HSBC HOLDINGS PLC
Form 6-K
February 24, 2015

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Report of Foreign Private Issuer

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

the Securities Exchange Act of 1934

For the month of February
HSBC Holdings plc

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

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

Form 20-F X Form 40-F .....

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

Yes..... No X

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

Table 24: Credit risk exposure - RWA density by region

	RWA density					
	Europe %	Asia %	MENA %	North America %	Latin America %	Total %
IRB advanced approach	34	33	40	49	39	36

Retail:						
- secured by mortgages on immovable property SME1	24	-	-	-	-	21
- secured by mortgages on immovable property non-SME	6	10	-	96	-	25
- qualifying revolving retail	20	26	-	31	-	23
- other SME1	45	-	-	50	-	45
- other non-SME	17	22	-	80	-	26
Total retail	12	14	-	90	-	25
Central governments and central banks	16	14	46	10	35	17
Institutions	38	25	28	26	67	30
Corporates2	45	59	-	54	-	52
Securitisation positions3	115	46	-	12	-	106
Non-credit obligation assets	51	14	40	77	41	26
IRB foundation approach	67	-	60	-	-	65
Central governments and central banks	-	-	-	-	-	-
Institutions	-	-	-	-	-	-
Corporates	67	-	60	-	-	65

	Europe %	Asia %	MENA %	North America %	Latin America %	Total %
Standardised approach	27	67	79	108	96	60
Central governments and central banks	3	5	10	174	226	10
Institutions	76	37	43	-	-	37
Corporates	98	90	95	99	102	94
Retail	72	75	75	72	71	74
Secured by mortgages on immovable property	36	35	41	36	37	36
Exposures in default	126	128	118	143	134	129
Regional governments or local authorities	-	-	-	-	72	57
Equity	192	236	126	100	172	204
Other4	65	72	89	64	160	74
At 31 December 2014	33	43	64	54	77	43
IRB advanced approach	31	30	43	54	32	35
Retail:						
- secured on real estate property	6	8	-	128	-	34
- qualifying revolving retail	21	24	-	34	-	23
- SMEs1	49	3	-	63	-	48
- other retail	21	23	-	50	-	23

Total retail	14	12	-	119	-	32
Central governments and central banks	14	13	49	10	30	16
Institutions	36	18	23	14	48	22
Corporates2	55	56	-	52	-	55
Securitisation positions3	47	40	-	15	-	44
IRB foundation approach	59	-	55	-	-	58
Corporates	59	-	55	-	-	58
Standardised approach	19	57	79	87	88	49
Central governments and central banks	-	1	1	10	-	-
Institutions	3	38	53	-	-	34
Corporates	84	89	96	89	99	91
Retail	79	75	75	78	74	76
Secured on real estate property	41	49	56	92	60	56
Past due items	122	100	124	124	141	131
Regional governments or local authorities	-	-	100	-	92	93
Equity	124	100	100	100	100	105
Other items6	61	32	69	85	64	48
At 31 December 2013	28	39	66	57	72	40

For footnotes, see page 36.

Key points

· The CRD IV requirement to report exposure gross of any cash collateral has caused a reduction in RWA density primarily within corporates in Europe as a result of the increase in exposure value.

· Retail IRB density has improved due to the continued run-off of the US CML retail mortgage portfolio resulting in an improved residual portfolio. The IRB RWA densities remain high in North America compared to other regions due to the continuing challenging conditions in the US mortgage market.

· Standardised institutions RWA density in Europe has worsened due to immaterial movements on a small portfolio (exposure is US$0.2bn).

Table 25: Credit risk exposure - by industry sector

	Exposure value								
	Personal US$bn	Manu-facturing US$bn	Inter-national trade and services US$bn	Property and other business activities US$bn	Government and public admin-istration US$bn	Other commercial US$bn	Financial US$bn	Non-customer assets US$bn	Total US$bn

IRB advanced approach	404.2	140.4	149.2	181.1	113.1	88.4	464.9	52.5	1,593.8
Retail:									
- secured by mortgages on immovable property SME	0.5	-	0.2	2.4	-	-	-	-	3.1
- secured by mortgages on immovable property non-SME	288.7	-	-	0.1	-	-	0.1	-	288.9
- qualifying revolving retail	66.2	-	-	-	-	-	-	-	66.2
- other SME	-	0.9	2.5	7.3	0.8	2.1	0.3	-	13.9
- other non-SME	47.1	-	-	-	0.2	-	-	-	47.3
Total retail	402.5	0.9	2.7	9.8	1.0	2.1	0.4	-	419.4
Central governments and central banks	-	-	0.1	-	94.7	-	232.6	-	327.4
Institutions	-	-	-	-	0.7	-	129.7	-	130.4
Corporates	1.7	139.5	146.4	171.3	16.7	86.3	63.9	-	625.8
Securitisation positions	-	-	-	-	-	-	38.3	-	38.3
Non-credit obligation assets	-	-	-	-	-	-	-	52.5	52.5
IRB foundation approach	0.2	8.9	6.0	1.5	0.5	4.9	3.8	-	25.8
Central governments and central banks	-	-	-	-	-	-	0.1	-	0.1
Institutions	-	-	-	-	-	-	0.1	-	0.1
Corporates	0.2	8.9	6.0	1.5	0.5	4.9	3.6	-	25.6
Standardised approach	88.0	63.0	52.0	46.2	89.0	44.0	187.7	20.6	590.5
Central governments or central banks	-	-	-	-	62.4	-	119.3	7.6	189.3
Institutions	-	-	-	-	-	-	30.1	-	30.1

Corporates	5.4	61.6	49.4	42.3	22.2	41.9	17.3	-	240.1
Retail	43.9	0.7	1.5	1.0	0.2	0.4	0.2	-	47.9
Secured by mortgages on immovable property	36.8	0.1	0.1	1.5	-	0.1	-	-	38.6
Exposures in default	1.9	0.6	0.8	0.6	0.1	0.6	0.1	-	4.7
Regional governments or local authorities	-	-	-	-	0.8	-	0.3	-	1.1
Equity	-	-	-	0.4	-	-	3.8	9.0	13.2
Other4	-	-	0.2	0.4	3.3	1.0	16.6	4.0	25.5
At 31 December 2014	492.4	212.3	207.2	228.8	202.6	137.3	656.4	73.1	2,210.1

	Exposure value								
	Personal US$bn	Manu-facturing US$bn	Inter-national trade and services US$bn	Property and other business activities US$bn	Government and public admin-istration US$bn	Other commercial US$bn	Financial US$bn	Non-customer assets US$bn	Total US$bn
IRB advanced approach	426.7	118.9	113.8	151.7	107.2	73.8	476.7	-	1,468.8
Retail:									
- secured on real estate property	310.7	-	-	-	-	-	-	-	310.7
- qualifying revolving retail	66.9	-	-	-	-	-	-	-	66.9
- SMEs1	-	0.9	1.7	14.2	0.4	0.9	0.5	-	18.6
- other retail	46.7	-	-	-	0.1	-	-	-	46.8
Total retail	424.3	0.9	1.7	14.2	0.5	0.9	0.5	-	443.0
Central governments and central	-	-	-	-	90.4	0.2	251.1	-	341.7

banks									
Institutions	-	-	-	-	0.2	-	129.8	-	130.0
Corporates2	2.4	118.0	112.1	137.5	16.1	72.7	49.9	-	508.7
Securitisation positions3	-	-	-	-	-	-	45.4	-	45.4
IRB foundation approach	-	8.6	5.9	1.1	0.4	4.2	3.4	-	23.6
Corporates	-	8.6	5.9	1.1	0.4	4.2	3.4	-	23.6
Standardised approach	89.4	58.9	50.7	44.0	81.0	46.2	238.8	58.7	667.7
Central governments and central banks	-	-	-	-	56.9	-	163.1	-	220.0
Institutions	-	-	-	-	-	-	35.2	-	35.2
Corporates	3.2	57.5	47.4	35.1	21.1	44.1	13.4	-	221.8
Retail	42.5	1.0	1.9	1.2	0.2	0.6	0.3	-	47.7
Secured on real estate property	41.3	0.1	1.1	7.0	-	0.9	-	-	50.4
Past due items	2.4	0.3	0.3	0.4	0.1	0.6	-	-	4.1
Regional governments or local authorities	-	-	-	-	0.8	-	-	-	0.8
Equity	-	-	-	-	-	-	3.3	-	3.3
Other items6	-	-	-	0.3	1.9	-	23.5	58.7	84.4
At 31 December 2013	516.1	186.4	170.4	196.8	188.6	124.2	718.9	58.7	2,160.1

For footnotes, see page 36.

Key points

· The CRD IV requirement to report exposure gross of any cash collateral has resulted in an increase of exposure value across a number of industries.

· The decrease in exposure to financial is primarily driven by reduced central bank exposures under both the standardised approach and the IRB advanced approach due primarily to lower deposits with central banks.

· Higher corporate lending, including term and trade-related lending, has led to an increase of exposure across industry sectors, primarily manufacturing, property and other business services and other commercial within corporate

under the IRB advanced approach.

· The decrease in personal sector is primarily due to the continued run-off of the US CML retail mortgage portfolio.

Table 26: Credit risk exposure - by residual maturity

	Exposure value					
	Less than 1 year US$bn	Between 1 and 5 years US$bn	More than 5 years US$bn	Undated US$bn	Total US$bn	RWAs US$bn
IRB advanced approach	729.1	382.5	429.8	52.4	1,593.8	581.6
Retail:						
- secured by mortgages on immovable property SME1	0.1	0.2	2.8	-	3.1	0.6
- secured by mortgages on immovable property non-SME1	2.9	4.1	281.9	-	288.9	71.6
- qualifying revolving retail	66.2	-	-	-	66.2	15.3
- other SME1	3.3	7.0	3.6	-	13.9	6.2
- other non-SME	13.8	12.7	20.8	-	47.3	12.4
Total retail	86.3	24.0	309.1	-	419.4	106.1
Central governments and central banks	212.7	80.2	34.5	-	327.4	54.1
Institutions	100.9	25.4	4.1	-	130.4	38.7
Corporates2	318.6	247.1	60.1	-	625.8	328.5
Securitisation positions3	10.6	5.7	22.0	-	38.3	40.7
Non-credit obligation assets	-	0.1	-	52.4	52.5	13.5
IRB foundation approach	10.5	12.9	2.4	-	25.8	16.8
Central governments and central banks	-	0.1	-	-	0.1	-
Institutions	-	0.1	-	-	0.1	-
Corporates	10.5	12.7	2.4	-	25.6	16.8
Standardised approach	242.1	201.6	116.8	30.0	590.5	356.9
Central governments and central banks	123.5	37.7	20.5	7.6	189.3	19.7
Institutions	16.2	0.9	13.0	-	30.1	11.2
Corporates	70.2	142.6	27.2	0.1	240.1	224.7
Retail	17.1	12.8	18.0	-	47.9	35.2
Secured by mortgages on immovable property	1.9	3.0	33.7	-	38.6	13.8
Exposures in default	2.2	1.3	1.2	-	4.7	6.1
	0.4	0.3	0.4	-	1.1	0.6

Regional governments or local authorities						
Equity	-	-	-	13.2	13.2	26.9
Other4	10.6	3.0	2.8	9.1	25.5	18.7
At 31 December 2014	981.7	597.0	549.0	82.4	2,210.1	955.3
IRB advanced approach	642.5	405.0	421.3	-	1,468.8	521.2
Retail:						
- secured on real estate property	2.8	5.0	302.9	-	310.7	105.4
- qualifying revolving retail	66.9	-	-	-	66.9	15.4
- SMEs1	3.8	8.7	6.1	-	18.6	8.9
- other retail	7.0	23.1	16.7	-	46.8	11.0
Total retail	80.5	36.8	325.7	-	443.0	140.7
Central governments and central banks	206.4	106.1	29.2	-	341.7	53.0
Institutions	99.1	29.9	1.0	-	130.0	28.0
Corporates2	223.1	230.6	55.0	-	508.7	279.7
Securitisation positions3	33.4	1.6	10.4	-	45.4	19.8
IRB foundation approach	10.6	11.5	1.5	-	23.6	13.6
Corporates	10.6	11.5	1.5	-	23.6	13.6
Standardised approach	248.0	233.5	101.2	85.0	667.7	329.5
Central governments and central banks	154.9	50.4	14.7	-	220.0	0.7
Institutions	17.9	4.3	13.0	-	35.2	12.1
Corporates	53.7	146.7	21.2	0.2	221.8	202.1
Retail	15.7	19.6	12.4	-	47.7	36.1
Secured on real estate property	2.7	9.2	38.5	-	50.4	28.4
Past due items	2.4	1.0	0.7	-	4.1	5.4
Regional governments or local authorities	0.3	0.1	0.4	-	0.8	0.8
Equity	-	-	-	3.3	3.3	3.5
Other items5	0.4	2.2	0.3	81.5	84.4	40.4
At 31 December 2013	901.1	650.0	524.0	85.0	2,160.1	864.3

For footnotes, see page 36

Key points

· The impact of foreign exchange movements on exposure value is discussed under table 22.

· The CRD IV requirement to report exposure gross of any cash collateral has resulted in an increase of exposure value primarily in the Less than 1 year and Between 1 and 5 years bandings.

· The impact of higher corporate lending, including term and trade-related lending, is reflected in the increase in exposure value, primarily in the Less than 1 year banding.

· The reduction in the Other Undated residual maturity banding is driven by the reclassification of Non Credit Obligation Assets to be reported separately under IRB approach. See table 9 for further information on CRD IV impacts.

· The reduction in deposits with central banks in Europe in Central governments and central banks under the standardised approach is reflected primarily in the Less than 1 year banding.

· Sale of government bonds in North America in Central governments and central banks under the IRB approach has resulted in a decrease in the Between 1 and 5 years banding.

· The decrease in retail IRB approach in the More than 5 years banding is primarily due to the continued run-off of the US CML retail mortgage portfolio in North America.

Application of the IRB approach

The narrative explanations that follow relate to the IRB approaches: advanced and foundation IRB for distinct customers and advanced IRB for the portfolio-managed retail business. Details of our use of the standardised approach can be found on page 70.

Our Group IRB credit risk rating framework incorporates obligor propensity to default expressed in PD, and loss severity in the event of default expressed in EAD and LGD. These measures are used to calculate regulatory expected loss ('EL') and capital requirements. They are also used with other inputs to inform rating assessments for the purpose of credit approval and many other management decisions.

Use of internal estimates

PDs, LGDs, and EAD applied in the calculation of regulatory capital requirements are also extensively used for other purposes, for example:

· credit approval and monitoring: IRB models are used in the assessment of customer and portfolio risk in lending decisions;

· risk appetite: IRB measures are an important element in identifying risk exposure at customer, sector, and portfolio level;

· pricing: IRB parameters are used in pricing tools for new transactions and reviews; and

· economic capital and portfolio management: IRB parameters are used in the economic capital model that has been implemented across HSBC.

Roll-out of the IRB approach

With PRA permission, we have adopted the Basel advanced approach for the majority of our business. At the end of 2014, portfolios in much of Europe, Asia and North America were on advanced IRB approaches. Others remain on the standardised or foundation approaches pending the definition of local regulations or model approval in line with our Basel IRB roll-out plans, or under exemptions or exclusion from IRB treatment. Additionally, in some instances, regulators have allowed us to transition from advanced to standardised approaches for a limited number of immaterial portfolios.

In June 2014 the EBA published a consultation on the thresholds for the application of the Standardised Approach for exposures treated under permanent partial use and the IRB roll-out plan. Subject to the publication of the finalised RTS it is expected that the roll-out plan will set target thresholds for IRB rather than the advanced IRB approach specifically.

Under the advanced IRB approach, banks are allowed to develop their own empirical models to quantify required capital for credit risk. All such models developed by us, and any material changes to those models, must be approved by the PRA, subject to de minimis exceptions. Material changes are those that individually have a high impact, or where a number of small changes in aggregate have a high impact. Quantitative and qualitative materiality thresholds for these model changes are determined by CRD IV which also requires us to obtain PRA approval before implementation where these thresholds are breached.

The effectiveness of this process is monitored by the PRA through an annual review of IRB usage, focusing on the proportion of total credit risk assets for which IRB approaches are used.

Banks have experienced difficulties in adopting advanced IRB in some cases, for example in portfolios which have very low levels of default, such that the PD, LGD and EAD cannot be assessed to a sufficiently high degree of confidence due to a lack of default or loss data. Difficulties also arise in countries where the rules and requirements of the local regulator's implementation of Basel requirements are different from those of the PRA, or where the regulators have introduced capital floors and overlays to mitigate perceived model deficiencies. Tables 27 and 31 below detail several material regulatory thresholds and overlays. Whilst recognising the complexity of adopting IRB in some situations, we remain committed to working constructively with our regulators to achieve acceptable roll-out plans.

The wholesale risk rating system

This section describes how we build and operate our credit risk analytical models, and use IRB metrics, in wholesale customer business.

PDs for wholesale customer segments, that is central governments and central banks, financial institutions and corporate customers, and for certain individually assessed personal customers, are estimated using a Customer Risk Rating ('CRR') master scale of 23 grades. Of these, 21 are non-default grades representing varying degrees of strength of financial condition, and two are default grades.

The score generated by a credit risk rating model for the obligor is mapped to a corresponding PD and master-scale CRR. The CRR is then reviewed by a credit approver who, taking into account all relevant information, such as most recent events and market data, where available, makes the final decision on the rating. The rating assigned therefore reflects the approver's overall view of the obligor's credit standing and propensity to default.

The finally assigned CRR determines the applicable master-scale PD range from which the reference PD, generally the arithmetical mid-point, is used in the regulatory capital calculation.

Reviewing the initial model score, relationship managers may propose a different CRR from that indicated, where they believe this more appropriate. Such amendments may only be made through an override process and must be approved by the Credit function. Overrides for each model are recorded, and override levels are reviewed, as part of the model management process.

The CRR is assigned at obligor level, which means that separate exposures to the same obligor are generally subject to a single, consistent rating. Where unfunded credit risk mitigants such as guarantees apply, these may also influence the final assignment of a CRR to an obligor. The impact of unfunded risk mitigants is considered for IRB approaches on page 69 and for the standardised approach on page 70.

If an obligor is in default on any material credit obligation to the Group, all of the obligor's facilities from the Group are considered to be in default.

Under the IRB approach, obligors are grouped into grades that have similar PD or anticipated default frequency. The anticipated default frequency may be estimated using all relevant information at the relevant date ('Point-in-time' or 'PIT' rating system), or be free of the effects of the credit cycle ('Through-the-cycle' or 'TTC' rating system).

We generally utilise a hybrid approach of PIT and TTC. That is, while models are calibrated to long-run default rates, obligor ratings are reviewed annually, or more frequently if necessary to reflect changes in their circumstances and/or their economic operating environment.

Thus, over the economic cycle, a cycle will also appear in CRR migration. The influence of longer-term economic cycle factors implied by the model's calibration, combined with the effect of ongoing credit review, will result in long-term PDs generally above the actual default frequency during benign economic periods, but not changing so fast in a downturn. In practice, under a hybrid approach, ratings tend to be more volatile than would be the case in a pure TTC system, but less volatile than in a pure PIT one.

Moreover, our policy requires approvers to downgrade ratings on expectations but to upgrade them only on performance. Therefore, ratings will typically migrate during a downturn in response to higher perceived risks, but be upgraded more slowly in an upswing. This leads to expected defaults overall typically exceeding actual defaults.

For EAD and LGD estimation, operating entities are permitted, subject to overview by Group Risk, to use their own modelling approaches for those parameters to suit conditions in their jurisdictions. Group Risk provides co-ordination, benchmarks, and the sharing and promotion of best practice on EAD and LGD estimation.

EAD is estimated to a 12-month forward time horizon and represents the current exposure plus an estimate for future increases in exposure, taking into account such factors as available but undrawn facilities, and the realisation of contingent exposures post-default.

LGD is based on the effects of facility and collateral structure on outcomes post-default. This includes such factors as the type of client, the facility seniority, the type and value of collateral, past recovery experience and priority under law. It is expressed as a percentage of EAD.

Wholesale models

To determine credit ratings for the different types of wholesale obligor, many different models and scorecards are used for PD, LGD, and EAD; there are over 100 wholesale IRB models in use or under development within HSBC. These models may be differentiated by region, customer segment and/or customer size. For example, PD models are

differentiated for all of our key customer segments, including sovereigns, financial institutions, large, medium and small sized corporates.

Global PD models have been developed for asset classes or clearly identifiable segments of asset classes where the customer relationship is managed globally, for example sovereigns, financial institutions and the largest corporate clients, typically those which operate internationally.

Local PD models, specific to a particular country, region, or sector, are developed for other obligors. This includes corporate clients when they show distinct characteristics in common in a particular geography. The most material local Corporate PD models are the UK mid-market PD model, and the Hong Kong and Asia-Pacific mid-market models.

The two major drivers of model methodology are the nature of the portfolio and the availability of internal or external data on historical defaults and risk factors. For some historically low-default portfolios, e.g. sovereign and financial institutions, a model will rely more heavily on external data and/or the input of an expert panel. By contrast, where sufficient data is available, models are built on a statistical basis, although the input of expert judgement may still form an important part of the overall model development methodology.

Most LGD and EAD models are developed according to local circumstances taking into account legal and procedural differences in the recovery and workout processes. However, our approach to EAD and LGD also encompasses global models for central governments and central banks, and for institutions, as exposures to these customer types are managed centrally by Global Risk. In 2013 the PRA required all firms to apply an LGD floor of 45% for senior unsecured exposure to sovereign entities. This floor was applied to reflect the relative paucity of loss observations across all firms in relation to these obligors. This floor is applied for the purposes of regulatory capital reporting.

In addition, the PRA has published guidance on the appropriateness of LGD models for low default portfolios generally. The PRA has determined that there should be at least 20 defaults per country per collateral type for LGD models to be approved. Where there are insufficient defaults, an LGD floor will be applied. As a result, in 2014, we were required to apply LGD floors for our banks portfolio and some Asia corporate portfolios where there are insufficient loss observations.

In the same guidance, the PRA also indicated that it considered income producing real estate to be an asset

class that would be difficult to model. As a result, we have migrated to the supervisory slotting approach for our UK CRE portfolio and have migrated our US Income Producing CRE portfolio on to the standardised approach.

Local models for the corporate exposure class are developed using various data inputs, including collateral information and geography (for LGD) and product type (for EAD). The most material corporate models are the UK and Asia models, all of which are developed using more than 10 years' worth of data. The LGD models are calibrated to a period of credit stress or downturn in economic conditions. The global LGD models for sovereigns and for banks reflect the expected increase in observed losses during an economic downturn period.

None of the EAD models are calibrated for a downturn, as analysis shows that utilisation decreases during a downturn because credit stress is accompanied by more intensive limit monitoring and facility reduction.

Table 27 below sets out the key characteristics of the significant wholesale credit risk models that drive the capital calculation split by Basel wholesale asset class, with their associated RWAs, including the number of models for each component, the model method or approach and the number of years of loss data used.

Table 27: Wholesale IRB credit risk models

Basel asset classes measured	RWAs for associated asset class US$bn	Compo-nent	Number of significant models	Model description and methodology	Number of years loss data
Central governments and central banks	54.1	PD	1	A constrained expert judgement model using a combination of expert judgement and quantitative analysis. The model inputs include macro-economic and political factors.	7
		LGD	1	An unsecured model built on assessment of structural factors that influence country's long term economic performance. Floor of 45%, applied as required by the PRA.	7
		EAD	1	Because of limited internal default experience and sparse historical data on utilisations and limits, the model was developed based on a combination of expert judgement and similar exposure types.	7
Institutions	38.7	PD	1	The model is a combination of expert judgement and statistical analysis. The model inputs include balance sheet information, country risk factors and qualitative data.	9
		LGD	1	Regression model that produces a downturn LGD and expected LGD. Inputs include collateral and country risk data. Floor of 45%, applied as required by the PRA.	9
		EAD	1	Regression based model that predicts Credit Conversion Factors taking into account current utilisation, available headroom, product type, and committed/uncommitted indicator.	9
Corporates1	322.3				
Global large corporates		PD	1	Even though the portfolio is low-default, the model is statistically built and calibrated on 15 years of data. The inputs include balance sheet information, market data, macroeconomic and country risk indicators and qualitative factors.	>10

Other corporates	PD	5	Corporates that fall below the Global large corporate threshold are rated through local PD models, which reflect regional circumstances. These models use balance sheet data, behavioural data and qualitative information to derive a statistically built PD.	>10
All corporates	LGD	3	Local statistical models covering all corporates including Global large corporates developed using various data inputs, including collateral information, recoveries and geography.	>7
	EAD	3	Local statistical models developed using various data inputs, including product type and geography.	>7

1 Excludes specialised lending exposures subject to supervisory slotting approach (see table 29).

Table 28 below sets out Basel metrics broken down by region, table 30 shows the same metrics, however these are broken down by CRR band. Table 29 sets out an analysis of those exposures to which a supervisory slotting approach is applied.

Table 28: Wholesale IRB portfolio analysis

	Europe	Asia	MENA	North America	Latin America	Total
	%	%	%	%	%	%
At 31 December 2014						
Exposure weighted average PD						
IRB advanced approach						
Central governments and central banks	0.09	0.09	1.23	0.01	0.57	0.17
Institutions	0.66	0.22	0.55	0.13	0.76	0.36
Corporates1	2.62	1.44	0.09	1.26	-	1.85
IRB foundation approach						
Central governments and central banks	-	-	0.04	-	-	0.04
Institutions	0.13	-	0.03	-	-	0.10
Corporates1	1.36	-	2.86	-	-	1.74

Exposure weighted average LGD						
IRB advanced approach						
Central governments and central banks	45.0	45.0	45.0	45.4	45.0	45.1
Institutions	35.3	45.3	39.8	40.6	45.4	42.0
Corporates1	25.8	44.3	13.7	36.6	-	35.6

1 Excludes specialised lending exposures subject to supervisory slotting approach (see table 29).

Table 29: Wholesale IRB exposures under the Slotting Approach

	Remaining maturity less than 2.5 years		Remaining maturity greater than 2.5 years		Total	
	Exposure value US$bn	RWAs US$bn	Exposure value US$bn	RWAs US$bn	Exposure value US$bn	RWAs US$bn
Supervisory Category						
Category 1 - Strong	7.0	3.4	9.7	6.7	16.7	10.1
Category 2 - Good	4.4	3.1	3.7	3.2	8.1	6.3
Category 3 - Satisfactory	1.4	1.7	1.5	1.7	2.9	3.4
Category 4 - Weak	0.9	2.4	0.3	0.8	1.2	3.2
Category 5 - Default	1.4	-	0.2	-	1.6	-
At 31 December 2014	15.1	10.6	15.4	12.4	30.5	23.0

Table 30 and the graphs below set out IRB exposures by obligor grade for central governments and central banks, institutions and corporates, all of which are assessed using our 23-grade CRR master scale. We benchmark the master scale against the ratings of external rating agencies. Each CRR band is associated with an external rating grade by reference to long-run default rates for that grade, represented by the average of issuer-weighted historical default rates.

The correspondence between the agency long-run default rates and the PD ranges of our master scale is

obtained by matching a smoothed curve based on those default rates with our master scale reference PDs. This association between internal and external ratings is indicative and may vary over time. In these tables, the ratings of Standard and Poor's ('S&P') are cited for illustration purposes, though we also benchmark against other agencies' ratings in an equivalent manner.

For further details of the Group's approach to credit quality classification, please see the definition of 'obligor grade' in the glossary, and also page 207 of the Annual Report and Accounts 2014.

Table 30a: Wholesale IRB exposure - by obligor grade1 - Central governments and central banks

	CRR	PD range	Exposure value2	Average PD3	Average LGD3	RWA	RWA density	RWAs	Mapped external rating
		%	US$bn	%	%		%	US$bn	
Default risk									
Minimal	0.1	0.000 to 0.010	122.8	0.01	45.2	7		8.7	AAA
	1.1	0.011 to 0.028	60.3	0.02	45.0	7		4.4	AA+ to AA
	1.2	0.029 to 0.053	59.2	0.04	45.4	13		7.4	AA- to A+
Low	2.1	0.054 to 0.095	51.6	0.07	45.0	20		10.4	A
	2.2	0.096 to 0.169	6.0	0.13	45.2	25		1.5	A-
Satisfactory	3.1	0.170 to 0.285	11.3	0.22	45.0	43		4.9	BBB+
	3.2	0.286 to 0.483	3.6	0.37	45.0	53		1.9	BBB
	3.3	0.484 to 0.740	1.6	0.63	45.0	63		1.0	BBB-
Fair	4.1	0.741 to 1.022	1.7	0.87	45.0	81		1.4	BB+
	4.2	1.023 to 1.407	0.4	1.16	45.0	125		0.5	BB
	4.3	1.408 to 1.927	0.2	1.65	43.3	100		0.2	BB-
Moderate	5.1	1.928 to 2.620	0.9	2.25	45.0	111		1.0	BB-
	5.2	2.621 to 3.579	0.7	3.05	45.0	129		0.9	B+
	5.3	3.580 to 4.914	5.6	4.20	45.0	130		7.3	B
Significant	6.1	4.915 to 6.718	0.7	5.75	45.2	157		1.1	B
	6.2	6.719 to 8.860	0.1	7.85	45.0	200		0.2	B-
High	7.1	8.861 to 11.402	0.7	10.00	45.0	186		1.3	CCC+
	7.2	11.403 to 15.000	-	-	-	-		-	CCC+

Special management	8.1	15.001 to 22.000	-	-	-	-	-	CCC+
	8.2	22.001 to 50.000	-	-	-	-	-	CCC+
	8.3	50.001 to 99.999	-	-	-	-	-	CCC to C
Default4	9/10	100.000	-	-	-	-	-	Default
At 31 December 2014			327.4	0.17	45.1	17	54.1	
Default risk								
Minimal	0.1	0.000 to 0.010	132.4	0.01	45.1	7	9.3	AAA to AA+
	1.1	0.011 to 0.028	74.3	0.02	45.0	6	4.8	AA to AA-
	1.2	0.029 to 0.053	38.7	0.04	45.0	14	5.6	A+
Low	2.1	0.054 to 0.095	64.1	0.07	45.0	18	11.7	A
	2.2	0.096 to 0.169	11.4	0.13	45.0	29	3.3	A-
Satisfactory	3.1	0.170 to 0.285	5.3	0.22	45.0	42	2.2	BBB+
	3.2	0.286 to 0.483	3.7	0.37	45.0	49	1.8	BBB to BBB-
	3.3	0.484 to 0.740	2.4	0.63	45.0	67	1.6	BBB-
Fair	4.1	0.741 to 1.022	1.1	0.87	45.0	82	0.9	BB+
	4.2	1.023 to 1.407	0.2	1.20	45.0	100	0.2	BB
	4.3	1.408 to 1.927	0.3	1.65	45.2	-	-	BB-
Moderate	5.1	1.928 to 2.620	0.9	2.25	45.0	111	1.0	BB-
	5.2	2.621 to 3.579	1.4	3.05	45.0	121	1.7	B+
	5.3	3.580 to 4.914	1.1	4.20	45.0	136	1.5	B+
Significant	6.1	4.915 to 6.718	0.3	5.75	45.4	167	0.5	B
	6.2	6.719 to 8.860	3.7	7.85	45.0	168	6.2	B-

High	7.1	8.861 to 11.402	0.4	10.00	45.0	175	0.7	B-
	7.2	11.403 to 15.000	-	-	-	-	-	CCC+
Special management	8.1	15.001 to 22.000	-	-	-	-	-	CCC
	8.2	22.001 to 50.000	-	-	-	-	-	CCC-
	8.3	50.001 to 99.999	-	-	-	-	-	CC to C
Default4	9/10	100.000	-	-	-	-	-	Default
At 31 December 2013			341.7	0.17	45.0	16	53.0	

For footnotes, see page 50.

Table 30b: Wholesale IRB exposure - by obligor grade1 - Institutions (continued)

	CRR IRB range	Exposure	Average PD value2	Average LGD3	RWA density3	RWAs	Mapped external rating
		US$bn %	%	%	%	US$bn	
Default risk							
Minimal	0.1 0.000 to 0.010	1.8	0.02	50.2	22	0.4	AAA
	1.1 0.011 to 0.028	15.3	0.03	41.0	12	1.8	AA+ to AA
	1.2 0.029 to 0.053	27.4	0.04	31.7	11	3.0	AA-
Low	2.1 0.054 to 0.095	44.0	0.07	45.2	20	8.5	A+ to A
	2.2 0.096 to 0.169	14.3	0.13	45.4	34	4.8	A-
Satisfactory	3.1 0.170 to 0.285	9.3	0.22	44.7	42	3.9	BBB+
	3.2 0.286 to 0.483	6.1	0.37	45.1	56	3.4	BBB
	3.3 0.484 to 0.740	4.2	0.63	46.7	74	3.1	BBB-
Fair	4.1 0.741 to 1.022	1.9	0.87	48.3	100	1.8	BB+
	4.2 1.023 to 1.407	2.3	1.20	31.3	65	1.5	BB
	4.3 1.408 to 1.927	0.9	1.65	45.8	133	1.2	BB-
Moderate	5.1 1.928 to 2.620	0.3	2.25	54.3	167	0.5	BB-

	5.2	2.621 to 3.579	0.3	3.05	47.6	167	0.5	B+
	5.3	3.580 to 4.914	0.6	4.20	55.7	180	0.9	B
								B-
Significant	6.1	4.915 to 6.718	0.3	5.75	76.0	267	0.8	B-
	6.2	6.719 to 8.860	0.4	7.85	28.8	100	0.4	B-
								CCC
		8.861 to						
High	7.1	11.402	0.6	10.00	57.4	250	1.5	CCC+
		11.403 to						
	7.2	15.000	0.3	13.00	51.2	233	0.7	CCC+
Special		15.001 to						
management	8.1	22.000	-	-	-	-	-	CCC
		22.001 to						
	8.2	50.000	-	-	-	-	-	CCC- to CC
		50.001 to						
	8.3	99.999	-	-	-	-	-	C
Default4	9/10	100.000	0.1	100.00	64.7	-	-	Default
At 31 December 2014			130.4	0.36	42.0	30	38.7	
Default risk								
Minimal	0.1	0.000 to 0.010	4.2	0.03	27.5	7	0.3	AAA to AA+
	1.1	0.011 to 0.028	13.9	0.03	28.1	6	0.9	AA to AA-
	1.2	0.029 to 0.053	15.4	0.04	28.5	8	1.2	A+
Low	2.1	0.054 to 0.095	48.1	0.07	34.2	12	5.7	A
	2.2	0.096 to 0.169	17.9	0.13	34.5	20	3.6	A-
Satisfactory	3.1	0.170 to 0.285	10.7	0.22	35.6	28	3.0	BBB+
	3.2	0.286 to 0.483	8.6	0.37	36.3	37	3.2	BBB to BBB-
	3.3	0.484 to 0.740	3.9	0.63	37.3	54	2.1	BBB-
Fair	4.1	0.741 to 1.022	2.0	0.87	38.4	60	1.2	BB+
	4.2	1.023 to 1.407	1.4	1.20	35.8	71	1.0	BB
	4.3	1.408 to 1.927	0.7	1.65	44.1	100	0.7	BB-
Moderate	5.1	1.928 to 2.620	0.4	2.25	45.4	100	0.4	BB-
	5.2	2.621 to 3.579	0.7	3.05	34.5	100	0.7	B+
	5.3	3.580 to 4.914	0.3	4.20	59.7	167	0.5	B+
Significant	6.1	4.915 to 6.718	0.3	5.75	69.7	200	0.6	B
	6.2	6.719 to 8.860	0.2	7.85	72.7	250	0.5	B-
		8.861 to						
High	7.1	11.402	0.9	10.00	49.7	211	1.9	B-
		11.403 to						
	7.2	15.000	0.2	13.00	52.5	200	0.4	CCC+

Special management	8.1	15.001 to 22.000	-	-	-	-	-	CCC
	8.2	22.001 to 50.000	-	-	-	-	-	CCC-
	8.3	50.001 to 99.999	-	-	-	-	-	CC to C
Default4	9/10	100.000	0.2	100.00	47.0	50	0.1	Default
At 31 December 2013			130.0	0.46	33.6	22	28.0	

For footnotes, see page 50.

Table 30c: Wholesale IRB exposure - by obligor grade1 - Corporates5 (continued)

	CRR	PD range %	Exposure value2 US$bn	Average PD3 %	Average LGD3 %	RWA density3 %	RWAs US$bn	Mapped external rating
Default risk								
Minimal	0.16	0.000 to 0.010	-	-	-	-	-	
	1.1	0.011 to 0.028	11.5	0.03	43.6	16	1.8	AAA to AA
	1.2	0.029 to 0.053	43.0	0.04	30.4	13	5.6	AA-
Low	2.1	0.054 to 0.095	70.7	0.07	32.8	18	12.5	A+ to A
	2.2	0.096 to 0.169	91.3	0.13	32.8	25	22.9	A- BBB+
Satisfactory	3.1	0.170 to 0.285	82.9	0.22	37.0	38	31.5	BBB+
	3.2	0.286 to	71.9	0.37	39.7	53	38.2	BBB

	3.3	0.483 0.484 to 0.740	71.1	0.63	35.0	60	42.7	BBB-
Fair	4.1	0.741 to 1.022	47.4	0.87	36.1	70	33.1	BB+
	4.2	1.023 to 1.407	33.0	1.20	37.9	81	26.7	BB
	4.3	1.408 to 1.927	32.6	1.65	40.3	101	32.8	BB-
Moderate	5.1	1.928 to 2.620	22.6	2.24	38.0	100	22.6	BB-
	5.2	2.621 to 3.579	12.8	3.07	40.8	116	14.9	B+
	5.3	3.580 to 4.914	11.6	4.16	38.7	121	14.0	B
Significant	6.1	4.915 to 6.718	4.7	5.74	36.9	123	5.8	B-
	6.2	6.719 to 8.860	3.6	7.85	39.7	158	5.7	B-
High	7.1	8.861 to 11.402	1.7	10.03	32.9	139	2.5	CCC+
	7.2	11.403 to 15.000	0.9	13.00	38.0	178	1.6	CCC+
Special management	8.1	15.001 to 22.000	0.7	19.01	34.5	175	1.4	CCC
	8.2	22.001 to 50.000	0.3	36.00	31.2	167	0.5	CCC- to CC
	8.3	50.001 to 99.999	0.3	75.00	45.1	133	0.4	C
Default4	9/10	100.000	6.3	100.00	40.8	81	5.1	Default

At 31 December 2014			620.9		1.85	36.0	52	322.3	
Default risk									
Minimal	0.16	0.000 to 0.010	-		-	-	-	-	
	1.1	0.011 to 0.028	12.5		0.03	42.7	15	1.9	AAA to AA-
	1.2	0.029 to 0.053	30.1		0.04	37.5	14	4.2	A+
Low	2.1	0.054 to 0.095	55.7		0.07	39.0	21	11.7	A
	2.2	0.096 to 0.169	64.5		0.13	41.5	31	20.3	A-
Satisfactory	3.1	0.170 to 0.285	71.3		0.22	39.9	40	28.7	BBB+
	3.2	0.286 to 0.483	64.2		0.37	38.8	52	33.1	BBB to BBB-
	3.3	0.484 to 0.740	49.1		0.63	37.9	64	31.6	BBB-
Fair	4.1	0.741 to 1.022	32.8		0.87	36.9	73	23.8	BB+
	4.2	1.023 to 1.407	28.1		1.20	37.1	81	22.8	BB
	4.3	1.408 to 1.927	29.3		1.65	36.3	89	26.0	BB-
Moderate	5.1	1.928 to 2.620	20.2		2.25	33.9	93	18.8	BB-
	5.2	2.621 to 3.579	12.9		3.05	38.5	112	14.6	B+
	5.3	3.580 to 4.914	9.8		4.20	35.5	115	11.3	B+

Significant	6.1	4.915 to 6.718	4.4	5.75	33.7	125	5.5	B
	6.2	6.719 to 8.860	3.1	7.85	38.0	158	4.9	B-
High	7.1	8.861 to 11.402	2.1	10.00	32.6	148	3.1	B-
	7.2	11.403 to 15.000	0.7	13.00	28.9	171	1.2	CCC+
Special management	8.1	15.001 to 22.000	1.0	19.00	35.5	190	1.9	CCC
	8.2	22.001 to 50.000	0.4	36.00	26.8	150	0.6	CCC-
	8.3	50.001 to 99.999	0.3	75.00	34.5	100	0.3	CC toC
Default4	9/10	100.000	7.1	100.00	36.2	41	2.9	Default
At 31 December 2013			499.6	2.32	38.5	54	269.2	

1 See glossary for definition of obligor grade.

2 Central governments and central banks exposure value includes US$1.2bn (2013: US$1.5bn) in undrawn commitments, institutions exposure value includes US$15.4bn (2013: US$12.7bn) and corporates exposure value includes US$358.2bn (2013: U$313.1bn).

3 Average PD, average LGD and RWA density percentages represent an exposure weighted average.

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

5 Excludes specialised lending exposures subject to the supervisory slotting approach (EAD: US$30.5bn; RWA: US$23.0bn).

6 The top band of the wholesale CRR master scale is not available to entities in the corporates exposure class, but restricted to the strongest central governments, central banks and institutions.

Key points

Central Governments and Central Banks
· The decrease in CRR 1.1 has been primarily driven by the sovereign rating downgrades in Middle East and North Africa to CRR 1.2 and reduced government debt in Asia.
· The movements in CRR 1.2 and CRR 2.1 bands are primarily driven by a sovereign rating upgrade in Asia.
Institutions
· LGD weightings have been impacted by the introduction of LGD floors applied to institutions.
· The movement in CRR 1.2 has been primarily driven by the CRD IV requirement to report exposure gross of any cash collateral and increased lending in Asia.
Corporates
· The increased exposure across Corporate CRR bandings was primarily driven by the CRD IV requirement to report exposure gross of any cash collateral. The additional increase in CRR 1.2, CRR 3.1, CRR 3.2, CRR 3.3 and CRR 4.1 reflects higher Corporate lending, including term and trade-related lending in Asia, Europe and North America.
· This increase in exposure is principally in the upper PD bandings resulting in the decrease in average PD.
· Average LGDs remain broadly consistent overall, with a decrease resulting from the inclusion of cash collateral in the LGD calculation for exposures under CRD IV, offset by an increase due to the introduction of LGD floors applied to certain corporates.

To view charts in PDF format please click on the link below:

http://www.rns-pdf.londonstockexchange.com/rns/5403F_-2015-2-22.pdf

Wholesale exposures by CRR Band

Wholesale 2014

Wholesale 2013

Central governments and central banks

Institutions

Corporates

Retail risk rating systems

Owing to the different country-level portfolio performance characteristics and loss history, there are no global models for our retail portfolios. Our retail models are developed at a local level, based on portfolio behaviour and observed defaults. Across the Group, we maintain over 1,000 retail risk predictive scorecards and models. Of these, just under 300 are used with the PRA's approval under our IRB permission, the remainder being application scorecards, behavioural scorecards, or forecasting models.

We classify approximately 40% of the total number of retail IRB models as constituting globally or regionally material risk rating systems, based on the criteria set out on page 33 and taking account of strategic importance to the Group. These material risk rating systems represented approximately 86% of our total retail IRB RWAs of US$106bn as of 31 December 2014.

The ten most material risk rating systems based on the above criteria, for which we disclose details of modelling methodology in table 31 below and performance data in table 37, represented RWAs of approximately US$74bn or 70% of the total retail IRB RWAs, the majority being attributable to the five risk rating systems for residential mortgages, our most material retail exposure class.

All newly adopted IRB models for retail portfolios, irrespective of size, require PRA approval. For changes to existing IRB models, a PRA approval process applies to all but a list of de minimis exemptions representing an immaterial percentage of total Group credit risk RWAs. This approval process sets various quantitative and qualitative thresholds to ensure that all significant model changes go forward for approval.

When developing retail models, segmentation based on risk characteristics is often adopted to enhance the models' discrimination and accuracy. The majority of our retail models are designed for a particular product or group of products in a specific country. We have developed and issued global internal model governance, development, validation and monitoring standards to ensure that locally developed models adhere, as far as possible, to consistent global standards. These permit specific variances in model approach, depending on local

regulatory, legal or data requirements, which are used to determine and predict the risks in these portfolios.

Our models incorporate conservatism where required under regulatory rules. Additional levels of conservatism, varying from region to region, may arise from a methodological choice of ours or from a specific regulatory intervention, depending on the local assessment of the risk factors by us and the regulatory authorities. Regulators may additionally impose 'floor' values for various metrics where data is scarce.

Our PD models are developed using statistical estimation based on a minimum of five years of historical data. The modelling approach is typically inherently TTC or, where models are developed based on a PIT approach, as in the UK, the model outputs become effectively TTC through the application of buffer or model adjustments as agreed with the PRA.

Our retail EAD models are also developed using at least five years of historical observations and typically adopt one of two approaches:

· for closed-end products without the facility for additional drawdowns, EAD is estimated as the outstanding balance of accounts at the time of observation; or

· EAD for products with the facility for additional drawdowns is estimated as the outstanding balance of accounts at the time of observation plus a CCF applied to the undrawn portion of the facility.

Our approach to LGD estimates has more variation, particularly in respect of the downturn period calculation that they generally include. For instance, UK mortgage models use a regulatory-defined downturn based on a minimum 40% decline in house prices from peak to trough.

In Hong Kong and the US, the downturn LGD for the mortgage model is defined to be the period when historical default rates and property price declines were at their most severe. This was observed in 2003-2004 in Hong Kong when it experienced the Severe Acute Respiratory Syndrome. In the US, this coincided with the US recession and subprime mortgage crisis covering the periods 2003 to 2008.

Table 31: Material Retail IRB risk rating systems

Portfolio	CRD IV asset class	RWA US$bn	Component model	Number of material component models	Model description and methodology	Number of years loss data1	Applicable Pillar 1 regulatory thresholds and overlays
UK HSBC residential mortgages	Retail - secured by mortgages on immovable property non-SME	5.86	PD	1	Statistical model built on internal behavioural data and bureau information, and calibrated to a long-run default rate.	7-10	PD floor of 0.03%
			LGD	1	Statistical estimates of loss and probability of possession in combination with the workout process and using the 1990's recession in benchmarking the downturn LGD.	> 10	LGD floor of 10% at portfolio level
			EAD	1	Statistical model based on historical data and uses balance at observation and expected number of months to default.	7-10	EAD must at least be equal to current balance
UK HSBC credit cards	Retail - qualifying revolving	2.24	PD	1	Statistical model built on internal behavioural data and bureau information, and calibrated to a long-run default rate.	7-10	PD floor of 0.03%
			LGD	1	Statistical model based on forecasting the amount of expected future	7-10	

					recoveries.		
			EAD	1	Statistical model which derives a credit conversion factor to determine the proportion of undrawn limit to be added to the balance at observation.	7-10	EAD must at least be equal to current balance
			PD	1	Statistical model built on internal behavioural data and bureau information, and calibrated to a long-run default rate.	7-10	PD floor of 0.03%
			LGD	1	Statistical model based on forecasting the amount of expected future recoveries.	7-10	
UK HSBC personal loans	Retail - other non-SME	2.45					
			EAD	1	Rule-based calculation based on current balance which continues to be a conservative estimate for EAD.	7-10	EAD must at least be equal to current balance
			PD	1	Statistical model built on internal behavioural data and bureau information, and calibrated to a long-run default rate.	7-10	PD floor of 0.03%
UK business banking	Retail - other SME	4.50	LGD	2	Two sets of models - one for secured and another for unsecured exposures. The secured model uses the value to loan as a key component for	7-10	

					estimation while the unsecured model estimates the amount of future recoveries and undrawn portion.		
			EAD	1	Statistical model using segmentation according to limit and utilisation and estimation of the undrawn exposure.	7-10	EAD must at least be equal to current balance
			PD	1	Statistical model built on internal behavioural data and bureau information, and calibrated to a long-run default rate.	> 10	PD floor of 0.03%
Hong Kong HSBC personal residential mortgages2	Retail - secured by mortgages on immovable property non-SME	3.70	LGD	1	Statistical model based on estimate of loss incurred over a recovery period derived from historical data with downturn LGD based on the worst observed default rate.	> 10	LGD floor of 10% at portfolio level
			EAD	1	Rule-based calculation based on current balance which continues to be a conservative estimate for EAD.	> 10	EAD must at least be equal to current balance
			PD	1	Statistical model built on internal behavioural data and bureau information, and calibrated to a long-run default rate.	> 10	PD floor of 0.03%
Hong Kong HSBC credit cards	Retail - qualifying revolving	2.90	LGD	1		> 10	

					Statistical model based on forecasting the amount of expected future recoveries.		
			EAD	1	Statistical model which derives a credit conversion factor to determine the proportion of undrawn limit to be added to the balance at observation.	> 10	EAD must at least be equal to current balance

Portfolio	CRD IV asset class	RWA US$bn	Component model	Number of material component models	Model description and methodology	Number of years loss data	Applicable Pillar 1 regulatory thresholds and overlays
			PD	1	Statistical model built on internal behavioural data and bureau information, and calibrated to a long-run default rate.	> 10	PD floor of 0.03%
Hong Kong HSBC personal instalment loans	Retail - other non-SME	1.22	LGD	1	Statistical model based on forecasting the amount of expected future recoveries.	> 10	
			EAD	1	Rule-based calculation based on current balance which continues to be a conservative estimate for EAD.	> 10	EAD must at least be equal to current balance
	Retail	28.7	PD	1		> 10	

US Consumer Lending first lien3	- secured by mortgages on immovable property non-SME				Statistical model built on internal behavioural data and bureau information, and calibrated to a long-run default rate.		PD floor of 0.03%
			LGD	1	Statistical model based on identifying the main risk drivers of loss and recovery and grouping them into homogeneous pools. Downturn LGD is derived based on the peak default rate observed while additional assumptions and estimations are done on incomplete workouts.	> 10	LGD floor of 10% at portfolio level 10% uplift on the total LGD for first lien portfolio LGD floor at the segment level based on the value notified to the PRA and ranges from c.60% to c.98%
			EAD	1	Rule-based calculation based on current balance which continues to be a conservative estimate for EAD.	> 10	EAD must at least be equal to current balance
			PD	1	Statistical model built on internal behavioural data and bureau information, and calibrated to a long-run default rate.	> 10	PD floor of 0.03%
US Mortgage Services first lien3	Retail - secured by mortgages on immovable property non-SME	13.3	LGD	1	Statistical model based on identifying the main risk	> 10	LGD floor of 10% at portfolio level

				drivers of loss and recovery and grouping them into homogeneous pools. Downturn LGD is derived based on the peak default rate observed while additional assumptions and estimations are done on incomplete workouts.		10% uplift on the total LGD for first lien portfolio LGD floor at the segment level based on the value notified to the PRA and ranges from c.60% to c.98%
			EAD	1	Rule-based calculation based on current balance which continues to be a conservative estimate for EAD.	> 10	EAD must at least be equal to current balance
			PD	1	Statistical model built on internal behavioural data and bureau information, and calibrated to a long-run default rate.	> 10	PD floor of 0.03% Uplift in RWA and EL based on comparison of outputs between existing and new models
			LGD	1	Statistical model based on identifying the main risk drivers of loss and recovery and grouping them into homogeneous pools. Downturn LGD is derived based on the peak default rate observed while additional	> 10	LGD floor of 10% at portfolio level Uplift in RWA and EL based on comparison of outputs between existing and new models
US HSBC Mortgage Corporation first lien3	Retail - secured by mortgages on immovable property non-SME	9.0					

		assumptions and estimations are done on incomplete workouts.	
EAD	1	Rule-based calculation based on current balance which continues to be a conservative estimate for EAD.	> 10 EAD must at least be equal to current balance Uplift in RWA and EL based on comparison of outputs between existing and new models

1 Defined as the number of years from the data period used for model development up to the present.

2 The Hong Kong Monetary Authority also introduced a 15% risk weight floor for all residential mortgages granted after 22 February 2013 in Hong Kong. This risk weight floor is also reflected in Group reported numbers.

3 In US mortgage business, first lien is a primary claim on a property which takes precedence over all subsequent claims and will be paid first from the proceeds in case of the property's foreclosure sale.

In December 2013, the PRA approved our use of a new set of models (referred to as Gen2 models) for the CML portfolios, subject to certain conditions with regard to LGD floors and regular assessment of the capital difference in applying the US instead of the PRA rules, mainly on the definition of default used for modelling.

For the HSBC Mortgage Corporation first lien portfolio, we continue to include agreed adjustments to the existing model outputs based on a new set of models which are yet to be approved by the PRA.

Table 32a below sets out the exposure-weighted average PDs by retail exposure class while table 32b below provides the exposure value, exposure-weighted average PDs and LGDs, RWA density and RWAs for our most material residential mortgages risk rating systems.

In table 32b, the regulatory LGD and PD floors of 10% and 0.03%, respectively, are included. In this table, the UK HSBC residential mortgages include the HSBC branded portfolios of HSBC Bank plc but not those of First Direct, Hong Kong residential mortgages consist of HSBC and Hang Seng portfolios, and the US residential mortgages cover the CML and the US HSBC Mortgage Corporation portfolios. The PD and LGD values in the US residential mortgages are before the quantitative adjustment due to the existing deficiencies of the US HSBC Mortgage Corporation Gen1 model. This quantitative adjustment is applied at the total portfolio RWA and EL levels.

Within table 32b, the RWAs and other Basel metrics have decreased in 2014 due to the increasing house prices in the UK and the continued sale of defaulted assets and improving economic conditions in the US. On the other hand, the implementation of the 15% risk weight floor for new residential mortgages in 2014 increased the RWAs and RWA density in Hong Kong.

Tables 33 and 34 show IRB exposures by exposure sub-class and portfolio quality bands: at Group level by internal PD band and by geographic region using a composite EL measure, respectively.

In table 33, band seven has lower RWAs because, as assets approach and go into default, our capital requirements are increasingly reflected in an EL deduction from capital, rather than a direct RWA

impact.

Table 32a: Retail IRB portfolio analysis

	Europe	Asia	North America	Total
	%	%	%	%
At 31 December 2014				
Exposure-weighted average PD				
Retail - secured by mortgages on immovable property non-SME	0.98	1.00	11.54	3.06
Retail - secured by mortgages on immovable property SME	8.81	0.76	-	7.06
Retail - qualifying revolving	1.41	1.09	1.74	1.30
Retail - other SME	10.09	0.12	3.75	9.73
Retail - other non-SME	1.90	1.76	7.54	2.68
Exposure-weighted average LGD				
Retail - secured by mortgages on immovable property non-SME	13.5	12.1	51.5	20.5
Retail - secured by mortgages on immovable property SME	19.0	11.1	-	17.5
Retail - qualifying revolving	84.5	100.2	90.1	91.3
Retail - other SME	48.7	9.1	61.0	49.0
Retail - other non-SME	22.0	22.8	77.7	30.0

Table 32b: Retail IRB exposures secured by mortgages on immovable property (non-SME)

	Exposure value	Average PD	Average LGD	RWA density	RWAs
	US$bn	%	%	%	US$bn
At 31 December 2014					
Total Retail IRB exposures secured by mortgages on immovable property (non-SME)	288.9	3.06	20.5	25	71.6
Of which:					
- US first lien residential mortgages	37.3	14.83	56.4	136	50.9
- UK HSBC residential mortgages	98.3	0.93	15.5	6	5.9
- Hong Kong residential mortgages	56.3	0.78	10.1	10	5.8

At 31 December 2013					
Total Retail IRB exposures secured on real estate property	310.7	4.02	20.1	34	105.4
Of which:					
- US first lien residential mortgages	42.8	18.13	59.6	176	75.3
- UK HSBC residential mortgages	104.4	1.11	16.4	7	7.3
- Hong Kong residential mortgages	52.1	0.74	10.1	7	3.8

Table 33: Retail IRB exposure - by internal PD band

	PD range %	Exposure value1 US$bn	Average PD2 %	Average LGD2 %	RWA density2 %	RWAs US$bn
At 31 December 2014						
Secured by mortgages on immovable property SME						
Band 1	0.000 to 0.483	0.5	0.10	11.9	0	0.0
Band 2	0.484 to 1.022	0.6	0.80	16.8	17	0.1
Band 3	1.023 to 4.914	1.5	2.45	18.3	20	0.3
Band 4	4.915 to 8.860	0.2	6.94	23.0	50	0.1
Band 5	8.861 to 15.000	0.1	11.25	26.4	0	0.0
Band 6	15.001 to 50.000	0.1	25.01	18.8	100	0.1
Band 7	50.001 to 100.000	0.1	100.00	16.8	0	0.0
		3.1	7.06	17.5	21	0.6
Secured by mortgages on immovable property Non-SME						
Band 1	0.000 to 0.483	219.7	0.12	15.2	6	12.1
Band 2	0.484 to 1.022	27.2	0.69	27.5	31	8.5
Band 3		24.1	2.01	36.2	82	19.8

	1.023 to 4.914					
	4.915 to					
Band 4	8.860	5.8	5.89	52.0	221	12.8
	8.861 to					
Band 5	15.000	2.2	12.31	36.7	200	4.4
	15.001 to					
Band 6	50.000	3.2	23.72	57.7	378	12.1
	50.001 to					
Band 7	100.000	6.7	97.17	59.4	28	1.9
		288.9	3.06	20.5	25	71.6
Qualifying revolving retail exposures						
	0.000 to					
Band 1	0.483	47.8	0.12	91.9	6	3.1
	0.484 to					
Band 2	1.022	6.6	0.71	91.3	29	1.9
	1.023 to					
Band 3	4.914	9.1	2.26	89.8	65	5.9
	4.915 to					
Band 4	8.860	1.4	6.64	87.8	136	1.9
	8.861 to					
Band 5	15.000	0.5	11.06	89.1	200	1.0
	15.001 to					
Band 6	50.000	0.5	24.44	90.3	260	1.3
	50.001 to					
Band 7	100.000	0.3	89.52	64.5	67	0.2
		66.2	1.30	91.3	23	15.3
Other SME						
	0.000 to					
Band 1	0.483	1.8	0.29	57.1	17	0.3
	0.484 to					
Band 2	1.022	2.3	0.74	46.0	30	0.7
	1.023 to					
Band 3	4.914	6.3	2.56	49.4	52	3.3
	4.915 to					
Band 4	8.860	1.5	6.68	45.7	60	0.9
	8.861 to					
Band 5	15.000	0.6	11.00	52.7	67	0.4
	15.001 to					
Band 6	50.000	0.5	24.99	54.1	100	0.5
	50.001 to					
Band 7	100.000	0.9	99.27	37.9	11	0.1
		13.9	9.73	49.0	45	6.2

Other non-SME						
Band 1	0.000 to 0.483	27.0	0.19	25.7	11	3.0
Band 2	0.484 to 1.022	6.3	0.71	33.3	30	1.9
Band 3	1.023 to 4.914	11.3	1.98	30.1	42	4.7
Band 4	4.915 to 8.860	0.9	7.24	60.6	100	0.9
Band 5	8.861 to 15.000	0.5	12.25	71.2	160	0.8
Band 6	15.001 to 50.000	0.6	28.20	63.4	150	0.9
Band 7	50.001 to 100.000	0.7	95.81	66.5	29	0.2
		47.3	2.68	30.0	26	12.4
Total retail						
Band 1	0.000 to 0.483	296.8	0.13	28.8	6	18.5
Band 2	0.484 to 1.022	43.0	0.70	39.0	30	13.1
Band 3	1.023 to 4.914	52.3	2.13	45.2	65	34.0
Band 4	4.915 to 8.860	9.8	6.27	56.2	169	16.6
Band 5	8.861 to 15.000	3.9	11.91	51.0	169	6.6
Band 6	15.001 to 50.000	4.9	24.47	60.7	304	14.9
Band 7	50.001 to 100.000	8.7	97.05	57.3	28	2.4
		419.4	2.99	33.7	25	106.1

	PD range	Exposure value	Average PD2	Average LGD2	RWA density2	RWAs
	%	US$bn	%	%	%	US$bn
At 31 December 2013						
Secured on real estate property						
Band 1	0.000 to 0.483	215.1	0.12	14.2	4	9.3
Band 2	0.484 to 1.022	42.2	0.65	23.4	29	12.2

Band 3	1.023 to 4.914	30.0	2.30	34.9	106	31.9
Band 4	4.915 to 8.860	5.1	5.91	54.3	308	15.7
Band 5	8.861 to 15.000	3.6	12.25	44.6	300	10.8
Band 6	15.001 to 50.000	4.9	24.16	50.2	445	21.8
Band 7	50.001 to 100.000	9.8	96.17	49.6	38	3.7
		310.7	4.02	20.1	34	105.4
Qualifying revolving retail exposures						
Band 1	0.000 to 0.483	47.9	0.12	90.7	6	2.9
Band 2	0.484 to 1.022	6.3	0.70	91.3	29	1.8
Band 3	1.023 to 4.914	9.5	2.18	88.7	62	5.9
Band 4	4.915 to 8.860	1.6	6.59	85.8	131	2.1
Band 5	8.861 to 15.000	0.7	10.90	84.9	157	1.1
Band 6	15.001 to 50.000	0.5	27.63	86.9	240	1.2
Band 7	50.001 to 100.000	0.4	88.27	78.4	100	0.4
		66.9	1.40	90.2	23	15.4
SMEs						
Band 1	0.000 to 0.483	2.6	0.25	38.3	19	0.5
Band 2	0.484 to 1.022	2.8	0.76	30.4	29	0.8
Band 3	1.023 to 4.914	8.1	2.64	40.5	57	4.6
Band 4	4.915 to 8.860	2.3	6.71	37.8	61	1.4
Band 5	8.861 to 15.000	0.8	11.08	46.3	88	0.7
Band 6	15.001 to 50.000	0.7	25.47	48.4	114	0.8
Band 7	50.001 to 100.000	1.3	99.27	34.9	8	0.1
		18.6	10.63	38.5	48	8.9
Other retail						

Band 1	0.000 to 0.483	24.6	0.20	17.7	9	2.1
Band 2	0.484 to 1.022	8.1	0.70	30.6	27	2.2
Band 3	1.023 to 4.914	11.4	1.98	28.6	39	4.5
Band 4	4.915 to 8.860	1.0	7.07	41.4	70	0.7
Band 5	8.861 to 15.000	0.5	11.76	55.7	100	0.5
Band 6	15.001 to 50.000	0.6	27.91	35.5	100	0.6
Band 7	50.001 to 100.000	0.6	93.52	56.1	67	0.4
		46.8	2.64	24.3	24	11.0
Total retail						
Band 1	0.000 to 0.483	290.2	0.12	27.3	5	14.8
Band 2	0.484 to 1.022	59.4	0.67	32.0	29	17.0
Band 3	1.023 to 4.914	59.0	2.26	43.1	79	46.9
Band 4	4.915 to 8.860	10.0	6.32	54.2	199	19.9
Band 5	8.861 to 15.000	5.6	11.88	50.6	234	13.1
Band 6	15.001 to 50.000	6.7	24.88	51.3	364	24.4
Band 7	50.001 to 100.000	12.1	96.13	49.2	38	4.6
		443.0	3.76	31.9	32	140.7

1 Secured by mortgages on immovable property - SME exposure value includes nil in undrawn commitments, secured by mortgages on immovable property - non-SME exposure value includes US$17.9bn, qualifying revolving retail exposures exposure value includes US$93.0bn, other SME exposure value includes US$4.4bn and other non-SMEexposure value includes US$14.4bn.

2 Average PD, average LGD and RWA density percentages represent exposure-weighted averages.

To view charts in PDF format please click on the link below:

http://www.rns-pdf.londonstockexchange.com/rns/5403F_-2015-2-22.pdf

Retail exposures by internal PD band

2014

2013

Key points

Secured by mortgages on immovable property

· Favourable shifts in PD bands are driven by the US run-off portfolio, due to book quality improvement driven by continued run-off that resulted in an improvement in the residual portfolio.

· The re-classification of part of the mortgage portfolio in North America has driven the movement between secured by mortgages on immovable property and other non-SME.

The possible variation between jurisdictions' definitions underlying retail PD and LGD diminishes the usefulness of these measures as comparators for the purposes of global retail portfolio management. To address this, we also maintain an EL scale for retail business, combining obligor and facility/product risk factors in a composite measure of PD and LGD. This scale, summarised in the table below, enables the diverse risk profiles of retail portfolios across the Group to be assessed using a common denominator instead of their disparate PD and LGD measures.

Table 34: Retail IRB exposure - by region1

	Exposure value			
	Europe US$bn	Asia US$bn	North America US$bn	Total exposure US$bn
Secured by mortgages on immovable property SME				
Expected loss band				
- less than 1%	1.8	0.7	-	2.5
- greater than or equal to 1% and less than 5%	0.5	-	-	0.5
- greater than or equal to 5% and less than 10%	-	-	-	-
- greater than or equal to 10% and less than 20%	-	-	-	-
- greater than or equal to 20% and less than 40%	-	-	-	-
- greater than or equal to 40% or exposures in default	0.1	-	-	0.1
	2.4	0.7	-	3.1
Secured by mortgages on immovable property non-SME				
Expected loss band				

- less than 1%	142.2	87.6	35.9	265.7
- greater than or equal to 1% and less than 5%	0.7	0.2	10.7	11.6
- greater than or equal to 5% and less than 10%	0.2	-	1.9	2.1
- greater than or equal to 10% and less than 20%	0.1	-	2.0	2.1
- greater than or equal to 20% and less than 40%	-	-	0.7	0.7
- greater than or equal to 40% or exposures in default	0.9	0.4	5.4	6.7
	144.1	88.2	56.6	288.9
Qualifying revolving retail exposures				
Expected loss band				
- less than 1%	29.4	23.4	3.2	56.0
- greater than or equal to 1% and less than 5%	4.4	3.1	0.7	8.2
- greater than or equal to 5% and less than 10%	0.6	0.4	0.1	1.1
- greater than or equal to 10% and less than 20%	0.2	0.3	-	0.5
- greater than or equal to 20% and less than 40%	0.1	0.1	-	0.2
- greater than or equal to 40% or exposures in default	0.2	-	-	0.2
	34.9	27.3	4.0	66.2
Other SME				
Expected loss band				
- less than 1%	6.3	0.1	0.4	6.8
- greater than or equal to 1% and less than 5%	5.1	-	0.2	5.3
- greater than or equal to 5% and less than 10%	0.6	-	-	0.6
- greater than or equal to 10% and less than 20%	0.2	-	-	0.2
- greater than or equal to 20% and less than 40%	0.1	-	-	0.1
- greater than or equal to 40% or exposures in default	0.9	-	-	0.9
	13.2	0.1	0.6	13.9
Other non-SME				
Expected loss band				
- less than 1%	32.6	5.4	3.9	41.9
- greater than or equal to 1% and less than 5%	1.5	0.5	1.6	3.6
- greater than or equal to 5% and less than 10%	0.2	0.1	0.3	0.6
- greater than or equal to 10% and less than 20%	-	-	0.4	0.4
- greater than or equal to 20% and less than 40%	-	-	0.2	0.2
- greater than or equal to 40% or exposures in default	0.3	-	0.3	0.6
	34.6	6.0	6.7	47.3
Total retail				
Expected loss band				
- less than 1%	212.3	117.2	43.4	372.9
- greater than or equal to 1% and less than 5%	12.2	3.8	13.2	29.2
- greater than or equal to 5% and less than 10%	1.6	0.5	2.3	4.4
- greater than or equal to 10% and less than 20%	0.5	0.3	2.4	3.2
- greater than or equal to 20% and less than 40%	0.2	0.1	0.9	1.2
- greater than or equal to 40% or exposures in default	2.4	0.4	5.7	8.5

At 31 December 2014	229.2	122.3	67.9	419.4

	Exposure value			
	Europe US$bn	Asia US$bn	North America US$bn	Total exposure US$bn
Secured on real estate property				
Expected loss band				
- less than 1%	152.1	85.1	40.4	277.6
- greater than or equal to 1% and less than 5%	1.2	1.1	13.2	15.5
- greater than or equal to 5% and less than 10%	0.3	-	3.5	3.8
- greater than or equal to 10% and less than 20%	0.1	-	2.6	2.7
- greater than or equal to 20% and less than 40%	-	-	1.7	1.7
- greater than or equal to 40% or exposures in default	1.1	0.3	8.0	9.4
	154.8	86.5	69.4	310.7
Qualifying revolving retail exposures				
Expected loss band				
- less than 1%	30.2	21.2	3.5	54.9
- greater than or equal to 1% and less than 5%	5.2	3.3	0.8	9.3
- greater than or equal to 5% and less than 10%	1.0	0.5	0.2	1.7
- greater than or equal to 10% and less than 20%	0.2	0.2	-	0.4
- greater than or equal to 20% and less than 40%	-	0.1	0.1	0.2
- greater than or equal to 40% or exposures in default	0.3	-	0.1	0.4
	36.9	25.3	4.7	66.9
SMEs				
Expected loss band				
- less than 1%	9.0	0.8	0.3	10.1
- greater than or equal to 1% and less than 5%	5.8	-	0.3	6.1
- greater than or equal to 5% and less than 10%	0.7	-	-	0.7
- greater than or equal to 10% and less than 20%	0.3	-	-	0.3
- greater than or equal to 20% and less than 40%	0.1	-	-	0.1

- greater than or equal to 40% or exposures in default	1.3	-	-	1.3
	17.2	0.8	0.6	18.6
Other retail				
Expected loss band				
- less than 1%	33.9	5.1	2.6	41.6
- greater than or equal to 1% and less than 5%	2.9	0.6	0.3	3.8
- greater than or equal to 5% and less than 10%	0.3	0.1	0.1	0.5
- greater than or equal to 10% and less than 20%	0.1	-	0.1	0.2
- greater than or equal to 20% and less than 40%	0.1	-	0.1	0.2
- greater than or equal to 40% or exposures in default	0.5	-	-	0.5
	37.8	5.8	3.2	46.8
Total retail				
Expected loss band				
- less than 1%	225.2	112.2	46.8	384.2
- greater than or equal to 1% and less than 5%	15.1	5.0	14.6	34.7
- greater than or equal to 5% and less than 10%	2.3	0.6	3.8	6.7
- greater than or equal to 10% and less than 20%	0.7	0.2	2.7	3.6
- greater than or equal to 20% and less than 40%	0.2	0.1	1.9	2.2
- greater than or equal to 40% or exposures in default	3.2	0.3	8.1	11.6
At 31 December 2013	246.7	118.4	77.9	443.0

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

Model performance

Model validation within HSBC is subject to global internal standards. All material models whose outputs are used in calculations of IRB capital requirements fall under this governance framework. These arrangements are designed to support a comprehensive quantitative and qualitative process within a cycle of model monitoring and validation that includes:

· investigation of model stability;

· model performance measured through testing the model's outputs against actual outcomes; and

· model use within the business, e.g. user input data quality, override activity, and the assessment of results from key controls around the usage of the rating system as a whole within the overall credit process.

The purpose of periodic monitoring and validation is therefore:

· to determine that the model continues to produce accurate outputs, suitable for the intended purposes;

· to confirm that the model remains conceptually sound, that the model design is still appropriate and the assumptions made at development remain valid;

· to ensure that the model is used for its intended purpose and for appropriate exposures only (use test); and

· to prompt corrective actions when the model outputs move away from the expected levels.

Models are validated against a series of metrics and triggers approved by the governance committee. The metrics and quantitative checks for periodic validation include a review of the data inputs and overall population stability, and an assessment of the model's discriminatory power or rank order capability, its calibration accuracy, and its performance against available benchmarks. The qualitative checks include and reconfirm all elements assessed at design phase, including the model's conceptual soundness.

The results of periodic in-depth validation must be presented to a model governing committee at least annually. A subset of the key performance metrics is produced and reviewed as part of the ongoing monitoring process.

A large number of models are used within the Group, and data at individual model level is, in most cases, immaterial in the context of the Group overall. We therefore disclose data covering most wholesale models including corporate models on an aggregated basis, and on our individually most material retail models as set out in table 31 above. The tables below show estimated values at the beginning of the relevant observation periods, and subsequent actual experienced values, for key Basel calculation metrics. Values for wholesale models are shown in tables 35 and 36, and for retail models in table 37. The basis of preparation of each table is set out below and in footnotes.

Wholesale credit models

For wholesale portfolios, we disclose the performance of models covering sovereign obligors, banks and corporates. As explained on page 45, we operate global models for the first two of these customer groups. In the case of corporates, we have aggregated data on models covering a customer population ranging from large multinational companies to medium-sized and smaller corporates. The PD analysis for this group includes mainly advanced IRB exposures but also a small element of foundation IRB.

In table 35 below, the data for sovereigns and banks are based on such a small number of defaults that the comparison of estimated with actual results, even where these are available, is not fully reflective of a model's performance. To mitigate this characteristic of low-default portfolios, additional analysis is carried out on these models at annual validation. This analysis shows that they discriminate risk well and are appropriately calibrated. The latter reflects both a prudent modelling approach and the conservatism required by regulations. As noted on page 46, sovereign and institutions exposures are subject to an explicit regulatory floor applied for the calculation of regulatory capital.

Within table 35, for back-testing purposes, a customer's CRR/PD is observed at a point in time and then their default or non-default status in the following one-year period is recorded against that PD grade. The PD presentation in table 35 is expressed for all exposure classes on an obligor basis, as model performance is judged on this basis in validation. The LGD and EAD refer to observations for the defaulted population, being the appropriate focus of an assessment of

these models' performance.

Table 35: IRB models - estimated and actual values (wholesale)8

	PD1		LGD2		EAD3	
	Estimated	Actuals	Estimated4	Actuals4	Estimated	Actuals
	%	%	%	%	%	%
2014						
Sovereigns model5	2.27	-	-	-	-	-
Banks model6	3.28	-	-	-	-	-
Corporates models7	1.88	1.16	36.83	16.06	0.47	0.34
2013						
Sovereigns model5	4.14	-	-	-	-	-
Banks model6	3.18	0.20	40.01	-	0.06	0.04
Corporates models7	2.63	1.20	33.09	18.69	0.54	0.48

1 Estimated PD for all models is average PD calculated on the number of obligors covered by the model(s).
2 Average LGD values are EAD-weighted.
3 Expressed as a percentage of total EAD which includes all defaulted and non-defaulted exposures for the relevant population.
4 For sovereigns and banks models, estimated and actuals LGD represents the average LGD for customers that have defaulted in the period. For corporates models, they represent the average LGD for customers that have defaulted and which have been resolved in the period.
5 No defaults have been observed in the Sovereign portfolio since 31 December 2012. In 2014 the estimated PD excludes inactive Sovereign obligors.
6 No defaults were observed in the Banks portfolio in 2014. During 2014 two defaults that occurred prior to 2013 were resolved resulting in an actual LGD of 7.86% against an originally estimated LGD of 55%.
7 Covers the combined populations of the global large corporates model, all regional IRB models for large, medium and small corporates and non-bank financial institutions. In 2014 the estimated and observed PDs has been calculated only for unique obligors.
8 Data represents an annual view, analysed as at 30 September.

Table 36 below expands upon the estimated and actual corporate PD in table 35, as sufficient defaults in this population make analysis at this level meaningful. This analysis is conducted as part of regular validation to ensure that, throughout the entire population, there is a satisfactory degree of conservative performance at all grades. Table 36 is not comparable with table 30c on page 50, mainly because table 36 is a distribution of facility limits, rather than exposure value, and for a back-testing population that does not exactly match the exposure class population of table 28 and table 30c.

Table 36: IRB models - corporate PD models - performance by CRR grade

Corporates1		
	Defaulted3	Estimated PD4

Facility2

	%	%	%
2014 CRR 0.16	0.01	0.00	0.01
CRR 1.1	6.32	0.00	0.02
CRR 1.2	6.68	0.00	0.04
CRR 2.1	16.71	0.01	0.07
CRR 2.2	13.07	0.00	0.13
CRR 3.1	10.38	0.06	0.22
CRR 3.2	12.50	0.11	0.37
CRR 3.3	6.62	0.25	0.63
CRR 4.1	10.41	0.28	0.87
CRR 4.2	4.12	0.79	1.20
CRR 4.3	3.49	0.83	1.65
CRR 5.1	2.50	0.53	2.25
CRR 5.2	2.09	0.54	3.05
CRR 5.3	1.47	1.74	4.20
CRR 6.1	0.59	3.02	5.75
CRR 6.2	0.30	1.12	7.85
CRR 7.1	0.29	14.59	10.00
CRR 7.2	0.08	2.78	13.00
CRR 8.1	2.31	1.17	19.00
CRR 8.2	0.04	32.32	36.00
CRR 8.3	0.02	4.85	75.00
Total	100.00		

Corporates1					
	Facility2	Defaulted3	Estimated PD4	Actual PD5	Diff. in PD
	%	%	%	%	%
2013					
CRR 0.16	0.00	0.00	0.01	0.00	0.01
CRR 1.1	4.83	0.00	0.02	0.00	0.02
CRR 1.2	7.47	0.00	0.04	0.00	0.04
CRR 2.1	20.85	0.00	0.07	0.00	0.07
CRR 2.2	10.38	0.01	0.13	0.03	0.10
CRR 3.1	10.79	0.07	0.22	0.16	0.06
CRR 3.2	9.49	0.13	0.37	0.22	0.15
CRR 3.3	8.33	0.15	0.63	0.27	0.36
CRR 4.1	6.40	0.35	0.87	0.48	0.39
CRR 4.2	5.84	0.93	1.20	0.80	0.40
CRR 4.3	4.22	0.47	1.65	0.67	0.98
CRR 5.1	4.18	0.72	2.25	0.76	1.49
CRR 5.2	3.07	0.97	3.05	1.03	2.02
CRR 5.3	1.85	2.77	4.20	1.89	2.31
CRR 6.1	0.98	4.37	5.75	3.28	2.47
CRR 6.2	0.46	5.74	7.85	3.77	4.08
CRR 7.1	0.44	12.69	10.00	7.95	2.05
CRR 7.2	0.15	7.84	13.00	8.68	4.32
CRR 8.1	0.15	9.48	19.00	11.44	7.56
CRR 8.2	0.07	14.94	36.00	13.70	22.30

CRR 8.3	0.05	13.12	75.00	13.64	61.36
Total	100.00				

1 Covers the combined populations of the global large corporates model, all regional IRB models for large, medium and small corporates and non-bank financial institutions.

2 Total facility limits for each CRR grade, expressed as a percentage of total limits granted.

3 Defaulted facilities as a percentage of total facility limits at that grade.

4 The estimated PD is before application of the 0.03% regulatory floor.

5 Actual PD is based on the number of defaulted obligors covered by the model(s), without taking into account the size of the facility granted or the exposures to the obligor.

6 The top band of the wholesale CRR master scale is not available to entities in the corporates exposure class, but restricted to the strongest central governments, central banks and institutions.

Retail credit models

In the case of retail portfolios, we do not operate global models due to the different country-level portfolio performance characteristics and loss history. Given the large number of retail IRB models globally, we disclose information on our most material local models.

The actual and estimated values are derived from the model monitoring and calibration processes performed at a local level. Within the discipline of our Global modelling policies, our analytics teams adopt back-testing criteria specific to local conditions in order to assess the accuracy of their models.

Table 37 below contains the estimated and actual values from the back-testing of our material IRB models covering the HSBC Brand portfolios in the UK, the HSBC portfolios under the Area Management Office in Hong Kong, and the residential mortgage portfolios in the US.

The PD, LGD and EAD estimated values here were calculated to compare with the reported actual values and have a different basis of preparation to the estimates reported in tables 32a and 32b.

Within table 37, for back-testing purposes, a customer's PD is observed at a point in time and their default or non-default status in the following one-year period is recorded against that PD grade. The PD presentation here is expressed on an obligor count basis consisting of non-defaulted obligors at the time of observation. The LGD and EAD refer to observations for the defaulted population, being the appropriate focus of an assessment of these models' performance. The LGD values represent the amount of loss as a percentage of EAD and are calculated based on defaulted accounts that got fully resolved or have completed the modelled recovery outcome period as of the reporting date. The EAD values are presented as a percentage of the total EAD which includes all defaulted and non-defaulted exposures for the relevant population. The regulatory PD and LGD floors of 0.03% and 10%, respectively, are applied during final capital calculation and hence not reflected in the below estimates where applicable.

The UK estimated values in table 37 are based on model outputs including required regulatory downturn adjustments. In conducting the back-testing, our UK HSBC residential mortgage LGD model uses a recovery outcome period of 24 months starting at the date of default. The significant proportion of defaulted population, which has not reached a fully resolved outcome as at the reporting date, contributed to the low actual LGD while the estimated LGD increased as a result of the required downturn adjustments. Overall, UK estimates in table 37 remain conservative and higher than calculated actual values.

The Hong Kong estimated PD and LGD values in table 37 include required stressed factors to reflect downturn conditions, especially in the case of the residential mortgage model. The LGD model for our Hong Kong HSBC residential mortgage portfolio uses a recovery outcome period of 24 months starting at the date of default. The estimates for our Hong Kong HSBC residential mortgage LGD remain higher than the calculated actual values but significantly below the 10% regulatory floor. There is minor under-estimation observed in our Hong Kong HSBC credit card EAD model; however this is already being remediated with model redevelopment expected to be completed by the end of 2015.

The US estimates in table 37 include downturn adjustments and model overlays agreed with the PRA. The LGD models for our Consumer Lending and Mortgage Services portfolios use a recovery outcome period of 30 months, and 36 months in the case of HSBC Mortgage Corporation portfolio, reflecting the longer recovery process due to foreclosure moratoria.

The LGD estimates for our Consumer Lending and Mortgage Services portfolios increased in 2014 when the Gen2 models with additional LGD model overlays as required in the PRA approval were implemented. However, actual LGD values are decreasing due to the continuing sale of defaulted assets and improving US economic conditions.

For the HSBC Mortgage Corporation portfolio, we still report the estimates from the existing Gen1 models. The new Gen2 models for this portfolio are under development and will be submitted for the PRA's approval during 2015. In the meantime, we continue to make the agreed quantitative adjustment to the amount of capital we hold against this portfolio to reflect the underperformance of the existing Gen1 models. The quantitative adjustment is performed at the portfolio RWA and EL levels and hence not reflected in table 37.

Table 37 is not comparable with tables 32a and 32b due to different population and methodology used for the purpose of back-testing, as described above.

Table 37: IRB models - estimated and actual values (retail)

	PD		LGD		EAD	
	Estimated	Actuals	Estimated	Actuals	Estimated	Actuals
	%	%	%	%	%	%
2014						
UK						
HSBC residential mortgage	0.50	0.31	15.82	4.68	0.24	0.23
HSBC credit card	1.37	1.07	91.11	86.30	1.83	1.78
HSBC personal loans	2.28	1.57	81.56	80.45	1.52	1.46
Business Banking (Retail SME)	2.83	2.57	73.04	68.17	2.00	1.88
Hong Kong						
	0.72	0.04	1.26	0.35	0.03	0.03

HSBC personal residential mortgage						
HSBC credit card	0.62	0.32	92.91	88.13	0.55	0.59
HSBC personal instalment loans	2.37	2.04	89.69	87.66	1.77	1.63
US						
Consumer Lending real estate first lien	7.31	7.72	77.16	60.29	7.83	7.72
Mortgage Services real estate first lien	9.43	8.12	71.40	60.17	7.51	7.43
HSBC Mortgage Corporation first lien	5.24	2.28	29.63	39.36	1.00	1.00
2013						
UK						
HSBC residential mortgage	0.55	0.38	17.30	6.40	0.32	0.31
HSBC credit card	1.54	1.27	88.10	84.10	1.70	1.67
HSBC personal loans	3.57	2.35	85.40	73.00	2.19	2.11
Business Banking (Retail SME)	2.39	2.61	78.00	70.00	2.03	1.99
Hong Kong						
HSBC personal residential mortgage	0.71	0.03	1.84	0.43	0.03	0.03
HSBC credit card	0.63	0.33	91.41	84.58	0.56	0.59
HSBC personal instalment loans	2.20	1.99	90.07	96.16	1.69	1.55
US						
Consumer Lending real estate first lien	7.74	8.22	67.13	64.93	7.08	6.72
Mortgage Services real estate first lien	10.15	9.68	60.04	62.92	6.12	5.88
HSBC Mortgage Corporation first lien	4.64	4.43	49.85	37.17	2.40	2.40

EL and credit risk adjustments

We analyse credit loss experience in order to assess the performance of our risk measurement and control processes, and to inform our understanding of the implications for risk and capital management of dynamic changes occurring in the risk profile of our exposures.

This analysis includes comparison of the EL calculated in the use of IRB risk rating models, which drives part of the regulatory capital calculation, with other reported measures of credit loss within financial statements prepared under IFRSs. These measures include loan impairment allowances, value adjustments and credit related provisions for off-balance sheet amounts, collectively referred to as credit risk adjustments ('CRA's). The excess of EL over CRAs is treated as a capital deduction in the composition of regulatory capital.

The disclosures below set out:

· commentary on aspects of the relationship between regulatory EL and CRAs recognised in our financial statements; and

· tables of EL and CRA balances and charges during the period by exposure class (within retail IRB, also by sub-class) and by region.

When comparing EL with measures of credit losses under IFRSs, it is necessary to take into account differences in the definition and scope of each. Below are examples of matters that can give rise to material differences in the way economic, business and methodological drivers are reflected quantitatively in the accounting and regulatory measures of loss.

Tables 38 and 39 set out, for IRB credit exposures, the EL, CRA balances and the actual loss experience reflected in the charges for CRAs.

CRA balances represent management's best estimate of losses incurred in the loan portfolios at the balance sheet date. Charges for CRAs represent a movement in the CRA balance during the year, reflecting loss events which occurred during the financial year and changes in estimates of losses arising on events which occurred prior to the current year. EL represents the one-year regulatory expected loss accumulated in the book and is calculated at a point in time.

EL and credit risk adjustments
IRB only (US$bn)

To view charts in PDF format please click on the link below

http://www.rns-pdf.londonstockexchange.com/rns/5403F_-2015-2-22.pdf

Examples of differences in definition and scope between EL and CRA balances

· Under IAS 39 our estimates of loss in impairment allowances are required to reflect the current circumstances and specific cash flow expectations of a customer. EL is based on modelled estimates and although the estimates may be individually assigned to specific exposures, the statistical nature of these models means that they are influenced by the behaviour of the overall portfolio;

· EL is based on exposure values that incorporate expected future drawings of committed credit lines, while CRAs are recognised in respect of financial assets recognised on the balance sheet and in

respect of committed credit lines where a loss is probable;

- EL is generally based on TTC estimates of PD over a one-year future horizon, determined via statistical analysis of historical default experience. CRAs are recognised for losses that have been incurred at the balance sheet date;
- In the majority of cases, EL is based on economic downturn estimates of LGD, while CRAs are measured using estimated future cash flows as at the balance sheet date;
- EL incorporates LGD, which may discount recoveries at a different rate from the effective interest rate employed in discounted cash flow analysis for CRAs;
- LGDs typically include all costs associated with recovery, whereas the accounting measurement considers only the costs of obtaining and selling collateral;
- The LGD and EAD used for the EL calculation in the Foundation IRB approach is set by regulations and may differ significantly from the accounting assumptions about estimated cash flows used;
- For EL, certain exposures are subject to regulatory minimum thresholds for one or more parameters, whereas credit losses under IFRSs are determined using management's judgement about estimated future cash flows; and
- In the case of EL, to meet regulatory prudential standards, HSBC's model philosophy favours the incorporation of conservative estimation to accommodate uncertainty, for instance where modelling portfolios with limited data. Under IFRSs, uncertainty is considered when forming management's estimates of future cash flows, using balanced and neutral judgement.

Table 38: IRB expected loss and CRAs - by exposure class1

CRA

	Expected loss US$bn	Balances US$bn	Charge for the year US$bn
IRB exposure classes			
Central governments and central banks	0.3	-	-
Institutions	0.3	-	-
Corporates	5.2	4.2	1.1
Retail	7.2	3.1	0.2
- secured by mortgages on immovable property SME	-	-	-
- secured by mortgages on immovable property non-SME	5.1	1.9	(0.1)
- qualifying revolving retail	0.7	0.3	0.1
- other SME	0.7	0.4	-
- other non-SME	0.7	0.5	0.2
At 31 December 2014	13.0	7.3	1.3
IRB exposure classes			
Central governments and central banks	0.3	-	-
Institutions	0.3	0.1	-
Corporates	5.8	4.4	1.5
Retail	9.3	5.1	1.2
- secured on real estate property	7.2	3.6	0.8
- qualifying revolving retail	0.7	0.4	0.3
- SMEs	0.9	0.7	-
- other retail	0.5	0.4	0.1
At 31 December 2013	15.7	9.6	2.7
IRB exposure classes			
Central governments and central banks	0.2	-	-
Institutions	0.3	-	-
Corporates	4.3	3.9	1.3
Retail	12.5	7.3	3.5
- secured on real estate property	9.9	5.3	2.4
- qualifying revolving retail	0.8	0.4	0.6
- SMEs	0.7	1.0	-
- other retail	1.1	0.6	0.5
At 31 December 2012	17.3	11.2	4.8

1 Excludes securitisation exposures because EL is not calculated for this exposure class.

Table 39: IRB expected loss and CRAs - by region1

	Expected loss US$bn	CRA Balances US$bn	Charge for the year US$bn
Europe	4.8	3.5	0.7
Asia	2.2	1.1	0.4
Middle East and North Africa	0.2	0.1	-
North America	5.7	2.6	0.2
Latin America	0.1	-	-
At 31 December 2014	13.0	7.3	1.3
Europe	6.0	4.5	1.4
Asia	1.9	1.0	0.2
Middle East and North Africa	0.4	0.2	-
North America	7.4	3.9	1.1
Latin America	-	-	-
At 31 December 2013	15.7	9.6	2.7

1 Excludes securitisation exposures because EL is not calculated for this exposure class.

Key points

· Excess expected loss decreased in North America, primarily due to the continued run-off of the US CML retail mortgage portfolio and the sale of lower quality loans, partially offset by some new defaults.

· In Europe, excess expected loss increased as result of the application of a LGD floor to UK corporates and the introduction of LGD floors to selected portfolios with a low default history.

Details of the Group's impaired loans and advances, past due but not impaired assets and impairment allowances and charges are set out from page 136 of the Annual Report and Accounts 2014.

Our approach for determining impairment allowances is explained on page 349 of the Annual Report and Accounts 2014, and the Group's definitions for accounting purposes of 'past due' and 'impaired' are set out on pages 136 and 137.

Under the accounting standards currently adopted by HSBC, impairment allowances, value adjusted and credit related provisions for off-balance sheet amounts are treated as specific CRAs.

Risk mitigation

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, 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. Specifically, 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.

Collateral

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

For credit risk mitigants comprising immovable property the key determinant of concentration at Group level is geographic, which, in the majority of cases, is the same as the reported geographic location of the related exposures. Use of immovable property mitigants for risk management purposes is predominantly in Asia and Europe. Further information regarding collateral held over CRE and residential property is provided on pages 147 and 156 respectively of the Annual Report and Accounts 2014.

Financial collateral

In the institutional sector, trading facilities are supported by charges over financial instruments such as cash, debt securities and equities. Financial collateral in the form of marketable securities is used in much of the Group's OTC derivatives activities and in SFTs such as repos, reverse repos, securities lending and borrowing. Netting is used extensively and is a prominent feature of market standard documentation. Further information regarding collateral held for trading exposures can be found on page 73.

In the banking book we provide customers with working capital management products. Some of these products have loans and advances to customers and customer accounts where we have rights of offset and comply with the regulatory requirements for on balance sheet netting. Under on-balance netting the customer accounts are treated as cash collateral and the effects of this collateral are incorporated in our LGD estimates. For risk management purposes the net amounts of such exposures are subject to limits which are monitored and the relevant customer agreements are subject to review and update, as necessary, to ensure the legal right of offset remains appropriate. At 31 December 2014 in the region of US$90bn of customer accounts were treated as cash collateral, mainly in the UK.

Other forms of collateral

Our Global Banking and Markets business utilises credit risk mitigation to manage the credit risk of its portfolios, with the goal of reducing concentrations in individual names, sectors or portfolios. The techniques in use include credit default swap ('CDS') purchases, structured credit notes and securitisation structures. Buying credit protection creates credit exposure against the protection provider, which is monitored as part of the overall credit exposure to them. Where applicable the transaction is entered into directly with a central clearing house counterparty, otherwise our exposure to CDS protection providers is diversified among mainly banking counterparties with strong credit ratings.

Policy and procedures

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

Valuing collateral

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

Local market conditions determine the frequency of valuation for CRE. Re-valuations are sought where, for example, as part of the regular credit assessment of the obligor, material concerns arise in relation to the performance of the collateral. CRE re-valuation also occurs commonly in circumstances where an obligor's credit quality has declined sufficiently to cause concern that the principal payment source may not fully meet the obligation. Where such concerns exist the re-valuation method selected will depend upon the loan to value relationship, the direction in which the local CRE market has moved since last valuation, and most importantly the specific characteristics of the underlying commercial real estate which is of concern.

Recognition of risk mitigation under the IRB approach

Within an IRB approach, risk mitigants are considered in two broad categories: first, those which reduce the intrinsic PD of an obligor and therefore operate as determinants of PD; and second, those which affect the estimated recoverability of obligations and require adjustment of LGD or, in certain limited circumstances, EAD.

The first typically include full parental guarantees - where one obligor within a group of companies guarantees another. This is usually factored into the estimate of the latter's PD, as it is assumed that the guarantor's performance materially informs the PD of the guaranteed entity. PD estimates are also subject to supplementary methodologies in respect of a 'sovereign ceiling', constraining the risk ratings assigned to obligors in countries of higher risk, and where only partial parental support exists. In addition, in certain jurisdictions, certain types of third party guarantee are recognised through substitution of the obligor's PD by the guarantor's PD.

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

The main types of provider of guarantees are banks, other financial institutions and corporates, the latter typically in support of subsidiaries of their company group. Across HSBC, the nature of such customers and transactions is very diverse and the creditworthiness of guarantors accordingly spans a wide spectrum. The creditworthiness of providers of unfunded credit risk mitigation is taken into consideration as part of the guarantor's risk profile when, for example, assessing the risk of other exposures such as direct lending to the guarantor. Internal limits for such contingent exposure are approved in the same way as direct exposures.

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

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

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

· for all other types of collateral, including real estate, the LGD for exposures calculated under the IRB advanced approach will be calculated by models. For IRB foundation, base regulatory LGDs are adjusted depending on the value and type of the asset taken as collateral relative to the exposure. The types of eligible mitigant recognised under the IRB foundation approach are more limited.

The table below sets out, for IRB exposures, the exposure value and the effective value of credit risk mitigation expressed as the exposure value covered by the credit risk mitigant. IRB credit risk mitigation reductions of EAD were immaterial at 31 December 2014.

Table 40: IRB exposure - credit risk mitigation

	At 31 December 2014		At 31 December 2013	
	Exposure value covered by credit derivatives or guarantees1 US$bn	Total exposure value US$bn	Exposure value covered by credit derivatives or guarantees US$bn	Total exposure value US$bn
Exposures under the IRB advanced approach				
Central governments and central banks	0.3	327.4	-	341.7
Institutions	0.8	130.4	2.1	130.0
Corporates	82.3	625.8	55.9	508.7
Retail	21.3	419.4	29.6	443.0
Securitisation positions	-	38.3	-	45.4
Non-credit obligation assets	-	52.5	-	-
		1,593.8		1,468.8

Exposures under the IRB foundation approach				
Central governments and central banks	-	0.1	-	-
Institutions	-	0.1	-	-
Corporates2	0.5	25.6	0.1	23.6

1 Figures presented in an 'obligor view'.
2 The value of exposures under the IRB foundation approach covered by eligible financial and other collateral was US$0.5bn (2013: US$0.6bn).

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

ECAI risk assessments are used within the Group as part of the determination of risk weightings for the following classes of exposure:
· Central governments and central banks;
· Institutions;
· Corporates;
· Securitisation positions;
· Short-term claims on institutions and corporates;
· Regional governments and local authorities; and
· Multilateral development banks.

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

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

When calculating the risk-weighted value of an exposure using ECAI risk assessments, risk systems identify the customer in question and look up the available ratings in the central database according to the rating selection rules. The systems then apply the prescribed credit quality step mapping to derive from the rating the relevant risk weight.

All other exposure classes are assigned risk weightings as prescribed in the PRA's rulebook

Credit quality step	Moody's assessments	S&P's assessments	Fitch's assessments
1	Aaa to Aa3	AAA to AA-	AAA to AA-
2	A1 to A3	A+ to A-	A+ to A-
3			

	Baa1 to Baa3	BBB+ to BBB-	BBB+ to BBB-
4	Ba1 to Ba3	BB+ to BB-	BB+ to BB-
5	B1 to B3	B+ to B-	B+ to B-
6	Caa1 and below	CCC+ and below	CCC+ and below

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

Associates' exposures are calculated under the standardised approach and, at 31 December 2014, represented approximately 16% (2013: 17%) of Group credit risk RWAs.

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 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 41 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 42 sets out the distribution of standardised exposures across credit quality steps. This analysis excludes regional governments or local authorities, short-term claims, securitisation positions, collective investment undertakings and multilateral development banks, as these exposures continue to be immaterial as a percentage of total standardised exposures. Also excluded, because the credit quality step methodology does not apply, are retail, equity, exposures in default and exposures secured by mortgages on immovable property.

Table 41: Standardised exposure - credit risk mitigation

	At 31 December 2014			At 31 December 2013		
	Exposure value covered by eligible financial and other collateral1	Exposure value covered by credit derivatives or guarantees1	Total exposure value	Exposure value covered by eligible financial and other collateral	Exposure value covered by credit derivatives or guarantees	Total Exposure value

	US$bn	US$bn	US$bn	US$bn	US$bn	US$bn
Exposures under the standardised approach						
Central governments and central banks	-	-	189.3	-	4.4	220.0
Institutions	-	2.5	30.1	-	3.4	35.2
Corporates	14.8	4.8	240.1	13.1	5.5	221.8
Retail	0.8	0.1	47.9	1.0	-	47.7
Secured by mortgages on immovable property	0.2	-	38.6	-	-	50.4
Exposures in default	-	-	4.7	-	-	4.1
Regional governments or local authorities	-	-	1.1	-	-	0.8
Equity	-	-	13.2	-	-	3.3
Other2	-	-	25.5	0.2	-	84.4
At 31 December			590.5			667.7

1 Figures presented in an 'obligor view'.

2 This includes the exposure class 'other items' with an exposure value of US$17.0bn as well as other less material standardised exposure classes not individually shown above

Table 42: Standardised exposure - by credit quality step

	At 31 December 2014			At 31 December 2013	
	Original exposure1	Exposure value2	RWAs	Exposure value2	RWAs
	US$bn	US$bn	US$bn	US$bn	US$bn
Central governments and central banks					
Credit quality step 1	171.0	177.1		218.8	
Credit quality step 2	0.7	0.8		-	
Credit quality step 3	0.6	0.9		-	
Credit quality step 4	0.5	0.5		-	
Credit quality step 5	-	-		0.1	
Credit quality step unrated	9.9	10.0		1.1	
	182.7	189.3	19.7	220.0	0.7

Institutions					
Credit quality step 1	1.2	0.6		3.5	
Credit quality step 2	2.1	1.1		-	
Credit quality step unrated	28.7	28.4		31.7	
	32.0	30.1	11.2	35.2	12.1
Corporates					
Credit quality step 1	2.3	1.3		4.1	
Credit quality step 2	7.3	4.8		2.2	
Credit quality step 3	2.7	1.6		2.8	
Credit quality step 4	2.7	1.7		0.8	
Credit quality step 5	1.6	1.0		0.7	
Credit quality step 6	3.1	2.3		0.3	
Credit quality step unrated	345.9	227.4		210.9	
	365.6	240.1	224.7	221.8	202.1

1 Figures presented in an 'obligor view.'
2 Exposure value is based on guarantor basis for 2014 in accordance with CRD IV reporting requirements and obligor basis for 2013.

Counterparty credit risk

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

Three approaches are used under Basel III to calculate exposure values for counterparty credit risk: standardised, mark-to-market and IMM. Exposure values calculated under these approaches are used to determine RWAs. Across the Group, we use both the mark-to-market and IMM approaches. Under the IMM approach, EAD is calculated by multiplying the effective expected positive exposure with a multiplier called 'alpha'.

Alpha (set to a default value of 1.4) accounts for several portfolio features that increase EL above that indicated by effective expected positive exposure in the event of default:

- co-variance of exposures;
- correlation between exposures and default;
- level of volatility/correlation that might coincide with a downturn;
- concentration risk; and
- model risk.

The effective expected exposure is derived from simulation, pricing and aggregation internal models approved by regulators. These models cover a range of asset classes including interest rate products, foreign exchange products, credit derivatives and equity derivatives.

The IMM model is subject to on-going model validation including monthly model performance monitoring. We also perform quarterly backtesting of the model's risk measures on a set of hypothetical portfolios as well as the market risk factor predictions. Calibration is performed using a minimum of three years historical data.

Our main IMM site is London where approximately 85% of the trade population falls under the IMM approach.

From a risk management perspective, including daily monitoring of credit limit utilisation, products not covered by IMM are subject to conservative asset class add-on tables calculated outside of the IMM framework.

Limits for counterparty credit risk exposures are assigned within the overall credit process. The measure used for counterparty credit risk management is the 95th percentile of potential future exposure.

The credit risk function assigns a limit against each counterparty to cover derivatives exposure which may arise as a result of a counterparty default. The magnitude of this limit will depend on the overall risk appetite and type of derivatives trading undertaken with the counterparty. Risk is then assessed for each counterparty using models that consider volatility, trade maturity and the counterparty legal documentation.

The models and methodologies used in the calculation of counterparty risk are approved by the Markets MOC. Models are subject to ongoing monitoring and validation. Additionally they are subject to independent review at inception and annually thereafter.

Credit valuation adjustment

As shown in table 12, CRD IV introduced a new regulatory capital charge to cover the risk of mark-to-market losses on expected counterparty risk to derivatives: CVA risk.

Further details about CVA risk may be found on page 259 of the Annual Report and Accounts 2014. For modelling details refer to Note 13, CVA methodology found on page 382 of the Annual Report and Accounts 2014.

Collateral arrangements

It is our policy to revalue all traded transactions and associated collateral positions on a daily basis. An independent Collateral Management function manages the collateral process including pledging and receiving collateral, investigating disputes and non-receipts.

Eligible collateral types are controlled under a policy to ensure price transparency, price stability, liquidity, enforceability, independence, reusability and eligibility for regulatory purposes. A valuation 'haircut' policy reflects the fact that collateral may fall in value between the date the collateral was called and the date of liquidation or enforcement. At least 95% of collateral held as credit risk mitigation under Credit Support Annex ('CSA's) is either cash or liquid government securities.

Credit ratings downgrade

A Credit Rating Downgrade clause in a Master Agreement or a Credit Rating Downgrade Threshold clause in a CSA are designed to trigger a series of events if the credit rating of the affected party falls below a specified level. These events may include the requirement to pay or increase collateral, the termination of transactions by the non-affected party or the assignment of transactions by the affected party.

We control the inclusion of credit ratings downgrade language in a Master Agreement or a CSA by requiring each Group office to obtain the endorsement of the relevant credit authority together with the approval of the Regional Global Markets COO via a Documentation Approval Committee.

Relevant management information is in place to enable us to identify any additional collateral requirements, where the threshold levels for these are affected by a credit ratings downgrade clause within a collateral agreement.

At 31 December 2014, the potential value of the additional collateral (pertaining to ISDA CSA downgrade thresholds only) that we would need to post with counterparties in the event of a one-notch downgrade of our rating was US$0.5bn (2013: US$0.5bn) and for a two-notch downgrade US$1.2bn (2013: US$0.9bn).

Counterparty credit risk exposures

The following tables analyse counterparty credit risk exposures and risk-weighted assets.

Table 43: Counterparty credit risk exposure - credit derivative transactions1

	At 31 December 2014			At 31 December 2013		
	Protection bought US$bn	Protection sold US$bn	Total US$bn	Protection bought US$bn	Protection sold US$bn	Total US$bn
Credit derivative products used for own credit portfolio						
Credit default swaps	1.9	0.1	2.0	2.7	-	2.7
Total notional value	1.9	0.1	2.0	2.7	-	2.7
Credit derivative products used for intermediation2						
Credit default swaps	263.3	262.5	525.8	328.3	322.5	650.8
Total return swaps	7.2	15.2	22.4	8.5	16.3	24.8
Total notional value	270.5	277.7	548.2	336.8	338.8	675.6
Total credit derivative notional value at 31 December	272.4	277.8	550.2	339.5	338.8	678.3

1 This table provides a further breakdown of totals reported on page 396 of the Annual Report and Accounts 2014 on an accounting consolidation basis.
2 This is where we act as intermediary for our clients, enabling them to take a position in the underlying securities but without having to take on the risks ourselves.

Table 44: Counterparty credit risk - net derivative credit exposure1

	2014	2013
	US$bn	US$bn
Counterparty credit risk2		
Gross total fair values	595.5	569.6
Accounting offset arrangements		

	(250.5)	(287.3)
Total gross derivatives	345.0	282.3
Less: netting benefits3	(263.4)	(209.0)
Netted current credit exposure	81.6	73.3
Less: collateral held	(49.9)	(43.3)
Net derivative credit exposure at 31 December	31.7	30.0

1 This table provides a further breakdown of totals reported on page 395 in the Annual Report and Accounts 2014 on an accounting consolidation basis.
2 Excludes add-on for potential future credit exposure.
3 This is the netting benefit available for regulatory capital purposes which is not recognised under accounting rules.

Under IFRSs, netting is only permitted if legal right of set-off exists and the cash flows are intended to be settled on a net basis. Under PRA regulatory rules, however, netting is applied for capital calculations if there is legal certainty and the positions are managed on a net collateralised basis. As a consequence, we recognise greater netting under the PRA rules, reflecting the close-out provisions that would take effect in the event of default of a counterparty rather than just those transactions that are actually settled net in the normal course of business.
Table 45 shows how the total OTC derivative regulatory exposures in table 46 are derived from the gross total fair values reported in table 44.

Table 45: Comparison of derivative accounting balances and counterparty credit risk exposure

At 31 December 2014

	Accounting balances US$bn	Regulatory exposures US$bn
Gross total fair values		
OTC derivatives	578.0	578.0
Spot transactions1	13.7	-
Exchange traded derivatives	3.8	3.8
	595.5	581.8
Initial margin posted to central counterparties2	-	9.9
Accounting offset arrangements		
IFRS basis	(250.5)	-
Mark-to-market method		

Potential future credit exposure	-	157.5
Legal right of offset3	-	(314.3)
IMM method		
Modelling impact4	-	(286.8)
Total derivative exposures at 31 December 2014	345.0	148.1

At 31 December 2013

	Accounting balances US$bn	Regulatory exposures US$bn
Gross total fair values		
OTC derivatives	556.0	556.0
Exchange traded derivatives and spot transactions1	13.6	-
	569.6	556.0
Central counterparties2	-	(283.6)
Accounting offset arrangements		
IFRS basis	(287.3)	-
Mark-to-market method		
Potential future credit exposure	-	95.1
Legal right of offset3	-	(157.0)
IMM method		
Modelling impact4	-	(104.7)
Total derivative exposures at 31 December 2013	282.3	105.8

1 Spot transactions attract a zero risk-weight under CRD IV rules.

2 Under CRD IV rules, in addition to derivatives transacted with central counterparties, initial margin posted to central counterparties is included in the regulatory exposures when calculating the RWA. Under Basel II OTC derivative exposures transacted with central counterparties were excluded from the counterparty credit risk calculation.

3 Legal right of offset derivative netting is a component of the US$313.3bn derivatives offset in the 'Maximum Exposure to Credit Risk' table on page 131 of the Annual Report and Accounts 2014.

4 The modelling impact for IMM exposures represents the difference between fair value and the EAD (calculated as 1.4 times the Effective Expected Potential Exposure) resulting from the model; the model incorporates offsets for netting benefits, correlation impacts and collateral as well as simulating the impact of potential market movements.

Table 46: Counterparty credit risk exposure - by exposure class, product and method

	IMM	Mark-to-market method	Total counterparty credit risk

	Exposure value US$bn	RWAs US$bn	Exposure value US$bn	RWAs US$bn	Exposure value US$bn	RWAs US$bn
By exposure class						
IRB advanced approach	27.1	14.4	107.6	45.3	134.7	59.7
Central governments and central banks	1.5	0.3	7.7	0.8	9.2	1.1
Institutions	9.0	4.4	62.8	21.8	71.8	26.2
Corporates	16.6	9.7	37.1	22.7	53.7	32.4
IRB foundation approach	-	-	5.6	2.3	5.6	2.3
Corporates	-	-	5.6	2.3	5.6	2.3
Standardised approach	3.0	-	8.3	4.4	11.3	4.4
Central governments and central banks	3.0	-	3.7	-	6.7	-
Institutions	-	-	0.3	0.1	0.3	0.1
Corporates	-	-	4.3	4.3	4.3	4.3
CVA advanced	-	3.5	-	-	-	3.5
CVA standardised	-	-	-	18.0	-	18.0
CCP standardised	0.1	-	49.4	2.8	49.5	2.8
	30.2	17.9	170.9	72.8	201.1	90.7
By product						
Derivatives (OTC and ETP)	30.2	14.4	117.9	42.8	148.1	57.2
Securities financing transactions	-	-	44.5	7.7	44.5	7.7
Other1	-	-	8.5	2.6	8.5	2.6
CVA advanced	-	3.5	-	-	-	3.5
CVA standardised	-	-	-	18.0	-	18.0
CCP default funds	-	-	-	1.7	-	1.7
At 31 December 2014	30.2	17.9	170.9	72.8	201.1	90.7
By exposure class						
IRB advanced approach	23.9	8.8	105.7	31.9	129.6	40.7
Central governments and central banks	1.2	0.2	3.0	0.7	4.2	0.9
Institutions	6.7	2.1	58.3	11.4	65.0	13.5
Corporates	16.0	6.5	44.4	19.8	60.4	26.3
IRB foundation approach	-	-	3.1	1.5	3.1	1.5
Corporates	-	-	3.1	1.5	3.1	1.5
Standardised approach	1.4	-	9.3	3.6	10.7	3.6
Central governments and central banks	1.4	-	5.1	-	6.5	-

Institutions	-	-	0.5	0.1	0.5	0.1
Corporates	-	-	3.7	3.5	3.7	3.5
	25.3	8.8	118.1	37.0	143.4	45.8
By product						
OTC derivatives	25.3	8.8	80.5	30.2	105.8	39.0
Securities financing transactions	-	-	29.7	4.7	29.7	4.7
Other1	-	-	7.9	2.1	7.9	2.1
At 31 December 2013	25.3	8.8	118.1	37.0	143.4	45.8

1 Includes free deliveries not deducted from regulatory capital.

Key points

· The year on year RWA increase of US$44.9bn is driven by a US$50.0bn increase upon the implementation of CRD IV rules. Further details of these impacts are shown in table 12. A further increase of US$9.7bn was observed under the IRB approach following the implementation of the LGD floor of 45% used in the calculation of risk weights for institution and corporate counterparties in London and corporate counterparties in the rest of the group.

· Offsetting the increases described above, decreases occurred across the portfolio. A reduction of US$3.2bn was due to the incorporation of residual collateral offsets from the internal model method within the exposures under the mark to market method in London. A US$3.9bn net reduction in RWAs was driven by reduced exposures as Bermudan Swaption positions were onboarded to the internal model method and the internal model was calibrated to market data. The calibration of the internal model along with the utilisation of index hedges also contributed to a reduction in the CVA advanced charge of US$1.0bn. A fall of US$2.8bn in the RWA against central counterparties since the implementation of CRD IV was driven by reductions in the c-factors calculated by the central counterparty and used to convert default fund contributions to capital charges. Remaining movements were driven by reductions in exposures in derivatives and security financing transactions.

Table 47: Counterparty credit risk exposure - by exposure class, product and geographical region

	Exposure value					
	Europe US$bn	Asia US$bn	MENA US$bn	North America US$bn	Latin America US$bn	Total US$bn
By exposure class						
IRB advanced approach	69.2	38.3	0.6	25.1	1.5	134.7
Central governments and central banks	5.8	2.5	-	0.6	0.3	9.2
Institutions	32.7	23.6	0.6	13.7	1.2	71.8
Corporates	30.7	12.2	-	10.8	-	53.7
IRB foundation approach	5.3	-	0.3	-	-	5.6
Corporates	5.3	-	0.3	-	-	5.6

Standardised approach	6.7	0.3	1.7	0.1	2.5	11.3
Central governments and central banks	5.8	-	0.9	-	-	6.7
Institutions	0.1	-	0.2	-	-	0.3
Corporates	0.8	0.3	0.6	0.1	2.5	4.3
CVA advanced1	-	-	-	-	-	-
CVA standardised1	-	-	-	-	-	-
CCP standardised	25.1	5.1	-	19.1	0.2	49.5
	106.3	43.7	2.6	44.3	4.2	201.1
By product						
Derivatives (OTC and ETP)	76.5	34.7	1.7	31.5	3.7	148.1
Securities financing transactions	27.4	2.9	0.9	12.8	0.5	44.5
Other	2.4	6.1	-	-	-	8.5
CVA advanced1	-	-	-	-	-	-
CVA standardised1	-	-	-	-	-	-
CCP default funds2	-	-	-	-	-	-
At 31 December 2014	106.3	43.7	2.6	44.3	4.2	201.1
By exposure class						
IRB advanced approach	68.3	33.6	0.3	25.7	1.7	129.6
Central governments and central banks	2.3	0.8	-	0.7	0.4	4.2
Institutions	29.3	22.7	0.3	11.4	1.3	65.0
Corporates	36.7	10.1	-	13.6	-	60.4
IRB foundation approach	2.9	-	0.2	-	-	3.1
Corporates	2.9	-	0.2	-	-	3.1
Standardised approach	5.8	0.3	2.3	-	2.3	10.7
Central governments and central banks	4.7	-	1.8	-	-	6.5
Institutions	0.4	-	0.1	-	-	0.5
Corporates	0.7	0.3	0.4	-	2.3	3.7
	77.0	33.9	2.8	25.7	4.0	143.4
By product						
OTC derivatives	51.5	27.2	1.0	22.9	3.2	105.8
Securities financing transactions	23.4	0.9	1.8	2.8	0.8	29.7
Other	2.1	5.8	-	-	-	7.9

At 31 December 2013	77.0	33.9	2.8	25.7	4.0	143.4

1 The RWA impact due to the CVA capital charge is calculated based on the exposures under the IRB and standardised approaches. No additional exposures are taken into account.
2 Default fund contributions are cash balances posted to central counterparties by all members. These cash balances are not included in the total reported exposure.

Table 48: Counterparty credit risk - RWAs by exposure class, product and geographical region

	RWAs					
	Europe US$bn	Asia US$bn	MENA US$bn	North America US$bn	Latin America US$bn	Total US$bn
By exposure class						
IRB advanced approach	28.5	16.4	0.2	13.9	0.7	59.7
Central governments and central banks	0.6	0.3	-	0.1	0.1	1.1
Institutions	12.4	7.6	0.2	5.4	0.6	26.2
Corporates	15.5	8.5	-	8.4	-	32.4
IRB foundation approach	2.1	-	0.2	-	-	2.3
Corporates	2.1	-	0.2	-	-	2.3
Standardised approach	0.8	0.3	0.7	-	2.6	4.4
Central governments and central banks	-	-	-	-	-	-
Institutions	-	-	0.1	-	-	0.1
Corporates	0.8	0.3	0.6	-	2.6	4.3
CVA advanced	3.5	-	-	-	-	3.5
CVA standardised	4.4	4.7	0.1	8.1	0.7	18.0
CCP Standardised	1.3	0.5	-	1.0	-	2.8
	40.6	21.9	1.2	23.0	4.0	90.7
By product						
Derivatives (OTC and ETP)	26.1	15.0	1.1	11.9	3.1	57.2
Securities financing transactions	4.5	0.5	-	2.5	0.2	7.7
Other	1.3	1.3	-	-	-	2.6
CVA advanced	3.5	-	-	-	-	3.5
CVA standardised	4.4	4.7	0.1	8.1	0.7	18.0
CCP default funds	0.8	0.4	-	0.5	-	1.7
At 31 December 2014	40.6	21.9	1.2	23.0	4.0	90.7
By exposure class						

IRB advanced approach	20.8	10.6	0.2	8.5	0.6	40.7
Central governments and central banks	0.4	0.2	-	0.2	0.1	0.9
Institutions	6.8	4.0	0.2	2.0	0.5	13.5
Corporates	13.6	6.4	-	6.3	-	26.3
IRB foundation approach	1.4	-	0.1	-	-	1.5
Corporates	1.4	-	0.1	-	-	1.5
Standardised approach	0.8	0.3	0.4	-	2.1	3.6
Central governments and central banks	-	-	-	-	-	-
Institutions	-	-	0.1	-	-	0.1
Corporates	0.8	0.3	0.3	-	2.1	3.5
	23.0	10.9	0.7	8.5	2.7	45.8
By product						
OTC derivatives	18.4	9.9	0.6	7.8	2.3	39.0
Securities financing transactions	3.3	0.2	0.1	0.7	0.4	4.7
Other	1.3	0.8	-	-	-	2.1
At 31 December 2013	23.0	10.9	0.7	8.5	2.7	45.8

Wrong-way risk

Wrong-way risk occurs when a counterparty's exposures are adversely correlated with its credit quality. There are two types of wrong-way risk.

· General wrong-way risk occurs when the probability of counterparty default is positively correlated with general risk factors such as where the counterparty is resident and/or incorporated in a higher-risk country and seeks to sell a non-domestic currency in exchange for its home currency.

· Specific wrong-way risk occurs when the exposure to a particular counterparty is positively correlated with the probability of counterparty default such as a reverse repo on the counterparty's own bonds. HSBC policy sets out that specific wrong-way transactions are approved on a case by case basis.

We use a range of tools to monitor and control wrong-way risk, including requiring the business to obtain prior approval before undertaking wrong-way risk transactions outside pre-agreed guidelines. The regional Traded Risk functions are responsible for the control and the monitoring process. This includes the monthly submission of wrong-way risk information to the GB&M Risk Management Committee.

Table 49: Counterparty credit risk - RWA density by exposure class, product and geographical region

	RWA density	
	Asia	

	Europe		MENA	North America	Latin America	Total
	%	%	%	%	%	%
By exposure class						
IRB advanced approach						
Central governments and central banks	10	14	-	17	38	12
Institutions	38	32	34	39	48	36
Corporates	50	70	-	78	-	60
IRB foundation approach						
Corporates	40	-	57	-	-	41
Standardised approach						
Central governments and central banks	-	-	-	-	-	-
Institutions	-	-	37	-	-	37
Corporates	100	100	97	-	102	99
CVA advanced	-	-	-	-	-	-
CVA standardised	-	-	-	-	-	-
CCP standardised	5	9	-	5	-	6
	38	50	47	52	95	45
By product						
Derivatives (OTC and ETP)	34	43	62	38	82	39
Securities financing transactions	17	18	-	19	40	17
Other	52	22	-	-	-	31
CVA advanced	-	-	-	-	-	-
CVA standardised	-	-	-	-	-	-
CCP default funds	-	-	-	-	-	-
At 31 December 2014	38	50	47	52	95	45
By exposure class						
IRB advanced approach						
Central governments and central banks	20	25	-	23	21	22
Institutions	24	18	41	17	34	21
Corporates	37	63	-	46	-	44
IRB foundation approach						
Corporates	48		54	-	-	48
Standardised approach						
Central governments and central banks	-	-	-	-	-	-

Institutions	-	-	42	-	-	12
Corporates	97	100	98	100	95	96
	30	32	23	33	67	32
By product						
OTC derivatives	36	36	62	34	72	37
Securities financing transactions	14	22	3	26	47	16
Other	61	14	-	-	-	27
At 31 December 2013	30	32	23	33	67	32

Central counterparties

Whilst exchange traded derivatives have been cleared through central counterparties ('CCP's) for many years, recent regulatory initiatives designed to reduce systemic risk in the banking system are directing increasing volumes of OTC derivatives to be cleared through CCPs.

A dedicated CCP credit team has been established to manage the interface with CCPs and undertake in-depth

due diligence of the unique risks associated with these organisations. This is to address an implication of the regulations that the Group's risk will be transferred from being distributed among individual, bilateral counterparties to a significant level of risk concentration on CCPs. We have developed a risk appetite framework to manage risk accordingly, on an individual CCP and global basis.

Securitisation

Group securitisation strategy

HSBC acts as originator, sponsor, liquidity provider and derivative counterparty to its own originated and sponsored securitisations, as well as those of third-party securitisations. Our strategy is to use securitisations to meet our needs for aggregate funding or capital management, to the extent that market, regulatory treatments and other conditions are suitable, and for customer facilitation. We have senior exposures to the securities investment conduits ('SIC's): Mazarin Funding Limited, Barion Funding Limited, Malachite Funding Limited and Solitaire Funding Limited. These are not considered core businesses, and exposures are being repaid as the securities they hold amortise.

Group securitisation roles

Our roles in the securitisation process are as follows:

· Originator: where we originate the assets being securitised, either directly or indirectly;

· Sponsor: where we establish and manage a securitisation programme that purchases exposures from third parties; and

· Investor: where we invest in a securitisation transaction directly or provide derivatives or liquidity facilities to a securitisation.

HSBC as originator

We use SPEs to securitise customer loans and advances and other debt that we have originated, in order to diversify our sources of funding for asset origination and for capital efficiency purposes. In such cases, we transfer the loans and advances to the SPEs for cash, and the SPEs issue debt securities to investors to fund the cash purchases. This activity is conducted in a number of regions and across a number of asset classes. We also act as a derivative counterparty. Credit enhancements to the underlying assets may be used to obtain investment grade ratings on the senior debt issued by the SPEs. The majority of these securitisations are consolidated for accounting purposes (see page 80 for the regulatory treatment). We have also established multi-seller conduit securitisation programmes for the purpose of providing access to flexible market-based sources of finance for our clients to finance discrete pools of third-party originated trade and vehicle finance loan receivables.

In addition, we use SPEs to mitigate the capital absorbed by some of our customer loans and advances we have

originated. Credit derivatives are used to transfer the credit risk associated with such customer loans and advances to an SPE, using securitisations commonly known as synthetic securitisations by which the SPE writes CDS protection to HSBC. These SPEs are consolidated for accounting purposes when the substance of the relationship indicates that we control them.

HSBC as sponsor

We are sponsor to a number of types of securitisation entity, including:

· a multi-seller conduit vehicle established to provide finance to clients - Regency Assets Limited - to which we provide senior liquidity facilities and programme-wide credit enhancement. Assets at the start of 2014 funded via the Bryant Park conduit in the US have now largely been disposed of and Bryant Park is no longer active; and

· four SICs established to provide tailored investments to third-party clients, backed primarily by senior tranches of securitisations and securities issued by financial institutions. Solitaire Funding Limited and Mazarin Funding Limited are asset-backed commercial paper conduits to which we provide transaction-specific liquidity facilities; Barion Funding Limited and Malachite Funding Limited are vehicles to which we provide senior term funding. We also provide a first loss letter of credit to Solitaire Funding Limited. The performance of our exposure to these vehicles is primarily subject to the credit risk of the underlying securities.

Further details of these entities may be found on page 443 of the Annual Report and Accounts 2014.

HSBC as investor

We have exposure to third-party securitisations across a wide range of sectors in the form of investments, liquidity facilities and as a derivative counterparty. These are primarily legacy exposures that are expected to be held to maturity.

These securitisation positions are managed by a dedicated team that uses a combination of market standard systems and third-party data providers to monitor performance data and manage market and credit risks.

In the case of re-securitisation positions, similar processes are conducted in respect of the underlying securitisations.

Valuation of securitisation positions

The valuation process of our investments in securitisation exposures primarily focuses on quotations from third parties, observed trade levels and calibrated valuations from market standard models. This process did not change in

2014.

We perform hedging in respect of our sponsored SICs interest rate and currency exposures. We make limited use of credit default swaps to hedge credit risk in respect of some securitisation positions.

Securitisation accounting treatment

For accounting purposes, we consolidate SPEs when the substance of the relationship indicates that we control them. In assessing control, all relevant factors are considered, including qualitative and quantitative aspects.

Full details of these assessments may be found on page 348 of the Annual Report and Accounts 2014.

We reassess the required consolidation whenever there is a change in the substance of the relationship between HSBC and an SPE, for example, when the nature of our involvement or the governing rules, contractual arrangements or capital structure of the SPE change.

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

Full derecognition occurs when we transfer our contractual right to receive cash flows from the financial assets, or retain the right but assume an obligation to pass on the cash flows from the assets, and transfer substantially all the risks and rewards of ownership. The risks include credit, interest rate, currency, prepayment and other price risks.

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

A small portion of financial assets that do not qualify for derecognition relate to loans, credit cards, debt securities and trade receivables that have been

securitised under arrangements by which we retain a continuing involvement in such transferred assets. Continuing involvement may entail retaining the rights to future cash flows arising from the assets after investors have received their contractual terms (for example, interest rate strips); providing subordinated interest; liquidity support; continuing to service the underlying asset; or entering into derivative transactions with the securitisation vehicles. As such, we continue to be exposed to risks associated with these transactions.

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

Securitisation regulatory treatment

For regulatory purposes, where significant risk in SPEs has been transferred to third parties, these SPEs are not consolidated but exposure to them, including derivatives or liquidity facilities, is risk-weighted as securitisation positions. Of the US$0.8bn (2013: US$1.6bn) of unrealised losses on AFS asset-backed securities disclosed in the Annual Report and Accounts 2014, nil (2013: US$0.1bn) relates to assets within SPEs that are not consolidated for regulatory purposes.

Analysis of securitisation exposures

HSBC's involvement in securitisation activities continued to reduce in the year, which is reflected in the following:

· no securitisation positions backed by revolving exposures other than trade receivables in Regency Assets Limited;

· no facilities subject to early amortisation provisions;

· no material positions held as synthetic transactions (2013: nil);

· no assets awaiting securitisation; and

· we do not provide financial support for securitised assets.

Realised losses were US$0.2bn (2013: US$0.3bn) on securitisation asset disposals during the year. Total exposure includes off-balance sheet assets of US$21.4bn (2013: US$27.3bn) which relate to liquidity lines to securitisation vehicles.

Further details of securitisation legacy positions may be found on page 161 of the Annual Report and Accounts 2014.

Table 50: Securitisation exposure - by approach

	At 31 December 2014			At 31 December 2013		
	Trading book US$bn	Non-trading book US$bn	Total US$bn	Trading book US$bn	Non-trading book US$bn	Total US$bn
IRB approach	2.9	38.3	41.2	2.6	48.6	51.2
Ratings based	2.9	23.6	26.5	2.6	31.1	33.7
Internal assessment approach1	-	14.7	14.7	-	17.1	17.1
Supervisory method	-	-	-	-	0.4	0.4
Standardised	-	0.4	0.4	-	0.4	0.4
At 31 December	2.9	38.7	41.6	2.6	49.0	51.6

1 Applies to exposures in Regency Assets Limited.

Table 51: Securitisation exposure - movement in the year

		Movement in year			
	Total at 1 January US$bn	As originator US$bn	As sponsor US$bn	As investor US$bn	Total at 31 December US$bn
Aggregate amount of securitisation exposures					
Residential mortgages1	2.5	-	-	1.7	4.2
Commercial mortgages1	4.8	-	-	(0.6)	4.2
Leasing	-	-	-	0.1	0.1

Loans to corporates or SMEs	0.2	-	-	0.9	1.1
Consumer loans	0.4	-	-	(0.1)	0.3
Trade receivables2	17.7	-	(1.8)	-	15.9
Re-securitisations1	25.6	(0.3)	(8.8)	(0.7)	15.8
Other assets	0.4	-	(0.4)	-	-
2014	51.6	(0.3)	(11.0)	1.3	41.6
Aggregate amount of securitisation exposures					
Residential mortgages1	4.2	-	-	(1.7)	2.5
Commercial mortgages1	3.9	-	(0.3)	1.2	4.8
Leasing	-	-	-	-	-
Loans to corporates or SMEs	0.2	-	-	-	0.2
Consumer loans	0.7	-	-	(0.3)	0.4
Trade receivables2	14.2	-	3.6	(0.1)	17.7
Re-securitisations1	31.6	(0.4)	(3.8)	(1.8)	25.6
Other assets	0.5	-	(0.1)	-	0.4
2013	55.3	(0.4)	(0.6)	(2.7)	51.6

1 Residential and Commercial motgages and re-securitisations principally include exposures to Solitaire Funding Limited, Mazarin Funding Limited, Barion Funding Limited and Malachite Funding Limited and restructured on-balance sheet assets. The pools primarily comprise the senior tranches of retail mortgage backed securities, commercial mortgage backed securities, auto ABS, credit card ABS, student loans, collateralised debt obligations, and also include bank subordinated debt.

2 Trade receivables largely relate to Regency Assets Limited and pools are senior with a maturity less than 10 years.

Table 52: Securitisation exposure - by trading and non-trading book

	At 31 December 2014			At 31 December 2013		
	Trading book US$bn	Non-trading book US$bn	Total US$bn	Trading book US$bn	Non-trading book US$bn	Total US$bn
As originator	-	2.1	2.1	-	2.4	2.4
Re-securitisations	-	2.1	2.1	-	2.4	2.4
As sponsor	-	27.9	27.9	-	39.2	39.2
Commercial mortgages	-	-	-	-	-	-
Loans to corporates or SMEs	-	-	-	-	-	-
Trade receivables	-	15.3	15.3	-	17.1	17.1
Re-securitisations	-	12.6	12.6	-	21.7	21.7
Other assets	-	-	-	-	0.4	0.4
As investor	2.9	8.7	11.6	2.6	7.4	10.0
Residential mortgages	1.7	2.5	4.2	1.1	1.4	2.5
Commercial mortgages	0.8	3.4	4.2	0.9	3.9	4.8
Leasing	-	0.1	0.1	-	-	-
Loans to corporates or SMEs	0.1	1.0	1.1	-	0.2	0.2

Consumer loans	0.1	0.2	0.3	0.1	0.3	0.4
Trade receivables	0.1	0.5	0.6	-	0.6	0.6
Re-securitisations	0.1	1.0	1.1	0.5	1.0	1.5
At 31 December	2.9	38.7	41.6	2.6	49.0	51.6

Table 53: Securitisation - asset values and impairments

	At 31 December 2014			At 31 December 2013		
	Underlying assets1		Securitisation exposures	Underlying assets1		Securitisation exposures
	Total US$bn	Impaired and past due US$bn	impairment US$bn	Total US$bn	Impaired and past due US$bn	impairment US$bn
As originator	2.2	2.1	0.7	4.1	3.4	0.9
Residential mortgages	0.3	-	-	0.4	-	-
Commercial mortgages	-	-	-	-	-	-
Re-securitisations2	1.9	2.1	0.7	3.7	3.4	0.9
As sponsor	28.9	0.3	0.2	37.9	0.3	0.3
Commercial mortgages	2.3	-	-	2.3	-	-
Loans to corporates and SMEs	-	-	-	-	-	-
Trade receivables	12.4	-	-	12.9	-	-
Re-securitisations2	14.2	0.3	0.2	20.7	0.3	0.3
Other assets	-	-	-	2.0	-	-
As investor3			-			-
Residential mortgages			-			-
Commercial mortgages			-			-
Re-securitisations			-			-
			-			
At 31 December			0.9			1.24

1 Securitisation exposures may exceed the underlying asset values when HSBC provides liquidity facilities while also acting as derivative counterparty and a note holder in the SPE.

2 For re-securitisations where HSBC has derived regulatory capital requirements based on the underlying pool of assets, the asset value used for the regulatory capital calculation is used in the disclosure of total underlying assets. For other re-securitisations, the carrying value of the assets per the Annual Report and Accounts 2014 is disclosed.

3 For securitisations where HSBC acts as investor, information on third-party underlying assets is not available.

4 The net effect of a number of insignificant movements, compared with prior year, was immaterial.

Table 54: Securitisation exposure - by risk weighting

	Exposure value1				Capital required			
	Trading book		Non-trading book2		Trading book3		Non-trading book	
	S4 US$bn	R5 US$bn	S4 US$bn	R5 US$bn	S4 US$bn	R5 US$bn	S4 US$bn	R5 US$bn

Long-term category - risk weights								
- less than or equal to 10%	0.9	-	16.7	-	-	-	-	-
- > 10% and ≤ 20%	0.9	0.1	8.0	5.6	-	-	-	-
- > 20% and ≤ 50%	0.2	-	1.1	1.4	-	-	-	0.1
- > 50% and ≤ 100%	0.3	-	1.5	0.7	-	-	-	0.1
- > 100% and ≤ 650%	0.3	-	0.1	1.3	0.2	-	0.1	0.3
- > 650% and < 1250%	-	-	-	-	-	-	-	-
1250%	0.2	-	1.1	1.2	0.2	-	1.1	1.2
At 31 December 2014	2.8	0.1	28.5	10.2	0.4	-	1.2	1.7
Long-term category - risk weights								
- less than or equal to 10%	0.8	-	18.2	-	-	-	0.1	-
- > 10% and ≤ 20%	0.4	-	7.0	0.3	-	-	0.1	-
- > 20% and ≤ 50%	0.4	0.4	1.4	13.6	-	-	-	0.5
- > 50% and ≤ 100%	0.1	-	1.9	0.5	-	-	0.1	-
- > 100% and ≤ 650%	0.3	-	0.3	2.4	0.1	0.1	0.1	0.6
- > 650% and < 1250%	-	0.1	-	0.1	-	-	-	-
Deductions from capital	0.1	-	1.6	1.7	0.1	-	1.6	1.7
At 31 December 2013	2.1	0.5	30.4	18.6	0.2	0.1	2.0	2.8

1 There are no short-term category exposures at 31 December 2014 (2013: nil).

2 Non-trading book figures at 31 December 2014 include US$0.4bn exposures treated under the standardised approach (2013: US$0.4bn).

3 Trading book securitisation capital requirements included under the market risk disclosures were US$0.4bn (2013: US$0.2bn).

4 Securitisation.

5 Re-securitisation. The total re-securitisation exposure value is less than that presented in tables 51 and 52, reflecting a differing treatment of Solitaire Funding Limited. In tables 51 and 52, Solitaire is treated as a re-securitisation, while the figures above are based on the fact that Solitaire is consolidated for regulatory

purposes, and present the exposure values as securitisations, allocated to the RWA bands of Solitaire's underlying pool of assets.

Key points

· The exposure movement in the year represents any purchase or sale of securitisation assets, the repayment of capital on amortising or maturing securitisation assets.

· The reductions in capital required reflect vertical slicing and sales of assets from re-securitisation vehicles for US$0.2bn and sales of assets held in North America for US$0.3bn.

· External rating upgrades on re-securitisation vehicles reduced capital required by US$0.3bn.

· The implementation of the AFS offset reduced capital required by US$0.7bn.

· The positions reported in the previous year as deductions are reported as risk weight of 1250% in the current year as required under CRD IV.

Market risk

Overview and objectives

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

Exposure to market risk

Exposure to market risk is separated into two portfolios:

·Trading portfolios comprise positions arising from market-making and the warehousing of customer-derived positions.

· Non-trading portfolios comprise positions that primarily arise from the interest rate management of our retail and commercial banking assets and liabilities, financial investments designated as available for sale and held to maturity, and exposures arising from our insurance operations.

Where appropriate, we apply similar risk management policies and measurement techniques to both trading and non-trading portfolios. Our objective is to manage and control market risk exposures in order to optimise return on risk while maintaining a market profile consistent with our status as one of the world's largest banking and financial services organisations.

The nature of the hedging and risk mitigation strategies performed across the Group corresponds to the market risk management instruments available within each operating jurisdiction. These strategies range from the use of traditional market instruments, such as interest rate swaps, to more sophisticated hedging strategies to address a combination of risk factors arising at portfolio level.

Overview of market risk in global businesses

The diagram below illustrates the main business areas where trading and non-trading market risks reside and market risk measures to monitor and limit exposures.

To view chart in PDF format please click on the link below:

http://www.rns-pdf.londonstockexchange.com/rns/5403F_-2015-2-22.pdf

1 The interest rate risk on the fixed-rate securities issued by HSBC Holdings is not included in the Group VaR.

Market risk governance

Market risk is managed and controlled through limits approved by the Risk Management Meeting of the GMB for HSBC Holdings and our various global businesses. These limits are allocated across business lines and to the Group's legal entities.

The management of market risk is principally undertaken in Global Markets, where 77% of the total value at risk of HSBC (excluding insurance) and almost all trading VaR resides, using risk limits approved by the GMB. VaR limits are set for portfolios, products and risk types, with market liquidity being a primary factor in determining the level of limits set.

Group Risk, an independent unit within Group Head Office, is responsible for our market risk management policies and measurement techniques. Each major operating entity has an independent market risk management and control function which is responsible for measuring market risk exposures in accordance with the policies defined by Group Risk, and monitoring and reporting these exposures against the prescribed limits on a daily basis. The market risk limits are governed according to the framework illustrated to the right.

To view chart in PDF format please click on the link below:

http://www.rns-pdf.londonstockexchange.com/rns/5403F_-2015-2-22.pdf

Each operating entity is required to assess the market risks arising on each product in its business and to transfer them to either its local Markets unit for management, or to separate books managed under the supervision of the local ALCO.

Our aim is to ensure that all market risks are consolidated within operations that have the necessary skills, tools, management and governance to manage them. In certain cases where the market risks cannot be fully transferred, we identify the impact of varying scenarios on valuations or on net interest income resulting from any residual risk positions.

Model risk is governed through MOCs at the regional and global wholesale credit and market risk levels. They have direct oversight and approval responsibility for all traded risk models utilised for risk measurement and management and stress testing. The MOCs prioritise the development of models, methodologies and practices used for trading risk

management within the Group and ensure that they remain within our risk appetite and business plans. The Markets MOC reports into the Group MOC, which oversees all model risk types at Group level. Group MOC informs the Group RMM about material issues at least on a bi-annual basis. The RMM is the Group's 'Designated Committee' according to the regulatory rules and it has delegated day-to-day governance of all trading risk models to the Markets MOC.

Our control of market risk in the trading and non-trading portfolios is based on a policy of restricting individual operations to trading within a list of permissible instruments authorised for each site by Group Risk, of enforcing new product approval procedures, and of restricting trading in the more complex derivative products only to offices with appropriate levels of product expertise and robust control systems.

Table 55: Market risk - RWAs and capital required

	At 31 December 2014		At 31 December 2013	
	Capital required US$bn	RWAs US$bn	Capital required US$bn	RWAs US$bn
Internal model based	3.6	44.6	4.2	52.2
VaR	0.6	7.3	0.4	4.9
Stressed VaR	0.8	10.4	0.8	9.4
Incremental risk charge	1.6	20.1	1.8	23.1
Comprehensive risk measure	-	-	0.2	2.6
Other VaR and stressed VaR1	0.6	6.8	1.0	12.2
PRA standard rules	0.9	11.4	0.9	11.2
Interest rate position risk	0.4	4.8	0.6	7.8
Foreign exchange position risk	0.1	0.7	0.1	1.1
Equity position risk	-	0.3	-	0.2
Commodity position risk	-	0.1	-	0.1
Securitisations	0.4	5.5	0.2	2.0
At 31 December	4.5	56.0	5.1	63.4

1 These are results from countries which cannot be included in the consolidated VaR permission because regulatory permission to do so has not been received, and which must therefore be aggregated rather than consolidated.

Key points

· Other VaR and stressed VaR decreased by US$5.4bn over the period due to PRA permission being granted to consolidate further sites within the global aggregated portfolio and a reduction in the positions within the sites outside of the global aggregated portfolio.

· Incremental risk charge decreased US$2.0bn due to PRA permission being granted to consolidate further sites within the global aggregated portfolio and a further US$1.0bn reduction driven by a re-calibration of matrices within the model.

· Comprehensive risk measure decreased over the period due to the disposal of the US Correlation Trading book.

· VaR and stressed VaR increased by a total of US$3.4bn over the period due to the loss of diversification benefit within the RNIV framework and the treatment of cross currency collateral in VaR, partially offset following a reduction in the positions for the Equities and FX desk and refinements in the RNIV calculations.

· Securitisation increased US$3.5bn over the period largely due to positions previously deducted from capital now being treated as 1250% RWAs under CRD IV.

· Interest Rate position risk decreased over the period primarily in Latin America due to the introduction of the Scenario Matrix Method for options and a general reduction in positions resulting in an RWA reduction of US$1.0bn. A further US$1.7bn reduction occurred in the US.

Market risk measures

Monitoring and limiting market risk exposures

Our objective is to manage and control market risk exposures while maintaining a market profile consistent with our risk appetite.

We use a range of tools to monitor and limit market risk exposures including sensitivity analysis, value at risk and stress testing.

Sensitivity analysis

Sensitivity analysis measures the impact of individual market factor movements on specific instruments or portfolios including interest rates, foreign exchange rates and equity prices, such as the effect of a one basis point change in yield. We use sensitivity measures to monitor the market risk positions within each risk type. Sensitivity limits are set for portfolios, products and risk types, with the depth of the market being one of the principal factors in determining the level of limits set.

Value at risk

VaR is a technique that estimates the potential losses on risk positions in the trading portfolio as a result of movements in market rates and prices over a specified time horizon and to a given level of confidence. The use of VaR is integrated into market risk management and is calculated for all trading positions regardless of how we capitalise those exposures. Where there is not an approved internal model, we use the appropriate local rules to capitalise exposures locally.

In addition, we calculate VaR for non-trading portfolios in order to have a complete picture of risk. Our models are predominantly based on historical simulation. VaR is calculated at a 99% confidence level for a one-day holding period. Where we do not calculate VaR explicitly, we use alternative tools as described summarised in the Market Risk Stress Testing table found in the Stress testing section below.

Our VaR models derive plausible future scenarios from past series of recorded market rates and prices, taking into account inter-relationships between different markets and rates such as interest rates and foreign exchange rates. The models also incorporate the effect of option features on the underlying exposures.

The historical simulation models used incorporate the following features:

· historical market rates and prices are calculated with reference to foreign exchange rates and commodity prices, interest rates, equity prices and the associated volatilities;

· potential market movements utilised for VaR are calculated with reference to data from the past two years; and

· VaR measures are calculated to a 99% confidence level and use a one-day holding period.

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

VaR model limitations

Although a valuable guide to risk, VaR should always be viewed in the context of its limitations, for example:

· the use of historical data as a proxy for estimating future events may not encompass all potential events, particularly those which are extreme in nature;

· the use of a holding period assumes that all positions can be liquidated or the risks offset during that period. This may not fully reflect the market risk arising at times of severe illiquidity, when the holding period may be insufficient to liquidate or hedge all positions fully;

· the use of a 99% confidence level by definition does not take into account losses that might occur beyond this level of confidence;

· VaR is calculated on the basis of exposures outstanding at close of business and therefore does not necessarily reflect intra-day exposures; and

· VaR is unlikely to reflect loss potential on exposures that only arise under conditions of significant market movement.

Risk-not-in-VaR framework

Our VaR model is designed to capture significant basis risk such as credit default swap versus bond, asset swap spreads and cross-currency basis. Other basis risks which are not completely covered in VaR, such as the Libor tenor basis, are complemented by our RNIV calculations and are integrated into our capital framework.

The RNIV framework therefore aims to capture and capitalise material market risks that are not adequately covered in the VaR model. An example of this is Libor-overnight index swap basis risk for minor currencies. In such instances the RNIV framework uses stress tests to quantify the capital requirement. On average in 2014, the capital requirement derived from these stress tests represented 2.6% of the total internal model-based market risk requirement.

Risks covered by RNIV represent 18% of market risk RWAs for models with regulatory approval and include those resulting from underlying risk factors which are not observable on a daily basis across asset classes and products, such as dividend risk and correlation risks.

Risk factors are reviewed on a regular basis and either incorporated directly in the VaR models, where possible, or quantified through the VaR-based RNIV approach or a stress test approach within the RNIV framework. The severity

of the scenarios is calibrated to be in line with the capital adequacy requirements. The outcome of the VaR-based RNIV is included in the VaR calculation and back-testing; a stressed VaR RNIV is also computed for the risk factors considered in the VaR-based RNIV approach.

In 2014, we modified our RNIV model on a non-diversified basis across risk factors to comply with new PRA CRDIV implementation guidelines.

Level 3 assets

The fair values of Level 3 assets and liabilities in trading portfolios are disclosed on page 380 of the Annual Report and Accounts 2014, and represent only a small proportion of the overall trading portfolio. Market risk arising from Level 3 instruments is managed by various market risk techniques such as stress testing and notional limits.

Back-testing

We routinely validate the accuracy of our VaR models by back-testing them against both clean and hypothetical profit and loss against the corresponding VaR numbers. Hypothetical profit and loss excludes non-modelled items such as fees, commissions and revenues of intra-day transactions.

We would expect on average to see two or three profits, and two or three losses, in excess of VaR at the 99% confidence level over a one-year period. The actual number of profits or losses in excess of VaR over this period can therefore be used to gauge how well the models are performing. To ensure a conservative approach to calculating our risk exposures, it is important to note that profits in excess of VaR are only considered when back-testing the accuracy of our models and are not used to calculate the VaR numbers used for risk management or capital purposes.

We back-test our Group VaR at various levels which reflect a full legal entity scope of HSBC, including entities that do not have local permission to use VaR for regulatory purposes.

Stress testing

Stress testing is an important tool that is integrated into our market risk management tool to evaluate the potential impact on portfolio values of more extreme, although plausible, events or movements in a set of financial variables. In such abnormal scenarios, losses can be much greater than those predicted by VaR modelling.

Stress testing is implemented at legal entity, regional and overall Group levels. A standard set of scenarios is utilised consistently across all regions within the Group. Scenarios are tailored to capture the relevant events or market movements at each level. The risk appetite around potential stress losses for the Group is set and monitored against referral limits.

Market Risk Stress Testing

Sensitivities	Technical	Hypothetical	Historical	Reverse Stress Testing
Impact of a single risk factor, e.g. break of a currency peg	Impact of the largest move in each risk factor without consideration of any underlying market	Impact of potential macroeconomic events, e.g. slowdown in mainland China	Scenarios that incorporate historical observations of market movements, e.g. Black Monday	

correlation 1987 for equities

Market risk reverse stress tests are undertaken on the premise that there is a fixed loss. The stress test process identifies which scenarios lead to this loss. The rationale behind the reverse stress test is to understand scenarios which are beyond normal business settings that could have contagion and systemic implications.

Stressed VaR and stress testing, together with reverse stress testing and the management of gap risk, provide management with insights regarding the 'tail risk' beyond VaR for which HSBC's appetite is limited.

Market Risk Capital Models

From a capital perspective, the model limitations are somewhat mitigated by the addition of Stressed VaR detailed below, which by definition incorporates 10-day scenarios in a period of stress.

The Incremental Risk Charge and Comprehensive Risk Measure detailed below, longer capital and liquidity horizons. Capital add-ons also exist to capture event risk including foreign exchange risk on pegged currencies and concentration risk associated with large equity holdings.

Table 56: Market risk models1

Model component	RWAs for associated asset class US$bn	Confidence level	Horizon	Model description and methodology
VaR	7.3	99%	10 day	Uses most recent two years' worth of daily returns to determine a loss distribution. The result is scaled from one day to provide an equivalent 10-day loss.
Stressed VaR	10.4	99%	10 day	Stressed VaR is calibrated to a one-year period of stress observed in history.
IRC	20.1	99.9%	1 year	Uses a multi-factor Gaussian Monte-Carlo simulation which includes product basis, concentration, hedge mismatch, recovery rate and liquidity as part of the simulation process. A minimum liquidity horizon of three months is applied and is based on a combination of factors including issuer type, currency and size of exposure.
CRM	-	99.9%	1 year	Calibrated to the same soundness standard as the IRC above, and the risk factors covered include credit migration, default, credit spread, correlation, recovery rate and basis risks. Following the sale of the correlation portfolio we no longer calculate a capital requirement for CRM.

1 Non-proprietary details are available in the Financial Services Register on the PRA website.

Stressed VaR

Stressed VaR is primarily used for regulatory capital purposes and is integrated into the risk management process to ensure prudent capital management. Stressed VaR complements other risk measures by providing the potential losses

arising from market turmoil. Calculations are based on a continuous one-year period of stress for the trading portfolio, based on the assessment at the Group level.

Stress VaR modelling follows the same approach as our VaR risk measure except for the following:

· potential market movements employed for stressed VaR calculations are based on a continuous one-year period of stress for the trading portfolio;

· the choice of period (November 2007 to November 2008) is based on the assessment at the Group level of the most volatile period in recent history; and

· it is calculated to a 99% confidence using a 10-day holding period.

Information on our VaR risk measure is included on pages 177 and 178 of the Annual Report and Accounts 2014.

Stressed value at risk (one-day equivalent)

	2014 US$m
At 31 December	83.3
Maximum	108.1
Minimum	21.7
Average	65.4

Stressed VaR exposures contribute to the capital held by HSBC against market risk factors. Stressed VaR fluctuated through 2014, reflecting the changing positions held by HSBC. Additionally stressed VaR increased due to modelling changes that removed certain diversification benefits.

Incremental Risk Charge

The IRC measures the default and migration risk of issuers of traded instruments.

Risk factors covered by it include credit migration, default, product basis, concentration, hedge mismatch, recovery rate and liquidity. The PDs are floored to reflect the lack of historical data on defaults and a period of stress is used to calibrate the spread changes for the relevant ratings. The IRC model is validated quarterly by stressing key model parameters and reviewing the response of the model.

The IRC is a standalone charge generating no diversification benefit with other charges.

The IRC model was updated to account for the dependency of the recovery rate and the economic cycle. Additionally, further granularity in parameters was introduced, in order to better represent the risk profile. As part of normal model oversight the IRC model is periodically recalibrated in order to continue accurately to capture the risk profile in a stressed environment.

Incremental risk charge

	2014

	US$m
At 31 December	1,781
Maximum	2,980
Minimum	1,754
Average	2,308

Comprehensive Risk Measure

The CRM is used to measure all price risks emanating from the correlation trading portfolio within a bank and also reflects the associated impact of liquidity, concentration and hedging. This measure is subject to a minimum capital requirement of 8% of RWA calculated under the standard rules for the portfolio. CRM is a standalone charge generating no diversification benefit with other charges.

Following the sale of our correlation portfolio in 2014 we no longer calculate a capital requirement for this measure.

Trading portfolios

Gap risk

Certain products are structured in such a way that they give rise to enhanced gap risk, being the risk that loss is incurred upon occurrence of a gap event. A gap event is a significant and sudden change in market price with no accompanying trading opportunity. Such movements may occur, for example, when, in reaction to an adverse event or unexpected news announcement, some parts of the market move far beyond their normal volatility range and become temporarily illiquid. In 2014 gap risk principally arose from non-recourse loan transactions, mostly for corporate clients, where the collateral against the loan is limited to the posted shares. Upon occurrence of a gap event, the value of the equity collateral could fall below the outstanding loan amount. Given their characteristics, these transactions make little or no contribution to VaR nor to traditional market risk sensitivity measures. We capture their risks within our stress testing scenarios and monitor gap risk on an ongoing basis. We did not incur any notable gap loss in 2014.

De-peg risk

For certain currencies (pegged or managed) the spot exchange rate is pegged at a fixed rate (typically to US dollars or euros), or managed within a pre-defined band around a pegged rate. De-peg risk is the risk of the peg or managed band changing or being abolished, and moving to a floating regime.

HSBC has a lot of experience in managing fixed and managed currency regimes. Using stressed scenarios on spot rates, we are able to analyse how de-peg events would impact the positions held by HSBC. We monitor such scenarios to pegged or managed currencies, such as the Hong Kong dollar, renminbi, Middle Eastern currencies and the Swiss franc with appreciation capped against the euro during 2014, and limit any potential losses that would occur. This complements traditional market risk metrics, such as historical VaR, which may not fully capture the risk involved in holding positions in pegged or managed currencies. Historical VaR relies on past events to determine the likelihood of potential profits or losses. However, pegged or managed currencies may not have experienced a de-peg event during the historical timeframe being considered.

ABS/MBS exposures

The ABS/MBS exposures within the trading portfolios are managed within sensitivity and VaR limits as described on page 176 of the Annual Report and Accounts, and are included within the stress testing scenarios described above.

Non-trading portfolios

Most of the Group's non-trading VaR relates to Balance Sheet Management ('BSM') or local treasury management functions. Contributions to Group non-trading VaR are driven by interest rates and credit spread risks arising from all global businesses. There is no commodity market risk in the non-trading portfolios.

Non-trading VaR also includes the interest rate risk of non-trading financial instruments held by the global businesses and transferred into portfolios managed by BSM or local treasury functions. In measuring, monitoring and managing risk in our non-trading portfolios, VaR is just one of the tools used. The management of interest rate risk in the banking book is described further in 'Non-trading interest rate risk' below, including the role of BSM.

Non-trading VaR excludes equity risk on available-for-sale securities, structural foreign exchange risk, and interest rate risk on fixed rate securities issued by HSBC Holdings, the scope and management of which are described in the relevant sections below.

Our control of market risk in the non-trading portfolios is based on transferring the assessed market risk of non-trading assets and liabilities created outside BSM or Markets, to the books managed by BSM, provided the market risk can be neutralised. The net exposure is typically managed by BSM through the use of fixed rate government bonds (liquid assets held in available-for-sale books) and interest rate swaps. The interest rate risk arising from fixed rate government bonds held within available-for-sale portfolios is reflected within the Group's non-traded VaR. Interest rate swaps used by BSM are typically classified as either a fair value hedge or a cash flow hedge and are included within the Group's non-traded VaR. Any market risk that cannot be neutralised in the market is managed by local ALCO in segregated ALCO books.

Credit spread risk for available-for-sale debt instruments

The risk associated with movements in credit spreads is primarily managed through sensitivity limits, stress testing and VaR. The VaR shows the effect on income from a one-day movement in credit spreads over a two-year period, calculated to a 99% confidence interval.

Available-for-sale equity securities

Potential new commitments are subject to risk appraisal to ensure that industry and geographical concentrations remain within acceptable levels for the portfolio. Regular reviews are performed to substantiate the valuation of the investments within the portfolio and investments held to facilitate ongoing business, such as holdings in government-sponsored enterprises and local stock exchanges.
Refer to Other risks - Non-trading book exposures in equities on page 93 for additional information.

Structural foreign exchange exposures

Structural foreign exchange exposures represent net investments in subsidiaries, branches and associates, the functional currencies of which are currencies other than the US dollar. An entity's functional currency is that of the primary economic environment in which the entity operates.

Exchange differences on structural exposures are recognised in 'Other comprehensive income'. We use the US dollar as our presentation currency in our consolidated financial statements because the US dollar and currencies linked to it form the major currency bloc in which we transact and fund our business. Our consolidated balance sheet is, therefore, affected by exchange differences between the US dollar and all the non-US dollar functional currencies of underlying subsidiaries.

We hedge structural foreign exchange exposures only in limited circumstances. Our structural foreign exchange exposures are managed with the primary objective of ensuring, where practical, that our consolidated capital ratios and the capital ratios of individual banking subsidiaries are largely protected from the effect of changes in exchange rates. This is usually achieved by ensuring that, for each subsidiary bank, the ratio of structural exposures in a given currency to RWAs denominated in that currency is broadly equal to the capital ratio of the subsidiary in question.

We may also transact hedges where a currency in which we have structural exposures is considered likely to revalue adversely, and it is possible in practice to transact a hedge. Any hedging is undertaken using forward foreign exchange contracts which are accounted for under IFRSs as hedges of a net investment in a foreign operation, or by financing with borrowings in the same currencies as the functional currencies involved. We evaluate residual structural foreign exchange exposures using an expected shortfall method.

Details of our structural foreign exchange exposures are provided in Note 33 to the Financial Statements, on page 435 of the Annual Report and Accounts 2014.

Non-trading interest rate risk

Non-trading book interest rate risk arises principally from mismatches between the future yield on assets and their funding cost, as a result of interest rate changes. Analysis of this risk is complicated by having to make assumptions on embedded optionality within certain product areas such as the incidence of mortgage prepayments, and from behavioural assumptions regarding the economic duration of liabilities which are contractually repayable on demand such as current accounts, and the re-pricing behaviour of managed rate products. These assumptions around behavioural features are captured in our interest rate risk behaviouralisation framework, which is described below.

We aim, through our management of market risk in non-trading portfolios, 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 revenue stream.

Our funds transfer pricing policies give rise to a two stage funds transfer pricing approach. For details see page 219 of the Annual Report and Accounts 2014.

The economic capital requirement for non-trading interest rate risk under Pillar 2 is measured by or Economic Value of Equity ('EVE') sensitivity. EVE sensitivity considers all re-pricing mismatches assuming a run-off of the current balance sheet, and quantifies the larger loss in economic value of the Group's net asset position (including off balance sheet positions) under a +/-200bps shock to interest rates.

Asset, Liability and Capital Management ('ALCM') is responsible for measuring and controlling non-trading interest rate risk under the supervision of the RMM. Its primary responsibilities are:

· to define the rules governing the transfer of interest rate risk from the commercial bank to BSM;

· to ensure that all market interest rate risk that can be hedged is effectively transferred from the global businesses to BSM; and

· to define the rules and metrics for monitoring the residual interest rate risk in the global businesses.

The different types of non-trading interest rate risk and the controls which the Group uses to quantify and limit its exposure to these risks can be categorised as follows:

· risk which is transferred to BSM and managed by BSM within a defined risk mandate;

· risk which remains outside BSM because it cannot be hedged or which arises due to our behaviouralised transfer pricing assumptions. This risk will be

captured by our net interest income EVE sensitivity, and corresponding limits are part of our global and regional risk appetite statements for non-trading interest rate risk. A typical example would be margin compression created by unusually low rates in key currencies;

· basis risk which is transferred to BSM when it can be hedged. Any residual basis risk remaining in the global businesses is reported to ALCO. A typical example would be a managed rate savings product transfer-priced using a Libor-based interest rate curve; and

· model risks which cannot be captured by net interest income or EVE sensitivity but are controlled by our stress testing framework. A typical example would be prepayment risk on residential mortgages or pipeline risk.

Details of the Group's monitoring of the sensitivity of projected net interest income under varying interest rate scenarios may be found on page 181 of the Annual Report and Accounts 2014.

Interest rate risk behaviouralisation

Unlike liquidity risk which is assessed on the basis of a very severe stress scenario, non-trading interest rate risk is assessed and managed according to 'business-as-usual' conditions. In many cases the contractual profile of non-trading assets/liabilities arising from assets/liabilities created outside Markets or BSM does not reflect the behaviour observed. Behaviouralisation is therefore used to assess the market interest rate risk of non-trading assets/liabilities and this assessed market risk is transferred to BSM, in accordance with the rules governing the transfer of interest rate risk from the global businesses to BSM.

Behaviouralisation is applied in three key areas:

· the assessed re-pricing frequency of managed rate balances;

· the assessed duration of non-interest bearing balances, typically capital and current accounts; and

· the base case expected prepayment behaviour or pipeline take-up rate for fixed rate balances with embedded optionality.

Interest rate behaviouralisation policies have to be formulated in line with the Group's behaviouralisation policies and approved at least annually by local ALCO and regional ALCM, in conjunction with local, regional and Group market risk monitoring teams.

The extent to which balances can be behaviouralised is driven by:

· the amount of the current balance that can be assessed as 'stable' under business-as-usual conditions; and

· for managed rate balances the historic market interest rate re-pricing behaviour observed; or

· for non-interest bearing balances the duration for which the balance is expected to remain under business-as-usual conditions. This assessment is often

driven by the re-investment tenors available to BSM to neutralise the risk through the use of fixed rate government bonds or interest rate derivatives, and for derivatives the availability of cash flow hedging capacity.

Balance Sheet Management

Effective governance across BSM is supported by the dual reporting lines it has to the CEO of GB&M and to the Group Treasurer. In each operating entity, BSM is responsible for managing liquidity and funding under the supervision of the local ALCO (which usually meets on a monthly basis). It also manages the non-trading interest rate positions transferred to it within a Global Markets limit structure.

In executing the management of the liquidity risk on behalf of ALCO, and managing the non-trading interest rate positions transferred to it, BSM invests in highly-rated liquid assets in line with the Group's liquid asset policy. The majority of the liquidity is invested in central bank deposits and government, supranational and agency securities with most of the remainder held in short-term interbank and central bank loans.

Withdrawable central bank deposits are accounted for as cash balances. Interbank loans, statutory central bank reserves and loans to central banks are accounted for as loans and advances to banks. BSM's holdings of securities are accounted for as available-for-sale or, to a lesser extent, held-to-maturity assets.

Statutory central bank reserves are not recognised as liquid assets. The statutory reserves that would be released in line with the Group's stressed customer deposit outflow assumptions are reflected as stressed inflows.

BSM is permitted to use derivatives as part of its mandate to manage interest rate risk. Derivative activity is predominantly through the use of vanilla interest rate swaps which are part of cash flow hedging and fair value hedging relationships.

Credit risk in BSM is predominantly limited to short-term bank exposure created by interbank lending, exposure to central banks and high quality sovereigns, supranationals or agencies which constitute the majority of BSM's liquidity portfolio. BSM does not manage the structural credit risk of any Group entity balance sheets.

BSM is permitted to enter into single name and index credit derivatives activity, but it does so to manage credit risk on the exposure specific to its securities portfolio in limited circumstances only. The risk limits are extremely limited and closely monitored. At 31 December 2014 and 31 December 2013 BSM had no open credit derivative index risk.

VaR is calculated on both trading and non-trading positions held in BSM. It is calculated by applying the same methodology used for the Markets business and utilised as a tool for market risk control purposes.

BSM holds trading portfolio instruments in only very limited circumstances. Positions and the associated VaR were not significant during 2014 and 2013.

Sensitivity of net interest income

A principal part of our management of market risk in non-trading portfolios is to monitor the sensitivity of projected net interest income under varying interest rate scenarios (simulation modelling). This monitoring is undertaken at an entity level by local ALCOs.

Entities apply a combination of scenarios and assumptions relevant to their local businesses, and standard scenarios which are required throughout HSBC. The latter are consolidated to illustrate the combined pro forma effect on our consolidated net interest income.

Projected net interest income sensitivity figures 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. This effect, however, does not incorporate actions which would probably be taken by BSM or in the business units to mitigate the effect of interest rate risk. In reality, BSM seeks proactively to change the interest rate risk profile to minimise losses and

optimise net revenues. The net interest income sensitivity calculations assume that interest rates of all maturities move by the same amount in the 'up-shock' scenario. Rates are not assumed to become negative in the 'down-shock' scenario which may, in certain currencies, effectively result in non-parallel shock. In addition, the net interest income sensitivity calculations take account of the effect on net interest income of anticipated differences in changes between interbank interest rates and interest rates over which the entity has discretion in terms of the timing and extent of rate changes.

Defined benefit pension schemes

Market risk arises within our defined benefit pension schemes to the extent that the obligations of the schemes are not fully matched by assets with determinable cash flows. Pension scheme obligations fluctuate with changes in long-term interest rates, inflation, salary levels and the longevity of scheme members. Pension scheme assets include equities and debt securities, the cash flows of which change as equity prices and interest rates (and credit risk) vary. There is a risk that market movements in equity prices and interest rates could result in asset values which, taken together with regular ongoing contributions, are insufficient over time to cover the level of projected obligations and these, in turn, could increase with a rise in inflation and members living longer. Management, and in certain instances trustees (who act on behalf of the pension schemes' beneficiaries), assess these risks using reports prepared by independent external consultants, take action and, where appropriate, adjust investment strategies and contribution levels accordingly.

Refer to Other risks - Pension Risk on page 92 for additional information.

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'.

The current Basel requirements include a capital requirement for operational risk, utilising three levels of sophistication as stated on page 18. We have historically adopted, and currently use, the standardised approach in determining our operational risk capital requirements. We are in the process of developing and implementing an AMA compliant model which we will use for economic capital calculation purposes, and it is our medium-term aim to move to the AMA for our operational risk regulatory capital requirement calculation. The table below sets out an analysis of our operational risk capital requirement by region and global business.

Operational risk is relevant to every aspect of our business, and covers a wide spectrum of issues, in particular legal, compliance, security and fraud. Losses arising from breaches of regulation and law, unauthorised activities, error, omission, inefficiency, fraud, systems failure or external events all fall within the definition of operational risk.

We have historically experienced operational risk losses in the following major categories:

· possible mis-selling of products;

· breach of regulatory requirements;

· fraudulent and other external criminal activities;

· breakdowns in processes/procedures due to human error, misjudgement or malice;

- terrorist attacks;
- system failure or non-availability; and
- in certain parts of the world, vulnerability to natural disasters.

Table 57: Operational risk RWAs

	At 31 December 2014		At 31 December 2013	
	Capital required US$bn	RWAs US$bn	Capital required US$bn	RWAs US$bn
By geographical region				
Europe	2.8	35.5	2.8	35.1
Asia	3.7	45.8	3.5	44.1
Middle East and North Africa	0.5	6.2	0.5	6.0
North America	1.2	15.2	1.4	17.2
Latin America	1.2	15.1	1.3	16.8
At 31 December	9.4	117.8	9.5	119.2
By global business				
Retail Banking and Wealth Management	2.9	36.7	3.1	38.8
Commercial Banking	2.6	33.2	2.6	32.9
Global Banking and Markets	3.6	44.5	3.5	43.3
Global Private Banking	0.3	3.6	0.3	3.9
Other	-	(0.2)	-	0.3
At 31 December	9.4	117.8	9.5	119.2

During 2014, our operational risk profile continued to be dominated by compliance and legal risks as referred to in the 'Top and emerging risks' section and Note 40 on the Financial Statements on pages 22 and 446, respectively, of the Annual Report and Accounts 2014. A number of material losses were realised in 2014, which related largely to events that occurred in previous years. These events included the possible historical mis-selling of payment protection insurance ('PPI') products in the UK (see Note 29 on page 420 of the Annual Report and Accounts 2014). A number of mitigating actions continue to be taken to prevent future mis-selling incidents.

The regulatory environment in which we operate is increasing the cost of doing business and could reduce our future profitability. The implementation of Global Standards remains one of the key strategic priorities for the Group and is ongoing.

For further details on Compliance Risk, refer to page 189 of the Annual Report and Accounts 2014.

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

The objective of our operational risk management is to manage and control operational risk in a cost-effective manner and within our risk appetite, as defined by GMB.

Organisation and responsibilities

Responsibility for minimising operational risk management lies primarily with HSBC's management and staff. Each regional, global business, country, business unit and functional head is required to maintain oversight over operational risk and internal control, covering all businesses and operational activities for which they are responsible.

The Group Operational Risk function and the Operational Risk Management Framework ('ORMF') assist business management in discharging their responsibilities.

The ORMF defines minimum standards and processes, and the governance structure for operational risk and internal control across the Group. To implement the ORMF a 'Three lines of defence' model is used for the management of risk. The first line of defence is every employee at HSBC, the second consists of the Global Functions and the third is Internal Audit.

More details on the 'Three lines of defence' model and our ORMF may be found on page 186 of the Annual Report and Accounts 2014.

The Global Operational Risk Committee, which reports to RMM, meets at least quarterly to discuss key risk issues and review the effective implementation of the ORMF.

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

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 actions to be taken when weaknesses are identified.

In 2014, we continued to enhance our ORMF policies and procedures, and undertook various activities, such as a global training programme, to further embed the use of the framework in the management of the business.

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.

In addition, an enhanced Risk Scenario Analysis process has been implemented across material legal entities to improve the quantification and management of material risks. This provides a top down, forward-looking view of risks to help determine whether they are being effectively managed within our risk appetite or whether further management action is required.

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

Operational risk and control assessment approach

Operational risk and control assessments are performed by individual business units and functions. The risk and control assessment 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. Risk and control assessments are reviewed and updated at least annually.

Appropriate means of mitigation and controls are considered. These include:
· making specific changes to strengthen the internal control environment; and
· investigating whether cost-effective insurance cover is available to mitigate the risk.

Recording

We use a centralised database to record the results of our operational risk management process. Operational risk and control assessments, as described above, are input 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 Group level, all Group companies are required to report individual losses when the net loss is expected to exceed US$10,000 and to aggregate all other operational risk losses under US$10,000. Losses are entered into the Operational Risk IT system and are reported to the Group Operational Risk function on a quarterly basis.

Other risks

Pension risk

We operate a number of pension plans throughout the world. Some of them are defined benefit plans. Sponsoring Group companies (and in some instances, employees) make regular contributions in accordance with advice from actuaries and in consultation with the plans' trustees (where relevant). In situations where a funding deficit emerges, sponsoring Group companies agree to make additional contributions to the plans, to address the deficit over an appropriate repayment period.

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

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

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

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

· a change in either interest rates or inflation expectations, causing an increase in the value of the plan liabilities; and

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

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

Non-trading book exposures in equities

Our non-trading equities exposures are reviewed by RMM at least annually. At 31 December 2014, on a regulatory consolidation basis, we had equity investments in the non-trading book of US$10.9bn (2013: US$9.3bn). These consist of investments held for the purposes shown in table 58.

Table 58: Non-trading book equity investments

	At 31 December 2014			At 31 December 2013		
	Available-for-sale US$bn	Designated at fair value US$bn	Total US$bn	Available-for-sale US$bn	Designated at fair value US$bn	Total US$bn
Strategic investments	7.5	0.1	7.6	5.2	0.1	5.3
Private equity investments	2.0	0.1	2.1	2.7	0.1	2.8
Business facilitation1	1.2	-	1.2	1.2	-	1.2
	10.7	0.2	10.9	9.1	0.2	9.3

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

We make investments in private equity primarily through managed funds that are subject to limits on the amount of investment. We risk assess these commitments to ensure that industry and geographical concentrations remain within acceptable levels for the portfolio as a whole, and perform regular reviews to substantiate the valuation of the investments within the portfolio.

Exchange traded investments amounted to US$5.9bn (2013: US$4.0bn), with the remainder being unlisted. These investments are held at fair value in line with market prices and are mainly strategic in nature. The increase in strategic investments was largely due to the increase in the market value of the investment in Industrial Bank. This offset the decrease in private equity holdings from the disposal of various direct and private equity fund investments.

On a regulatory consolidation basis, the net gain from disposal of equity securities amounted to US$1.0bn (2013: US$0.5bn), while impairment of AFS equities amounted to US$0.4bn (2013: US$0.2bn). In 2014, unrealised gains on AFS equities were excluded from regulatory capital, because under the PRA's implementation of CRD IV they can only be recognised in CET1 capital from 1 January 2015, whereas in 2013 under the Basel 2.5 rules unrealised gains on equities of US$1.6bn were included in tier 2 capital.

Details of our accounting policy for AFS equity investments and the valuation of financial instruments may be found on pages 399 and 378, respectively, of the Annual Report and Accounts 2014. A detailed description of the valuation techniques applied to private equity may be found on page 383 of the Annual Report and Accounts 2014.

Risk management of insurance operations

We operate an integrated bancassurance model which provides insurance products principally for customers with whom we have a banking relationship. Insurance products are sold through all global businesses, but predominantly by RBWM and CMB through our branches and direct channels worldwide.

The insurance contracts we sell relate to the underlying needs of our banking customers, which we can identify from our point-of-sale contacts and customer knowledge. The majority of sales are of savings and investment products and term and credit life contracts. By focusing largely on personal and SME lines of business we are able to optimise volumes and diversify individual insurance risks.

Where we have operational scale and risk appetite, mostly in life insurance, these insurance products are manufactured by HSBC subsidiaries. Manufacturing insurance allows us to retain the risks and rewards associated with writing insurance contracts by keeping part of the underwriting profit, investment income and distribution commission within the Group.

Where we do not have the risk appetite or operational scale to be an effective insurance manufacturer, we engage with a handful of leading external insurance companies in order to provide insurance products to our customers through our banking network and direct channels. These arrangements are generally structured with our exclusive strategic partners and earn the Group a combination of commissions, fees and a share of profits.

We distribute insurance products in all of our geographical regions. We have core life insurance manufacturing entities, the majority of which are direct subsidiaries of legal banking entities, in seven countries (Argentina, Brazil, Mexico, France, the UK, Hong Kong and Singapore). There are also life insurance manufacturing subsidiaries in mainland China, Ireland (in run-off), Malaysia and Malta.

We measure the risk profile of our insurance manufacturing businesses using an economic capital approach, where assets and liabilities are measured on a market value basis and a capital requirement is held to ensure that there is less than a 1 in 200 chance of insolvency over the next year, given the risks that the businesses are exposed to. In 2014, we aligned the measurement approach for market, credit and insurance risks in the economic capital model to the new pan-European Solvency II insurance capital regulations applicable from 2016.

Further details of the management of financial risks and insurance risk arising from the insurance operations are provided from page 190 of the Annual Report and Accounts 2014.

Residual risk

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

Liquidity and funding risk

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

The objective of our liquidity framework is to allow us to withstand very severe stresses. It is designed to be adaptable to changing business models, markets and regulations. Our Liquidity and funding risk management framework requires:

· liquidity to be managed by operating entities on a stand-alone basis with no implicit reliance on the Group or central banks;

· all operating entities to comply with their limits for the advances to core funding ratio; and

· all operating entities to maintain positive stressed cash flow positions out to three months under prescribed Group stress scenarios.

We do not manage liquidity through the explicit allocation of capital as, in common with standard industry practice, this is not considered to be an appropriate or adequate mechanism for managing these risks. However, we recognise that a strong capital base can help to mitigate liquidity risk.

Funding risk is a form of liquidity risk arising when the liquidity needed to fund illiquid asset positions cannot be obtained at the expected terms and when required. Our primary sources of funding are customer current accounts and customer savings deposits payable on demand or at short notice. We issue wholesale securities (secured and unsecured) to supplement our customer deposits and change the currency mix, maturity profile or location of our liabilities. In the normal course of business we do not seek to utilise secured financing as a source of funding to finance customer assets, beyond the collateralised security financing activities within Global Markets. The table in Appendix II summarises the total on and off-balance sheet assets that are encumbered and unencumbered on liquidity and funding risk basis and unencumbered assets that could be used to support potential future funding and collateral needs.

Details of our Liquidity and Funding Risk parameters are provided from page 164 of the Annual Report and Accounts 2014.

Reputational risk

Reputational risk is the failure to meet stakeholder expectations as a result of any event, behaviour, action or inaction, either by HSBC itself, our employees or those with whom we are associated, that might cause stakeholders to form a negative view of HSBC. Reputational risk relates to perceptions, whether based on fact or otherwise. Stakeholders' expectations are constantly changing and thus reputational risk is dynamic and varies between geographies, groups and individuals. As a global bank, HSBC shows unwavering commitment to operating, and to be seen to be operating, to the high standards we have set for ourselves in every jurisdiction. Reputational risk might result in financial or non-financial impacts, loss of confidence, adverse effects on our ability to keep and attract customers, or other consequences. Any lapse in standards of integrity, compliance, customer service or operating efficiency represents a potential reputational risk.

For further details, please refer to the Reputational Risk section on page 199 of the Annual Report and Accounts 2014.

Sustainability risk

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

Business risk

The PRA specifies that banks, as part of their ICAAP, should review their exposure to business risk.

Business risk is the potential negative impact on profits and capital from the Group not meeting our strategic objectives, as a result of unforeseen changes in the business and regulatory environment, exposure to economic cycles and technological changes.

We manage and mitigate business risk through our risk appetite, business planning and stress testing processes, so that our business model and planned activities are monitored, resourced and capitalised consistent with the commercial,

economic and risk environment in which the Group operates, and that any potential vulnerabilities of our business plans are identified at an early stage so that mitigating actions can be taken.

Dilution risk

Dilution risk is the risk that an amount receivable is reduced through cash or non-cash credit to the obligor, and arises mainly from factoring and invoice discounting transactions.

Where there is recourse to the seller, we treat these transactions as loans secured by the collateral of the debts purchased and do not report dilution risk for them. For our non-recourse portfolio, we do not report any dilution risk as we obtain an indemnity from the seller

which indemnifies us against this risk. Moreover, factoring transactions involve lending at a discount to the face-value of the receivables which provides protection against dilution risk.

Details of our management of these risks may be found on the following pages of the Annual Report and Accounts 2014: liquidity and funding 164, reputational 199 and sustainability 201.

Remuneration

Details of the Group's remuneration policy, including details on the remuneration committee membership, activities, our remuneration strategy and tables showing the remuneration details of HSBC's Identified Staff and Material Risk Takers may be found on the Remuneration Policy on our website (http://www.hsbc.com/investor-relations/governance) and the Directors' Remuneration Report on pages 300-323 of the Annual Report and Accounts 2014.

Appendix I

Simplified organisation chart for regulatory purposes1

To view chart in PDF format please click on the link below:

http://www.rns-pdf.londonstockexchange.com/rns/5403F_-2015-2-22.pdf

1 At 31 December 2014 showing entities in Home and Priority Growth markets, wholly owned unless shown otherwise (part ownership rounded down to the nearest per cent), except 2, below.
2 Control of Special Purpose Entities is not based on ownership.
3 Middle East and North Africa.

Appendix II

Asset encumbrance

The following is the disclosure of encumbered and unencumbered assets (as at 31 Dec 2014) based on the requirement in Part Eight of the Capital Requirements Regulation and in the related Guideline issued by the European Banking Authority on 27 June 2014.

Template A - Assets

	Carrying amount	Fair value	Carrying amount	Fair value of

		of encumbered assets	of encumbered assets	of unencumbered assets	unencumbered assets
		010	040	060	090
		US$m	US$m	US$m	US$m
010	Assets of the reporting institution	138,370	-	2,590,799	-
030	Equity instruments	10,857	10,857	75,486	75,364
040	Debt securities	112,294	112,288	442,741	442,605
120	Other assets	1,367	-	477,596	-

Template B - Collateral received

		Fair value of encumbered collateral received or own debt securities issued	Fair value of collateral received or own debt securities issued available for encumbrance
		010	040
		US$m	US$m
130	Assets of the reporting institution	141,701	118,173
150	Equity instruments	29,292	7,940
160	Debt securities	111,763	98,001
230	Other collateral received	-	995
240	Own debt securities issued other than own covered bonds or ABSs	-	-

Template C - Encumbered assets/collateral received and associated liabilities

		Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered
		010	030
		US$m	US$m
010	Carrying amount of selected financial liabilities	172,547	268,477

Template D - Information on importance of encumbrance

We are a deposit-led bank and hence the majority of our funding is from customer accounts and customer savings deposits payable on demand or at short notice. This is part of our Group framework, where we have defined the limit for the ratio of Advances to Deposits to be below 90% (2014: 72%). Given this structural unsecured funding position we have little requirement to fund ourselves in secured markets, and therefore our overall low level of encumbrance reflects this position. However, we do provide collateralised financing services to clients as part of our Global Banking and Markets business model, providing cash financing or specific securities, and these result in off-balance sheet encumbrance. The other sources which contribute to encumbrance are securities pledged in derivative transactions, mostly for hedging purposes; issuance of asset-backed securities, and covered bond programmes in the UK, France and Australia. HSBC Holdings ALCO reviews the asset encumbrance of the institution as a whole quarterly and any events causing change in the asset encumbrance level are examined.

Appendix III

Transitional own funds disclosure

	At 31 December 2014 US$m	CRR prescribed residual amount US$m	Final CRD IV text US$m
Common equity tier 1 (CET1) capital: instruments and reserves			
Capital instruments and the related share premium accounts	20,122	-	20,122
of which: ordinary shares	20,122	-	20,122
Retained earnings	135,589	-	135,589
Accumulated other comprehensive income (and other reserves)	13,648	-	13,648
Minority interests (amount allowed in consolidated CET1)	4,640	-	4,640
Independently reviewed interim net profits net of any foreseeable charge or dividend1	(2,742)	-	(2,742)
Common equity tier 1 capital before regulatory adjustments	171,257	-	171,257
Common equity tier 1 capital: regulatory adjustments			
Additional value adjustments	(1,341)	-	(1,341)
Intangible assets (net of related deferred tax liability)	(22,475)	-	(22,475)

Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability)	(1,036)	-	(1,036)
Fair value reserves related to gains or losses on cash flow hedges	(57)	-	(57)
Negative amounts resulting from the calculation of expected loss amounts	(5,813)	-	(5,813)
Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	570	-	570
Defined-benefit pension fund assets	(4,069)	-	(4,069)
Direct and indirect holdings of own CET1 instruments	(1,083)	-	(1,083)
Regulatory adjustments applied to common equity tier 1 in respect of amounts subject to pre-CRR treatment			
Regulatory adjustments relating to unrealised gains and losses	(2,753)	2,753	-
of which: unrealised gains on available-for-sale equities	(1,378)	1,378	-
of which: reserves arising from revaluation of property	(1,375)	1,375	-
Total regulatory adjustments to Common equity tier 1 (CET1)	(38,057)	2,753	(35,304)
Common equity tier 1 (CET1) capital	133,200	2,753	135,953
Additional Tier 1 (AT1) capital: instruments			
Capital instruments and the related share premium accounts	5,681	-	5,681
of which: classified as equity under applicable accounting standards	5,681	-	5,681
Amount of qualifying items and the related share premium accounts subject to phase out from AT1	9,874	(9,874)	-
Qualifying tier 1 capital included in consolidated AT1 capital (including minority interests not included in CET1) issued by subsidiaries and held by third parties	4,132	(3,735)	397
of which: instruments issued by subsidiaries subject to phase out	3,248	(3,248)	-
AT1 capital before regulatory adjustments	19,687	(13,609)	6,078
Additional Tier 1 capital: regulatory adjustments			
Residual amounts deducted from Additional Tier 1 capital with regard to	(148)	148	-

deduction from Tier 2 capital during the transitional period			
of which: Direct and indirect holdings by the institution of the T2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities	(148)	148	-
Total regulatory adjustments to Additional Tier 1 (AT1) capital	(148)	148	-
Additional Tier 1 (AT1) capital	19,539	(13,461)	6,078
Tier 1 capital (T1 = CET1 + AT1)	152,739	(10,708)	142,031

	At 31 December 2014	CRR prescribed residual amount	Final CRD IV text
	US$m	US$m	US$m
Tier 2 (T2) capital: instruments and provisions			
Capital instruments and the related share premium accounts	14,143	-	14,143
Amount of qualifying items and the related share premium accounts subject to phase out from T2	7,594	(7,594)	-
Qualifying own funds instruments included in consolidated T2 capital (including minority interests and AT1 instruments not included in CET1 or AT1) issued by subsidiaries and held by third parties	16,476	(15,981)	495
of which: instruments issued by subsidiaries subject to phase out	16,137	(16,137)	-
T2 capital before regulatory adjustments	38,213	(23,575)	14,638
Tier 2 (T2) capital: regulatory adjustments	(222)	(148)	(370)
Direct and indirect holdings by the institution of the T2 instruments and subordinated loans of financial sector			

entities where the institution has a significant investment in those entities (net of eligible short positions)			
Total regulatory adjustments to Tier 2 (T2) capital	(222)	(148)	(370)
Tier 2 (T2) capital	37,991	(23,723)	14,268
Total capital (TC = T1 + T2)	190,730	(34,431)	156,299
Total risk-weighted assets	1,219,765	-	1,219,765
Capital ratios and buffers			
Common equity Tier 1	10.9%		
Tier 1	12.5%		
Total capital	15.6%		
Institution specific buffer requirement			
of which: capital conservation buffer requirement			
of which: counter cyclical buffer requirement			
of which: systemic risk buffer requirement			
of which: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer			
Common Equity Tier 1 available to meet buffers	6.9%		
Amounts below the threshold for deduction (before risk weighting)			
Direct and indirect holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	2,459		
Direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	9,123		
Deferred tax assets arising from temporary differences (amount below	7,660		

10% threshold, net of related tax liability)	
Applicable caps on the inclusion of provisions in Tier 2	
Credit risk adjustments included in T2 in respect of exposures subject to standardised approach (prior to the application of the cap)	-
Cap on inclusion of credit risk adjustments in T2 under standardised approach	4,453
Credit risk adjustments included in T2 in respect of exposures subject to internal ratings-based approach (prior to the application of the cap)	-
Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	3,266
Capital instruments subject to phase-out arrangements (only applicable between 1 January 2013 and 1 January 2022)	
Current cap on CET1 instruments subject to phase out arrangements	-
Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)	-
Current cap on AT1 instruments subject to phase out arrangements	13,122
Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)	833
Current cap on T2 instruments subject to phase out arrangements	23,971
Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	4,572

1 Following regulatory guidance, the prospective fourth interim dividend, net of projected scrip, has been deducted from the fourth interim profits.

CRD IV own funds disclosure requirements determine that firms must provide a detailed disclosure of the nature and amounts of specific items on own funds following an EBA specified uniform template. During the transitional period, the relevant template is the one set out in annex VI of Commission Implementing Regulation 1423/2013, which became applicable from 31 March 2014.

The capital position is presented on a CRD IV Year 1 transitional basis. Where appropriate, additional line items have been included to accommodate certain amounts not captured by the template. We have also

provided additional information in the column, 'CRR prescribed residual amount', for completeness, to facilitate the reading of the end point capital resources position which results from adding the two columns together.

A list of the features of our capital instruments in accordance with annex III of Commission Implementing Regulation 1423/2013 is also being published on our website with reference to our balance sheet on 31 December 2014. This is in addition to the full terms and conditions of our securities, also available on our website.

Appendix IV

Abbreviations

Abbreviation	Brief description
A	
ABS1	Asset-backed security
AFS1	Available-for-sale
ALCM	Asset, Liability and Capital Management
AMA	Advanced Measurement Approach
AT1 capital	Additional Tier 1 capital
B	
Basel Committee	Basel Committee on Banking Supervision
BIPRU	Prudential Sourcebook for Banks, Building Societies and Investment Firms
BoCom	Bank of Communications Co., Limited, one of China's largest banks
BRRD1	Bank Recovery and Resolution Directive
BSM	Balance Sheet Management
C	
CCB1	Capital conservation buffer
CCF1	Credit conversion factor
CCLB	Countercyclical leverage ratio buffer
CCP	Central counterparty
CCR1	Counterparty credit risk
CCyB1	Countercyclical capital buffer
CDS1	Credit default swap
CET11	Common equity tier 1
CIU	Collective investment undertakings
CML	Consumer and Mortgage Lending (US)
CPB1	Capital planning buffer
CRA1	Credit risk adjustment
CRD1	Capital Requirements Directive
CRE1	Commercial real estate
CRM1	Comprehensive risk measure
CRR1	Customer risk rating
CSA1	Credit Support Annex
CVA1	Credit valuation adjustment
E	

EAD1	Exposure at default
EBA	European Banking Authority
ECAI1	External Credit Assessment Institutions
EDTF	Enhanced Disclosure Task Force
EEA	European Economic Area
EL1	Expected loss
EU	European Union
EVE1	Economic value of equity
F	
FCA1	Financial Conduct Authority (UK)
FCCM1	Financial collateral comprehensive method
Fitch	Fitch Group
FPC1	Financial Policy Committee (UK)
FSB	Financial Stability Board
G	
GB&M	Global Banking and Markets, a global business
GCRO	Group Chief Risk Officer
GENPRU	The PRA's rules, as set out in the General Prudential Sourcebook
GMB	Group Management Board
GPB	Global Private Banking, a global business
GPSP	Group Performance Share Plan
GRC	Group Risk Committee
Group	HSBC Holdings together with its subsidiary undertakings

Abbreviation	Brief description
G-SIB1	Global systemically important bank
G-SII	Global systemically important institution
H	
HBUS	HSBC Bank USA NA
HNAH	HSBC North America Holdings Inc
Hong Kong	The Hong Kong Special Administrative Region of the People's Republic of China
HSBC	HSBC Holdings together with its subsidiary undertakings
I	
IAA1	Internal Assessment Approach
ICAAP1	Internal Capital Adequacy Assessment Process
ICG	Individual capital guidance
IFRSs	International Financial Reporting Standards
IMM1	Internal Model Method
IRB1	Internal ratings-based approach
IRC1	Incremental risk charge
ISDA	International Swaps and Derivatives Association
ITS	Implementing Technical Standards
L	
LFRF	Liquidity and funding risk management framework
LGD1	Loss given default
Libor	London Interbank Offer Rate
M	
MENA	Middle East and North Africa
MOC	Model Oversight Committee

Moody's	Moody's Investor Service
O	
OIS	Overnight Index Swap
ORMF	Operational risk management framework
O-SII	Other systemically important institution
OTC1	Over-the-counter
P	
PD1	Probability of default
PFE	Potential future exposure
PIT1	Point-in-time
PPI	Payment protection insurance product
PRA1	Prudential Regulation Authority (UK)
PS	Policy Statement
PVA1	Prudent valuation adjustment
PVIF	Present value of in-force long-term insurance business
Q	
QIS	Quantitative Impact Study
R	
RAS	Risk Appetite Statement
RBM1	Ratings Based Method
Retail IRB1	Retail Internal Ratings Based approach
RMM	Risk Management Meeting
RNIV	Risks not in VaR
RTS	Regulatory Technical Standard
RWA1	Risk-weighted asset
S	
S&P	Standard and Poor's rating agency
SFM1	Supervisory Formula Method
SFT1	Securities Financing Transactions
SIC	Securities Investment Conduit
SME	Small and medium-sized enterprise
SPE1	Special Purpose Entity
SRB1	Systemic Risk Buffer
STD1	Standardised approach
Abbreviation	Brief description
T	
TLAC1	Total Loss Absorbing Capacity
TTC1	Through-the-cycle
T2 capital	Tier 2 capital
U	
UK	United Kingdom
US$	United States dollar
US	United States of America
V	
VaR1	Value at risk
W	
WCMR	Wholesale Credit and Market Risk

1 Full definition included in Glossary at Appendix V.

Appendix V

Glossary

Term	Definition
A	
Additional value adjustment	See 'Prudent valuation adjustment'.
Arrears	Customers are said to be in arrears (or in a state of delinquency) when they are behind in fulfilling their obligations, with the result that an outstanding loan is unpaid or overdue. When a customer is in arrears, the total outstanding loans on which payments are overdue are described as delinquent.
Asset-backed securities ('ABS's)	Securities that represent an interest in an underlying pool of referenced assets. The referenced pool can comprise any assets which attract a set of associated cash flows but are commonly pools of residential or commercial mortgages.
Available-for-sale ('AFS') financial assets	Those non-derivative financial assets that are designated as available for sale or are not classified as a) loans and receivables b) held-to-maturity investments or c) financial assets at fair value through profit or loss.
B	
Back-testing	A statistical technique used to monitor and assess the accuracy of a model, and how that model would have performed had it been applied in the past.
Bank Recovery and Resolution Directive ('BRRD')	A European legislative package issued by the European Commission and adopted by EU Member States. This directive was finalised in July 2014 with the majority of provisions coming into effect 1 January 2015. This introduces a common EU framework for how authorities should intervene to address banks which are failing or are likely to fail. The framework includes early intervention and measures designed to prevent failure and in the event of bank failure for authorities to ensure an orderly resolution.
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 2.5	The update to Basel II including changes to capital and disclosure requirements for securitisation and market risk, which took effect in December 2011.
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.
Basis risk	The risk that prices of offsetting financial instruments in a hedging strategy will not move in entirely opposite directions from each other. There is therefore a risk that the imperfect correlation between the instruments used for the hedging strategy produces an overall gain or loss.
BIPRU	Prudential sourcebook for Banks, Building Societies and Investment Firms.
C	
Capital conservation buffer ('CCB')	A capital buffer prescribed by regulators under Basel III and designed to ensure banks build up capital buffers outside periods of stress which can be drawn down as losses are incurred. Should a bank's capital levels fall within the capital conservation buffer range, capital distributions will be constrained by the regulators.
Capital planning buffer ('CPB')	A capital buffer, prescribed by the PRA under Basel II, designed to ensure banks build up capital buffers outside periods of stress which can be drawn down as losses are incurred. Should a bank's capital levels fall within the capital planning buffer range, a period of heightened regulatory interaction would be triggered.
Capital required	Capital required represents the Pillar 1 capital charge calculated at 8% of RWAs.

Term	Definition
Capital requirements directive ('CRD')	A capital adequacy legislative package issued by the European Commission and adopted by EU member states. The first CRD legislative package gave effect to the Basel II proposals in the EU and came into force on 20 July 2006. CRD II, which came into force on 31 December 2010, subsequently updated the requirements for capital instruments, large exposure, liquidity risk and securitisation. A further CRD III amendment updated market risk capital and additional securitisation requirements and came into force on 31 December 2011. The CRD IV package comprises a recast Capital Requirements Directive and a new Capital Requirements Regulation. The package implements the Basel III capital proposals together with transitional arrangements for some

	of its requirements. CRD IV proposals came into force on 1 January 2014.
Capital resources	Capital held on balance sheet that is eligible to satisfy capital requirements.
CET 1 ratio	A Basel III measure, of CET 1 capital expressed as percentage of total risk exposure amount.
Code Staff	Senior management, risk takers, staff engaged in control functions, and any employee whose total remuneration takes them into the same remuneration bracket as senior management and risk takers and whose professional activities have a material impact on the firm's risk profile.
Commercial paper ('CP')	An unsecured, short-term debt instrument issued by a corporation, typically for the financing of accounts receivable, inventories and meeting short-term liabilities. The debt is usually issued at a discount, reflecting prevailing market interest rates.
Commercial real estate	Any real estate, 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.
Comprehensive risk measure ('CRM')	The comprehensive risk measure model covers all positions that are part of the correlation trading portfolio. Comprehensive risk measure covers all price risks including spread, default and migration. Like incremental risk charge, it is calibrated to a 99.9 percentile loss and a one-year capital horizon to generate a capital add-on to VAR.
Conduits	HSBC sponsors and manages multi-seller conduits and SICs. The multi-seller conduits hold interests in diversified pools of third-party assets such as vehicle loans, trade receivables and credit card receivables funded through the issuance of short-dated commercial paper and supported by a liquidity facility. The SICs hold predominantly asset-backed securities referencing such items as commercial and residential mortgages, vehicle loans and credit card receivables funded through the issuance of both long-term and short-term debt.
Consumer and Mortgage Lending	In the US, the CML portfolio consists of our Consumer Lending and Mortgage Services businesses, which are in

('CML')	run-off. The Consumer Lending business offered secured and unsecured loan products, such as first and second lien mortgage loans, open-ended home equity loans and personal non-credit card loans through branch locations and direct mail. The majority of the mortgage lending products were for refinancing and debt consolidation rather than home purchases. In the first quarter of 2009, we discontinued all originations by our Consumer Lending business. Prior to the first quarter of 2007, when we ceased loan purchase activity, the Mortgage Services business purchased non-conforming first and second lien real estate secured loans from unaffiliated third parties. The business also included the operations of Decision One Mortgage Company ('Decision One'), which historically originated mortgage loans sourced by independent mortgage brokers and sold these to secondary market purchasers. Decision One ceased originations in September 2007.
Core tier 1 capital	The highest quality form of regulatory capital under Basel II that comprised total shareholders' equity and related non-controlling interests, less goodwill and intangible assets and certain other regulatory adjustments.
Core tier 1 ratio	A Basel II measure, of core tier 1 capital expressed as a percentage of the total risk-weighted assets.
Countercyclical capital buffer ('CCyB')	A capital buffer prescribed by regulators under Basel III which aims to ensure that capital requirements take account of the macro-financial environment in which banks operate. This will provide the banking sector with additional capital to protect it against potential future losses, when excess credit growth in the financial system as a whole is associated with an increase in system-wide risk.
Counterparty credit risk ('CCR')	Counterparty credit risk, in both the trading and non-trading books, is the risk that the counterparty to a transaction may default before completing the satisfactory settlement of the transaction.
Term	Definition
CRD III	See 'Capital requirements directive'.
CRD IV	See 'Capital requirements directive'.
Credit Conversion Factor ('CCF')	CCFs are used in determining the EAD in relation to credit risk exposures. The CCF is an estimate of the proportion of undrawn commitments expected to have been drawn down at the point of default.

Credit default swap ('CDS')	A derivative contract whereby a buyer pays a fee to a seller in return for receiving a payment in the event of a defined credit event (e.g. bankruptcy, payment default on a reference asset or assets, or downgrades by a rating agency) on an underlying obligation (which may or may not be held by the buyer).
Credit enhancements	Facilities used to enhance the creditworthiness of financial obligations and cover losses due to asset default.
Credit quality step	A step in the PRA credit quality assessment scale which is based on the credit ratings of 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 adjustment	Credit risk adjustments are all amounts by which CET 1 has been reduced in order to reflect losses exclusively related to credit risk under IFRSs, resulting from impairments, value adjustments or provisions for off-balance sheet items that are recognised in the profit or loss account.
Credit risk mitigation	A technique to reduce the credit risk associated with an exposure by application of credit risk mitigants such as collateral, guarantees and credit protection.
Credit spread option	A derivative that transfers risk from one party to another. The buyer pays an initial premium in exchange for potential cash flows if the credit spread changes from its current level.
Credit Support Annex ('CSA')	A legal document that regulates credit support (collateral) for OTC derivative transactions between two parties.
Customer risk rating ('CRR')	An internal scale of 23 grades measuring obligor PD.
CVA risk capital charge	A capital charge under CRD IV to cover the risk of mark-to-market losses on expected counterparty risk to derivatives.
D	
Debit valuation adjustment ('DVA')	An adjustment made by an entity to the valuation of OTC derivative liabilities to reflect within fair value the entity's own credit risk.
Debt securities	Financial assets on the Group's balance sheet representing certificates of indebtedness of credit institutions, public bodies or other undertakings, excluding those issued by

	central banks.
Delinquency	See 'Arrears'.
E	
Economic capital	The internally calculated capital requirement which is deemed necessary by HSBC to support the risks to which it is exposed.
Economic Value of Equity ('EVE')	Considers all re-pricing mismatches in the current balance sheet and calculates the change in market value that would result from a set of defined interest rate shocks.
Equity risk	The risk arising from positions, either long or short, in equities or equity-based instruments, which create exposure to a change in the market price of the equities or equity instruments.
Expected loss ('EL')	A regulatory calculation of the amount expected to be lost on an exposure using a 12-month time horizon and downturn loss estimates. EL is calculated by multiplying the PD (a percentage) by the EAD (an amount) and LGD (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.
Exposure value	Exposure at default.
External Credit Assessment Institutions ('ECAI')	ECAIs include external credit rating agencies such as Standard & Poor's, Moody's and Fitch.
F	
Fair value	Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.
Term	Definition
Financial collateral comprehensive method	This method applies a volatility adjustment (or 'haircut') to the value of the collateral to allow for the fact that the collateral taken may fall in value when it comes to taking control of the collateral and selling it. This adjusted collateral value is then subtracted from the exposure to create an 'adjusted exposure'. Firms on the standardised approach will then apply the risk weight of the borrower to the adjusted exposure value, while firms using foundation IRB make a formulaic adjustment to the LGD number

	which has a similar effect. To calculate these 'haircuts', the firm can use either a table of supervisory numbers or its own numbers if it meets certain requirements.
Financial Conduct Authority ('FCA')	The Financial Conduct Authority regulates the conduct of financial firms and, for certain firms, prudential standards in the UK. It has a strategic objective to ensure that the relevant markets function well.
Financial Policy Committee ('FPC')	The Financial Policy Committee, at the Bank of England, is charged with a primary objective of identifying, monitoring and taking action to remove or reduce systemic risks with a view to protecting and enhancing the resilience of the UK financial system. The FPC has a secondary objective to support the economic policy of the UK Government.
Firm Data Submission Framework	A comprehensive framework for the submission of the data by banks to the PRA for the purpose of conducting stress tests. Over the past two years it has been designed and implemented by the PRA (and before that the FSA) in collaboration with a number of large UK banks.
G	
Global Systemically Important Bank ('G-SIB')	The FSB established in November 2011 a methodology to identify G-SIBs based on 12 principal indicators. Designation will result in the application of a CET1 buffer between 1% and 3.5%, to be phased in by 1 January 2019. The list of G-SIBs is re-assessed through annual re-scoring of banks and a triennial review of the methodology. National regulators have discretion to introduce higher charges than the minima. In CRD IV this is implemented via the Global Systemically Important Institutions (G-SII) Buffer. The requirements, initially for those banks identified in November 2014 as G-SIBs, will be phased in from 1 January 2016, becoming fully effective on 1 January 2019. National regulators have discretion to introduce higher thresholds than the minima. In November 2014, the FSB published a revised list of G-SIBs and their current assessment of the appropriate capital charge. HSBC was assigned an add-on of 2.5%.
H	
Haircut	A discount applied by management when determining the amount at which an asset can be realised. The discount takes into account the method of realisation including the extent to which an active market for the asset exists. With respect to credit risk mitigation, a downward adjustment to collateral value to reflect any currency or maturity mismatches between the credit risk mitigant and the underlying exposure to which it is being applied. Also a

	valuation adjustment to reflect any fall in value between the date the collateral was called and the date of liquidation or enforcement.
Held-to-maturity	An accounting classification for investments acquired with the intention and ability of being held until they mature.
I	
Impaired loans	Loans where the Group does not expect to collect all the contractual cash flows or expects to collect them later than they are contractually due.
Impairment allowances	Management's best estimate of losses incurred in the loan portfolios at the balance sheet date.
Impairment charge	Impairment charges represent a movement in the impairment allowance balance during the year, reflecting loss events which occurred during the financial year and changes in estimates of losses arising on events which occurred prior to the current year.
Incremental risk charge ('IRC')	The IRC model captures the potential distribution of profit and loss due to default and migration for a portfolio of credit positions. For credit positions held on the trading book, and subject to specific interest rate risk VAR for regulatory capital, an IRC based on the 99.9th percentile of the IRC distribution, over a one-year capital horizon, is used as a capital add-on to VAR
Institutions	Under the standardised approach, Institutions comprise credit institutions or investment firms. Under the IRB approach, Institutions also include regional governments and local authorities, public sector entities and multilateral development banks.

Term	Definition
Insurance risk	A risk, other than financial risk, transferred from the holder of a contract to the insurance provider. The principal insurance risk is that, over time, the combined cost of claims, administration and acquisition of the contract may exceed the aggregate amount of premiums received and investment income.
Interest rate risk ('IRR')	Exposure to adverse movements in interest rates. Accepting this risk is a normal part of banking and can be an important source of profitability and shareholder value.
Internal Assessment Approach ('IAA')	One of three calculation methods defined under the IRB approach to securitisations. The IAA is limited to exposures

	arising from asset-backed commercial paper programmes, mainly related to liquidity facilities and credit enhancement. Eligible ECAI rating methodology is applied to each asset class in order to derive the equivalent rating level for each transaction. This methodology is verified by the internal Credit function as part of the approval process for each new transaction. The performance of each underlying asset portfolio is monitored to confirm that the applicable equivalent rating level still applies and is independently verified.
Internal Capital Adequacy Assessment Process ('ICAAP')	The Group's own assessment of the levels of capital that it needs to hold through an examination of its risk profile from regulatory and economic capital viewpoints.
Internal Model Method ('IMM')	One of three approaches defined in the Basel framework to determine exposure values for counterparty credit risk.
Internal ratings-based approach ('IRB')	A method of calculating credit risk capital requirements using internal, rather than supervisory, estimates of risk parameters.
Invested capital	Equity capital invested in HSBC by its shareholders, adjusted for certain reserves and goodwill previously amortised or written off.
IRB advanced approach ('AIRB')	A method of calculating credit risk capital requirements using internal PD, LGD and EAD models.
IRB foundation approach ('FIRB')	A method of calculating credit risk capital requirements using internal PD models but with supervisory estimates of LGD and conversion factors for the calculation of EAD.
ISDA	International Swaps and Derivatives Association.
ISDA Master agreement	Standardised contract developed by ISDA used as an umbrella contract under which bilateral derivatives contracts are entered into.
L	
Leverage ratio	A measure, prescribed by regulators under Basel III, which is the ratio of tier 1 capital to total exposures. Total exposures include on-balance sheet items, off-balance sheet items and derivatives, and should generally follow the accounting measure of exposure. This supplementary measure to the risk-based capital requirements is intended to constrain the build-up of excess lending in the banking sector.
Liquidity risk	The risk that HSBC does not have sufficient financial resources to meet its obligations as they fall due, or will

	have to do so at an excessive cost. This risk arises from mismatches in the timing of cash flows.
Loss given default ('LGD')	The estimated ratio (percentage) of the loss on an exposure to the amount outstanding at default (EAD) upon default of a counterparty.
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.
Mark-to-market approach	One of three approaches defined by Basel II to determine exposure values for counterparty credit risk.
Minimum capital requirement	The minimum amount of regulatory capital that a financial institution must hold to meet the Pillar 1 requirements for credit, market and operational risk. Also see 'capital required'.
Model validation	The process of assessing how well a credit risk model performs using a predefined set of criteria including the discriminatory power of the model, the appropriateness of the inputs, and expert opinion.
Multilateral Development Bank	An institution created by a group of countries to provide financing for the purpose of development. Under the standardised approach to credit risk, eligible multilateral development banks attract a zero per cent risk weight.
N	
Net interest income	The amount of interest received or receivable on assets net of interest paid or payable on liabilities.

Term	Definition
O	
Obligor grade	Obligor grades, summarising a more granular underlying counterparty risk rating scale for estimates of PD, are defined as follows: · 'Minimal Default Risk': The strongest credit risk, with a negligible PD. · 'Low Default Risk': A strong credit risk, with a low PD. · 'Satisfactory Default Risk': A good credit risk, with a satisfactory PD. · 'Fair Default Risk': The risk of default remains fair, but identified weaknesses may warrant more regular monitoring. · 'Moderate Default Risk': The overall position will not be causing any immediate concern, but more regular monitoring will be necessary as a result of sensitivities to

	external events that give rise to the possibility of risk of default increasing. · 'Significant Default Risk': Performance may be limited by one or more troublesome aspects, known deterioration, or the prospect of worsening financial status. More regular monitoring required. · 'High Default Risk': Continued deterioration in financial status, that requires frequent monitoring and ongoing assessment. The PD is of concern but the borrower currently has the capacity to meet its financial commitments. · 'Special Management': The PD is of increasing concern and the borrower's capacity to fully meet its financial commitments is becoming increasingly less likely. · 'Default': A default is considered to have occurred with regard to a particular obligor when either or both of the following events has taken place: the Group considers that the obligor is unlikely to pay its credit obligations in full, without recourse by the Group to actions such as realising security; or the obligor is past due more than 90 days, (90 days to 180 days for retail), on any material credit obligation to the Group.
Operational risk	The risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events, including legal risk.
Original exposure	Original exposure is the exposure value without taking into account value adjustments and provisions, credit conversion factors and the effect of credit risk mitigation techniques.
Over-the-counter ('OTC')	A bilateral transaction (e.g. derivatives) that is not exchange traded and that is valued using valuation models.
P	
Past due items	'Past due items' is an exposure class under the standardised approach to credit risk. A financial asset falls into this exposure class once it is more than 90 days past due. A financial asset such as a loan is past due when the counterparty has failed to make a payment when contractually due.
Pillar 1	Minimum capital requirements - the calculation of regulatory capital for credit, market, and operational risk.
Pillar 2	The supervisory review process - sets out the process by which a bank should review its overall capital adequacy and the processes under which the supervisors evaluate how well financial institutions are assessing their risks and take appropriate actions in response to the assessments.
Pillar 3	Market discipline - sets out the disclosure requirements for banks to publish certain details of their risks, capital and risk management, with the aim of strengthening market discipline.
Point-in-time ('PIT')	Estimates of PD (or other measures) generally covering a short time horizon (usually a 12-month period) and that are sensitive to changes in the economic cycle. This differs

	from a TTC basis which uses long run average economic and risk data to reduce such sensitivity.
Potential future exposure ('PFE')	The potential future credit exposure on derivatives contracts, calculated using the mark-to-market approach.
PRA Standard rules	The method prescribed by the PRA for calculating market risk capital requirements in the absence of VAR model approval.
Present value of in-force long-term insurance business ('PVIF')	An asset representing the present value of the equity holders' interest in the issuing insurance companies' profits, expected to emerge from long-term insurance business or long-term investment contracts with discretionary participating features, written at the balance sheet date.
Private equity investments	Equity securities in operating companies not quoted on a public exchange, often involving the investment of capital in private companies or the acquisition of a public company that results in its delisting.
Probability of default ('PD')	The probability that an obligor will default within one year.

Term	Definition
Prudential Regulation Authority ('PRA')	The Prudential Regulation Authority in the UK is responsible for prudential regulation and supervision of banks, building societies, credit unions, insurers and major investment firms.
Prudent Valuation Adjustment ('PVA')	A deduction from common equity tier 1 capital where the prudent value of trading assets or other financial assets measured at fair value is materially lower than the fair value recognised in the financial statements.
Q	
Qualifying revolving retail exposures	Retail IRB exposures that are revolving, unsecured, and, to the extent they are not drawn, immediately and unconditionally cancellable, such as credit cards.
R	
Ratings Based Method ('RBM')	One of three calculation methods defined under the IRB approach to securitisations. The approach uses risk weightings based on ECAI ratings, the granularity of the underlying pool and the seniority of the position and whether it is a re-securitisation.
Reference PD	HSBC's master CRR scale has been constructed using a set of PD points, falling at regular intervals along an exponential PD curve and determining the boundaries of 23 CRR bands. Reference PDs have been determined, which for most bands fall mid-way between that band's boundary PD points. The determination of the bands and corresponding reference PDs takes into account the need to

	avoid concentration in any one band, and to ensure effective mapping to risk management portfolio quality scales.
Regulatory capital	The capital which HSBC holds, determined in accordance with rules established by the PRA for the consolidated Group and by local regulators for individual Group companies.
Repo/reverse repo (or sale and repurchase agreement)	A short-term funding agreement that allows a borrower to create a collateralised loan by selling a financial asset to a lender. As part of the agreement the borrower commits to repurchase the security at a date in the future repaying the proceeds of the loan. For the party on the other end of the transaction (buying the security and agreeing to sell in the future) it is a reverse repurchase agreement or a reverse repo.
Re-securitisation	A securitisation of a securitisation exposure, where the risk associated with an underlying pool of exposures is tranched and at least one of the underlying exposures is a securitisation exposure.
Residential Mortgaged Backed Securities ('RMBSs')	A type of security whose cash flows come from residential debt such as mortgages, home-equity loans and subprime mortgages.
Residual maturity	The period outstanding from the reporting date to the maturity or end date of an exposure.
Retail Internal Ratings Based ('Retail IRB') approach	Retail exposures that are treated under the IRB approach.
Return on equity	Profit attributable to ordinary shareholders of the parent company divided by average ordinary shareholders' equity.
Risk appetite	The aggregate level and types of risk a firm is willing to assume within its risk capacity to achieve its strategic objectives and business plan.
Risk-weighted assets ('RWAs')	Calculated by assigning a degree of risk expressed as a percentage (risk weight) to an exposure value in accordance with the applicable Standardised or IRB approach rules.
RMM	Risk Management Meeting of the GMB.
Run-off portfolios	Legacy credit in GB&M, the US CML portfolio and other US run-off portfolios, including the treasury services related to the US CML businesses and commercial operations in run-off. Origination of new business in the run-off portfolios has been discontinued and balances are being managed down through attrition and sale.

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$0.1bn for presentation purposes.
S	
Securities Financing Transactions ('SFT')	The act of loaning a stock, derivative, or other security to an investor or firm.
Securitisation	A transaction or scheme whereby the credit risk associated with an exposure, or pool of exposures, is tranched and where payments to investors in the transaction or scheme are dependent upon the performance of the exposure or pool of exposures. A traditional securitisation involves the transfer of the exposures being securitised to an SPE which issues securities. In a synthetic securitisation, the tranching is achieved by the use of credit derivatives and the exposures are not removed from the balance sheet of the originator.
Securitisation position	Securitisation position means an exposure to a securitisation.

Term	Definition
Significant Influence Function	PRA registered role, recognised as being a control function role.
Six filters	An internal measure designed to improve capital deployment across the Group. Five of the filters examine the strategic relevance of each business in each country, in terms of connectivity and economic development, and the current returns, in terms of profitability, cost efficiency and liquidity. The sixth filter requires adherence to global risk standards.
Sovereign exposures	Exposures to governments, ministries, departments of governments, embassies, consulates and exposures on account of cash balances and deposits with central banks.
Specialised lending exposure	Specialised lending exposures are defined by the PRA as exposures to an entity which was created specifically to finance and/or operate physical assets, where the contractual arrangements give the lender a substantial degree of control over the assets and the income that they generate and the primary source of repayment of the obligation is the income generated by the assets being financed, rather than the independent capacity of a broader commercial enterprise.

Special Purpose Entity ('SPE')	A corporation, trust or other non-bank entity, established for a narrowly defined purpose, including for carrying on securitisation activities. The structure of the SPE and its activities are intended to isolate its obligations from those of the originator and the holders of the beneficial interests in the securitisation.
Specific issuer risk	Specific issuer (credit spread) risk arises from a change in the value of debt instruments due to a perceived change in the credit quality of the issuer or underlying assets.
Standardised approach ('STD')	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.
Stressed VaR	A market risk measure based on potential market movements for a continuous one-year period of stress for a trading portfolio.
Subordinated liabilities	Liabilities which rank after the claims of other creditors of the issuer in the event of insolvency or liquidation.
Supervisory Formula Method('SFM')	An alternative Ratings Based Method to be used primarily on sponsored securitisations. It is used to calculate the capital requirements of exposures to a securitisation as a function of the collateral pool and contractual properties of the tranche or tranches retained.
Supervisory slotting approach	A method for calculating capital requirements for specialised lending exposures where the internal rating of the obligor is mapped to one of five supervisory categories, each associated with a specific supervisory risk weight.
Systemic Risk Buffer	A capital buffer prescribed in the EU under CRD IV, to address risks in the financial sector as a whole, or one or more sub-sectors, to be deployed as necessary by each EU member state with a view to mitigate structural macro-prudential risk. In the UK this was transposed in January 2015 and is to be applied to ring-fenced banks and building societies over a certain threshold.
T	
Through-the-cycle ('TTC')	A rating methodology which seeks to take cyclical volatility out of the estimation of default risk by assessing a borrower's performance over the business cycle.
Tier 2 capital	A component of regulatory capital, comprising eligible capital securities and any related share premium. Under Basel II, Tier 2 capital comprises of 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.
Total Loss Absorbing Capacity	A proposal by the FSB and not yet finalised for global systemically important banks to have a sufficient amount of specific types of liabilities which can be used to absorb losses and recapitalise a bank in resolution. These proposals are intended to facilitate an orderly resolution that minimises any impact on financial stability, ensures the

	continuity of critical functions, and avoids exposing taxpayers to loss.
Total return swap	A credit derivative transaction that swaps the total return on a financial instrument (cash flows and capital gains and losses), for a guaranteed interest rate, such as an inter-bank rate, plus a margin.
Trading book	Positions in financial instruments and commodities held either with intent to trade or in order to hedge other elements of the trading book. To be eligible for trading book capital treatment, financial instruments must either be free of any restrictive covenants on their tradability or able to be hedged completely.

Term	Definition
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.
W	
Write-down/write-off	When a financial asset is written down or written off, a customer balance is partially or fully removed, respectively, from the balance sheet. Loans (and related impairment allowance accounts) are normally written off, either partially or in full, when there is no realistic prospect of recovery. Where loans are secured, this is generally after receipt of any proceeds from the realisation of security. In circumstances where the net realisable value of any collateral has been determined and there is no reasonable expectation of further recovery, write-off may be earlier.
Wrong-way risk	An adverse correlation between the counterparty's PD and the mark-to-market value of the underlying transaction.

Appendix VI

Contacts

Enquiries relating to HSBC's strategy or operations may be directed to:

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SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

HSBC Holdings plc

By:

Name: Ben J S Mathews

Title: Group Company Secretary

Date: 23 February 2015