HSBC BANK BERMUDA LIMITED

Capital and Risk Management
Pillar 3 Disclosures at 31 December 2016

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Cautionary statement regarding forward-looking statements

The *Capital and Risk Management Pillar 3 Disclosures at 31 December 2016 ('Pillar 3 Disclosures 2016')* contains certain forward-looking statements with respect to the Group's financial condition, results of operations and business.

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

Written and/or oral forward-looking statements may also be made in the periodic reports to the Bermuda Monetary Authority ('BMA'), financial statements of the Group, offering circulars and prospectuses, press releases and other written materials, and in oral statements made by the Bank's Directors, officers or employees to third parties, including financial analysts.

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

Certain defined terms

Unless the context requires otherwise, 'Bank' or 'HSBC Bermuda' means HSBC Bank Bermuda Limited, 'Group' means the Bank together with its subsidiaries, 'HSBC Holdings' means HSBC Holdings plc and 'HSBC' or 'HSBC Group' means HSBC Holdings together with its subsidiaries. The abbreviation 'US$m' represents millions of US dollars.

Contact

Bermuda
Angela Cotterill
Communications Manager
Telephone: +1 (441) 299 6956

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HSBC BANK BERMUDA LIMITED

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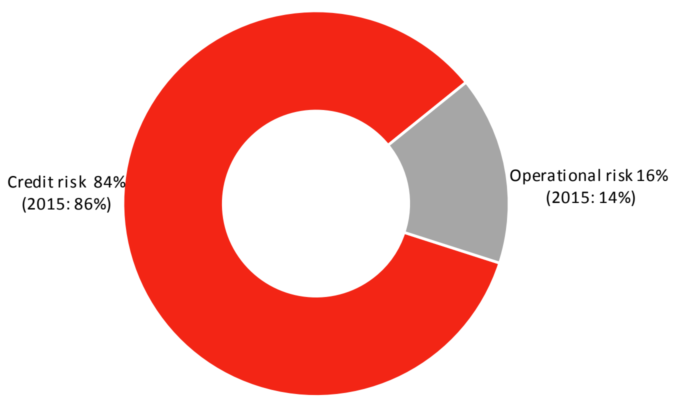
Key regulatory metrics

On 1 January 2015, Basel III came into force. Capital and risk-weighted assets ('RWA's) are calculated and presented on this basis. In our Pillar 3 Disclosures 2014, capital and RWAs at 31 December 2014 were calculated and presented on a Basel II basis. In the table below, 2014 comparative figures are on a Basel II basis.

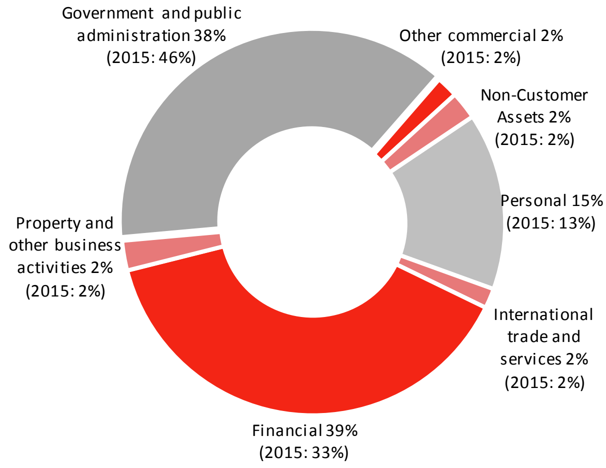
CET1 Capital	CET1 Ratio	Credit RWAs
US$m 821	**23.1%**	**US$m 2,994**
2015: US$m 986	2015: 21.8%	2015: US$m 3,878
2014: US$m 1,027	2014: 23.6%	2014: US$m 3,632

Total Regulatory Capital	Total Capital Ratio	Credit risk RWA density
US$m 850	**23.9%**	**29.5%**
2015: US$m 1,013	2015: 22.4%	2015: 30.9%
2014: US$m 1,061	2014: 24.4%	2014: 30.5%

RWAs by risk type



Credit risk EAD by industry sector



Introduction

HSBC Bermuda is a leading financial services company providing retail and corporate banking, investment and fund administration services to international and local clients. The Bank was founded in 1889, and in 2004 became a member of the HSBC Group, one of the largest banking and financial services organisations in the world.

Regulatory framework for disclosures

The BMA supervises HSBC Bermuda both on an unconsolidated and consolidated basis, and therefore receives information on the capital adequacy of, and sets individual capital guidance for, both the solo bank and the Group as a whole.

At consolidated Group level, we calculated capital for prudential regulatory reporting purposes throughout 2016 using the Basel III framework of the Basel Committee on Banking Supervision ('Basel Committee'), as implemented by the BMA. The Basel framework is structured around three 'pillars'. The Pillar 1 minimum capital requirements and Pillar 2 supervisory review process are complemented by Pillar 3: market discipline.

The BMA implemented Basel II in Bermuda from 1 January 2009 and its rules are set out in The Revised Framework for Regulatory Capital Assessment ('BMA Framework'). Following extensive consultation with industry, the BMA published "Basel III for Bermuda Banks - Final Rule" which became effective on 1 January 2015, thus setting out in a single policy document, the final rules for the enhancement of Capital Adequacy and Liquidity in Bermuda's banking sector. Elements of Basel II and corresponding guidance will remain in force subject to future revisions from the Basel Committee. To the extent that provisions are not superseded by Basel III, the BMA Framework issued on 31st December 2008, will remain applicable.

The revised Basel III capital framework adopts Common Equity Tier 1 Capital ('CET1') as the main form of regulatory capital. Minimum Basel III capital ratios will be CET1 at least 4.5% of Risk Weighted Assets ('RWAs'), Tier 1 Capital at least 6.0% of RWAs and Total Capital at least 8.0% of RWAs. Through Pillar 2 capital ratio add-ons, which form part of the Authority's Prudential Supervision, the Authority has prescribed a total minimum capital ratio in excess of the minimum Basel III requirements. The group has at all times maintained a capital ratio in excess of the minimum regulatory requirement and it is well placed to continue to exceed regulatory requirements in the future.

In addition to the minimum capital ratios and Pillar 2 related add-ons prescribed by the Authority the new Basel III rules also provide for the following capital requirements:

- Capital Conservation Buffer: Ultimately set at 2.5% of RWAs and is composed of CET1 eligible capital. The ratio will be phased in over five years starting at 0.0% in 2015, 0.63% in 2016 and increasing to 2.5% by 2019.
- Countercyclical Buffer: To be composed of CET1 eligible capital. The Authority will assess the need for a buffer of up to 2.5% of RWAs during periods of excessive credit or periods exhibiting other macroeconomic pressures.
- Capital Surcharge for Domestic Systemically Important Banks ('D-SIB'): Can range from 0.5% to 3.0% and is related to factors such as size, interconnectedness, substitutability and complexity. The D-SIB buffer has been determined by the Authority in conjunction with the CARP process in 2015.

The new Basel III rules also address the areas of Leverage and Liquidity. The Authority has adopted a 5% leverage ratio calculated as the ratio of Tier 1 Capital to Total Exposure. The Group is currently in excess of this requirement. The Authority has adopted a Liquidity Coverage Ratio ('LCR') with an implementation timetable consistent with that published by the Basel Committee. The minimum requirement is 60% starting on 1 January 2015 rising in equal annual incremental steps of 10% to reach 100% on 1 January 2019. The LCR is designed to ensure that banks have a sufficient stock of unencumbered high-quality liquid assets ('HQLA') to survive a significant liquidity stress scenario lasting 30 days. The LCR is calculated as HQLA divided by total net cash outflows over the period of the next 30 days. Total net cash outflows are calculated in accordance with rules prescribed by the regulator. The Group is compliant with LCR requirements and is well positioned to continue to be compliant during the ramp up to a 100% ratio.

Pillar 3 Disclosures 2016

The aim of Pillar 3 is to develop disclosures by banks which allow market participants to assess the scope of application of Basel III, capital, particular risk exposures and risk assessment processes, and hence the capital adequacy of the institution. Under the Pillar 3 framework all material risks must be disclosed, enabling a comprehensive view of the institution's risk profile. Disclosures consist of both quantitative and qualitative information and are provided at the consolidated level. Where disclosure has been withheld as proprietary or non-material, as the rules permit, we comment as appropriate.

The BMA permits certain Pillar 3 requirements to be satisfied by inclusion within the financial statements.

Where we adopt this approach, references are provided to the relevant pages of the audited *Consolidated Financial Statements of HSBC Bank Bermuda Limited and its subsidiaries for the financial year ended 31 December 2016.* *('Consolidated Financial Statements 2016').*

Frequency

In accordance with BMA requirements, the Group publishes comprehensive Pillar 3 Disclosures semi-annually.

Media and location

The *Pillar 3 Disclosures 2016* and other information on the Group are available on the Bank's website: www.about.hsbc.bm/hsbc-in-bermuda

Basis of measurement / Comparison with the Consolidated Financial Statements 2016

The *Pillar 3 Disclosures 2016* have been prepared in accordance with regulatory capital adequacy concepts and rules, rather than in accordance with International Financial Reporting Standards ('IFRSs'). Therefore, some information in the *Pillar 3 Disclosures 2016* is not directly comparable with the financial information in the *Consolidated Financial Statements 2016*. This is most pronounced for the credit risk disclosures, where credit exposure is defined as the amount at risk that is estimated by the Group under specified Basel III parameters. This differs from similar information in the *Consolidated Financial Statements 2016*, which is mainly reported as at the balance sheet date and therefore does not reflect the likelihood of future drawings of committed credit lines.

Verification

Whilst the *Pillar 3 Disclosures 2016* are not required to be externally audited, the document has been verified internally in accordance with the Group's policies on disclosure and its financial reporting and governance processes.

Consolidation basis

The basis of consolidation for financial accounting purposes and a list of entities within the Group that are fully consolidated are described on page 8 and page 41 of the *Consolidated Financial Statements 2016*.

Holdings in non-financial entities are risk-weighted, subject to certain overall limits above which a deduction from regulatory capital is required.

Scope of Basel Pillar 1 approaches

The scope of permissible Basel approaches, and those that the Group has adopted, are described below.

Risk category	Scope of permissible approaches	Approach adopted by the Group
Credit risk	The Basel framework applies three approaches of increasing sophistication to the calculation of Pillar 1 credit risk capital requirements. The most basic level, the standardised approach, requires banks to use external credit ratings to determine the risk weightings applied to rated counterparties. Other counterparties are grouped into broad categories and standardised risk weightings are applied to these categories. The next level, the IRB foundation approach, allows banks to calculate their credit risk capital requirements on the basis of their internal assessment of a counterparty's probability of default ('PD'), but subjects their quantified estimates of EAD and LGD to standard supervisory parameters. Finally, the IRB advanced approach allows banks to use their own internal assessment in both determining PD and quantifying EAD and LGD.	For consolidated Group reporting, we have adopted the standardised approach and have no immediate plans to transition from the standardised approach to the advanced approach.
Market risk	Market risk capital requirements can be determined under either the standard rules or the internal models approach. The latter involves the use of internal VAR models to measure market risks and determine the appropriate capital requirement.	We are not required to report under market risk methodologies as our trading book does not exceed the de minimis threshold, resulting in an exemption as defined in the BMA Framework.
Operational risk	The Basel framework includes capital requirements for operational risk, again utilising three levels of sophistication. The capital required under the basic indicator approach is a simple percentage of gross revenues, whereas under the standardised approach, it is one of three different percentages of gross revenues allocated to each of eight defined business lines. Both these approaches use an average of the last three financial years' revenues. Finally, the advanced measurement approach uses the banks' own statistical analysis and modelling of operational risk data to determine capital requirements.	We have adopted the standardised approach in determining the consolidated operational risk capital requirement and have no immediate plans to transition from the standardised approach to the advanced approach.

Capital and Risk

Capital management

Table 1: Consolidated capital structure

	At 31 December 2016 US$m	At 31 December 2015 US$m
Composition of regulatory capital		
Total Common Equity Tier 1 Capital (CET1)	**821**	986
Called up share capital[1]	**30**	30
Share premium[1]	**389**	389
Retained earnings	**402**	567
Tier 2 capital	**29**	28
Collective impairment allowances	**29**	28
Regulatory Adjustments:	**-**	(1)
Total regulatory capital	**850**	1,013

	At 31 December 2016		At 31 December 2015	
	RWAs US$m	**Capital required [2] US$m**	RWAs US$m	Capital required [2] US$m
Credit risk	**2,994**	**240**	3,878	310
Operational risk	**563**	**45**	636	51
Total	**3,557**	**285**	4,514	361

1 *The terms and conditions of ordinary share capital and share premium can be found on page 64 of the Consolidated Financial Statements 2016.*

2 *'Capital required' represents the Pillar 1 capital charge calculated at 8% of risk-weighted assets ('RWAs').*

Table 2: Capital ratios – Consolidated Group and bank subsidiaries

	At 31 December 2016		At 31 December 2015	
	Group[1] %	**HSBC Bermuda %**	Group %	HSBC Bermuda %
CET1 ratio	**23.1**	**22.6**	21.8	20.8
Total capital ratio	**23.9**	**23.4**	22.4	21.5

1 *The Group does not have any banking operations outside of Bermuda.*

Capital management and allocation

Our approach to managing Group capital has been to ensure that we exceed current regulatory requirements and are well placed to meet expected future requirements. The objectives of the Bank's internal capital management policies are to maintain creditor and market confidence, to sustain future development of the business, and to meet regulatory capital requirements at all times. In addition, these objectives are designed to:

- maximise the financial resources of the Bank so that it can be a source of strength to all its subsidiaries;
- ensure that the Bank generates sufficient income to pay dividends; and
- minimise any structural impediments to the free flow of capital resources, so that capital can be deployed in those businesses offering the best returns to the Bank.

In order to meet these objectives, the Bank develops capital plans which identify future capital requirements and/or surpluses. Capital plans are part of the Annual Operating Plan ('AOP') process and are used to ensure that the Group and the Bank continue to be adequately capitalised in the future. The capital plan contains actual data plus forecasts by quarter. In addition, supporting commentary is included to describe or include:

- projected timing and nature of future dividend payments;
- any known (or possible) requests for capital in addition to previously submitted capital plans;
- explanation for any material changes in current or projected risk-weighted assets;
- any plans, including amounts and timing, for local capital issuance;
- any plans with respect to repayment or refinancing of maturing capital; and
- any other information or assumptions considered relevant from an HSBC Group perspective.

The Bank submits a capital plan annually for the following year to the Audit and Risk Committee and the Board of Directors.

The responsibility for global capital allocation principles and decisions rests with the HSBC Group Management Board ('GMB'). Through its structured internal governance processes, HSBC maintains discipline over its investment and capital allocation decisions, seeking to ensure that returns on investment are adequate after taking account of capital costs.

Transferability of capital within the Group

Each subsidiary manages its own capital required to support planned business growth and meet its local regulatory requirements within the context of the approved annual Group capital plan. In accordance with HSBC's Capital Management Framework, capital generated by subsidiaries in excess of planned requirements is returned to HSBC, normally by way of dividends. However, capital cannot be transferred from a subsidiary if the transfer was to cause the subsidiary to no longer have capital to cover its minimum capital requirement. Own funds in excess of the minimum capital requirement are potentially transferable as long as there is no current or foreseeable material practical or legal impediment to the prompt transfer of funds.

The Bank holds investments in subsidiaries primarily in Bermuda and Cayman. Currently the Group holds levels of capital well in excess of regulatory requirements. There are no legal constraints on the transfer of profits, royalties, fees, or on the repatriation of invested capital, from any regions the Group operates in.

In addition, the Bank does not hold assets that are normally subject to restrictions such as:

- funds that are dedicated to policyholders;
- funds subject to local exchange controls or other national restrictions;
- subordinated debt or other hybrid instruments that legally constitute liabilities of the issuing entity hence not fully transferable; and
- minority interests.

As a consequence of this, there is no material practical or legal impediment to the transfer of capital. Nevertheless, the Bank's assessment of its levels of surplus capital includes, but is not limited to, the following factors:

- capital adequacy standards of local and external regulatory authority/authorities;
- capital needs for approved planned business expansion;
- capital effects of any approved acquisition /divestment or other exceptional corporate action;
- the level of distributable reserves; and
- tax efficiency of dividend distributions.

Finally, transferability of capital under stressed conditions is assessed as part of the stress testing process.

Internal capital adequacy assessment

The Group assesses the adequacy of capital by considering the resources necessary to cover unexpected losses arising from discretionary risks, such as credit risk and market risk, or non-discretionary risks, such as operational risk and reputational risk. The framework, together with related policies, define the Capital Assessment and Risk Profile ('CARP') process by which the Group examines the risk profile from both regulatory and economic capital viewpoints and ensures that the level of capital:

- remains sufficient to support the Group's risk profile and outstanding commitments;
- exceeds the formal minimum regulatory capital requirements by an internally determined margin;
- allows the bank to remain adequately capitalised in the event of a severe economic downturn stress scenario; and
- remains consistent with our strategic and operational goals.

The minimum regulatory capital that the Group is required to hold is determined by the rules established by the BMA.

The Group has reviewed and determined via the annual capital plan a minimum internal capital target in excess of the minimum regulatory capital requirement agreed between the Group and the BMA at the completion of the Pillar 2 supervisory assessment process annually.

Stress testing

Stress testing and scenario analysis are central to the monitoring of the nature of risks, helping us to understand the sensitivities of the core assumptions in our capital plans to the adverse effect of extreme but plausible events. Stress testing allows us to formulate our response and mitigate risk in advance of actual conditions exhibiting the stresses identified in the scenarios. Market stresses which occurred throughout the financial system in recent years have been used to inform our capital planning processes and enhance the stress scenarios we employ. The Bank also participates in the Standardised Stress Test required by the BMA as part of the Pillar 2 CARP process. We take into account the results of all such stress testing when assessing our internal and regulatory capital requirements.

Risk management objectives and policies

Overview

All our activities involve to varying degrees the measurement, evaluation, acceptance and management of risks. As risk is not static, our risk profile continually alters as a result of change in the scope and impact of a wide range of factors, from geopolitical to transactional. Our risk management framework is designed for the continuous monitoring of the risk environment and an integrated evaluation of risks and their interactions.

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

Risk management is embedded through:

- a historically strong risk culture, with personal accountability for decisions;
- a formal governance structure, with a clear, well understood framework of risk ownership, standards and policy;
- the alignment of risk and business objectives, with integration of risk appetite into business planning and capital management; and
- an independent and expert global risk function ('Global Risk').

Risk culture

HSBC has long recognised the importance of a strong risk culture, the fostering of which is a key responsibility of senior executives. Our risk culture may be characterised as conservative, control-based and rooted in experience. It is reinforced by our HSBC Values and our Global Standards, and forms the basis from which the Board, advised by the Risk Management Committee ('RMC'), establishes the Group's risk appetite and the risk management framework. These are instrumental in aligning the behaviour of individuals with the Group's attitude to assuming and managing risk.

Our global standards set the tone from the top, and are central to our approach to balancing risk and reward. All staff play a role in the management of risk as part of our 'three lines of defence' model. We have a system of personal, not collective, authorities for lending decisions. Personal accountability, reinforced by our HSBC Values, helps sustain a disciplined and constructive culture of risk management and control throughout HSBC.

Risk governance

Our strong risk governance reflects the importance placed by the Board and the Risk Management Meeting ('RMM') on shaping the Group's risk strategy and managing risks effectively.

Strong risk governance is supported by:

- a clear policy framework of risk ownership;
- a risk appetite process through which the types and levels of risk that we are prepared to accept in executing our strategy are articulated and monitored;
- performance scorecards cascaded from the GMB that align business and risk objectives; and
- the accountability of all staff for identifying, assessing and managing risks within the scope of their assigned responsibilities.

Risk appetite is a key component of our management of risk and is discussed in more detail below.

Organisation and responsibilities

An established framework of risk ownership and documented standards, policy and procedures, supports effective risk management and internal control systems.

The Board of Directors ('Board')

The role of the Board is to provide entrepreneurial leadership of the Group within a framework of prudent and effective controls which enables risks to be assessed and managed. The Board as a whole is collectively responsible for the long-term success of the Group and delivery of sustainable value to shareholders. It sets the strategy and risk appetite for the Group and approves the capital and operating plans presented by management for the achievement of the strategic objectives it has set. Implementation of the strategy set by the Board is delegated to the Bank's Executive Management Committee which is led by the Bank's CEO.

Audit and Risk Committee

The Audit and Risk Committee is accountable to the Board and has non-executive responsibility for oversight of and advice to the Board on matters relating to financial reporting and high-level risk-related matters and risk governance. The responsibilities of the Audit and Risk Committee are clearly set out in its Terms of Reference, which are approved by the Board and are aligned to the HSBC Group's core terms of reference for subsidiary audit and risk committees.

Executive Management Committee ('ExCo')

The Board has delegated to ExCo accountability for the day to day management of the Group. The responsibilities of ExCo are clearly set out in its Terms of Reference, which are approved by the Board and include its primary responsibility for developing and implementing the Group's operating and strategic plans.

In addition, the following are the principal management committees discharging duties and responsibilities for the risk management framework of the Group:

Risk Management Meeting ('RMM')

The RMM is the formal governance committee established to provide recommendations and advice requested to the Bank's Chief Risk Officer on enterprise-wide management of all risks and the policies and guidelines for the management of risk within the Group as set out in the Group's Enterprise Risk Management Framework, referenced in the Global Standards Manual ('GSM') Chapter 2.

The RMM will serve as the governance body for enterprise-wide risk management with particular focus on risk culture, risk appetite, risk profile and integration of risk management into the Bank's strategic objectives.

Financial Crime Compliance Executive Committee ('FCCExCo')

The FCCExCo provides on-going oversight, management and communication of Financial Crime Compliance ('FCC') risks, issues and changes impacting business lines operating within Bermuda and Cayman. FCC includes Anti-Money Laundering ('AML'), Sanctions and Anti-Bribery & Corruption ('ABC'). The FCCExCo is accountable to the RMM and to the Regional AML, Sanctions or ABC Exco/Committee, as appropriate / as required.

Asset Liability Management Committee ('ALCO')

One of the specific responsibilities of ALCO is to review all balance sheet risks on a systematic basis to ensure that adequate controls exist and that the related returns fully reflect these risks and that adequate capital is allocated to support these risks. ALCO is also responsible for ensuring prudent management of the following balance sheet risks: interest rate risk, liquidity risk, funding risk and foreign exchange risk. In addition, ALCO is also responsible for evaluating and communicating the impact of new capital and liquidity regulatory requirements.

Global Standards In-Country Execution Committee (GSICEC)

The GSICEC manages the execution of the Global Standards Programme, across all lines of business for the Group.

HSBC policy

HSBC's risk management policies are encapsulated in the GSM and cascaded in a hierarchy of policy manuals throughout HSBC to communicate standards, instructions and guidance to employees. They support the formation of risk appetite and establish procedures for monitoring and controlling risks, with timely and reliable reporting to management. HSBC regularly reviews and updates its risk management policies, systems and methodologies to reflect changes in law, regulation, markets, products and emerging best practice. Functional Instruction Manuals ('FIM') are the vehicles by which HSBC policies on risk and capital governance are articulated and indeed are the operating platforms for HSBC. All employees are required to have read and adhere to GSM and relevant FIMs.

Each business area is responsible for creating and maintaining its own business-specific procedures. Staff are trained using the procedures which are reviewed on a regular basis. The Internal Control department performs independent regular reviews and highlights any procedural gaps. In addition, HSBC Group Audit conducts periodic audits of functions and businesses.

Risk appetite

The Group's risk appetite framework, which is approved annually, describes the quantum and types of risk the Group is prepared to take in executing its strategy. It is central to an integrated approach to risk, capital and business management and supports the Group in achieving its return on equity objectives, as well as being a key element of meeting the Group's obligations under the supervisory review process of Basel III. Our approach is designed to reinforce the integration of risk considerations into key business goals and planning processes.

The formulation of risk appetite considers the Group's risk capacity, its financial position, the strength of its core earnings and the resilience of its reputation and brand. It is expressed both qualitatively, describing which risks are taken and why, and quantitatively. Senior management attach quantitative metrics within the risk appetite framework in order that:

- underlying business activity may be guided and controlled so it continues to align with Risk appetite;
- key assumptions underpinning the risk appetite can be monitored and, as necessary, adjusted through subsequent business plan iterations; and
- anticipated mitigating business decisions are flagged and acted upon promptly.

The risk appetite framework covers both the beneficial and adverse aspects of risk. It is used as the basis for risk evaluation, capital ratio monitoring and performance measurement for the Group. Risk appetite is executed through the operational limits that control the levels of risk run by the Group and customer groups and is measured using risk-adjusted performance metrics.

Further details on risk management may be found on pages 50 to 61 of the *Consolidated Financial Statements 2016*.

Credit risk

Overview and objectives

Credit risk is the risk of financial loss if a customer or counterparty fails to meet a payment obligation under a contract. It arises principally from direct lending, trade finance and off-balance sheet products such as counterparty risk guarantees and credit derivatives, and from holdings of debt and other securities. Credit risk generates the largest regulatory capital requirement of the risks we incur.

The principal objectives of our credit risk management function are:

- to maintain a strong culture of responsible lending, and a robust credit risk policy and control framework;
- to both partner and challenge our businesses in defining, implementing and continually re-evaluating our credit risk appetite under actual and stress scenario conditions; and
- to ensure there is independent, expert scrutiny of credit risks, their costs and their mitigation.

Credit Risk Management

The Group is responsible for the formulation of high-level credit policies, based on HSBC policies. It also reviews the application of HSBC's universal credit risk rating system. HSBC's credit risk limits to counterparties in the financial and government sectors are managed centrally to optimise the use of credit availability and to avoid excessive risk concentration.

Cross-border risk is controlled through the imposition of country limits, which are determined by taking into account economic and political factors, and local business knowledge, with sub-limits by maturity and type of business. Transactions with counterparties in higher risk countries are considered on a case-by-case basis.

Within the overall framework of the HSBC policy, the Group has an established risk management process encompassing credit approvals, control of exposures (including those to borrowers in financial difficulty), credit policy direction to business units and the monitoring and reporting of exposures both on an individual and a portfolio basis.

Group management is responsible for the quality of its credit portfolios and follows a credit process involving delegated approval authorities and credit procedures, the objective of which is to build and maintain risk assets of high quality. Regular reviews are undertaken to assess and evaluate levels of risk concentration, including those to individual industry sectors and products. Special attention is paid to the management of problematic loans. Where deemed appropriate, specialist units are established to provide intensive management and control to maximise recoveries of assets, which show early signs of potential impairment.

The following pages set out credit risk exposures, RWAs and regulatory capital requirements at 31 December 2016, together with 31 December 2015 comparatives.

Table 3: Credit risk – summary

	As at 31 December 2016			
	Average exposure [1] US$m	**Exposure value US$m**	**Risk weighted assets US$m**	**Capital required [2] US$m**
Standardised approach				
Cash	**25**	**30**	**-**	**-**
Sovereigns and multilateral development banks	**4,042**	**3,503**	**53**	**4**
Public sector entities	**152**	**235**	**94**	**8**
Corporates	**643**	**515**	**412**	**33**
Banks and securities firms	**3,928**	**3,548**	**969**	**78**
Retail loans	**280**	**276**	**222**	**18**
Residential mortgages	**1,081**	**1,170**	**461**	**38**
Commercial mortgages	**153**	**180**	**180**	**14**
Past due loans	**290**	**95**	**143**	**11**
Other balance sheet exposures [3]	**263**	**238**	**238**	**19**
Non-market related off balance sheet credit	**349**	**313**	**192**	**15**
Market-related off balance sheet credit	**47**	**56**	**30**	**2**
Total	**11,253**	**10,159**	**2,994**	**240**

	As at 31 December 2015			
	Average exposure [1] US$m	Exposure value US$m	Risk weighted assets US$m	Capital required [2] US$m
Standardised approach				
Cash	26	26	-	-
Sovereigns and multilateral development banks	4,498	5,441	200	16
Public sector entities	127	155	79	6
Corporates	1,003	735	454	36
Banks and securities firms	4,127	3,521	933	75
Retail loans	285	285	285	23
Residential mortgages	1,102	1,090	623	50
Commercial mortgages	119	142	142	11
Past due loans	427	359	539	43
Other balance sheet exposures [3]	292	248	248	20
Non-market related off balance sheet credit	396	487	355	28
Market-related off balance sheet credit	60	45	20	2
Total	12,462	12,534	3,878	310

1 *Average exposure is calculated by aggregating exposure value of the last five quarters and dividing by five.*

2 *'Capital required' represents the Pillar 1 capital charge calculated at 8% of risk-weighted assets ('RWAs').*

3 *Includes such items as Property plant and equipment, prepayments and accruals, Assets held for sale.*

Exposures are allocated to a region, based on the country of incorporation of the Group subsidiary where the exposure was originated.

Table 4: Credit risk exposure – by geographical region

	Exposure value				
	Bermuda US$m	Cayman US$m	Total US$m	RWAs US$m	RWA density %
At 31 December 2016					
Standardised approach					
Cash	**30**	**-**	**30**	**-**	**-**
Sovereigns and multilateral development banks	**3,503**	**-**	**3,503**	**53**	**2**
Public sector entities	**235**	**-**	**235**	**94**	**53**
Corporates	**515**	**-**	**515**	**412**	**74**
Banks and securities firms	**3,527**	**21**	**3,548**	**969**	**27**
Retail loans	**276**	**-**	**276**	**222**	**80**
Residential mortgages	**1,170**	**-**	**1,170**	**461**	**39**
Commercial mortgages	**166**	**14**	**180**	**180**	**100**
Past due loans	**94**	**1**	**95**	**143**	**151**
Other balance sheet exposures	**238**	**-**	**238**	**238**	**100**
Non-market related off balance sheet credit	**313**	**-**	**313**	**192**	**61**
Market-related off balance sheet credit	**56**	**-**	**56**	**30**	**54**
Total	**10,123**	**36**	**10,159**	**2,994**	**29**
At 31 December 2015					
Standardised approach					
Cash	26	-	26	-	-
Sovereigns and multilateral development banks	5,441	-	5,441	200	4
Public sector entities	155	-	155	79	51
Corporates	735	-	735	454	62
Banks and securities firms	3,494	27	3,521	933	26
Retail loans	285	-	285	285	100
Residential mortgages	1,090	-	1,090	623	57
Commercial mortgages	126	16	142	142	100
Past due loans	351	8	359	539	150
Other balance sheet exposures	245	3	248	248	100
Non-market related off balance sheet credit	487	-	487	355	73
Market-related off balance sheet credit	45	-	45	20	44
Total	12,480	54	12,534	3,878	31

The table below presents an analysis of credit risk exposures by industry sector.

Table 5: Credit risk exposure – by industry sector

	Personal US$m	Manu-facturing US$m	International trade and services US$m	Property and other business activities US$m	Government and public administration US$m	Other commercial US$m	Financial US$m	Non-customer assets US$m	Total US$m
At 31 December 2016									
Standardised approach									
Cash	**-**	**-**	**-**	**-**	**-**	**-**	**30**	**-**	**30**
Sovereigns and multilateral development banks	**-**	**-**	**-**	**-**	**3,503**	**-**	**-**	**-**	**3,503**
Public sector entities	**-**	**-**	**-**	**-**	**235**	**-**	**-**	**-**	**235**
Corporates	**-**	**-**	**162**	**29**	**84**	**153**	**87**	**-**	**515**
Banks and securities firms	**-**	**-**	**-**	**-**	**-**	**-**	**3,548**	**-**	**3,548**
Retail loans	**276**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**276**
Residential mortgages	**1,170**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1,170**
Commercial mortgages	**3**	**-**	**-**	**165**	**6**	**-**	**6**	**-**	**180**
Past due loans	**64**	**-**	**3**	**24**	**1**	**1**	**2**	**-**	**95**
Other balance sheet exposures	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**238**	**238**
Non-market related off balance sheet credit	**6**	**29**	**4**	**37**	**2**	**28**	**207**	**-**	**313**
Market-related off balance sheet credit	**-**	**-**	**-**	**-**	**-**	**-**	**56**	**-**	**56**
Total	**1,519**	**29**	**169**	**255**	**3,831**	**182**	**3,936**	**238**	**10,159**
At 31 December 2015									
Standardised approach									
Cash	-	-	-	-	-	-	26	-	26
Sovereigns and multilateral development banks	-	-	-	-	5,441	-	-	-	5,441
Public sector entities	-	-	-	-	155	-	-	-	155
Corporates	-	85	150	22	86	188	204	-	735
Banks and securities firms	-	-	-	-	-	-	3,521	-	3,521
Retail loans	285	-	-	-	-	-	-	-	285
Residential mortgages	1,090	-	-	-	-	-	-	-	1,090
Commercial mortgages	4	-	-	124	7	-	7	-	142
Past due loans	237	-	34	78	2	3	5	-	359
Other balance sheet exposures	-	-	-	-	-	-	-	248	248
Non-market related off balance sheet credit	6	-	35	39	77	10	320	-	487
Market-related off balance sheet credit	-	-	-	-	-	-	45	-	45
Total	1,622	85	219	263	5,768	201	4,128	248	12,534

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

Table 6: Credit risk exposure – by residual maturity

	Exposure value			
	Less than 1 year US$m	Between 1 and 5 years US$m	More than 5 years US$m	Total US$m
At 31 December 2016				
Standardised approach				
Cash	**30**	**-**	**-**	**30**
Sovereigns and multilateral development banks	**1,102**	**2,376**	**25**	**3,503**
Public sector entities	**-**	**235**	**-**	**235**
Corporates	**58**	**320**	**137**	**515**
Banks and securities firms	**2,153**	**1,373**	**22**	**3,548**
Retail loans	**69**	**110**	**97**	**276**
Residential mortgages	**6**	**29**	**1,135**	**1,170**
Commercial mortgages	**61**	**47**	**72**	**180**
Past due loans	**26**	**2**	**67**	**95**
Other balance sheet exposures	**74**	**12**	**152**	**238**
Non-market related off balance sheet credit	**151**	**156**	**6**	**313**
Market-related off balance sheet credit	**56**	**-**		**56**
Total	**3,786**	**4,660**	**1,713**	**10,159**
At 31 December 2015				
Standardised approach				
Cash	26	-	-	26
Sovereigns and multilateral development banks	2,260	3,181	-	5,441
Public sector entities	70	85	-	155
Corporates	172	381	182	735
Banks and securities firms	2,248	1,251	22	3,521
Retail loans	83	98	104	285
Residential mortgages	16	39	1,035	1,090
Commercial mortgages	40	25	77	142
Past due loans	103	14	242	359
Other balance sheet exposures	89	-	159	248
Non-market related off balance sheet credit	216	265	6	487
Market-related off balance sheet credit	45	-	-	45
Total	5,368	5,339	1,827	12,534

Application of the standardised approach

The standardised approach requires banks to use risk assessments prepared by External Credit Assessment Institutions ('ECAIs') or Export Credit Agencies to determine the risk weightings applied to rated counterparties. ECAI risk assessments are used as part of the determination of the risk weightings for the following classes of exposure:

- Sovereigns and multilateral development banks;
- Public sector entities;
- Corporates; and
- Banks and securities firms.

All other exposure classes are assigned risk weightings according to rules prescribed in the BMA Framework.

For the purpose of Pillar 1 reporting to the regulator, the Group has nominated Standard & Poor's ('S&P') Rating Group as the primary ECAI. S&P ratings will be used in all cases where a rating exists for either the instrument or issuer. When no S&P rating exists, Moody's ratings will be used for either the instrument or issuer. If no rating exists for an instrument or issuer for S&P in the 1st instance or Moody's in the 2nd instance, then the Fitch rating will be used. If no S&P, Moody's or Fitch rating exists for an instrument or issuer then the security will be considered unrated. The Group has not nominated any Export Credit Agencies.

Data files of external ratings from the nominated ECAI are matched with customer records in the Group's centralised credit database. When calculating the risk-weighted value of any exposure under the standardised approach, the customer in question is identified and matched to a rating, according to the BMA's rating selection rules. The relevant risk rate is then derived using the BMA's prescribed credit quality step mapping.

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

The table on the following page sets out the distribution of standardised exposures across credit quality steps for all exposures to sovereigns and multilateral development banks, public sector entities, corporates, and banks and securities firms.

Table 7: Credit risk exposure – by credit quality step

At 31 December 2016	Exposure value before credit risk mitigation US$m	Credit risk mitigation US$m	Exposure value after credit risk mitigation US$m	Risk weighted assets US$m
Sovereigns and multilateral development banks				
Credit quality step 1	**3,240**	**250**	**3,490**	**-**
Credit quality step 2	**263**	**-**	**263**	**53**
	3,503	**250**	**3,753**	**53**
Public sector entities				
Credit quality step 1	**165**	**(69)**	**96**	**19**
Credit quality step 2	**70**	**-**	**70**	**35**
Credit quality step 3	**-**	**40**	**40**	**40**
	235	**(29)**	**206**	**94**
Corporates				**-**
Credit quality step 1	**67**	**(67)**	**-**	**-**
Credit quality step 2	**-**	**-**	**-**	**-**
Credit quality step 3	**54**	**(47)**	**7**	**7**
Credit quality step 4	**-**	**-**	**-**	**-**
Credit quality step 5	**140**	**(40)**	**100**	**151**
Credit quality step unrated	**254**	**-**	**254**	**254**
	515	**(154)**	**361**	**412**
Banks and securities firms [1]				
Credit quality step 1	**1,874**	**(67)**	**1,807**	**361**
Credit quality step 2	**1,544**	**-**	**1,544**	**582**
Credit quality step 3	**118**	**-**	**118**	**24**
Credit quality step unrated	**12**	**-**	**12**	**2**
	3,548	**(67)**	**3,481**	**969**
At 31 December 2015				
Sovereigns and multilateral development banks				
Credit quality step 1	4,443	234	4,677	-
Credit quality step 2	998	-	998	200
	5,441	234	5,675	200
Public sector entities				
Credit quality step 1	155	-	155	31
Credit quality step 2	-	-	-	-
Credit quality step 3	-	49	49	48
	155	49	204	79
Corporates				-
Credit quality step 1	186	(186)	-	-
Credit quality step 2	-	-	-	-
Credit quality step 3	50	(48)	2	2
Credit quality step 4	241	(48)	192	194
Credit quality step 5	-	-	-	-
Credit quality step unrated	258	-	258	258
	735	(282)	452	454
Banks and securities firms [1]				
Credit quality step 1	2,096	-	2,096	419
Credit quality step 2	976	-	976	329
Credit quality step 3	327	-	327	133
Credit quality step unrated	122	-	122	52
	3,521	-	3,521	933

Table 8: Credit risk exposure – credit risk mitigation

At 31 December 2016	**Exposure value US$m**	**Exposure value covered by eligible financial collateral[1] US$m**	**Exposure value covered by guarantees [2] US$m**
Standardised approach			
Cash	**30**	**-**	**-**
Sovereigns and multilateral development banks	**3,503**	**-**	**-**
Public sector entities	**235**	**-**	**69**
Corporates	**515**	**-**	**154**
Banks and securities firms	**3,548**	**-**	**67**
Retail loans	**276**	**-**	**-**
Residential mortgages	**1,170**	**-**	**-**
Commercial mortgages	**180**	**-**	**-**
Past due loans	**95**	**-**	**-**
Other balance sheet exposures	**238**	**-**	**-**
Non-market related off balance sheet credit exposures	**313**	**114**	**-**
Market-related off balance sheet credit exposures	**56**	**-**	**-**
Total	**10,159**	**114**	**290**

At 31 December 2015			
Standardised approach			
Cash	26	-	-
Sovereigns and multilateral development banks	5,441	-	-
Public sector entities	155	-	-
Corporates	735	-	282
Banks and securities firms	3,521	-	-
Retail loans	285	-	-
Residential mortgages	1,090	-	-
Commercial mortgages	142	-	-
Past due loans	359	-	-
Other balance sheet exposures	248	-	-
Non-market related off balance sheet credit exposures	487	89	-
Market-related off balance sheet credit exposures	45	-	-
Total	12,534	89	282

[1] *Eligible Financial Collateral includes cash (as well as other comparable instruments) and debt securities*

[2] *Credit risk mitigation is applied to claims guaranteed by Sovereigns (rated AA- or above) and Public sector entities rated BBB.*

Credit risk mitigation ('CRM')

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

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

We have safeguards designed to ensure that exposures to providers or types of risk mitigation do not become excessive in relation to the Group's capital resources.

CRM techniques that are currently applied by the Group reduce or transfer credit risk primarily by affecting the risk weightings through collateralisation or the use of guarantees.

The most common method of mitigating credit risk is to take collateral. Usually, in the residential and commercial real estate businesses, a mortgage over the property is taken to help secure claims. In the commercial and industrial sectors, charges are created over business assets such as premises, stock and debtors. Facilities to small and medium enterprises are commonly granted against guarantees given by their owners and/or directors. Guarantees from third parties can arise where the Group extends facilities without the benefit of any alternative form of security, e.g. where it issues a bid or performance bond in favour of a non-customer at the request of another bank.

The most commonly used collateral for off- balance sheet exposures include cash and fixed deposit accounts held with the Bank, investment in HSBC Corporate Money Fund or other investment portfolios and guarantees.

Recognition of risk mitigation under the standardised approach

Where credit risk mitigation is available in the form of an eligible guarantee, non-financial collateral, or credit derivatives, the exposure is divided into covered and uncovered portions. The covered portion, which is determined after applying an appropriate 'haircut' for currency and maturity mismatch (and for omission of restructuring clauses for credit derivatives, where appropriate) to the amount of the protection provided, attracts the risk weight of the protection provider. The uncovered portion attracts the risk weight of the obligor. For exposures fully or partially covered by eligible financial collateral, the value of the exposure is adjusted under the Financial Collateral Comprehensive Method ('FCCM') using supervisory volatility adjustments, including those arising from currency mismatch, which are determined by the specific type of collateral (and, in the case of eligible debt securities, their credit quality) and its liquidation period. The adjusted exposure value is subject to the risk weight of the obligor.

Table 8 sets out the credit risk mitigation for exposures under the standardised approach, expressed as the exposure value covered by the credit risk mitigant, and table 7 sets out the distribution of standardised exposures across credit quality steps.

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

Past due and impaired loans

Loans are classified in accordance with the BMA Framework.

The approach followed for specific and collective allowances and statistical methods can be found on pages 12 and 13 of the *Consolidated Financial Statements 2016*. Details of allowances for loan impairment at 31 December 2016 and 2015 can be found on page 35 of the *Consolidated Financial Statements 2016*.

An analysis by geographical region shows that the majority of the loan impairment is provided for loans in Bermuda.

Table 9: Reconciliation of changes in the allowance for loan impairment

	At 31 December 2016		
	Individually assessed loans US$m	**Collectively assessed loans US$m**	**Total US$m**
Allowance for loan impairment			
Opening balance at 1 January 2016	**92**	**28**	**120**
Uncollectible amounts written off during the period	**(66)**	**-**	**(66)**
Recoveries during the period	**-**	**(1)**	**(1)**
Net impairment charges during the period	**17**	**2**	**19**
Balance at 31 December 2016	**43**	**29**	**72**

Further details of loans that are past due up to 90 days and more than 90 days by counterparty type are set out in the table below.

Table 10: Past due loans and allowance for loan impairment by counterparty type

	Residential mortgages US$m	**Commercial mortgages US$m**	**Other US$m**	**Total US$m**
At 31 December 2016				
Past due loans (past due up to 90 days)	**43**	**-**	**11**	**54**
Impaired loans (past due more than 90 days)	**232**	**58**	**50**	**340**
Individual and collective allowance for all loan impairments	**(49)**	**(12)**	**(11)**	**(72)**
At 31 December 2015				
Past due loans (past due up to 90 days)	44	3	10	57
Impaired loans (past due more than 90 days)	260	102	91	453
Individual and collective allowance for all loan impairments	(55)	(25)	(40)	(120)

Market risk

Overview and objectives

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

The Group is not required to report under market risk methodologies as its trading book does not exceed the de minimis threshold, resulting in an exemption as defined in the BMA Framework.

The objectives of the Group's market risk management are to manage and control market risk exposures in order to optimise return within the Group's risk appetite.

Organisation and responsibilities

The management of market risk is undertaken mainly in Global Markets using risk limits approved by the HSBC Group Management Board. Limits are set for portfolios, products and risk types. Market liquidity is an important factor taken into account when setting limits. Final approval of limits resides with local entity Boards.

Global Risk is responsible for our market risk management policies and measurement techniques. The Group has an independent market risk management and control function which is responsible for measuring market risk exposures in accordance with the policies defined by Global Risk, and for monitoring and reporting exposures against the prescribed limits on a daily basis. Interest rate risk in the banking book ('IRRBB') is defined as the exposure of our non-trading products to interest rates. This risk arises in such portfolios principally from mismatches between the future yield on assets and their funding costs, as a result of interest rate changes. Analysis of this risk is complicated by behavioural assumptions regarding the economic duration of liabilities which are contractually repayable on demand such as current accounts.

The Group assesses the structural interest rate risks which arise in the businesses and transfers these risks to the Group's balance sheet management team. When the behavioural characteristics of a product differ from its contractual characteristics, the behavioural characteristics are assessed to determine the appropriate underlying interest rate risk. ALCO regularly monitors all such behavioural assumptions and interest rate risk positions to ensure they comply with established interest rate risk limits.

Measurement and monitoring

In the course of managing interest rate risk, quantitative techniques and simulation models are used where appropriate to identify the potential net interest income and market value effects of these interest rate positions under different scenarios. The primary objective of such interest rate risk management is to limit potential adverse effects of interest rate movements on net interest income whilst balancing the effect on the current net operating income stream and unrealised mark-to-market positions.

A principal part of the Group's management of market risk is to monitor the sensitivity of projected net interest income under varying interest rate scenarios (simulation modelling). The Group aims to mitigate the effect of prospective interest rate movements, which could reduce future net interest income, while balancing the cost of such hedging activities on the current net operating income stream.

The models measure the effect on net interest income due to parallel and ramp movements of plus or minus 100 basis points in all yield curves. The results represent the effect of the pro-forma movements in net interest income based on the projected yield curve scenarios and the Group's current interest rate risk profile.

For model results see page 53 of the *Consolidated Financial Statements 2016*.

The Group's foreign exchange exposure comprises trading exposures and structural foreign currency translation exposure. Structural currency risk exists for the Group in holding subsidiary company investments whose functional currencies are not the US dollar or Bermuda dollar.

Operational risk

Overview and objectives

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

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

The objective of the Group’s operational risk management is to manage and control operational risk in a cost-effective manner within targeted levels of operational risk consistent with the Group’s risk appetite.

Organisation and responsibilities

The Operational Risk Management Framework (‘ORMF’) defines the minimum standards and governance structure for operational risk and internal control across the Group. Central to the ORMF is the concept of the ‘Three lines of defence’ model used to manage risk.

The First Line of Defence consists of 'Risk Owners' and 'Control Owners'. Our Global Businesses are the Risk Owners. They are accountable and responsible for managing risk in their day-to-day activities through processes and controls. Control Owners exist in Global Businesses, Global Functions and HSBC Operations, Services and Technology (‘HOST’). They are required to monitor and provide an opinion on the effectiveness of the controls relied upon by the Risk Owners to manage their risks. The First Line of Defence must ensure all key risks are identified, mitigated and monitored through an appropriate control environment.

The Second Line of Defence consists of Risk Stewards and their teams. It is made up in part (but not exclusively) of leaders within Global Risk and other Global Functions. They set policy, give advice and provide independent challenge. In doing this, they oversee and assess the risk management activities carried out by the First Line. They support the Risk Owners in setting their risk appetite within the Group's overall risk appetite. The Second Line provides assurance over the effectiveness of the risk and control activities conducted by the First Line of Defence.

The Third Line of Defence, Global Internal Audit, independently assures our risk management, governance and internal controls to make sure they are effective and fit for purpose. They are responsible for providing independent assurance to management and the Board over the design and operation of HBBM's risk management, governance and internal control processes.

Measurement and monitoring

We have codified our ORMF in a high level standard, supplemented by detailed policies. These policies explain our approach to identifying, assessing, monitoring and controlling operational risk and give guidance on mitigating action to be taken when weaknesses are identified.

Articulation of risk appetite for material operational risks helps the business to understand the level of risk our organisation is willing to take. Monitoring operational risk exposure against risk appetite on a regular basis, and setting out our risk acceptance process, drives risk awareness in a more forward-looking manner. It assists management in determining whether further action is required.

The ORMF defines a standard risk assessment methodology and provides guidance for the systematic reporting of operational loss data.

Operational risk and control assessment approach

Operational risk and control assessments are performed by individual business units and functions. The Risk and Control Assessment (‘RCA’) process is designed to provide business areas and functions with a forward-looking view of operational risks, an assessment of the effectiveness of controls, and a tracking mechanism for action plans so that they can proactively manage operational risks within acceptable levels. RCAs are reviewed dynamically and updated on the occurrence of trigger events, which materially change the risk profile.

Once risks and controls have been identified and assessed, appropriate means of mitigation and controls are considered. These include:

- Strengthening and/or maintaining the integrity of the operational process and supporting controls;
- Transferring the risk using a third party or appropriate insurance cover;
- Accepting the risk using an appropriate governance processes.

Recording

ORION is the Group's system of record for capturing and reporting Operational Risk data. The RCAs, as described above, are inputted and maintained by business units. Business management and Business Risk and Control Managers monitor and follow up the progress of documented action plans.

Operational risk loss reporting

To ensure that operational risk losses are consistently reported and monitored at HSBC Group level, the Bank is required to report individual losses when the net loss is expected to be equal to or greater than US$10,000 and to aggregate all other operational risk losses under US$10,000. Losses are entered into ORION and reported to various risk forums on a regular basis.

Glossary

Term	Definition
B	
Basel II	The capital adequacy framework issued by the Basel Committee on Banking Supervision in June 2006 in the form of the 'International Convergence of Capital Measurement and Capital Standards'.
Basel III	In December 2010, the Basel Committee issued 'Basel III rules: a global regulatory framework for more resilient banks and banking systems' and 'International framework for liquidity risk measurement, standards and monitoring'. Together these documents present the Basel Committee's reforms to strengthen global capital and liquidity rules with the goal of promoting a more resilient banking sector. In June 2011, the Basel Committee issued a revision to the former document setting out the finalised capital treatment for counterparty credit risk in bilateral trades. The Basel III requirements will be phased in with full implementation by 1 January 2019.
BMA	Bermuda Monetary Authority ('BMA') is the regulator of financial institutions in Bermuda.
C	
CARP	Capital Assessment and Risk Profile ('CARP') is the Group's own annual assessment of the levels of capital that it needs to hold through an examination of its risk profile from a regulatory viewpoint.
CET 1 ratio	A Basel III measure, of CET 1 capital expressed as percentage of total risk exposure amount.
Commercial real estate	Any real estate investment, comprising buildings or land, intended to generate a profit, either from capital gain or rental income.
Common equity tier 1 capital ('CET1')	The highest quality form of regulatory capital under Basel III that comprises common shares issued and related share premium, retained earnings and other reserves excluding the cash flow hedging reserve, less specified regulatory adjustments.
Credit quality step	A step in the BMA credit quality assessment scale which is based on the credit ratings of External Credit Assessment Institutions ('ECAIs'). It is used to assign risk weights under the standardised approach.
Credit risk	Risk of financial loss if a customer or counterparty fails to meet an obligation under a contract. It arises mainly from direct lending, trade finance and leasing business, but also from products such as guarantees, derivatives and debt securities.
Credit risk mitigation ('CRM')	A technique to reduce the credit risk associated with an exposure by application of credit risk mitigants such as collateral, guarantees and credit protection.
D	
de minimis threshold	Where an institution's exposure to market risk is judged de minimis, it is permitted exceptionally to report and calculate its aggregate capital charge on the basis of the standard banking book approach. This is the case where the trading book does not normally exceed 5% of its total business.

Term	Definition
E	
ECAI	External Credit Assessment Institution, such as Moody's Investors Service, Standard & Poor's Ratings Group or Fitch Group.
Economic profit	The difference between the return on financial capital invested by shareholders ('return on invested capital') and the cost of that capital. Economic profit may be expressed as a whole number or as a percentage.
Exposure	A claim, contingent claim or position which carries a risk of financial loss.
Exposure at default ('EAD')	The amount expected to be outstanding after any credit risk mitigation, if and when the counterparty defaults. EAD reflects drawn balances as well as allowance for undrawn amounts of commitments and contingent exposures.
G	
GMB	HSBC Group Management Board.
H	
Haircut	With respect to credit risk mitigation, an adjustment to collateral value to reflect any currency or maturity mismatches between the credit risk mitigant and the underlying exposure to which it is being applied. Also a valuation adjustment to reflect any fall in value between the date the collateral was called and the date of liquidation or enforcement.
I	
Impairment allowances	Management's best estimate of losses incurred in the loan portfolios at the balance sheet date.
Internal ratings-based approach ('IRB')	A method of calculating credit risk capital requirements using internal, rather than supervisory, estimates of risk parameters.
Invested capital	Equity capital invested by the shareholder.
IRB advanced approach	A method of calculating credit risk capital requirements using internal probability of default ('PD'), loss given default ('LGD') and exposure at default ('EAD') models.
IRB foundation approach	A method of calculating credit risk capital requirements using internal PD models but with supervisory estimates of LGD and conversion factors for the calculation of EAD.
L	
Loss given default ('LGD')	The estimated ratio (percentage) of the loss on an exposure to the amount outstanding at default (EAD) upon default of a counterparty.
M	
Market risk	The risk that movements in market risk factors, including foreign exchange rates and commodity prices, interest rates, credit spreads and equity prices will reduce income or portfolio values.

Term	Definition
N	
Net interest income	The amount of interest received or receivable on assets net of interest paid or payable on liabilities.
O	
Operational risk	The risk of loss resulting from inadequate or failed internal processes, people and systems or from external events, including legal risk.
R	
Regulatory capital	The capital which the Bank and/or the Group holds, determined in accordance with rules established by the BMA.
Residual maturity	The period outstanding from the reporting date to the maturity or end date of an exposure.
Risk appetite	An assessment of the types and quantum of risks to which the Bank and/or the Group wishes to be exposed.
Risk-weighted assets (‘RWAs’)	Calculated by assigning a degree of risk expressed as a percentage (risk weight) to an exposure in accordance with the applicable standardised approach rules.
RWA density	The average risk weight, expressed as a percentage of RWAs divided by exposure value, based on those RWA and exposure value numbers before they are rounded to the nearest US$0.1mil for presentation purposes.
S	
Standardised approach	In relation to credit risk, a method for calculating credit risk capital requirements using ECAI ratings and supervisory risk weights. In relation to operational risk, a method of calculating the operational capital requirement by the application of a supervisory defined percentage charge to the gross income of eight specified business lines.
T	
Tier 1 capital	A component of regulatory capital, comprising common equity tier 1 (‘CET1’) and additional tier 1. Additional tier 1 includes eligible non-common equity capital securities and any related share premium.
Tier 2 capital	A component of regulatory capital, comprising qualifying subordinated loan capital, related non-controlling interests, allowable collective impairment allowances and unrealised gains arising on the fair valuation of equity instruments held as available-for-sale. Tier 2 capital also includes reserves arising from the revaluation of properties.
V	
Value at risk (‘VaR’)	A measure of the loss that could occur on risk positions as a result of adverse movements in market risk factors (e.g. rates, prices, volatilities) over a specified time horizon and to a given level of confidence.

HSBC Bank Bermuda Limited
6 Front Street, Hamilton HM 11, Bermuda
Telephone: +1 441 295 4000 Facsimile: +1 441 295 7093
www.hsbc.bm