Standard & Poor's and Fitch. In 2008 the Group originated three synthetic securitisation programmes with a maximum notional value of \$6.5 billion.

At December 2008 \$44 million of securitised exposures were classified as impaired and past due.

All eight transactions are structured as synthetic protection to facilitate the hedging of commercial loans and trade finance facilities extended to clients by the Group's branches and subsidiaries. All transactions are also structured as non-disclosed pools for reason of client confidentiality.

The table below provides detail of securitisation programmes that have been originated by the Group.

	Underlying facilities hedged	Public/private	Start Date	Scheduled maturity	31.12.08		
					Max Notional \$million	Outstanding Exposures* \$million	Retained Exposures \$million
START III	Commercial Loan	Public	Dec 2006	June 2010	1,500	1,401	18
START IV	Commercial Loan	Public	June 2007	Dec 2010	1,500	1,366	1,219
TF5	Trade Finance	Private	May 2008	Dec 2010	3,000	2,563	2,864
SEALANE	Trade Finance	Public	Nov 2007	May 2011	3,000	2,651	2,708
START II	Commercial Loan	Public	June 2006	June 2011	1,600	1,469	1,370
START V	Commercial Loan	Public	July 2008	Jan 2012	1,000	924	928
SHANGREN	Trade Finance	Private	Aug 2008	Feb 2012	2,500	2,247	2,231
ASIAMEA	Commercial Loan	Private	Dec 2007	Dec 2012	1,500	1,438	1,399
					15,600	14,059	12,737

\* The underlying exposures that have been securitised in the programmes.

\*\* The exposures that have not been sold to investors but have been retained by the Group.

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#### Accounting policy

The Group securitises various financial assets as part of credit risk mitigation activities. These securitisations serve to transfer the credit risk associated with specific financial assets to an SPE via the use of credit derivatives. The SPE then issues various tranches of notes or credit linked notes which offer recourse to investors whose claims to payment are backed by the underlying financial assets, via a waterfall structure.

The financial assets included in a securitisation programme will be fully or partially derecognised in the consolidated balance sheet when rights to receive cash flows from the financial assets have expired or where the Group has transferred substantially all risks and rewards of ownership.

Through the use of synthetic securitisation, the Group buys protection without actual transference of any assets to an SPE. These exposures are hedged by the SPE through the issue of credit linked notes. As a result, the Group remains the owner of the assets but has transferred a substantial part of the credit risk to the SPE. Third party investors in securities issued by the SPE have recourse only to the assets of the SPE and not to the Group.

Valuation of retained interest is initially valued at cost and subsequently determined using market price quotations where available or dealer quotes. The assumptions used for valuation are based on observable transactions in similar securities and are verified by external pricing sources, where available.

#### Governance of securitisation activities

Securitisation transactions proposed for funding and capital management of the Group must first obtain support from the

respective Capital Management Committee (CMC), that manages the capital requirements of the business, before going to Group Liquidity Management Committee (LMC) for final approval. LMC ensures timing of deal execution is co-ordinated with capital raising activities of Group Treasury.

Execution of each securitisation transaction must either be under the Individual Transaction Approval or Product Program Framework; such that all relevant support, control and risk functions are involved in the transaction. Specifically, Compliance covers issues like confidentiality of clients' information and insider information, Finance advises on the accounting treatment, Credit advises on the regulatory treatment, Group Tax provides an opinion on taxation and Group Regulatory Reporting facilitates communication with the regulator.

#### Basel II for securitisation positions

The calculation of risk-weighted exposure amounts for securitisation positions is based on the following two IRB securitisation calculation methods advised by the FSA:

- IRB method for certain senior securitisation positions; and
- Standardised Approach for all other securitisation positions.

All existing securitisation transactions originated by Wholesale Banking, detailed in the table on page 36, meet the credit risk transfer requirement to be accounted for as securitisation under the Basel II regulatory capital regime.

The table below presents a summary of the securitisation positions retained or purchased by the Group analysed by risk weight band. The majority of the exposures are rated AAA.

	31.12.08		
Risk weight bands	Securitisation Programmes* \$million	ABS** \$million	Total \$million
0% – 20%	12,268	3,233	15,501
20% – 40%	135	440	575
40% – 60%	–	419	419
60% – 80%	75	58	133
80% – 100%	14	107	121
100% and above	75	72	147
1250% or Deducted	170	121	291
Total	12,737	4,450	17,187

\* Retained exposures that are included in the securitisation programmes originated by the Group and have not been sold to investors.

\*\* ABS exposures purchased from a third party by the Group.

## 5. Market risk

Standard Chartered recognises market risk as the risk of loss resulting from changes in market prices and rates. The Group is exposed to market risk arising principally from customer driven transactions. The objective of the Group's market risk policies and processes is to obtain the best balance of risk and return while meeting customers' requirements.

The primary categories of market risk for Standard Chartered are:

- Interest rate risk: arising from changes in yield curves, credit spreads and implied volatilities on interest rate options;
- Currency exchange rate risk: arising from changes in exchange rates and implied volatilities on foreign exchange options;
- Commodity price risk: arising from changes in commodity prices and commodity option implied volatilities; covering energy, precious metals, base metals and agricultural; and
- Equity price risk: arising from changes in the prices of equities, equity indices, equity baskets and implied volatilities on related options.

### Market risk governance

Market risk is governed by the GRC, which agrees policies and levels of risk appetite in terms of VaR and stress loss. The Group Market Risk Committee (GMRC) provides market risk oversight and sets market risk policies. These policies cover both trading and non-trading books of the Group. The trading book is defined as per the FSA handbook and BIPRU. This is more restrictive than the broader definition within IAS39 'Financial Instruments: Recognition and Measurement', as the FSA only permits certain types of financial instruments or arrangements to be included within the trading book. Limits by location and portfolio are proposed by the businesses within the terms of agreed policy.

Group Market Risk (GMR) approves the limits within delegated authorities and monitors exposures against these limits. Additional limits are placed on specific instruments and position concentrations where appropriate. Sensitivity measures are used in addition to VaR as risk management tools. For example, interest rate sensitivity is measured in terms of exposure to a one basis point increase in yields, whereas foreign exchange, commodity and equity sensitivities are measured in terms of the underlying values or amounts involved. Option risks are controlled through revaluation limits on underlying price and volatility shifts, limits on volatility risk and other variables that determine the options' value.

### Value at Risk

The Group measures the risk of losses arising from future potential adverse movements in market rates, prices and volatilities using a VaR methodology. VaR, in general, is a quantitative measure of market risk which applies recent historic market conditions to estimate potential future loss in market value that will not be exceeded in a set time period at a set statistical confidence level. VaR provides a consistent measure that can be applied across trading businesses and products over time and can be set against actual daily trading profit and loss outcome.

VaR is calculated for expected movements over a minimum of one business day and to a confidence level of 97.5 per cent. This confidence level suggests that potential daily losses, in excess of the VaR measure, are likely to be experienced six times per year.

The Group uses historic simulation as its VaR methodology with an observation period of one year. Historic simulation involves the revaluation of all unmatured contracts to reflect the effect of historically observed changes in market risk factors on the valuation of the current portfolio.

VaR is calculated as the Group's exposure as at the close of business, generally London time. Intra-day risk levels may vary from those reported at the end of day.

### Back testing

To ensure their predictive power, VaR models are back tested against actual results. In 2008 there have been only three exceptions in the regulatory back testing. This is well within the 'green zone' applied internationally to internal models by bank supervisors, and implies that model reliability is statistically greater than 95 per cent.

Back testing is conducted daily against clean profit and loss, which is the actual profit and loss for a given business day adjusted to remove the effect of certain items unrelated to market risk. Back testing is also conducted against clean hypothetical profit and loss which is the clean profit and loss that would have occurred for a given business day if the portfolio on which the VaR number for that business day is based remained unchanged.

### Stress testing

Losses beyond the confidence interval are not captured by a VaR calculation, which therefore gives no indication of the size of unexpected losses in these situations.

GMR complements the VaR measurement by regularly stress testing market risk exposures to highlight potential risk that may arise from extreme market events that are rare but plausible.

Stress testing is an integral part of the market risk management framework and considers both historical market events and forward looking scenarios. A consistent stress testing methodology is applied to trading and non-trading books.

Stress scenarios are regularly updated to reflect changes in risk profile and economic events. The GMRC has responsibility for reviewing stress exposures and, where necessary, enforcing reductions in overall market risk exposure. The GRC considers stress testing results as part of its supervision of risk appetite.

The stress testing methodology assumes that scope for management action would be limited during a stress event, reflecting the decrease in market liquidity that often occurs.

Regular stress test scenarios are applied to each interest rates, credit spreads, exchange rates, commodity prices and equity prices. This covers all asset classes in the Financial Markets banking and trading books.

Ad hoc scenarios are also prepared reflecting specific market conditions and for particular concentrations of risk that arise within the businesses.

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#### Market risk changes

Trading, non-trading and total VaR continued to rise in 2008 as a consequence of rising market volatility across the wider global markets. The one year observation period applied for VaR increasingly reflected the increased volatility.

The acquisition of American Express Bank in 2008 increased Group VaR by \$1.1 million.

From 2008, reported Group VaR reflects adjustments made for the inclusion of credit spread VaR arising from non-trading book activity, and the exclusion of structural Group Treasury debt capital issuance positions.

#### Market risk regulatory capital

At Group and Solo Consolidated levels, the FSA specifies minimum capital requirements against market risk. The FSA has granted the Group Capital Adequacy Directive 2 (CAD2) internal model approval covering the majority of general interest rate and foreign exchange risk in the trading book. CAD2 internal model approval allows the Group to calculate the market risk capital requirement using VaR at the 99 per cent confidence level for positions within the scope of approval granted by the FSA. In 2008 the scope was extended to include precious and base metals market risk. Positions outside the CAD2 scope are assessed according to standard FSA rules and currently this

includes all specific interest rate and equity risks amongst others. At 31 December 2008 the Group's market risk regulatory capital requirement was \$735 million.

#### Valuation framework

Products may only be traded subject to a formally approved Product Programme which identifies the risks, controls and regulatory treatment. The control framework is assessed by the relevant Group functions as well as Group Internal Audit on an ongoing basis. It is Group policy that all assets and liabilities held are to be recorded in the financial accounts on a fair-value basis that is consistent with IFRS.

The Product control function is responsible for valuation controls in accordance with policy. Where possible, positions held are marked to market on a consistent and daily basis using quoted prices within active markets. Where this is not possible, positions are marked to model using models which have been independently and periodically validated by GMR. Product Control ensure adherence to the Group Policy for valuation adjustments to incorporate counterparty risk, bid/ask spreads, market liquidity and where appropriate model risk reserves to mark all positions on a prudent basis. The GMRC provides oversight and governance of all policy and performs a monthly review of the valuation adjustments.

The minimum regulatory market risk capital requirements for the trading book is presented below for the Group.

	31.12.08	
	Regulatory Capital Requirement \$million	Risk Weighted Assets \$million
<b>Market Risk Capital Requirements for Trading Book</b>		
Interest rate*	257	3,217
Equity	28	350
Options	143	1,792
Collective investment schemes	1	13
Commodity**	45	563
Foreign exchange*,**	59	739
Other	–	–
Internal Models Approach	202	2,531
<b>Total</b>	<b>735</b>	<b>9,205</b>

\* Interest rate and foreign currency capital requirements for positions which are not within the scope of permission to use a VaR model granted by the FSA.

\*\* Commodity and foreign currency covers all business activities across trading and non-trading books.



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### 31 December 2008

The minimum regulatory market risk capital requirement for the trading book is presented below for the Group's significant subsidiaries.

	31.12.08		
	Standard Chartered Bank \$million	Standard Chartered Bank (HK) Ltd \$million	Standard Chartered First Bank Korea Ltd \$million
<b>Market Risk Capital Requirements for Trading Book</b>			
Interest rate*	199	30	–
Equity	28	–	–
Options	149	–	–
Collective investment schemes	1	–	–
Commodity**	45	–	–
Foreign exchange*, **	66	6	–
Other	–	–	–
Internal Models Approach	207	4	64
Total	695	40	64
Market Risk – RWA	8,688	498	800

\* Interest rate and foreign currency capital requirements for positions which are not within the scope of permission to use a VaR model granted by the FSA.

\*\* Commodity and foreign currency covers all business activities across trading and non-trading books.

The tables below show the average, high and low trading and non-trading VAR over the year 2008, and the actual position on 31 December 2008. The highest and lowest VaR are independent and could have occurred on different days.

Trading and Non-trading (VaR at 97.5 per cent, 1 day)

<b>Daily value at risk</b>	31.12.08			
	Average \$million	High \$million	Low \$million	Actual^^ \$million
Interest rate risk*	25.1	37.6	14.2	36.7
Foreign exchange risk	6.0	8.7	3.3	4.8
Commodity risk	1.3	2.4	0.6	2.1
Equity risk	1.4	2.4	0.5	0.8
Total**	31.5^	42.5^	17.8	41.7

Trading (VaR at 97.5 per cent, 1 day)

<b>Daily value at risk</b>	31.12.08			
	Average \$million	High \$million	Low \$million	Actual^^ \$million
Interest rate risk*	12.0	16.0	8.5	9.3
Foreign exchange risk	6.0	8.7	3.3	4.8
Commodity risk	1.3	2.4	0.6	2.1
Equity risk	1.4	2.4	0.5	0.8
Total**	14.2^	20.6	9.2	9.8

\* Interest rate risk VaR includes credit spread risk.

\*\* The total book VaR shown in the tables above is not a sum of the component risks due to offsets between them.

^ Standard Chartered took an economic hedge against the GBP proceeds of the 2008 rights issue into US dollars. The foreign exchange hedge was excluded from VaR. Including it would result in a Group VaR of a peak level of \$71.1 million and average Group VaR for 2008 would have increased by \$1.3 million.

^^ This represents the actual one day VaR as at 31 December.

The highest and lowest VaR are independent and could have occurred on different days



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#### Interest rate risk in the non-trading book

Interest rate risk from across the non-trading book portfolios is transferred to Financial Markets where it is managed by local Asset and Liability Management (ALM) desks under the supervision of local Asset and Liability Committees (ALCO). The ALM desks deal in the market in approved financial instruments in order to manage the net interest rate risk, subject to approved VaR and risk limits.

VaR and stress tests are applied to non-trading book exposures in the same way as for the trading book.

Until 2008 non-trading VaR measured general interest rate price risk only. Specific risk in the non-trading book, or the risk of a price change in an investment due to factors related to the issuer, has also been measured with a separate VaR model since 2008. This VaR model uses the Monte Carlo simulation approach and measures risk to the 97.5 per cent confidence level, the same as the general VaR model. Basis risk, or the risk arising from hedging exposure to one interest rate with exposure to a rate which reprices under slightly different conditions, is also analysed.

Non Trading (VaR at 97.5 per cent, 1 day)

Daily value at risk	31.12.08			
	Average \$million	High \$million	Low \$million	Actual <sup>^</sup> \$million
Interest rate risk *	19.8	39.6	10.6	38.8

<sup>^</sup> This represents the actual one day VaR as at 31 December.

\* Interest rate risk VaR includes credit spread risk.

The highest and lowest VaR are independent and could have occurred on different days.

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## 6. Operational risk

Operational risk is the 'risk of direct or indirect loss due to an event or action resulting from inadequate or failed internal processes, people and systems, or from external events'. The Group seeks to ensure that key operational risks are managed in a timely and effective manner through a framework of policies, procedures and tools to identify, assess, monitor, control and report such risks.

The Group Operational Risk Committee (GORC) supervises and directs the management of operational risks across the Group.

GORC is also responsible for ensuring adequate and appropriate policies and procedures are in place for the identification, assessment, monitoring, control and reporting of operational risks.

Group Operational Risk is responsible for setting the operational risk policy, defining standards for measurement and for

operational risk capital calculation. A Group Operational Risk Assurance function, independent from the businesses, is responsible for deploying and assuring the operational risk management framework, and for monitoring the Group's key operational risk exposures.

Standard Chartered uses The Standardised Approach to assess its regulatory and internal capital requirements for Operational Risk. The Standardised Approach for operational risk capital calculation applies a beta to the average income that was achieved in the previous three years by the Group. Following BIPRU 6, the average income is categorised into FSA business lines in accordance with the Group policy.

The table below details the operational risk capital requirement for Consumer Banking and Wholesale Banking.

	31.12.08 Operational Risk Capital Requirement \$million
Consumer Banking	670
Wholesale Banking	797
Total	1,467

## 7. Immaterial portfolios

### Non Trading Book Equities & Specialised Lending Exposures

For the purposes of BIPRU requirements 11.5.15 & 11.5.11 the holdings of non-trading book equities and the specialised lending portfolio are considered immaterial. At 31 December 2008, non-trading book equity holdings amount to \$2.0 billion and specialised lending exposure total \$1.7 billion, which together total less than 1 per cent of the Group's total exposure.

## 8. Forward looking statements

It is possible that this document could or may contain forward-looking statements that are based on current expectations or beliefs, as well as assumptions about future events. These forward-looking statements can be identified by the fact that they do not relate only to historical or current facts. Forward-looking statements often use words such as anticipate, target, expect, estimate, intend, plan, goal, believe, will, may, should, would, could or other words of similar meaning. Undue reliance should not be placed on any such statements because, by their very nature, they are subject to known and unknown risks and uncertainties and can be affected by other factors that could cause actual results, and the Group's plans and objectives, to differ materially from those expressed or implied in the forward-looking statements.

There are several factors which could cause actual results to differ materially from those expressed or implied in forward looking statements. Among the factors that could cause actual results to differ materially from those described in the forward looking statements are changes in the global, political, economic, business, competitive, market and regulatory forces, future exchange and interest rates, changes in tax rates and future business combinations or dispositions.

The Group undertakes no obligation to revise or update any forward looking statement contained within this document, regardless of whether those statements are affected as a result of new information, future events or otherwise.

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## 9. Acronyms

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ABS	Asset Backed Security
AIRB	Advanced Internal Ratings Based
ALCO	Asset and Liability Committee
ALM	Asset and Liability Management
ARC	Audit and Risk Committee
ARROW	Advanced Risk Response Operating Framework
BIPRU	Prudential Sourcebook for Banks, Building Societies and Investment Firms
CAD2	Capital Adequacy Directive 2
CCF	Credit Conversion Factor
CCR	Counterparty Credit Risk
CDOs	Collateralised Debt Obligations
CMBS	Commercial Mortgage Backed Securities
CMC	Capital Management Committee
CRD	Capital Requirements Directive
CRM	Credit Risk Mitigation
CSA	Credit Support Annexes
EAD	Exposure at Default
ECAI	External Credit Assessment Institutions
FSA	Financial Services Authority
FSV	Forced Sale Value
GALCO	Group Asset and Liability Committee
GCC	Group Credit Committee
GCRO	Group Chief Risk Officer
GMR	Group Market Risk
GMRC	Group Market Risk Committee
GORC	Group Operational Risk Committee
GRC	Group Risk Committee
GSAM	Group Special Asset Management
IAS	International Accounting Standard
ICAAP	Internal Capital Adequacy Assessment Process
ICG	Individual Capital Guidance
IIP	Individual Impairment Provision
IRB	Internal Ratings Based
IFRS	International Financial Reporting Standards
LGD	Loss Given Default
LMC	Liquidity Management Committee
MAC	Model Assessment Committee
MTM	Mark-to-Market
PD	Probability of Default
PIP	Portfolio Impairment Provision
RMBS	Residential Mortgage Backed Securities
RMF	Risk Management Framework
RTO	Risk Type Owner
RWA	Risk Weighted Assets
SME	Small and Medium Enterprises
SPE	Special Purpose Entity
SREP	Supervisory Review and Evaluation Process
VaR	Value at Risk

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## Appendix 1 – Group entities

At 31 December 2008, the principal subsidiary undertakings, all indirectly held and principally engaged in the business of banking and provision of other financial services, were as follows:

Country and place of incorporation or registration	Main areas of operation	Group interest in ordinary share capital %
Standard Chartered Bank, England and Wales	United Kingdom, Middle East, South Asia, Asia Pacific, Americas and, through Group companies, Africa	100.00
Standard Chartered First Bank Korea Limited, Korea	Korea	100.00
Standard Chartered Bank Malaysia Berhad, Malaysia	Malaysia	100.00
Standard Chartered Bank (Pakistan) Limited, Pakistan	Pakistan	98.99
Standard Chartered Bank (Taiwan) Limited, Taiwan	Taiwan	100.00
Standard Chartered Bank (Hong Kong) Limited, Hong Kong	Hong Kong	100.00
Standard Chartered Bank (China) Limited, China	China	100.00
Standard Chartered Bank (Thai) Public Company Limited, Thailand	Thailand	99.97
Standard Chartered Receivables (UK) Limited, England and Wales	United Kingdom	100.00
Standard Chartered Financial Investments Limited, England and Wales	United Kingdom	100.00
Standard Chartered Debt Trading Limited, England and Wales	Hong Kong	100.00
Standard Chartered Private Equity Limited, Hong Kong	Hong Kong	100.00

The below table lists the entities where accounting treatment differs from the prudential treatment.

Associate	Prudential Treatment	Main areas of operation	Group interest in ordinary share capital %
Asia Commercial Bank	Deducted from capital resources	Vietnam	15.00
China Bohai Bank	Deducted from capital resources	China	19.90
Fleming Family & Partners	Proportionally consolidated	Asia	20.00
MCashback Limited	Proportionally consolidated	UK	30.00
mReferral Corporation Limited	Proportionally consolidated	Hong Kong	33.00
Merchant Solutions Limited	Proportionally consolidated	Hong Kong	44.00