HSBC HOLDINGS PLC
Form 20-F
February 20, 2019

As filed with the Securities and Exchange Commission on February 20, 2019.

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 20-F
REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934
Or
þ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2018
Or
TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
Or
SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
Date of event requiring this shell company report ____________
For the transition period from N/A to N/A
Commission file number: 001-14930
HSBC Holdings plc
(Exact name of Registrant as specified in its charter)

N/A	United Kingdom
(Translation of Registrant's name into English)	(Jurisdiction of incorporation or organisation)

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(Name, Telephone, Email and/or Facsimile number and Address of Company Contact Person)
Securities registered or to be registered pursuant to Section 12(b) of the Securities Exchange Act of 1934:

Title of each class	Name of each exchange on which registered
Ordinary Shares, nominal value US$0.50 each.	London Stock Exchange
	Hong Kong Stock Exchange
	Euronext Paris
	Bermuda Stock Exchange
	New York Stock Exchange*
American Depository Shares, each representing 5 Ordinary Shares of nominal value US$0.50 each.	New York Stock Exchange
6.20% Non-Cumulative Dollar Preference Shares, Series A	New York Stock Exchange*

American Depositary Shares evidenced by American Depositary receipts, each representing one-fortieth of a Share of 6.20% Non-Cumulative Dollar Preference Shares, Series A	New York Stock Exchange
5.10% Senior Unsecured Notes Due 2021	New York Stock Exchange
4.00% Senior Unsecured Notes Due 2022	New York Stock Exchange
4.875% Senior Unsecured Notes Due 2022	New York Stock Exchange
7.625% Subordinated Notes due 2032	New York Stock Exchange
7.35% Subordinated Notes due 2032	New York Stock Exchange
6.5% Subordinated Notes 2036	New York Stock Exchange
6.5% Subordinated Notes 2037	New York Stock Exchange
6.8% Subordinated Notes Due 2038	New York Stock Exchange
6.100% Senior Unsecured Notes due 2042	New York Stock Exchange
8.125% Perpetual Subordinated Capital Securities Exchangeable at the Issuer's Option into Non-Cumulative Dollar Preference Shares	New York Stock Exchange
8.00% Perpetual Subordinated Capital Securities Exchangeable at the Issuer's Option into Non-Cumulative Dollar Preference Shares, Series 2	New York Stock Exchange
4.250% Subordinated Notes due 2024	New York Stock Exchange
5.250% Subordinated Notes due 2044	New York Stock Exchange
4.250% Subordinated Notes due 2025	New York Stock Exchange
3.400% Senior Unsecured Notes due 2021	New York Stock Exchange
4.300% Senior Unsecured Notes due 2026	New York Stock Exchange
Floating Rate Senior Unsecured Notes due 2021	New York Stock Exchange
2.950% Senior Unsecured Notes due 2021	New York Stock Exchange
3.600% Senior Unsecured Notes due 2023	New York Stock Exchange
3.900% Senior Unsecured Notes due 2026	New York Stock Exchange
Floating Rate Senior Unsecured Notes due 2021	New York Stock Exchange
2.650% Senior Unsecured Notes due 2022	New York Stock Exchange
Floating Rate Senior Unsecured Notes due 2022	New York Stock Exchange

4.375% Subordinated Notes due 2026	New York Stock Exchange
3.262% Fixed Rate/Floating Rate Senior Unsecured Notes due 2023	New York Stock Exchange
3.033% Fixed Rate/Floating Rate Senior Unsecured Notes due 2023	New York Stock Exchange
4.041% Fixed Rate/Floating Rate Senior Unsecured Notes due 2028	New York Stock Exchange
3.950% Fixed Rate/Floating Rate Senior Unsecured Notes due 2024	New York Stock Exchange
Floating Rate Senior Unsecured Notes due 2021	New York Stock Exchange
Floating Rate Senior Unsecured Notes due 2024	New York Stock Exchange
4.583% Fixed Rate/Floating Rate Senior Unsecured Notes due 2029	New York Stock Exchange
2.175% Resettable Senior Unsecured Notes due 2023	New York Stock Exchange
4.292% Fixed Rate/Floating Rate Senior Unsecured Notes due 2026	New York Stock Exchange
Floating Rate Senior Unsecured Notes due 2021	New York Stock Exchange
Floating Rate Senior Unsecured Notes due 2026	New York Stock Exchange

Securities registered or to be registered pursuant to Section 12(g) of the Securities Exchange Act of 1934: None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Securities Exchange Act of 1934: None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

Ordinary Shares, nominal value US$0.50 each 20,360,841,496

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

þ Yes ¨ No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. ¨ Yes þ No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. þ Yes ¨ No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). þ Yes ¨ No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer þ Accelerated filer Non-accelerated filer

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP	International Financial Reporting Standards as issued by the International Accounting Standards Board þ	Other

If "Other" has been checked in response to the previous question indicate by check mark which financial statement item the registrant has elected to follow.

¨ Item 17 ¨ Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

¨ Yes þ No

*Not for trading, but only in connection with the registration of American Depositary Shares.

Connecting customers to opportunities
HSBC aims to be where the growth is, enabling businesses to thrive and economies to prosper, and ultimately helping people to fulfil their hopes and realise their ambitions.

Inside front cover image
We are investing in digital technology to improve the service we provide to our customers. Our award-winning mobile apps are one of the ways we help them manage their money more quickly, conveniently and safely. This picture was taken by Terry Tam, who works for HSBC as an IT developer.

Employee photos
All the photos on the inside pages of this report, with the exception of Board and executive profiles, were taken by people working for HSBC in locations including the UK, China, India, Malta and Bangladesh. Many more employees across the Group's international network have contributed to HSBC Now Photo, an ongoing project that allows them to demonstrate their talent as photographers and show the diversity of the world around them.

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Strategic Report
An overview of how we are structured, what we do and where, our strategic priorities, the principal risks we face, and high-level performance information. The section is introduced by both the Group Chairman and the Group Chief Executive, and also explains the role of the Board.

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Additional Information

Important information for our shareholders, including contact information. Like any industry and company, we have our set of abbreviations and terminology. Accordingly, we provide an explanation of the abbreviations used. A glossary of key terms is available online at www.hsbc.com/investors.

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This Strategic Report was approved by the Board on 19 February 2019.

Mark E Tucker

Group Chairman

None of the websites referred to in this Form 20-F for the year ended 31 December 2018 (the 'Form 20-F') (including where a link is provided), and none of the information contained on such websites, are incorporated by reference in this report.

Our values
Our values define who we are as an organisation and make us distinctive.
Dependable
We are dependable, standing firm for what is right and delivering on commitments.
Open
We are open to different ideas and cultures, and value diverse perspectives.
Connected
We are connected to our customers, communities, regulators and each other, caring about individuals and their progress.
As a reminder
Reporting currency
We use US dollars.
Adjusted measures
We supplement our IFRS figures with alternative performance measures used by management internally. These measures are highlighted with the following symbol:<>

ÑFurther explanation may be found on page 34.

Cautionary statement regarding forward-looking statements

The Form 20-F contains certain forward-looking statements with respect to HSBC's financial condition, results of operations and business, including the strategic priorities and 2020 financial, investment and capital targets described herein.

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

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

Forward-looking statements involve inherent risks and uncertainties. Readers are cautioned that a number of factors could cause actual results to differ, in some instances materially, from those anticipated or implied in any forward-looking statement. These include, but are not limited to:

- Changes in general economic conditions in the markets in which we operate, such as continuing or deepening recessions and fluctuations in employment beyond those factored into consensus forecasts; changes in foreign exchange rates and interest rates, including the accounting impact resulting from financial reporting in respect of hyperinflationary economies; volatility in equity markets; lack of liquidity in wholesale funding markets; illiquidity and downward price pressure in national real estate markets; adverse changes in central banks' policies with respect to the provision of liquidity support to financial markets; heightened market concerns over sovereign creditworthiness in over-indebted countries; adverse changes in the funding status of public or private defined benefit pensions; and consumer perception as to the continuing availability of credit and price competition in the market segments we serve; and deviations from the market and economic assumptions that form the basis for our ECL measurements;
- Changes in government policy and regulation, including the monetary, interest rate and other policies of central banks and other regulatory authorities; initiatives to change the size, scope of activities and interconnectedness of financial institutions in connection with the implementation of stricter regulation of financial institutions in key markets worldwide; revised capital and liquidity benchmarks which could serve to deleverage bank balance sheets and lower returns available from the current business model and portfolio mix; imposition of levies or taxes designed to change business mix and risk appetite; the practices, pricing or responsibilities of financial institutions serving their consumer markets; expropriation, nationalisation, confiscation of assets and changes in legislation relating to foreign ownership; changes in bankruptcy legislation in the principal markets in which we operate and the consequences thereof; general changes in government policy that may significantly influence investor decisions; extraordinary government actions as a result of current market turmoil; other unfavourable political or diplomatic developments producing social instability or legal uncertainty which in turn may affect demand for our products and services; the costs, effects and outcomes of product regulatory reviews, actions or litigation, including any additional compliance requirements; and the effects of competition in the markets where we operate including increased competition from non-bank financial services companies, including securities firms.
- Factors specific to HSBC, including our success in adequately identifying the risks we face, such as the incidence of loan losses or delinquency, and managing those risks (through account management, hedging and other techniques). Effective risk management depends on, among other things, our ability through stress testing and other techniques to prepare for events that cannot be captured by the statistical models it uses; and our success in addressing operational, legal and regulatory, and litigation challenges; and other risks and uncertainties we identify in 'top and emerging risks' on pages 100 to 111.

1aHSBC Holdings plc

Certain defined terms

Unless the context requires otherwise, 'HSBC Holdings' means HSBC Holdings plc and 'HSBC', the 'Group', 'we', 'us' and 'our' refer to HSBC Holdings together with its subsidiaries. Within this document the Hong Kong Special Administrative Region of the People's Republic of China is referred to as 'Hong Kong'. When used in the terms 'shareholders' equity' and 'total shareholders' equity', 'shareholders' means holders of HSBC Holdings ordinary shares and those preference shares and capital securities issued by HSBC Holdings classified as equity. The abbreviations '$m', '$bn' and '$tn' represent millions, billions (thousands of millions) and trillions of US dollars, respectively.

HSBC Holdings plc 1b

Highlights

Our international network, access to high-growth markets and balance sheet strength help us deliver long-term value for our stakeholders.

Group
For year ended 31 Dec 2018
(2017: $17.2bn)
$19.9bn
(2017: $21.1bn)
$21.7bn
(2017: $51.4bn)
$53.8bn

At 31 Dec 2018

(2017: $871bn)
$865bn
(2017: 14.5%)
14.0%
(2017: $2,522bn)
$2,558bn

Strategy highlights
In June 2018, we set out eight strategic priorities against which we committed to tracking our performance until the end of 2020. Below is a selection of highlights from our progress in 2018.

11% <>
adjusted revenue growth in Asia.

14% <>
revenue growth in transaction banking.

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HSBC 'scale markets' improved by two ranks or maintained a top-three rank in customer satisfaction for RBWM.

2 percentage point
improvement in employee engagement to 66%.
ÑFor footnotes, see page 89.
Selected awards and recognitions
Euromoney Trade Finance Survey 2019
Top Global Trade Finance Bank
Euromoney Cash Management Survey 2018
Best Global Cash Manager for Corporates
Best Global Cash Manager for Financial Institutions
Euromoney Awards for Excellence 2018
World's Best Bank for Transaction Services
World's Best Bank for Corporates
North America's Best Bank for Transaction Services
Asia's Best Bank for Sustainable Finance
Middle East's Best Bank for Financing
Insurance Asset Management Awards 2018
Best Emerging Markets Manager of the Year
The Banker Investment Banking Awards 2018
Most Innovative Investment Bank of the Year
PWM The Banker Global Private Banking Awards 2018
Best Private Bank in Hong Kong
Best Private Bank in the UK

About HSBC
With assets of $2.6tn at 31 December 2018, HSBC is one of the world's largest banking and financial services organisations.

More than
39 million
customers bank with us
We employ around
235,000
people around the world[2]

We have around
200,000
shareholders in 130 countries and territories

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Our global businesses

Our operating model consists of four global businesses and a Corporate Centre, supported by HSBC Operations, Services and Technology, and 11 global functions, including risk, finance, compliance, legal, marketing and human resources.

Retail Banking and Wealth Management ('RBWM')	Commercial Banking ('CMB')	Global Banking and Markets ('GB&M')	Global Private Banking ('GPB')
We help 38 million customers across the world to manage their finances, buy their homes, and save and invest for the future. Our HSBC Premier and Advance propositions are aimed at mass affluent and emerging affluent customers who value international connectivity. For customers with simpler banking needs, we offer a full range of products and services reflecting local requirements.	We support approximately 1.5 million business customers in 53 countries and territories, ranging from small enterprises focused primarily on their domestic markets, through to large companies operating globally. Our services include working capital, term loans, payment services and international trade facilitation, as well as expertise in mergers and acquisitions, and access to financial markets.	We serve approximately 4,100 clients in more than 50 countries and territories. We support major government, corporate and institutional clients worldwide. Our product specialists continue to deliver a comprehensive range of transaction banking, financing, advisory, capital markets and risk management services.	We serve high net worth and ultra high net worth individuals and families, including those with international banking needs. Services provided include Investment Management, which includes advisory and brokerage services, and Private Wealth Solutions, which comprises trusts and estate planning, to protect and preserve wealth for future generations.
Adjusted profit before tax<>			
(2017: $6.5bn)	(2017: $6.8bn)	(2017: $5.8bn)	(2017: $0.3bn)
$7.1bn	$7.7bn	$6.1bn	$0.3bn
Adjusted risk-weighted assets<>			
(31 Dec 2017: $118.1bn)	(31 Dec 2017: $289.8bn)	(31 Dec 2017: $293.2bn)	(31 Dec 2017: $15.8bn)
$126.9bn	$321.2bn	$281.0bn	$16.8bn

<>Our global businesses are presented on an adjusted basis, which is consistent with the way in which we assess the performance of our global businesses.

Delivery against Group financial targets

Return on tangible equity <>	Adjusted jaws<>	Dividends per ordinary share in respect of 2018
8.6%	(1.2)%	$0.51
Target: >11% by 2020	Target: positive	Target: sustain
(2017: 6.8%)		

ÑFor further details, see page 17.

Group Chairman’s statement
Our ability to meet our targets depends on being able to help our customers manage the present uncertainty and capture the opportunities that unquestionably exist.

HSBC is in a strong position. Our performance in 2018 demonstrated the underlying health of the business and the potential of the strategy that John Flint, our Group Chief Executive, announced in June.

Despite a challenging external environment in the fourth quarter, all of our global businesses delivered increased profits and the Group achieved a higher return on tangible equity in 2018. Asia again contributed a substantial portion of the Group’s profits, notably in Retail Banking and Wealth Management and Commercial Banking. Overall, the Group delivered reported profit before tax of $19.9bn, up 16% on 2017, and adjusted profit before tax of $21.7bn, up 3%.

This performance allows us to approve a fourth interim dividend of $0.21, bringing the total dividend for 2018 to $0.51.

The Board of Directors
There were a number of Board changes in 2018.

Jonathan Symonds became Deputy Group Chairman. Iain Mackay left the business after 11 years, with the last eight spent as Group Finance Director. My thanks go to Iain for his dedicated service to the Group, and in particular for the integral role he played in executing the Group strategy and improving the quality of our financial reporting. Ewen Stevenson joined the Board as Group Chief Financial Officer on 1 January this year.

We said goodbye to Phillip Ameen, Joachim Faber and John Lipsky, all of whom retired from the Board. I am very grateful to each of them for their invaluable advice and counsel. Their departures led to a reduction in the size of the Board as part of our ongoing work to simplify, clarify and strengthen governance arrangements.

We also cut the number of Board committees from seven to five and simplified subsidiary governance. I believe this creates clearer and stronger lines of authority and accountability, enabling the Board to devote more time to priority areas.

We welcome the new UK Corporate Governance Code, which places greater emphasis on how the Board considers the interests of all stakeholders in its discussions and decision making, and promotes a strong internal culture.

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We see the new Code as an opportunity to further enhance our existing stakeholder engagement, ensuring that the business as a whole can continue to develop constructive and considerate relationships with all those with whom we work. We will include details of this in the Annual Report and Accounts 2019.

Connecting customers to opportunities

The financial targets that John announced in June remain appropriate, even as the global economic outlook becomes less predictable. Our ability to meet them depends on being able to help our customers manage the present uncertainty and capture the opportunities that unquestionably exist.

The system of global trade remains subject to political pressure, and differences between China and the US will likely continue to inform sentiment in 2019. However, the conclusion of major trade agreements – including the Comprehensive and Progressive Agreement for Trans-Pacific Partnership; the EU's landmark bilateral agreements with Japan and Singapore; and the potential ratification of the US-Mexico-Canada Agreement in 2019 – provide important counterweights that could give impetus to international trade in the year ahead.

The fundamentals for growth in Asia remain strong in spite of a softer regional economic outlook. The structural and financial reforms underway across the region should continue to support economic development. China remains subject to domestic and external pressures, but we expect it to maintain strong growth. We also expect further financial liberalisation to form part of China's response to changing external conditions. This will benefit domestic and international customers and investors.

The US economy and the influence of the Federal Reserve remain central to global sentiment. We expect policymakers to adopt a more cautious stance in 2019, even as the economy continues to grow. A slowdown in the pace of US interest rate rises could carry positive implications for Asian economies and businesses, as well as for US growth. Both the Mexican and Canadian economies are poised to grow at a steady pace.

Many of our UK customers are understandably cautious about the immediate future, given the prolonged uncertainty surrounding the UK's exit from the European Union. HSBC UK, our new UK ring-fenced bank, has an important role in supporting our customers as they prepare for a range of possible outcomes. Our universal banking business in France will also help provide continuity to our customers in the UK and the rest of Europe. In Europe, as elsewhere, we are confident in our ability to help customers make the most of the opportunities they see.

There are more risks to global economic growth than this time last year, and we remain alive and responsive to all possibilities. Our strong balance sheet and revenue base equip us to navigate these risks and, most importantly, enable us to help our customers negotiate their own paths.

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Fulfilling our potential

Enabling our people to do their jobs to the best of their ability is a priority for the Board, and for me personally. They are essential to our present and future success. The Board fully endorses the Group's commitment to develop and support our people and we offer the Group Management Board our wholehearted support in realising that ambition.

I had the honour of officially opening the new headquarters of HSBC UK in Birmingham in December. As well as providing a new home for the UK ring-fenced bank, One Centenary Square houses the European hub of HSBC

University, our global learning and development centre. Since then, we have opened new HSBC University hubs at our new premises in Dubai, and in Mexico City. These cutting-edge facilities form part of our response to the complex challenges our employees now face working for a global bank in an unpredictable environment. HSBC University aims not only to equip them with the right skills, but also to help them understand the culture that will continue to make HSBC a unique organisation.

Many thanks

My thanks go to John and each of the 235,000 people who work for HSBC. Their hard work, commitment and talent has been key to the Group's progress in 2018. Our challenge and shared purpose is to build on that good work through the rest of 2019 and beyond. I have every confidence we can do so.

Mark E Tucker
Group Chairman
19 February 2019

"The fundamentals for growth in Asia remain strong in spite of a softer regional economic outlook."
"The Board fully endorses the Group's commitment to develop and support our people and we offer the Group Management Board our wholehearted support in realising that ambition."
"Our strong balance sheet and revenue base equip us to navigate these risks and, most importantly, enable us to help our customers negotiate their own paths."

Group Chief Executive's review
Helping our people be at their best is the critical enabler of our business strategy and fundamental to delivering our financial targets.
In June 2018, I set out a plan to get HSBC growing again and to create value for shareholders. While this targets clear financial outcomes, it has our customers at its centre. We want to bring more of HSBC to more people and to serve them in the best possible way.
The eight strategic priorities that I outlined in June are the key to achieving these aims. We are seeking to connect more customers to our international network and high-growth markets. We are working to improve our capital efficiency and to turn our US business around. We are investing in technology and our digital capabilities to serve our customers better and stay competitive. We are also taking steps to support our people more effectively and help them be at their best.
I am encouraged by our progress so far. We are growing customer numbers and capturing market share in our scale markets and from our international network. Our US business is short of where we want it to be, but is moving in the right direction. Our investment in technology is making our business simpler, safer, and easier for our customers to use. We have launched new products and made strategic hires in mainland China and Hong Kong that are materially improving our service to international clients. We have also established our UK ring-fenced bank.
These were important factors in our 2018 financial performance. Revenue growth in our four global businesses helped deliver higher Group reported and adjusted profit before tax. Group return on tangible equity – our headline measure – was also up significantly from 6.8% in 2017 to 8.6%. This is a good first step towards meeting our return on tangible equity target of more than 11% by 2020.
Engaging our people
HSBC has a strong and proud culture. We understand our role and our purpose, and that HSBC exists to serve others. As Group Chief Executive, I have a responsibility to nurture and preserve those aspects of our culture that serve us well. I also recognise that I have a responsibility to improve aspects of our behaviours that may be impeding our performance.
In my first year in this role, I started a conversation throughout the bank about how we help our people be the best version of themselves. This is part of a broader ambition to create what we call the healthiest human system in our industry.

There is more that we can do to create an environment that is sufficiently supportive, protective and engaging. We need to have more open and honest conversations. This is the least that our people should be able to expect. If we cannot provide it, it hurts our ability to serve not just our customers, but all the stakeholder groups on whom our success depends. It also impedes our ability to deliver our strategy and our targets.
We have started by signalling to our people that creating a safe and supportive working environment is a strategic priority for the business. Leaders are being encouraged to model the right behaviours and provide direction on the type of behaviour we expect. We are also opening conversations around issues like mental health, well-being, bullying and harassment.
We are making material changes to the organisation that allow us to support our people more effectively. Our governance procedures are being simplified and strengthened to reduce complexity and make it easier for people to do their jobs. We are also helping our people work more flexibly. On learning and development, we have opened new HSBC University hubs around the world and improved access to digital training.
At an individual level, every person at HSBC is being encouraged to think about how we create the healthiest human system in our industry, and to play an active role in doing so. We are regularly collecting feedback from our people

and it is informing the action we are taking.

The early signs are positive. In 2018, 66% of our employees said they would recommend HSBC as a great place to work, up from 64% the previous year. While this demonstrates an improvement in a relatively short space of time, it also shows that we have much further to go. This work will continue into 2019 and beyond. If we are successful, then we will materially improve all aspects of HSBC's performance, including delivery of our strategy.

Business performance

All four global businesses grew adjusted revenue in 2018.

Retail Banking and Wealth Management had a very good year. Higher interest rates, rising customer numbers, and growth of more than $20bn in our UK and Hong Kong mortgage book all contributed to a strong rise in Retail Banking adjusted revenue. Despite a good performance in the first three quarters of the year, Wealth Management adjusted revenue fell slightly in 2018 due to the effects of market volatility in the fourth quarter.

Commercial Banking had an excellent 2018, delivering double-digit adjusted revenue growth on the back of an outstanding performance in Global Liquidity and Cash Management. Credit and Lending generated adjusted revenue growth from higher balances, despite lower margins from increased competition. Solid performances in Asia and Europe enabled Global Trade and Receivables Finance to grow adjusted revenue despite an increasingly difficult environment for trade.

Global Banking and Markets grew adjusted revenue in spite of considerably reduced market activity in the fourth quarter. Our market-leading transaction banking franchises generated strong increases in adjusted revenue, which exceeded the reduction in markets-related revenue from Rates, Credit, and Equities.

Global Private Banking returned to growth in 2018 on the back of new business won in Hong Kong. Adjusted revenue from deposits also increased on the back of interest rate rises.

Adjusted jaws was negative for 2018. While adjusted costs were broadly as we expected for the full year, adjusted revenue fell short due to market weakness in the fourth quarter. Positive jaws remains an important discipline in delivering our financial targets and we remain committed to it in 2019.

Expected credit losses were slightly higher than loan impairment charges in 2017, reflecting the uncertain economic outlook in the UK and heightened downside risks.

Our common equity tier 1 ratio of 14% was lower than at the same point in 2017, due mainly to adverse foreign exchange movements and the impact of higher lending.

We returned a total of $2bn to shareholders through share buy-backs in 2018, reflecting our desire to neutralise the impact of scrip dividends over the medium term. We remain committed to this policy, subject to regulatory approval.

Outlook

We have made a good start to 2019. Our Group revenue performance in January was ahead of our plan for the month and actual credit performance remained robust, albeit with some softening of credit performance in the UK. We continue to prepare for the UK's departure from the EU in order to provide continuity for our customers in the UK and mainland Europe. Our well-established universal bank in France gives us a major advantage in this regard. Our immediate priority is to help our customers manage the present uncertainty.

Despite more challenging market conditions at the end of the year and a weaker global economic outlook, we are committed to the targets we announced in June. We remain alert to the downside risks of the current economic environment, especially those relating to the UK economy, global trade tensions and the future path of interest rates. We will be proactive in managing costs and investment to meet the risks to revenue growth where necessary, but we will not take short-term decisions that harm the long-term interests of the business.

We plan to achieve positive adjusted jaws in 2019 and remain focused on achieving a return on tangible equity of over 11% by 2020, while maintaining a stable dividend.

"We want to bring more of HSBC to more people and to serve them in the best possible way."

"HSBC has a strong and proud culture. We understand our role and our purpose, and that HSBC exists to serve others."

"Despite more challenging market conditions at the end of year and a weaker global economic outlook, we are committed to the targets we announced in June."

John Flint
Group Chief Executive
19 February 2019

Our strategy

Our strategy enables us to connect customers to opportunities. It is supported by long-term global trends and our strong combination of strategic advantages.

Long-term trends
Our industry continues to be affected by several long-term and global trends.

The world is expected to continue to become more connected as global flows of trade, finance and data continue to grow.

Source: Oxford Economics, Bilateral Trade in Services (2018).

Global trade growth is expected to continue and trade within regions is expected to be a key driver, accounting for over 40% of goods volume growth.

Source: McKinsey & Company.

Half of the world's population is now considered middle class or wealthier, and this proportion is expected to grow to approximately two-thirds by 2030. Almost nine in 10 of the next billion middle-class consumers will be Asian.

Source: Brookings, A Global Tipping point: Half the world is now middle class or wealthier (2018).

Climate change is accelerating and global temperatures are trending significantly higher. Investment in renewable energy capacity will be needed to limit the global temperature increase to 2°C.

Source: OECD, Investing in Climate, Investing in Growth (2017); BP, Statistical Review of World Energy; HSBC analysis.

Client examples

CLP Holdings Limited (‘CLP’): power and utilities, Hong Kong

CLP, a Hong Kong-listed pan-Asian power business, is committed to supporting the Hong Kong government’s target to reduce carbon intensity by 65–70% by 2030 from 2005 levels. HSBC has assisted CLP as Sole Adviser in establishing the ‘CLP climate action finance framework’ to attract qualified investments in the transitioning to a low-carbon economy. Under this framework, HSBC acted as a joint bookrunner on the debut $500m Reg S Energy Transition Bond issued by Castle Peak Power Company Limited, to help finance the development of a new gas-fired generation unit in Hong Kong.

Imagination: creative agency, UK

Imagination, a creative agency and fast-growing global authority on brand experience, found itself outgrowing its banking relationship and constrained by its bank’s local focus. HSBC provided Imagination with the benefits of a robust international network including greater access to debt and liquidity, an optimised banking experience across 10 countries through HSBCnet, and an integration with Imagination’s enterprise resource planning system for holistic viewing of transactions and account details.

Euroimmun: medical diagnostics, Germany

Euroimmun was acquired by a US medical technology company. Both companies were long-standing CMB clients, so HSBC was mandated with settlement of the consideration. An introduction to HSBC’s GPB business in Germany led to Euroimmun’s largest shareholder and its Chief Financial Officer placing the majority of sale proceeds with GPB. Through collaboration between our CMB, GB&M and GPB businesses, we were able to provide multi-product solutions during critical events for the client.

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The long-term trends outlined on the previous page reinforce our strategic advantages as a leading international bank with exceptional access to the fastest growing markets and robust balance sheet strength.

Strategic advantages

Leading international bank

- More than 50% of Group client revenue linked to international clients
- ‘World’s Best Bank for Transaction Services’[3]
- Chosen by large corporates across regions as their lead international bank[4]

Exceptional access to high-growth markets

- Wide breadth of access to high-growth developing markets in Asia, the Middle East and Latin America
- Investment aligned to high-growth markets to deliver shareholder value
- Committed to enhanced customer service and investments in technology to help capture growth opportunities

2018 revenue: $53.9bn

Balance sheet strength

- Continue to maintain strong capital, funding and liquidity position with diversified business model
- Conservative approach to credit risk and liquidity management
- Low earnings volatility
- Foundation for sustained dividend; strong capacity for distribution to shareholders

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ÑFor footnotes, see page 89.

Strategic priorities

We entered the next phase of our strategy in 2018, focused on growth and creating value for our stakeholders.

Return to growth and value creation

In our June 2018 Strategy Update, we outlined eight strategic priorities to deliver growth, improve returns, empower our people, and enhance our customer experience. Each priority has a target or set of targeted outcomes by 2020. The table opposite contains a summary of our progress, with additional details provided below.

Growth from areas of strength

Strategic priority 1: We made a strong start in accelerating growth from our Asian franchise after making select investments in areas such as Hong Kong and our wealth business. Overall, Asia adjusted revenue was 11% higher than the previous year with double-digit growth in Hong Kong, mainland China and the Pearl River Delta. Despite some market uncertainty, we continued to support customers as we increased loan balances by 9%. Our wealth business in Asia[7] gained positive momentum with double-digit revenue growth in Private Banking and Asset Management, and 4% growth in RBWM Wealth distribution. However, Asia Insurance manufacturing revenue was down 11% versus 2017 due to adverse market conditions.

We continue to support clients and economies through the China-led Belt and Road Initiative, and FinanceAsia recognised our market leadership by awarding us the 'Best Belt and Road Bank' in Asia for the second consecutive year.

In sustainable finance, our goal is to be a leading partner for our clients to help the world's transition to a low-carbon economy. We have made good progress with our ambition to provide $100bn of sustainable financing, facilitation and investment by 2025, with a cumulative total of $28.5bn delivered in 2017 and 2018. For further details on our sustainable finance commitment, see page 27.

Strategic priority 2: We completed the set-up of our UK ring-fenced bank, HSBC UK, six months ahead of the legal deadline, and we opened our new UK head office in Birmingham. We supported our retail customers' purchasing of homes, as we grew our mortgage market share to 6.6%[8]. For our corporate clients, we launched our largest ever dedicated SME fund, with £12bn of funding, including £1bn of funding to help UK companies grow overseas. While HSBC UK has seen initial growth in retail customers (up by 251,000, a growth of 2%), we are still driving initiatives to grow our commercial customer base.

Strategic priority 3: We continue to make investments to enable growth in our international network. In Global Trade and Receivables Finance ('GTRF'), we are investing in a transformation of our operating model to help clients and colleagues conduct trade and manage capital more efficiently. In Securities Services, we are developing our digital proposition across many products. We are on track to achieve our target of mid to high single-digit revenue growth by 2020. International client revenue was up 7% compared with 2017; transaction banking revenue grew 14%, driven by double-digit growth across Global Liquidity and Cash Management ('GLCM'), Foreign Exchange and Securities Services. GTRF revenue grew by 2%, reflecting the subdued global trade environment.

Turnaround of low-return businesses

Strategic priority 4: The US turnaround is our most challenging strategic priority. Our US return on tangible equity ('RoTE') increased from 0.9% to 2.7%, supported by favourable expected credit losses, and capital released to HSBC Holdings. However, significant improvement is required to achieve our 2020 targeted outcome of greater than 6% RoTE in the US. Investments in our platforms and products are supporting organic growth. Our active customer base in RBWM increased by nearly 200,000 to 1.3 million people. We grew CMB revenue by 7% and transaction banking revenue in GB&M by 9%.

Strategic priority 5: To enhance returns for our shareholders, we have committed to improving our capital efficiency. In 2018, our revenue over risk-weighted assets ('RWAs') ratio grew by 0.3 percentage points to 6.2%, driven by

broad-based revenue growth across our four global businesses. We continue to redeploy RWAs to higher-return businesses.

Putting the customer at the centre

Strategic priority 6: We aim to create the capacity to invest in growth and technology through a combination of cost discipline and revenue growth. We did not achieve our target of positive adjusted jaws in 2018, in part due to unexpected market volatility in the

last two months of the year, which impacted revenue. However, we remain committed to the discipline of positive adjusted jaws. Our revenue growth helped support $4.1bn in investment for business growth, productivity, regulatory and mandatory purposes. We are already seeing results, with approximately 45% of retail customers now digitally active and more than 30% of sales through digital channels[9]. In CMB, we halved the onboarding time to an average of 11 days for clients.

Strategic priority 7: We exist, at our core, to serve our customers and we made a commitment in June 2018 to improve customer service in our eight 'scale markets'[10]. We are measuring our performance against customer satisfaction indices. In 2018, six markets in RBWM and three markets in CMB sustained a top-three rank and/or improved by two ranks in customer satisfaction.

Empower our people

Strategic priority 8: We have committed to simplifying the organisation and investing in the future skills of our employees. We continue to improve our employee engagement, as reflected in the improvement of our employee advocacy by two percentage points to 66%. Our ESG rating is derived from the impact we have on our wider stakeholders. We are currently rated an 'Average performer', and we are driving several initiatives to achieve an 'Outperformer' rating. Information on how we are empowering our people can be found in the 'How we do business' section on pages 22 to 29, with additional details in our ESG Update in April 2019.

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Financial overview

Reported results

Reported results	2018 $m	2017 $m	2016 $m
Net operating income before change in expected credit losses and other credit impairment charges ('revenue')	53,780	51,445	47,966
ECL/LICs	(1,767)	(1,769)	(3,400)
Net operating income	52,013	49,676	44,566
Total operating expenses	(34,659)	(34,884)	(39,808)
Operating profit	17,354	14,792	4,758
Share of profit in associates and joint ventures	2,536	2,375	2,354
Profit before tax	19,890	17,167	7,112

This table shows our reported results for the last three years ended 31 December 2018, 2017 and 2016.

HSBC adopted the requirements of IFRS 9 'Financial Instruments' on 1 January 2018, with the exception of the provisions relating to the presentation of gains and losses on financial liabilities designated at fair value, which were adopted on 1 January 2017.

Under IFRS 9, the recognition and measurement of expected credit losses differs from the approach under IAS 39. The change in expected credit losses relating to financial assets under IFRS 9 is recorded in the income statement under 'change in expected credit losses and other credit impairment charges' ('ECL'). As prior periods have not been restated, changes in impairment of financial assets in the comparative periods remain in accordance with IAS 39 and are recorded in the income statement under 'loan impairment charges and other credit risk provisions' ('LICs') and are therefore not necessarily comparable to ECL recorded for the current period.

All commentary in this financial overview compares the 2018 results with 2017, unless otherwise stated.

Reported profit before tax

Reported profit before tax of $19.9bn was $2.7bn or 16% higher, mainly reflecting growth in revenue. Operating expenses fell by $0.2bn, as increases, mainly associated with investments to grow the business, were more than offset by a net favourable movement in significant items, which included the non-recurrence of our costs to achieve programme.

Reported profit before tax included a net favourable movement of significant items of $2.1bn, which is described in more detail on page 34. Excluding these items and a favourable effect of foreign currency translation differences of $0.1bn, profit before tax increased by $0.6bn or 3%.

Reported revenue

Reported revenue of $53.8bn was $2.3bn or 5% higher, which reflected revenue growth in all global businesses, although revenue fell in Corporate Centre. The increase in reported revenue included a favourable effect of foreign currency translation differences of $0.1bn, broadly offset by a net adverse movement in significant items of $0.1bn.

Significant items included:

- a net loss on disposals, acquisitions and investment in new businesses of $0.1bn in 2018, compared with a net gain of $0.3bn in 2017.

This was partly offset by:

- a net release of provisions related to customer redress programmes in the UK of $0.1bn in 2018, compared with net charges of $0.1bn in 2017; and
- lower adverse fair value movements on financial instruments (up $0.1bn).

Excluding significant items and foreign currency translation differences, revenue increased by $2.3bn or 4%.

Reported ECL/LICs

In 2018, reported ECL of $1.8bn related mainly to RBWM ($1.2bn), notably in Mexico, the UK and Asia, as well as CMB ($0.7bn).

In 2017, reported LICs were $1.8bn, notably in RBWM ($1.0bn) as well as in CMB ($0.5bn) and GB&M ($0.5bn). This was partly offset by net releases in Corporate Centre of $0.2bn.

Foreign currency translation differences between the periods were $0.1bn favourable.

Reported operating expenses

Reported operating expenses of $34.7bn were $0.2bn or 1% lower, as an increase in operating expenses from near- and medium-term investments to grow the business, together with higher performance-related pay, were more than offset by a net favourable movement in significant items of $2.1bn. Significant items included:

- the non-recurrence of costs to achieve, which were $3.0bn in 2017; and
- customer redress programme costs of $0.1bn in 2018, compared with $0.7bn in 2017.

These were partly offset by:

- settlements and provisions in connection with legal and regulatory matters of $0.8bn in 2018. This compared with a net release of $0.2bn in 2017;
- a provision in relation to past service costs of guaranteed minimum pension benefits equalisation of $0.2bn in 2018; and
- the non-recurrence of gains on the partial settlement of pension obligations of $0.2bn in 2017.

Excluding significant items and adverse foreign currency translation differences of $0.1bn, operating expenses increased by $1.8bn or 6%.

Reported share of profit in associates and joint ventures

Reported share of profit in associates of $2.5bn was $0.2bn or 7% higher, primarily reflecting an increase in income from Bank of Communications Co., Limited (‘BoCom’).

Excluding the favourable effect of foreign currency translation differences of $41m, share of profit in associates increased by $0.1bn.

Dividends

On 19 February 2019, the Board announced a fourth interim dividend of $0.21 per ordinary share.

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Adjusted performance

Our reported results are prepared in accordance with IFRSs as detailed in the Financial Statements on page 263.

We also present alternative performance measures. Adjusted performance is an alternative performance measure used to align internal and external reporting, identify and quantify items management believes to be significant, and provide insight into how management assesses period-on-period performance. Alternative performance measures are highlighted with the following symbol:<>

To derive adjusted performance, we adjust for:

- the year-on-year effects of foreign currency translation differences; and
- the effect of significant items that distort year-on-year comparisons, which are excluded in order to improve understanding of the underlying trends in the business.

ÑFor reconciliations of our reported results to an adjusted basis, including lists of significant items, see page 66.

Adjusted results<>

This table shows our adjusted results for 2018 and 2017. These are discussed in more detail on the following pages.

Adjusted results<>	2018 $m	2017 $m	(%)
Net operating income before change in expected credit losses and other credit impairment charges (‘revenue’)	53,940	51,661	4 %
ECL/LICs	(1,767)	(1,713)	(3)%
Total operating expenses	(32,990)	(31,231)	(6)%
Operating profit	19,183	18,717	2 %
Share of profit in associates and joint ventures	2,536	2,416	5 %
Profit before tax	21,719	21,133	3 %

	2018 $m	2017 $m	Adverse	Favourable	%
Revenue	53,940	51,661		2,279	4 %
ECL/LICs	(1,767)	(1,713)	(54)		(3)%
Total operating expenses	(32,990)	(31,231)	(1,759)		(6)%
Operating profit	19,183	18,717		466	2 %
Share of profit in associates and joint ventures	2,536	2,416		120	5 %
Profit before tax	21,719	21,133		586	3 %

Adjusted profit before tax<>

On an adjusted basis, profit before tax of $21.7bn was $0.6bn or 3% higher, reflecting revenue growth from all global businesses, although revenue fell in Corporate Centre. Operating expenses increased, primarily reflecting the impact of investments to grow the business. In addition, ECL in 2018 were $1.8bn compared with LICs of $1.7bn in 2017.

From 1 July 2018, Argentina was deemed a hyperinflationary economy for accounting purposes. The impact of applying IAS 29 ‘Financial Reporting in Hyperinflationary Economies’ from 1 July 2018 and presenting in accordance

with IAS 21 'The Effects of Changes in Foreign Exchange Rates' resulted in a $160m reduction in profit before tax. The effects of hyperinflation accounting in Argentina have not been deemed a significant item and are therefore included within adjusted results.

Reconciliation of reported to adjusted profit before tax

	2018	2017
	$m	$m
Adjusted profit before tax	21,719	21,133
Currency translation	—	87
Significant items:	1,829	3,879
– costs of structural reform	361	420
– costs to achieve	—	3,002
– customer redress programmes	93	763
– disposals, acquisitions and investment in new businesses	165	(221)
– fair value movements on financial instruments	100	245
– gain on partial settlement of pension obligation	—	(188)
– past service costs of guaranteed minimum pension benefits equalisation	228	—
– restructuring and other related costs	66	—
– settlements and provisions in connection with legal and regulatory matters[22]	816	(198)
– currency translation on significant items	—	56
Reported profit before tax	19,890	17,167

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Adjusted revenue<>

Adjusted revenue of $53.9bn increased by $2.3bn or 4%, reflecting revenue growth in all global businesses, partly offset by lower revenue in Corporate Centre.

- In RBWM, revenue increased by $1.7bn or 8%, driven by growth in Retail Banking, reflecting deposit and lending balance growth, and the benefit of wider deposit margins in Hong Kong. These factors were partly offset by margin compression on mortgages in Hong Kong and the UK. Revenue in Wealth Management decreased, as a result of lower life insurance manufacturing revenue, partly offset by higher investment distribution revenue.
- In CMB, revenue rose $1.6bn or 12%, notably in Global Liquidity and Cash Management ('GLCM') as we benefited from wider deposit margins, primarily in Hong Kong, and growth in average balances mainly in the UK. In addition, revenue increased in Credit and Lending ('C&L'), notably in the UK and Hong Kong due to higher average balances.
- In GB&M, revenue was $0.2bn or 1% higher mainly due to growth in GLCM and Securities Services from interest rate rises and higher average balances. These increases were partly offset by lower revenue in Global Markets as revenue growth in Foreign Exchange was more than offset by reductions in Rates and Credit due to subdued client activity and spread compression.
- In GPB, revenue was $0.1bn or 4% higher, mainly in Hong Kong from higher deposit revenue as we benefited from wider margins, and from higher investment revenue. This increase was partly offset by lower revenue resulting from client repositioning.
- In Corporate Centre, negative adjusted revenue of $0.2bn compared with adjusted revenue of $1.2bn in 2017. This reduction was largely in Central Treasury, and included the adverse effects of hyperinflation accounting in Argentina of $231m. Revenue from our legacy portfolios also decreased, mainly due to losses on portfolio disposals.

Movement in adjusted revenue compared with 2017<>

	2018	2017	Variance	%
	$m	$m	$m	
Retail Banking and Wealth Management	21,935	20,220	1,715	8%
Commercial Banking	14,885	13,247	1,638	12%
Global Banking and Markets	15,512	15,285	227	1%
Global Private Banking	1,785	1,723	62	4%
Corporate Centre	(177)	1,186	(1,363)	(115)%
Total	53,940	51,661	2,279	4%

Adjusted ECL/LICs<>

In 2018, adjusted ECL were $1.8bn. These included charges in RBWM ($1.2bn), notably against our unsecured lending balances in Mexico, the UK and Asia. In the UK, ECL also included charges related to the current economic uncertainty.

In CMB, ECL of $0.7bn reflected charges in most regions, including a charge in the UK relating to the current economic uncertainty, partly offset by releases in North America.

These charges were partly offset by a net release in Corporate Centre of $0.1bn related to the legacy credit portfolio in the UK.

In 2017, adjusted LICs of $1.7bn mainly related to RBWM ($1.0bn). These included LICs in Mexico, the UK and Hong Kong against unsecured lending balances. In CMB, LICs of $0.5bn in 2017 included charges in Asia, the UK, Mexico and the UAE, partly offset by net releases in North America.

Adjusted operating expenses<>

Adjusted operating expenses of $33.0bn were $1.8bn or 6% higher. This mainly reflected near- and medium-term investments to grow the business (up $0.9bn). In RBWM, these were primarily to grow our franchise through front-line recruitment, marketing and developing digital capabilities, including products and customer propositions. In GB&M, we made strategic hires and invested in new capabilities and functionalities for Global Markets, Global Banking and Securities Services, and also continued to invest in the HSBC Qianhai Securities joint venture in mainland China. We also increased our investment in productivity programmes (up $0.3bn), mainly in Technology and Operations.

Performance-related pay increased by $0.2bn and volume-related growth increased by $0.2bn.

The cost savings from our productivity programmes absorbed the impact of inflation. Our UK bank levy charge remained broadly unchanged.

The number of employees expressed in full-time equivalent ('FTE') staff at 31 December 2018 was 235,217, an increase of 6,530 from 31 December 2017. This increase reflected investments in business growth programmes across RBWM, GB&M and CMB. Additionally, the number of contractors as at 31 December 2018 was 10,854, a decrease of 2,040 from 31 December 2017.

The effect of hyperinflation accounting in Argentina reduced adjusted operating expenses by $63m.

Adjusted share of profit in associates and joint ventures<>

Adjusted share of profit in associates of $2.5bn was $0.1bn or 5% higher than in 2017, reflecting an increase in income from BoCom.

2017: $31.2bn

2018: $33.0bn

* UK bank levy charge for 2018 included $41m incurred in 1Q18

^ Quarterly adjusted operating expenses are presented at average 4Q18 exchange rates

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Balance sheet and capital

Balance sheet strength

Total reported assets of $2.6tn were $36.4bn or 1% higher than at 31 December 2017 on a reported basis, and 5% higher on a constant currency basis. We continued our targeted asset growth, notably in Asia.

Distributable reserves

The distributable reserves of HSBC Holdings at 31 December 2018 were $30.7bn, compared with $38.0bn at 31 December 2017. The decrease was primarily driven by distributions to shareholders of $10.1bn, which were higher than distributable profits generated of $5.7bn, as well as share buy-backs of $2.0bn, partly offset by gains from IFRS 9 transitional adjustments of $1.0bn and fair value gains net of tax due to movements in our own credit risk of $0.9bn. A decrease of $3.0bn arose from the re-presentation of the 2017 share buy-back.

Capital strength

We manage our capital in an effort to ensure we exceed current regulatory requirements and are well placed to meet those expected in the future. We monitor our position using capital ratios. These measure capital relative to a regulatory assessment of risks taken. We quantify how these risks relate to our businesses using RWAs.

ÑDetails of these risks are included on page 193.

Our CET1 ratio at 31 December 2018 was 14.0%, down from 14.5% at 31 December 2017. This decrease was primarily driven by foreign currency translation differences, the share buy-back and an increase in RWAs due to balance sheet growth.
ÑFurther details on movements in capital are included on page 150.

Adoption of IFRS 9

HSBC adopted the requirements of IFRS 9 on 1 January 2018, with the exception of the provisions relating to the presentation of gains and losses on financial liabilities designated at fair value, which were adopted from 1 January 2017. The adoption of IFRS 9 reduced our net assets at 1 January 2018 by $1.6bn.

Delivery against Group financial targets

Return on tangible equity <>

Our target is to achieve a reported return on tangible equity ('RoTE') of more than 11% by the end of 2020. We intend to do this while maintaining a common equity tier 1 ('CET1') ratio of greater than 14%.
RoTE is calculated as reported profit attributable to ordinary shareholders less changes in goodwill and the present value of in-force long-term insurance business, divided by average tangible shareholders' equity. A targeted reported RoTE of 11% in 2020 is broadly equivalent to a reported return on equity ('RoE') of 10%.
In 2018, we achieved a RoTE of 8.6% compared with 6.8% in 2017.

Adjusted jaws<>

Adjusted revenue up 4.4	%	Adjusted jaws (1.2)%
Adjusted operating expenses up 5.6	%	

Adjusted jaws measures the difference between the rates of change in adjusted revenue and adjusted operating expenses.
Our target is to maintain positive adjusted jaws on an annual basis, while noting the sensitivity of the impact on adjusted jaws of unexpected movements in revenue or operating expenses growth.
Positive jaws occurs when the percentage change in revenue is higher than, or less negative than, the corresponding rate for operating expenses.
In 2018, adjusted revenue increased by 4.4% and our adjusted operating expenses increased by 5.6%. Adjusted jaws was therefore negative 1.2%.

Dividends

We plan to sustain the annual dividend in respect of the year at its current level for the foreseeable future. Growing our dividend will depend on the overall profitability of the Group, delivering further release of less efficiently deployed capital and meeting regulatory capital requirements in a timely manner.

To achieve these financial targets by 2020, we aim to deliver mid-single-digit growth in revenue, low- to mid-single-digit growth in operating expenses, and approximately 1–2% annual growth in RWAs. Given the current economic environment, we will seek to offset some or all of any possible weaker-than-planned revenue growth with actions to manage operating expenses and investments.

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Global businesses

We manage our products and services globally through our global businesses.

The ‘Management view of adjusted revenue’ tables provide a breakdown of revenue by major products, and reflect the basis on which each business is assessed and managed.

Commentary is on an adjusted basis, which is consistent with how we assess the performance of our global businesses.<>

Retail Banking and Wealth Management

Key events

- In RBWM, we grew active customers by 1.2 million in 2018 through our continued investments in strategic initiatives to drive growth in key markets and through lending products. We grew our mortgage book by over $20bn in the UK and Hong Kong, strengthening our position in these markets. We increased credit card issuances by 24%, notably in the UK, Mexico, the US and Hong Kong.
- We upgraded our wealth proposition in Asia through the launch of HSBC Life in Hong Kong, the improvement of our wealth investment capability for mobile banking in China, and the enhancement of our wealth product offering in Hong Kong for high net worth investors.
- We listened to our customers and have acted on feedback to improve product features and have made it easier for customers to bank with us through digital transformation. The PayMe app in Hong Kong processes three million transactions per month and the Connected Money app in the UK has had more than 200,000 downloads since its launch in May 2018.

Financial performance

Adjusted profit before tax of $7.1bn was $0.6bn or 9% higher, reflecting revenue growth, partly offset by higher operating expenses.

Adjusted revenue of $21.9bn was $1.7bn or 8% higher, with an increase in Retail Banking partly offset by Wealth Management. Revenue growth was strong in Hong Kong and the UK in particular, with notable increases in India and mainland China, and in our Latin American markets.

In Retail Banking, revenue was up $1.8bn or 13%. This reflected improved deposit margins from rising interest rates, together with deposit balance growth of $21bn or 3% and lending balance growth of $31bn or 9%. These factors were partly offset by mortgage margin compression from higher funding costs, primarily in Hong Kong and the UK.

In Wealth Management, revenue was down $0.1bn or 2% due to net adverse movements in market impacts of $0.6bn in life insurance manufacturing. In Wealth Management:

- life insurance manufacturing revenue decreased by $0.2bn or 11%, reflecting adverse movements in market impacts of $0.3bn in 2018, compared with a favourable movement of $0.3bn in 2017. This was partly offset by growth in the value of new business written ($0.2bn) and favourable actuarial assumption changes and experience variances ($0.2bn); and
- investment distribution revenue increased by $0.1bn due to higher sales of insurance products and bonds. Revenue from the sale of equity and mutual funds was stable as strong trading conditions in the first half of the year were offset by a slowdown in the second half of the year.

In 2018, the credit quality of our loan portfolio remained stable at 34 basis points of average gross loans. Adjusted ECL of $1.2bn mainly related to charges in Mexico, the UK and Asia, notably against unsecured lending. In the UK, ECL also included charges related to the current economic uncertainty. This compared with adjusted LICs of $1.0bn

in 2017, notably related to charges in Mexico, the UK and Hong Kong against unsecured lending balances.
Adjusted operating expenses of $13.7bn were $0.9bn or 7% higher. This primarily reflected a $0.6bn increase relating to investments, including $0.4bn in marketing and digital capabilities to help deliver improved customer service, and $0.1bn in staff to support business growth, particularly in the UK, Hong Kong, mainland China (including the Pearl River Delta) and the US.

Management view of adjusted revenue<>	Footnotes	2018 $m	2017 $m	2016 $m	2018 vs 2017 $m	%
Retail Banking		15,262	13,456	12,690	1,806	13
Current accounts, savings and deposits		8,534	6,296	5,186	2,238	36
Personal lending		6,728	7,160	7,504	(432)	(6)
– mortgages		1,937	2,372	2,585	(435)	(18)
– credit cards		2,880	2,886	3,018	(6)	—
– other personal lending	23	1,911	1,902	1,901	9	—
Wealth Management		6,104	6,215	5,230	(111)	(2)
– investment distribution	24	3,383	3,279	2,902	104	3
– life insurance manufacturing		1,656	1,870	1,362	(214)	(11)
– asset management		1,065	1,066	966	(1)	—
Other	25	569	549	563	20	4
Net operating income	26	21,935	20,220	18,483	1,715	8
Adjusted RoRWA (%)	27	5.8	5.6	4.7		
RoTE excluding significant items and UK bank levy (%)		21.0	21.6	16.3		

ÑFor footnotes, see page 89.
Change in adjusted profit before tax
+9%

Commercial Banking

Key events
- In CMB, we achieved double-digit growth in revenue and profit before tax. Growth was broadly based, with revenue increases across all major products and regions.
- We continued to improve customer experience and satisfaction, surveying over 18,000 customers across 40 markets in 2018 through the 'Moments of Truth' programme. Through this programme we improved global scores across key customer interactions and have driven improvements through more than 100 actions taken to address customer feedback. Through these client surveys we have seen a 17% year-on-year increase in customers reporting they have had a good or better onboarding experience.
- We continued to invest in our digital capabilities and we simplified online journeys on HSBCnet for around 41,000 clients across 36 countries. We also halved average onboarding times for our relationship-managed customers, and completed landmark trade transactions on the Voltron and we.trade platforms.
- We increased sustainable financing through both facilitation (green bonds and equity capital markets) and growth in financing (green loans and leases). In 2018, CMB contributed over $4bn towards the Group's sustainable financing target.

Financial performance
Adjusted profit before tax of $7.7bn was $0.8bn or 12% higher, driven by increased revenue, partly offset by higher operating expenses. ECL of $0.7bn in 2018 compared with LICs of $0.5bn in 2017.
Adjusted revenue of $14.9bn was $1.6bn or 12% higher with increases in all products, most notably GLCM.
- In GLCM, revenue was $1.0bn or 22% higher, with growth across all regions. The increase was mainly in Hong Kong from wider margins, and in the UK from wider margins and average balance sheet growth. In C&L, revenue growth of $0.2bn or 5% reflected average balance sheet growth in the UK and Hong Kong, partly offset by margin compression. In addition, revenue

increased by $44m or 2% in GTRF despite challenging market conditions, with growth reflecting higher average balances in Asia and the UK.

Revenue growth was primarily in Asia (up 18%), mainly from increases in Hong Kong (up 21%) and mainland China (up 22%), as well as in the UK (up 10%). There was also notable revenue growth in the US (up 7%), Canada (up 8%), Latin America (up 20%) and MENA (up 5%).

Corporate customer value from our international subsidiary banking proposition grew by 19%*.

Adjusted ECL were $0.7bn in 2018, reflecting charges across most regions, including a charge in the UK related to uncertainty in the economic outlook, partly offset by releases in North America. This compared with adjusted LICs of $0.5bn in 2017, which reflected charges in Asia, the UK, Mexico and the UAE, partly offset by net releases in North America.

Adjusted operating expenses of $6.5bn were $0.5bn or 9% higher, reflecting increased staff costs (up $0.2bn), including higher performance-related pay. In addition, we continued to increase our investment in digital capabilities (up $0.1bn), improvements in operational efficiency and customer experience, as well as regulatory and compliance.

Management view of adjusted revenue<>	Footnotes	2018 $m	2017 $m	2016 $m	2018 vs 2017 $m	%
Global Trade and Receivables Finance		1,865	1,821	1,833	44	2
Credit and Lending		5,342	5,101	5,053	241	5
Global Liquidity and Cash Management		5,802	4,775	4,249	1,027	22
Markets products, Insurance and Investments and Other	28	1,876	1,550	1,521	326	21
Net operating income	26	14,885	13,247	12,656	1,638	12
Adjusted RoRWA (%)	27	2.5	2.4	2.2		
RoTE excluding significant items and UK bank levy (%)		14.0	14.0	13.0		

ÑFor footnotes, see page 89.

Change in adjusted profit before tax
+12%

* Analysis relates to corporate client income, which includes total income from GB&M synergy products, including foreign exchange and debt capital markets. This measure differs from reported revenue in that it excludes Business Banking and Other and internal cost of funds.

Global Banking and Markets

Key events

In GB&M, we are making good progress with our strategic plan, increasing revenue and profit before tax while reducing risk-weighted assets by 4%. In 2018, performance was particularly strong in transaction banking products, with continued growth in GLCM (up 20%) and Securities Services (up 11%). We have continued to expand the product offerings and capabilities from our securities joint venture in China.

We acted as the sole green structuring adviser on a $1.25bn green sukuk bond for the Republic of Indonesia, the first ever international offering of green securities by an Asian sovereign.

Financial performance

Adjusted profit before tax of $6.1bn was $0.2bn or 4% higher, reflecting increased revenue and a $26m release of ECL in 2018, compared with LICs of $0.4bn in 2017. This was partly offset by higher operating expenses as we continued to invest in the

business. We have continued to deliver RWA savings, with net reductions of 4% ($12bn), including savings from management initiatives of $30bn during 2018. This reduction was partly offset by targeted lending growth.

With effect from the fourth quarter of 2018, interest earned on capital deployed, which was previously disclosed within 'Other' revenue, has been allocated to product lines. The 2017 comparatives have been re-presented on the new basis, with no effect on total adjusted revenue.

Adjusted revenue of $15.5bn was $0.2bn or 1% higher, and included a net favourable movement of $0.1bn on credit and funding valuation adjustments. The increase in revenue primarily reflected the strength of our transaction banking franchises, which more than offset the effects of economic uncertainty and reduced client activity.

– GLCM recorded double-digit growth (up $0.4bn or 20%) as we increased average balances by 4% through continued momentum in winning client mandates, and from favourable interest rate movements, notably in Asia.
– Securities Services revenue rose $0.2bn or 11% as we grew average assets under management and average assets under custody from increased client mandates, growth in equity markets early in 2018, and higher interest rates.
– Global Banking revenue increased $67m or 2% as growth in secured lending balances, gains on corporate lending restructuring and lower adverse movements on portfolio hedges were partly offset in our capital markets businesses, due to challenging market conditions and narrower spreads.
– GTRF revenue grew by 7% as we grew average lending balances while also reducing risk-weighted assets.

This was partly offset by the following:

– Global Markets revenue decreased by $0.5bn or 7% as economic uncertainty and reduced primary issuance led to subdued client activity and spread compression, which resulted in lower revenue in Rates (down $0.7bn or 31%) and Credit (down $0.2bn or 19%). This was partly offset by higher revenue in Foreign Exchange (up $0.4bn or 15%), from increased volatility in emerging markets.
– Principal Investments revenue fell by $0.1bn or 31% from lower gains on mark-to-market revaluation of investments, and on asset sales, compared with 2017.

Net adjusted ECL releases of $26m in 2018 related to releases against a small number of clients in the US and Europe, notably in the oil and gas sector, partly offset by charges in the UK against exposures in the retail and construction sectors.

In 2017, adjusted LICs of $0.4bn were primarily against two large corporate exposures in Europe.

Adjusted operating expenses increased $0.5bn or 5%, as cost-saving initiatives were more than offset by investment in business growth and efficiency initiatives, and in regulatory programmes. We also incurred higher revenue-related taxes and costs.

Management view of adjusted revenue<>	Footnotes	2018 $m	2017 $m	2016 $m	2018 vs 2017 $m	%
Global Markets		6,490	7,009	6,731	(519)	(7)
– FICC		5,271	5,714	5,720	(443)	(8)
Foreign Exchange		3,022	2,622	2,777	400	15
Rates		1,482	2,147	2,148	(665)	(31)
Credit		767	945	795	(178)	(19)
– Equities		1,219	1,295	1,011	(76)	(6)
Securities Services		1,973	1,772	1,577	201	11
Global Banking		4,115	4,048	3,819	67	2
Global Liquidity and Cash Management		2,645	2,213	1,884	432	20
Global Trade and Receivables Finance		809	757	689	52	7
Principal Investments		224	327	221	(103)	(31)
Credit and funding valuation adjustments	29	(183)	(262)	(55)	79	30
Other	30,31	(561)	(579)	(59)	18	3
Net operating income	26,31	15,512	15,285	14,807	227	1
Adjusted RoRWA (%)	27	2.1	2.0	1.8		

RoTE excluding significant items and UK bank levy (%)	10.5	10.6	10.2

ÑFor footnotes, see page 89.

Change in adjusted profit before tax

+4%

Global Private Banking

Key events

- In GPB, revenue increased by 10% in key markets targeted for growth, mostly in Asia (up 18%). We have added 101 new revenue generating employees globally, with 71 in Asia.
- We were named Best Private Bank in both Hong Kong and the UK at the PWM/The Banker Private Banking awards 2018.
- We had net new money inflows of $15bn in key markets targeted for growth, of which almost 60% came from collaboration with our other global businesses. In 2018, one in every three new GPB client relationships was introduced by CMB.

Financial performance

Adjusted profit before tax of $344m was $48m or 16% higher, reflecting revenue growth and a net release of ECL. This was partly offset by higher operating expenses.

Adjusted revenue of $1.8bn increased by $62m or 4%, mainly in Hong Kong from higher deposit revenue as margins widened following interest rate rises, and from higher investment revenue from strong mandate flows. Other income decreased including lower revenue following client repositioning.

In 2018, there was a net release of adjusted ECL of $8m. This compared with adjusted LICs of $16m in 2017.

Adjusted operating expenses of $1.4bn were $38m or 3% higher, due to higher staff costs, reflecting investment to support growth, mainly in Asia.

Management view of adjusted revenue<>	Footnotes	2018 $m	2017 $m	2016 $m	2018 vs 2017 $m	%
Investment revenue		717	700	738	17	2
Lending		391	393	420	(2)	(1)
Deposit		497	404	345	93	23
Other		180	226	267	(46)	(20)
Net operating income	26	1,785	1,723	1,770	62	4
Adjusted RoRWA (%)	27	2.1	1.9	1.7		
RoTE excluding significant items and UK bank levy (%)		9.9	7.1	5.6		

ÑFor footnotes, see page 89.

Change in adjusted profit before tax
+16%

Corporate Centre[32]

Financial performance

Adjusted profit before tax of $0.5bn was $1.1bn or 67% lower, reflecting lower revenue and higher ECL, partly offset by lower operating expenses.

We recorded negative adjusted revenue of $0.2bn in 2018 compared with adjusted revenue of $1.2bn in 2017. This reduction reflected lower revenue in Central Treasury and legacy portfolios, and a reduction in Other income.

Central Treasury revenue was $1.1bn lower, reflecting:

- higher interest expense on debt issued by HSBC Holdings (up $0.4bn), from an increase in issuances and higher average cost of debt issued;
- lower revenue in Balance Sheet Management ('BSM') (down $0.3bn), mainly from de-risking activities undertaken during 2017 in anticipation of interest rate rises, lower reinvestment yields and lower gains on disposals;
- adverse fair value movements of $0.3bn in 2018 compared with favourable movements of $0.1bn in 2017, relating to the economic hedging of interest rate and exchange rate risk on our long-term debt with long-term derivatives; and

- a $0.2bn loss arising from adverse swap mark-to-market movements following a bond reclassification under IFRS 9 ‘Financial Instruments’.

Revenue from legacy portfolios was down $0.1bn, reflecting losses on disposals.

Other income decreased by $0.2bn, mainly from the adverse effects of hyperinflation accounting in Argentina.

Adjusted ECL releases of $0.1bn in 2018 and net adjusted LICs releases of $0.2bn in 2017 were both primarily related to our legacy credit portfolio.

Adjusted operating expenses of $1.9bn were $0.2bn or 9% lower due to the favourable impact of hyperinflation accounting in Argentina and lower costs in relation to the run-off of the CML portfolio, which was completed during 2017.

Adjusted income from associates increased by $0.1bn or 4%. Our associate, The Saudi British Bank, announced a merger agreement with Alawwal Bank in Saudi Arabia. The merger, subject to shareholder and regulatory approval, is expected to be completed in 2019 and would dilute HSBC’s shareholding in the merged bank from 40% to 29.2%.

Management view of adjusted revenue<>	Footnotes	2018	2017	2016	2018 vs 2017	
		$m	$m	$m	$m	%
Central Treasury	33	662	1,728	1,706	(1,066)	(62)
Legacy portfolios		(93)	(26)	26	(67)	>(100)
Other	34	(746)	(516)	(188)	(230)	(45)
Net operating income	26	(177)	1,186	1,544	(1,363)	(115)
RoTE excluding significant items and UK bank levy (%)		(5.7)%	(5.2)%	(1.9)%		

ÑFor footnotes, see page 89.

How we do business

Supporting sustainable growth

We conduct our business intent on supporting the sustained success of our customers, people and communities.

Overview

Our purpose is to be where the growth is, connecting customers to opportunities. We help enable businesses to thrive and economies to prosper, helping people to fulfil their hopes and dreams and realise their ambitions.

To achieve our purpose, we need to build strong relationships with all of our stakeholders – including customers, employees and the communities in which we operate. This will help enable us to deliver our strategy and operate our business in a way that is sustainable.

In this section, we provide information about our customers, employees and our approach to creating a responsible business culture. We also provide an update on our sustainability strategy, including progress towards our $100bn sustainable finance commitment and our second disclosure for the Task Force on Climate-related Financial Disclosures ('TCFD').

Our Environmental, Social and Governance ('ESG') Update will be published in April 2019 and will be available on our website at www.hsbc.com/our-approach/measuring-our-impact. It will provide further detail on the topics covered in this section.

Customers

We create value by providing the products and services our customers need, and aim to do so in a way that fits seamlessly into their lives. This helps us to build long-lasting relationships with our customers. We maintain trust by striving to protect our customers' data and information, and delivering fair outcomes for them – and if things go wrong, we need to address complaints in a timely manner. Operating with high standards of conduct is central to our long-term success and underpins our ability to serve our customers.

In this section, we focus on RBWM, our largest global business by number of customers, and on our two largest markets – the UK and Hong Kong. We measure and report on customer data for all of our global businesses within our ESG Update.

Our largest global business

RBWM

Supports approximately 38 million customers worldwide

Our largest markets

UK

$399bn in total customer accounts

Hong Kong

$485bn in total customer accounts

Customer recommendation index†

RBWM

† The index uses the 0-10 rating scale for the customer recommendation question to create a 100 point index. Surveys are based on a relevant and representative subset of the market. Data provided by Kantar.

Complaint resolution[35]

Time taken to resolve complaints

(excluding payment protection insurance complaints)

Same day or next working day Between 2–5 days Longer than 5 days

ÑFor footnotes, see page 89.

Acting on feedback in RBWM

We listen to our customers, and know that asking their opinion on our service is core to understanding their needs and concerns. Their feedback has helped us to become more accessible through improved digital experiences and our overall customer service. We continue to focus on simplifying our processes and will launch our new mobile banking app into more markets. We are working to make things easy, personable and transparent.

Senior leaders have ultimate responsibility for customer service standards and monitor these through key metrics aligned to performance objectives. These include:

- how customers feel about recommending us; and
- the speed and quality of complaint resolution.

Complaints are recorded and analysed so that we can learn what went wrong and why. Complaint resolution remains a priority for us and in 2018 we saw a slight improvement in the percentage of complaints resolved within the same or next working day.

In the charts and tables on page 22, we outline our 2018 performance on customer recommendation for our UK and Hong Kong markets, and complaint resolution for our 10 largest markets.

In the following table, we have highlighted some examples of how customer feedback has driven improvements for our RBWM customers.

What our customers are telling us	Our response
Make banking more accessible	
	– We simplified our login process by rolling out biometrics (Apple's Touch ID and HSBC Voice ID) to 18 markets. – In the UK, we trained our front-line employees to become 'Digital Experts'. In branch or on the phone, they teach our customers how to complete their task digitally. In 2018, 85% of new customers opened accounts through a supported digital experience.
Make it easy to understand our fees and charges	
	– In Singapore, we simplified our mortgage application forms and offer letters, so customers can be clear about their repayment schedule, terms and conditions, and fees and charges. – Through digital messaging we are raising customer awareness around overdrafts. In the UK, we expanded the volume of overdraft alerts, which we first introduced in 2017, sending more than 26 million alerts in 2018.
Make our processes easier	
	– In the UK, we have continued to simplify our mortgage process. Through automatic valuations, improved credit policies and increased underwriter availability, applications can be approved within 10 days. – To make investing more accessible, we equipped our branch employees in Hong Kong, China and Singapore with tablets and launched an online financial health check. Customers can now understand their investment options in their own time, without a specialist appointment.

Digital

As part of our strategy, we are committed to using technology to enhance our customers' experience. In 2018, we focused efforts on improving the online and mobile banking experience for our customers and building upon machine learning. This will help enable us to analyse our customers' speech, language and tone to better understand their queries and respond with the right solution more quickly.

– Globally, 44% of RBWM customers are digitally active

Taking responsibility for the service we deliver

We define conduct as delivering fair outcomes for customers and supporting the orderly and transparent operation of financial markets. This is central to our long-term success and ability to serve customers. We have clear policies,

frameworks and governance in place to protect them. These cover the way we behave; design products and services; train and incentivise employees; and interact with customers and each other. Our conduct framework guides activities to strengthen our business and increases our understanding of how the decisions we make affect customers and other stakeholders. Details on our conduct framework are available at www.hsbc.com. For further information on conduct, see page 88.

Our employees

Our people are critical to our success, and we have made a commitment to build the healthiest human system in our industry to enable them to thrive. As we work towards this, we are focused on fostering a culture in which our employees feel valued, empowered to share their views, and able to fulfil their potential.

Listening to our people

Understanding how our people feel about HSBC is vital. It helps us ensure that we are giving them the right support to achieve their potential and to serve our customers well.

We capture the views of our people on a range of topics, such as our strategy, culture and working environment, through our employee survey, Snapshot. Results are presented to the Group Management Board and relevant executive committees. This means that we can take action based on the feedback.

We track employee advocacy by asking whether they would recommend HSBC as a great place to work. Currently, 66% would recommend HSBC, an increase from 64% in 2017. Analysis in 2018 showed us that trust in leadership, career development and recognising our people for their behaviour and performance are what drives a positive response to this question.

HSBC Exchange provides a forum for employees to share their open and honest views. Typically, these are meetings held without an agenda, meaning people can discuss what matters most to them. We know from Snapshot that when people participate in

Exchange meetings, they feel more able to speak up, have more trust in leadership and report higher levels of well-being. More than half of our employees took part in an Exchange meeting during 2018. For example, our Global Banking and Markets global business hosted a series of Exchanges on the subject of culture and conduct, and Exchanges were held Group-wide as part of the conversation around the healthiest human system.

Snapshot and Exchange provide robust feedback that we use to improve the employee experience. For instance, our people fed back that mental well-being is important. We already provide employee assistance lines in every country, and in 2019 we will provide additional mental health education and support to line managers. Our focus will be on spotting the signs of mental ill-health, having open conversations and signposting where to find support.

Enabling a diverse and inclusive environment for all

Our commitment

We are committed to a thriving environment where people are valued, respected and supported to fulfil their potential. By building upon the extraordinary range of ideas, backgrounds, styles and perspectives of our employees, we can drive better outcomes for our stakeholders including customers, communities, suppliers and shareholders.

Gender balance at senior levels

Gender balance in leadership is an area where we are making progress but we recognise the need to improve. In 2018, we signed up to the 30% Club campaign commitment to reach 30% women in senior leadership roles (classified as 0–3 in our global career band structure) by 2020. In order to achieve that aspirational target, we set an objective that more than 27.6% of our senior leadership should be women by the end of 2018. We achieved 28.2%.

Employee retention
85.5%
(2017: 85.7%)

Male Female

*Combined executive committee and direct reports includes HSBC executive Directors, Group Managing Directors, and their direct reports (excluding administrative staff) plus Company Secretary.

Employee networks

We have seven global employee networks as well as our HSBC Communities, which include common interest groups. They provide spaces for colleagues to speak up about internal and commercial issues and opportunities, make connections, and learn from each other. The networks focus on gender, age, ethnicity, LGBT+, faith, working parents, carers, and ability. Our HSBC Communities focus on a variety of topics, including flexible working, military and veterans, and Chinese culture.

More information about our diversity and inclusion activity and our UK Gender Pay Gap Report is available at www.hsbc.com/our-approach/measuring-our-impact.

Whistleblowing

We think it is important to have a culture where our people feel able to speak up. Individuals are encouraged to raise concerns about wrongdoing or unethical conduct through the usual reporting and escalation channels. However, we understand that there are circumstances where people need to raise concerns more discreetly. HSBC Confidential is a global whistleblower platform that enables all of our people to raise issues in confidence and without fear of retaliation.

Whistleblowing concerns are investigated thoroughly and independently. Some of the common themes that have been referred to HSBC Confidential include behaviour and conduct, allegations of fraud, and weaknesses with information security. Remedial activity has been undertaken where appropriate, including disciplinary action, dismissal, as well as adjustments to variable pay, performance ratings and behaviour ratings. Processes have also been enhanced where needed. HSBC does not condone or tolerate any acts of retaliation against those who raise concerns, and has a strict policy prohibiting any such acts. The outcomes of allegations of retaliation are reported to senior management. Making malicious or false claims is incompatible with our values.

The Group Audit Committee has responsibility for oversight of the Group's whistleblowing arrangements and receives regular updates on the status of whistleblowing arrangements and outcomes.

We promoted the Group's whistleblowing arrangement through a training and awareness campaign in 2018 and this is reflected in the increase in the number of cases compared with 2017.

A responsible business culture

HSBC's purpose is to connect people with opportunities. With this purpose comes the responsibility to protect our customers, our communities and the integrity of the financial system.

Non-financial risks

We use a range of tools to monitor and manage our non-financial risks, including our risk appetite, risk map, top and emerging risks, and stress testing processes. During 2018, we continued to strengthen our approach to managing operational risk as set out in the operational risk management framework ('ORMF'). The approach sets out governance, appetite and provides a single view of non-financial risks that matter the most and associated controls. It incorporates a risk management system to enable active risk management. The enhancement and embedding of the risk appetite framework for non-financial risk and improving the consistency of the adoption of the end-to-end risk and control assessment processes has been a particular focus and while there remains more to do, progress has been made in 2018 to strengthen the control environment and the management of non-financial risk.

For further details on our non-financial risks and the 'Top and emerging risks', see pages 30 and 31.

Cybersecurity

Cybersecurity continues to be a focus area for HSBC and is routinely reported at the Board level to ensure appropriate visibility, governance and executive support for our ongoing cybersecurity activities. We continue to strengthen and invest significantly in both business and technical controls in order to prevent, detect and respond to an increasingly hostile cyber threat environment. These include enhancing controls to protect against advanced malware, data leakage, infiltration of payments systems and denial of service attacks. For additional information, please see the 'Top and emerging risks' section on page 30.

Financial crime compliance

In order to help protect the integrity of the global financial system, we have made, and continue to make, significant investments in our ability to detect, deter and prevent financial crime. We have exited customers, products and countries where we deemed the financial crime risk too high to manage. We are also working with governments and other banks to advance our collective interests in this area. These steps are enabling us to reduce the risk of financial crime much more effectively.

Our risk appetite has been set formally. Further details may be found in the Risk section on page 30.

Anti-bribery and corruption

We are committed to high standards of ethical behaviour and operate a zero-tolerance approach to bribery and corruption, which we consider unethical and contrary to good corporate governance. We require compliance with all anti-bribery and corruption laws in all markets and jurisdictions in which we operate. We have a global anti-bribery and corruption policy, which gives practical effect to global initiatives, such as the Organisation of Economic Co-operation and Development ('OECD') Convention on Combating Bribery of Foreign Public Officials in International Business Transactions and Principle 10 of the United Nations Global Compact. We continue to invest in technology and training. In 2018, 98% of our workforce were trained via a mandatory e-learning course and more than 12,000 employees, who undertake activities with a high risk of bribery, received targeted role-based training.

Total: $7.0bn

Tax

We are committed to applying both the letter and spirit of the law in all territories where we operate. We aim to have open and transparent relationships with all tax authorities, ensuring that any areas of uncertainty or dispute are agreed and resolved in a timely manner. As a consequence, we believe that we pay our fair share of tax in the jurisdictions in which we operate.

We have adopted the UK Code of Practice on Taxation for Banks, which was introduced in 2009, and manage tax risk in accordance with a formal tax risk management framework.

We apply a number of tax initiatives introduced after the global financial crisis with the aim of increasing transparency. These initiatives address both the tax positions of companies and of their customers. These include:

- the US Foreign Account Tax Compliance Act ('FATCA');
- the OECD Standard for Automatic Exchange of Financial Account Information (the 'Common Reporting Standard');
- the Capital Requirements (Country by Country Reporting) Regulations;
- the OECD Base Erosion and Profit Shifting ('BEPS') initiative; and
- the UK legislation on the corporate criminal offence ('CCO') of failing to prevent the facilitation of tax evasion.

Human rights

HSBC's commitment to respecting human rights, principally as they apply to our employees, our suppliers and through our lending, is set out in our 2015 Statement on Human Rights. This statement, along with our ESG Updates and our statements under the UK's Modern Slavery Act ('MSA'), which include further information, is available on www.hsbc.com/our-approach/measuring-our-impact. Our next MSA statement will be published in April 2019.

Other matters

Information on our corporate governance is on page 197, and information on legal proceedings and regulatory matters can be found on page 328.

Supporting sustainable growth

We recognise our wider obligations to the communities where we operate, and understand economic growth must also be sustainable. Our sustainable growth initiatives are set out in an integrated strategy aligned to our Group strategy and our global business operations.

In 2018, we contributed $105m to charitable programmes and our employees volunteered 264,000 hours to community activities during the working day. We continued our flagship environmental partnership, the HSBC Water Programme.

Sustainable finance

We define sustainable finance as any form of financial service that integrates ESG criteria into business or investment decisions. Sustainable finance covers the financing and investment activities needed to support the United Nations Sustainable Development Goals ('SDGs') and the Paris Agreement. The Paris Agreement aims to limit the risk of an increase in temperatures to 2°C above pre-industrial levels.

To achieve the Paris Agreement and facilitate the transition to a low-carbon world, over $100tn of infrastructure investment will be required in the next 15 years[36]. We recognise the critical role finance has to play in this transition. Our sustainable finance commitments reflect our ambition to be a leading global partner to the public and private sectors in helping with the transition to a low-carbon economy, achieving the SDGs, and supporting positive societal impacts.

ÑFor footnotes, see page 89.

HSBC's sustainable finance commitments

In November 2017, we published five sustainable finance commitments. In this section, we summarise the progress update against these commitments:

For our full commitments, see our ESG Supplement released in November 2017.

Provide and facilitate $100bn of sustainable financing and investment by 2025

– We have provided $28.5bn of financing, investing, and facilitation since 1 January 2017 (see details on page 28).

Source 100% of our electricity from renewable sources by 2030, with an interim target of 90% by 2025

– We signed renewables power purchase agreements that cover 29% of our electricity consumption, which is up two percentage points from 2017, and decreased energy consumption per FTE by 19% since 2011 (details on our carbon dioxide emissions can be found on page 88).

Reduce our exposure to thermal coal and actively manage the transition path for other high-carbon sectors

– We rolled out a framework to measure transition risks across our six higher-transition risk sectors in our loan portfolio. Further information can be found in the 'Risk management' section of our TCFD disclosure on page 29.

– We updated our energy policy to align lending guidelines to science-based climate change-related targets (see additional details on page 126).

Adopt the recommendations of the TCFD to improve transparency

– Further details of our second TCFD disclosure are on page 29.

Lead and shape the debate around sustainable finance and investment

– We published 25 articles on HSBC's Centre of Sustainable Finance (www.sustainablefinance.hsbc.com). This included 'Managing financial system stability and climate change – a preliminary guide', which was the product of collaboration and engagement with individuals in various businesses, functions and geographies across HSBC.

– We intensified engagement with leading regulatory and industry bodies to promote sustainable finance, for example by leading a capital markets workstream of UK Green Finance Taskforce.

We provided forums for client engagement and dialogue through proprietary events, including a breakfast at the World Economic Forum in 2018 called 'Financing the sustainable silk road'.

Progress towards $100bn sustainable finance commitment

As part of our drive to deliver growth from areas of strength, we are committed to helping our clients transition to a low-carbon economy, supporting the achievement of the SDGs, and supporting positive societal impacts.

Cumulative progress through 2018

Since the start of 2017, we have achieved $28.5bn of our commitment to provide and facilitate $100bn of sustainable financing and investment by 2025. A data dictionary, including detailed definitions of contributing activities, may be found on our website www.hsbc.com/our-approach/measuring-our-impact.

Facilitation	Financing	Investments
We provide advisory services to facilitate the flow of capital and to provide access to capital markets. Products include: green, social, and sustainable bonds; debt capital markets; and equity capital markets.	We provide lending for specific finance activities. Products include project finance (e.g. financing of renewable infrastructure projects), and green loans (e.g. financing of eligible green products).	We provide investments into defined socially responsible investment ('SRI') and low-carbon funds.
Cumulative progress* ($bn) 21.4	Cumulative progress* ($bn) 5.8	Cumulative progress* ($bn) 1.3
2018 highlights - HSBC ranked number two in Dealogic's green, social and sustainability bonds league table and number one in the sustainability bonds table. - HSBC Malaysia issued the world's first SDG sukuk bond, aligned to the United Nations SDG principles. - Impact reporting for our green and SDG Bonds can be found on our website www.hsbc.com/investors/fixed-income-investors/green-and-sustainability-bonds.	2018 highlights - HSBC participated in the development of the green loan principles, published by the Loan Markets Association ('LMA') in March 2018. - HSBC provided the first ever green loan in Singapore aligned to the LMA green loan principles.	2018 highlights - HSBC created two Global Lower Carbon funds. - We achieved a rating of A+/A using United Nations Principles of Responsible Investment ('UN PRI'). This covers all of our funds, of which SRI represents approximately 1% of our total assets under management.

Geographical breakdown of our progress

Awards
GlobalCapital Sustainable and Responsible Capital Markets Awards 2018:
Most Impressive Financial Institution Green/SRI Bank Issuer
Most Impressive Investment Bank for Asia Pacific Green/SRI Capital Markets
Euromoney Awards 2018:
Asia's Best Bank for Sustainable Finance
Extel Awards 2018:

No.1 Provider of Integrated Climate Change

Other transition activities
- Margin-linked loans: We have provided $1.1bn of committed facilities where the loan margin is linked to sustainability indicators.
- We are working with clients on a sustainable supply chain finance solution.
- Since January 2017, we have advised on more than $2bn of mergers and acquisitions transactions for renewable energy customers.

*PwC provided limited assurance over progress towards the $100bn sustainable finance commitment as at 31 December 2018 in accordance with International Standard on Assurance Engagement 3000 (Revised) 'Assurance Engagements other than Audits and Reviews of Historical Financial Information'. This can be found on our website www.hsbc.com/our-approach/measuring-our-impact. Further information on the external assurance of our contribution to sustainable finance and our overall ESG assurance planning will be included in our next ESG Update and on our website at www.hsbc.com.

Task Force on Climate-related Financial Disclosures (‘TCFD’)
We all have a role to play in limiting climate change and supporting the transition to a low-carbon economy, and we are a signatory to the disclosure recommendations by the Financial Stability Board’s task force. This represents our second disclosure under the framework.

Governance	Mitigating climate change is a key priority for our senior leadership, with sustainable finance metrics included in the Group's strategic priorities. In 2018, there were two presentations on sustainability to the HSBC Holdings Board, two to the Group Audit Committee, four to the Group Risk Committee, and two to the HSBC Group Management Board. Senior leadership have engaged with regulators, industry associations and non-governmental organisations on this topic, such as through the Bank of England consultation on climate change, the Group Chairman's participation in the One Planet Summit and the Group Chief Executive's designation as a World Economic Forum climate leader. A summarised list of HSBC's sustainability-related memberships is available at: www.hsbc.com/our-approach/measuring-our-impact/sustainability-memberships.
Strategy	Supporting the transition to a low-carbon economy is a key part of HSBC's strategy, and new products have been offered to facilitate this, along with a pledge to provide $100bn of sustainable finance by 2025. To date, we have reached $28.5bn of that goal. For further information, see page 28. We recognise many clients across sectors are making significant shifts towards the low-carbon economy. During 2019, we intend to develop new metrics to help measure these activities, with an aim to publish in next year's disclosure. We believe education of our people is crucial on this topic. We gave sustainability training to more than 2,300 employees during 2018 and launched a sustainability online learning programme for all employees globally, with content developed in collaboration with the University of Cambridge Institute for Sustainability Leadership. We report on the emissions of our own operations via CDP (formerly the Carbon Disclosure Project). This is available, as well as other information related to the sustainability of our own operations, at: www.hsbc.com/our-approach/measuring-our-impact.
Risk management	We are increasingly incorporating climate-related risk, both physical and transition, into how we manage and oversee risks internally and with our customers. Climate risk is now included as a theme in our 'Top and emerging risks report' to ensure that it receives monthly management oversight via the Risk Management Meeting of the Group Management Board ('RMM') (see page 30). In addition, our Board-approved risk appetite statement contains a qualitative statement on our approach to sustainability, which will be further expanded in 2019 to include climate risk explicitly. We have a number of sustainability risk policies covering specific sectors. In 2018, we updated our energy policy to limit the financing of high-carbon-intensity energy projects, while still supporting energy customers on their transition to a low-carbon economy. From the release of the new energy policy in April 2018 until the end of 2018, HSBC financed no new coal-fired power plants. Transition risk, in the context of climate change, is the possibility that a customer's ability to meet its financial obligations will deteriorate due to the global movement from a high-carbon to a low-carbon economy. HSBC is working to embed transition risk into its day-to-day credit risk management. The aim is that over time, each wholesale counterparty will receive a client transition risk rating based on their susceptibility to, and ability to manage, transition risk. We have identified six higher transition risk sectors based on their contribution to global carbon dioxide emissions. These sectors are: oil and gas; building and construction; chemicals; automotive; power and utilities; and metals and mining. Over time we may identify additional sectors as having higher transition risk depending on a variety of factors, including country-level carbon dioxide reduction plans per the Paris Agreement. The table below presents our exposure to the six higher transition risk sectors. These figures capture all lending activity, including environmentally responsible customers and sustainable financing. Further

details on our approach to the quantification of exposures can be found in footnote 37 on page 89. This is expected to evolve over time as we develop new climate-related metrics.

Sector	% of total wholesale loans and advances to customers and banks in 2018[37]
Oil and gas	≤ 3.9%
Building and construction	≤3.8%
Chemicals	≤ 3.9%
Automotive	≤3.4%
Power and utilities	≤3.0%
Metals and mining	≤ 2.8%
Total	≤ 20.8%

Total wholesale loans and advances to customers and banks amount to $668bn.
ÑFor footnotes, see page 89.

Next steps

HSBC's TCFD disclosures will continue to evolve and expand over time. In line with TCFD recommendations, our Annual Report and Accounts will start to disclose the additional climate risk-related metrics relating to our portfolio for specific sectors, as the availability of sufficient, reliable and relevant customer data permits.

Risk overview

We actively manage risk to help protect and enable the business.

Managing risk

HSBC has maintained a conservative and consistent approach to risk throughout its history, helping to ensure we protect customers' funds, lend responsibly and support economies. By carefully aligning our risk appetite to our strategy, we aim to deliver sustainable long-term shareholder returns.

All employees are responsible for the management of risk, with the ultimate accountability residing with the Board. We have a strong risk culture, which is embedded through clear and consistent communication and appropriate training for all employees. A comprehensive risk management framework is applied throughout the Group, with governance and corresponding risk management tools. This framework is underpinned by our risk culture and reinforced by the HSBC Values.

Our Global Risk function oversees the framework and is led by the Group Chief Risk Officer, an executive Director. It is independent from the global businesses, including our sales and trading functions, to provide challenge, appropriate oversight and balance in risk/reward decisions.

HSBC's risk appetite defines our desired forward-looking risk profile, and informs the strategic and financial planning process. It is articulated in our risk appetite statement, which is approved by the Board. Key elements include:

- risks that we accept as part of doing business, such as credit risk and market risk;
- risks that we incur as part of doing business, such as operational risk, which are actively managed to remain below an acceptable tolerance; and
- risks for which we have zero tolerance, such as knowingly engaging in activities where foreseeable reputational risk has not been considered.

We operate a wide-ranging stress testing programme undertaking both internal and regulatory stress tests. In 2018, we participated in the Bank of England's ('BoE') annual stress test, which showed that our capital ratios, after taking account of CRD IV restrictions and strategic management actions, exceeded the BoE's requirements.

Internal stress tests are an important element in our risk management and capital management frameworks. They assess the impacts of potential adverse macroeconomic, geopolitical and other HSBC-specific events. The selection of scenarios reflects our top and emerging risks identification process and our risk appetite. Stress testing analysis helps management understand the nature and extent of vulnerabilities to which the Group is exposed.

Key risk appetite metrics

Component	Measure	Risk appetite	2018
Returns	Return on tangible equity ('RoTE') *	≥11.0%	8.6 %
Capital	CET 1 ratio – CRD IV end point basis	≥13.5%	14.0 %
Change in expected credit losses and other credit impairment charges	Change in expected credit losses and other credit impairment charges	≤0.50%	0.34 %
	as a % of advances: RBWM		
		≤0.45%	0.12 %

Change in expected credit losses and other credit impairment charges
as a % of advances: wholesale (CMB, GB&M and GPB)

* Our target is to achieve a reported RoTE of more than 11% by the end of 2020.

ÑOur risk management framework and risks associated with our banking and insurance manufacturing operations are described on pages 112 and 125, respectively.

Top and emerging risks

Our top and emerging risks framework helps enable us to identify forward-looking risks so that we may take action either to prevent them materialising or limit their effect.

Top risks are those that may have a material impact on the financial results, reputation or business model of the Group in the year ahead. Emerging risks are those that have large unknown components and may form beyond a one-year horizon. If any of these risks were to occur, they could have a material effect on HSBC.

During 2018, we made five changes to our top and emerging risks to reflect our assessment of their potential effects on the Group. Firstly, ‘Libor replacement’ (now renamed ‘Interbank offered rate transition’ or ‘Ibor transition’) was added as a new risk due to the ongoing effort by global regulators to reform benchmark rates and the work required to evaluate the impact of this transition on HSBC’s products and services. Secondly, ‘Climate-related risk’ has also been added, to help monitor and mitigate the impacts of climate change on the Group and our customers, as well as support our commitment to Sustainable Finance. Thirdly, ‘Execution risk’ was removed following the successful completion of a number of high-priority programmes. In addition, two thematic risks were renamed to better reflect the challenges facing the Group. The new names are used in the table that follows, which details our current 13 top and emerging risks.

ÑOur current top and emerging risks are summarised on the next page and discussed in more detail on page 100.
ÑOur approach to identifying and monitoring top and emerging risks is described on page 113.

Risk	Trend	Mitigants
Externally driven		
Economic outlook and capital flows	>	We actively monitor our credit and trading portfolios, including undertaking stress tests, to identify sectors and clients that may come under stress due to: escalating tariffs and other trade restrictions; an economic slowdown in the eurozone and mainland China; and adverse outcomes of negotiations concerning the UK's exit from the EU.
Geopolitical risk	^	We continually assess the impact of geopolitical events on our businesses and exposures, and take steps to mitigate them, where required, to help ensure we remain within our risk appetite. We have also strengthened physical security at our premises where the risk of terrorism is heightened.
The credit cycle	>	We undertake detailed reviews of our portfolios and are assessing proactively customers and sectors likely to come under stress as a result of geopolitical or macroeconomic events, reducing limits where appropriate.
Cyber threat and unauthorised access to systems	^	We continue to strengthen our cyber-control framework and improve our resilience and cybersecurity capabilities, including threat detection and analysis, access control, payment systems controls, data protection, network controls and back-up and recovery.
1 Regulatory developments including conduct, with adverse impact on business model and profitability	>	We engage with regulators to help ensure new regulatory requirements are effectively implemented, and work with them in relation to their investigations into historical activities.
Financial crime risk environment	>	We have integrated the majority of our Global Standards reforms into our day-to-day operations, and expect to complete the transition to business and function management in 2019. We continue to enhance our financial crime risk management capabilities and we are investing in the next generation of tools to fight financial crime through the application of advanced analytics and artificial intelligence.
1 Ibor transition	^	We are evaluating the impact of the replacement of Ibor (including Libor) with alternative risk-free rates on HSBC's products, services and processes as the industry accord evolves, with the intention of minimising disruption through appropriate mitigating actions.
Climate-related risks	>	We are committed to helping finance the transition to a low-carbon economy and continue to make progress in this area (see the Group's TCFD year-two response on page 29). We regularly review our sustainability risk policies to ensure they remain fit-for-purpose while still supporting customers.
Internally driven		
IT systems infrastructure and resilience	>	We continue to monitor and improve service resilience across our technology infrastructure, enhancing our problem diagnosis/resolution and change execution capabilities to reduce service disruption to our customers.
1 Risks associated with workforce capability, capacity	>	We continue to monitor workforce capacity and capability requirements in line with HSBC's published growth strategy and any emerging issues in the markets

and environmental factors with potential impact on growth		in which we operate. These issues can include changes to immigration and tax rules as well as industry-wide regulatory changes.
Risks arising from the receipt of services from third parties	>	We continue to strengthen essential governance processes and relevant policies relating to how we identify, assess, mitigate and manage risks across the range of third parties with which we do business. This includes control monitoring and assurance throughout the third-party life cycle.
Enhanced model risk management expectations	^	We have evolved our capability and practice for model risk management by enhancing the second line of defence Model Risk Management function, strengthening the model oversight committee structure through the chairmanship of the Group Chief Risk Officer and attendance of global business CEOs, and evolving our model risk governance framework.
Data management	^	We continue to improve our insights, data aggregation, reporting and decisions through ongoing improvement of our data governance, data quality, data privacy, data infrastructure and architecture framework.

^Risk heightened during 2018
>Risk remained at the same level as 2017
•Thematic risk renamed during 2018

UK withdrawal from the European Union

The UK is due to formally leave the European Union ('EU') in March 2019. However, there is no certainty on the future relationship between the UK and the EU or indeed an implementation period. This creates market volatility and economic risk, particularly in the UK. Our Group's global presence and diversified client base should help to mitigate the impact of the UK's withdrawal from the EU. While there may be some changes to the provision of products and services for our clients and employees based in the UK and EU, we are taking mitigating actions to help minimise any potential disruption. These include expanding our product offerings available in our European entities, migrating customers where necessary and transferring some of our European branch network from HSBC Bank plc to our subsidiary in France. Our existing footprint in the EU, and in particular our subsidiary in France, has provided a strong foundation for us to build upon. As part of our stress testing programme, a number of internal macroeconomic and event-driven scenarios were considered alongside a scenario set by the Bank of England to support our planning for, and assessment of, the impact of the UK's withdrawal from the EU. The results confirmed that we are well positioned in the event of potential shocks.

ÑFor further details, please refer to our top and emerging risks on page 100.
ÑOur approach to the UK's withdrawal from the European Union is described in more detail in 'Areas of special interest' on page 111.

Remuneration

Our remuneration policy supports the achievement of our strategic objectives by balancing reward for short- and long-term sustainable performance.

Remuneration principles

The remuneration strategy for our employees is based on a series of key principles.

What we do

- Focus on total compensation with a strong link between pay and performance
- Judge not only what is achieved, but also how it is achieved, in line with the HSBC Values
- Operate a thorough performance management and HSBC Values assessment process
- Recognise and reward our employees for outstanding positive behaviour
- Design our policy to align compensation with long-term stakeholder interests
- Apply our employee recognition and conduct framework to strengthen the alignment between risk and reward across the Group

What we don't do

- Reward inappropriate or excessive risk taking or short-term performance at the expense of long-term company sustainability
- Use only a formulaic approach to determine bonuses for our executives
- Award discretionary bonuses to employees rated unacceptable against the HSBC Values and behaviours
- Allow our employees to hedge against their unvested or retained awards
- Offer employment contracts with a notice period of more than 12 months
- Have pre-arranged individual severance agreements

Embedding our values in our remuneration framework

Instilling the right behaviours and driving and encouraging actions that are aligned to organisational values and expectations are essential. We therefore have a number of mechanisms to reinforce our values.

Mechanisms	Outcomes
Behavioural rating for all employees	• Subject to compliance with local labour laws, employees receive a behaviour rating based on their adherence to HSBC Values to ensure performance is judged not only on what is achieved, but also on how it is achieved.
Performance management	• Performance objectives define what our employees need to achieve, how and when, in line with business and role priorities. Objectives are initially created by our employees at the start of the year. Objectives are then tracked and updated by employees throughout the year as priorities change. • Performance management for all our employees is underpinned by our 'Everyday Performance and Development' programme. This approach involves frequent, holistic and meaningful conversations throughout the year between a manager and employee. The conversations provide an opportunity to discuss progress, provide feedback and recognise behaviours, identify any support that may be needed, and address any issues that could be affecting the employee's sense of well-being.
Conduct recognition	• The employee recognition and conduct framework provides a set of guidelines designed to reward exceptional conduct and handle any conduct breaches consistently across the Group. • Rewarding positive conduct may take the form of use of our global recognition programme 'At Our Best', or via positive adjustments to performance and behaviour ratings and variable pay. •

The framework also provides guidance on applying negative adjustments to performance and behaviour ratings and to variable pay, alongside disciplinary sanctions, where conduct breaches have been identified.

How we set our variable pay pool

When deciding on the variable pay pool, the Group Remuneration Committee considers a number of factors, which are set out in the following table:

Performance and risk appetite statement	– Our variable pay pool takes into account our performance in the context of our risk appetite.
Countercyclical funding methodology	– To dampen effects of economic cycles, the variable pay pool's size has a floor and a ceiling, and we also limit the payout ratio as performance increases to prevent the risk of inappropriate behaviour.
Distribution of profits	– Our funding methodology ensures that the distribution of post-tax profit between capital, shareholders and variable pay is appropriate, and that the majority of post-tax profit is allocated to capital and shareholders.
Commerciality and affordability	– We face challenges arising from being headquartered in the UK, which has more stringent reward practices. We take into account these challenges in determining the size of the variable pay pool to help ensure we can continue to attract and retain talent in key markets.

Our variable pay pool was $3,473m, an increase of 5.1% compared with 2017.

Variable pay for our executive Directors

Variable pay for our executive Directors is driven by scorecard achievement. Targets in the scorecard are set according to our key performance indicators to ensure linkages between our strategy and remuneration policies and outcome.

ÑSee the Directors' remuneration report on page 231 for further details.

Remuneration for our executive Directors

Our remuneration policy for executive Directors was approved at our 2016 Annual General Meeting ('AGM') and is intended to apply for three performance years until the AGM in 2019. We will be putting forward a new remuneration policy for shareholder approval at the AGM. Details of the proposed policy can be found on page 220.

The table below shows the amount our executive Directors earned in 2018. For details of Directors' pay and performance for 2018, see the Directors' remuneration report on page 217.

(in £000)		Base salary	Fixed pay allowance	Cash in lieu of pension	Annual incentive	AML DPA Award[38]	LTI[39]	Sub-total	Taxable benefits	Non-taxable benefits	Notional returns	Total
John Flint[40]	2018	1,028	1,459	308	1,665	—	—	4,460	40	28	54	4,582
	2017	—	—	—	—	—	—	—	—	—	—	—
Stuart Gulliver[41,43]	2018	171	241	51	282	1,530	—	2,275	65	6	41	2,387
	2017	1,250	1,700	375	2,127	—	—	5,452	500	71	63	6,086
Iain Mackay[42,43]	2018	700	950	210	1,088	1,057	—	4,005	80	44	33	4,162
	2017	700	950	210	1,334	—	—	3,194	64	37	42	3,337
Marc Moses	2018	700	950	210	1,324	695	—	3,879	13	38	33	3,963
	2017	700	950	210	1,358	—	—	3,218	16	38	42	3,314

ÑFor footnotes, see page 89.

Financial summary

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Use of non-GAAP financial measures

Our reported results are prepared in accordance with IFRSs as detailed in the Financial Statements starting on page 253.

To measure our performance we also use non-GAAP financial measures, including those derived from our reported results that eliminate factors that distort year-on-year comparisons. The 'adjusted performance' measure used throughout this report is described below, and where others are used they are described. All non-GAAP financial measures are reconciled to the closest reported financial measure.

The global business segmental results on pages 64 to 72 are presented on an adjusted basis in accordance with IFRS 8 'Operating Segments', as detailed in 'Basis of preparation' on page 64.

Adjusted performance

Adjusted performance is computed by adjusting reported results for the effects of foreign currency translation differences and significant items, which both distort year-on-year comparisons.

We consider adjusted performance provides useful information for investors by aligning internal and external reporting, identifying and quantifying items management believes to be significant, and providing insight into how management assesses year-on-year performance.

Significant items

'Significant items' refers collectively to the items that management and investors would ordinarily identify and consider separately to improve the understanding of the underlying trends in the business.

The tables on pages 67 to 70 and pages 78 to 84 detail the effects of significant items on each of our global business segments and geographical regions in 2018, 2017 and 2016.

Foreign currency translation differences

Foreign currency translation differences reflect the movements of the US dollar against most major currencies during 2018.

We exclude them to derive constant currency data, allowing us to assess balance sheet and income statement performance on a like-for-like basis and better understand the underlying trends in the business.

Foreign currency translation differences

Foreign currency translation differences for 2018 are computed by retranslating into US dollars for non-US dollar branches, subsidiaries, joint ventures and associates:

- the income statements for 2017 and 2016 at the average rates of exchange for 2018; and
- the balance sheets at 31 December 2017 and 31 December 2016 at the prevailing rates of exchange on 31 December 2018.

No adjustment has been made to the exchange rates used to translate foreign currency-denominated assets and liabilities into the functional currencies of any HSBC branches, subsidiaries, joint ventures or associates. The constant currency data of HSBC's Argentinian subsidiaries has not been adjusted further for the impacts of hyperinflation. When reference is made to foreign currency translation differences in tables or commentaries, comparative data reported in the functional currencies of HSBC's operations has been translated at the appropriate exchange rates applied in the current period on the basis described above.

Changes to presentation from 1 January 2018

IFRS 9

HSBC adopted the requirements of IFRS 9 'Financial Instruments' on 1 January 2018, with the exception of the provisions relating to the presentation of gains and losses on financial liabilities designated at fair value, which were adopted on 1 January 2017. The impact of transitioning to IFRS 9 at 1 January 2018 on the consolidated financial statements of HSBC was a decrease in net assets of $1.6bn, arising from:

- a decrease of $2.2bn from additional impairment allowances;
- a decrease of $0.9bn from our associates reducing their net assets;
- an increase of $1.1bn from the remeasurement of financial assets and liabilities as a consequence of classification changes, mainly from revoking fair value accounting designations for certain long-dated issued debt instruments; and
- an increase in net deferred tax assets of $0.4bn.

The effect of IFRS 9 on the carrying value of investments in associates has been updated from the effect disclosed in our Annual Report and Accounts 2017 and in our Report on Transition to IFRS 9 'Financial Instruments' 1 January 2018 as a result of those entities publicly reporting their expected transition impacts. This resulted in a further decrease in net assets of $0.6bn, net of tax.

Refer to 'Standards applied during the year ended 31 December 2018' on page 263 and Note 37 'Effects of reclassification and remeasurement upon adoption of IFRS 9' for further detail.

Income statement presentation

The classification and measurement requirements under IFRS 9, which was adopted from 1 January 2018, is based on an entity's assessment of both the business model for managing the assets and the contractual cash flow characteristics of the assets. The standard contains a classification for items measured mandatorily at fair value through profit and loss as a residual category. Given its residual nature, the presentation of the income statement has been updated to

separately present items in this category which are of a dissimilar nature or function, in line with IAS 1 ‘Presentation of Financial Statements’ requirements. Comparative data has been re-presented. There is no net impact on total operating income.

Prior to 2018, foreign exchange exposure on some financial instruments designated at fair value was presented in the same line in the income statement as the underlying fair value movement on these instruments. In 2018, we grouped the entire effect of foreign exchange exposure in the profit and loss and presented it within 'Net trading activities' in 'Net income from financial instruments held for trading or managed on a fair value basis'. Comparative data has been re-presented. There is no net impact on total operating income and the impact on 'changes in fair value of long-term debt and related derivatives' in 2017 was $(517)m (2016: $1,978m; 2015: $110m; 2014: $130m).

IAS 29

From 1 July 2018, Argentina was deemed a hyperinflationary economy for accounting purposes.

The results of HSBC's operations with a functional currency of the Argentine peso have been prepared in accordance with IAS 29 'Financial Reporting in Hyperinflationary Economies' as if the economy had always been hyperinflationary. The results of those operations for the year ended 31 December 2018 are stated in terms of current purchasing power using the Indice de Precios al Consumidor at 31 December 2018, with the corresponding adjustment presented in other comprehensive income ('OCI'). In accordance with IAS 21 'The Effects of Changes in Foreign Exchange Rates', the results have been translated and presented in US dollars at the prevailing rate of exchange on 31 December 2018. The Group's comparative information presented in US dollars has not been restated.

The impact of applying IAS 29 and the hyperinflation provisions of IAS 21 in the current year was a decrease in the Group's profit before tax of $160m, comprising a decrease in revenue of $231m, offset by a decrease in expected credit losses of $8m, and a decrease in operating expenses of $63m.

Critical accounting estimates and judgements

The results of HSBC reflect the choice of accounting policies, assumptions and estimates that underlie the preparation of HSBC's consolidated financial statements. The significant accounting policies, including the policies which include critical accounting estimates and judgements, are described in Note 1.2 on the Financial Statements. The accounting policies listed below are highlighted as they involve a high degree of uncertainty and have a material impact on the financial statements:

- Impairment of amortised cost financial assets and financial assets measured at fair value through other comprehensive income ('FVOCI'): The most significant judgements relate to defining what is considered to be a significant increase in credit risk, determining the lifetime and point of initial recognition of revolving facilities, and in making assumptions and estimates to incorporate relevant information about past events, current conditions and forecasts of economic conditions. A high degree of uncertainty is involved in making estimations using assumptions that are highly subjective and very sensitive to the risk factors. See Note 1.2(i) on page 269.
- Hedge accounting and the replacement of major interest rate reference rates: The financial markets are going through a significant reform and replacement of the major interest rate reference rates. These interbank offered rates ('Ibors'), such as Libor and Euribor, are currently widely used as benchmarks for a large volume and broad range of financial products and contracts. This results in significant accounting judgement being involved in determining whether certain hedge accounting relationships that hedge variability of cash flows and interest rate risk due to changes in Ibors continue to qualify for hedge accounting as at 31 December 2018. See Note 1.2(h) on page 273.
- Deferred tax assets: The most significant judgements relate to those made in respect of expected future profitability. See Note 1.2(l) on page 273.
- Valuation of financial instruments: In determining the fair value of financial instruments a variety of valuation techniques are used, some of which feature significant unobservable inputs and are subject to substantial uncertainty. See Note 1.2(c) on page 267.
- Impairment of interests in associates: Impairment testing involves significant judgement in determining the value in use, and in particular estimating the present values of cash flows expected to arise from continuing to hold the investment, based on a number of management assumptions. The most significant judgements relate to the impairment testing of our investment in Bank of Communications Co., Limited ('BoCom'). See Note 1.2(a) on page 265.
- Goodwill impairment: A high degree of uncertainty is involved in estimating the future cash flows of the cash-generating units ('CGUs') and the rates used to discount these cash flows. See Note 1.2(a) on page 265.
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Provisions: Significant judgement may be required due to the high degree of uncertainty associated with determining whether a present obligation exists, and estimating the probability and amount of any outflows that may arise. See Note 1.2(m) on page 273.

Given the inherent uncertainties and the high level of subjectivity involved in the recognition or measurement of the items above, it is possible that the outcomes in the next financial year could differ from the expectations on which management's estimates are based, resulting in the recognition and measurement of materially different amounts from those estimated by management in these Financial Statements.

Report of the Directors | Financial summary

Consolidated income statement

Summary consolidated income statement

	Footnotes	2018 $m	2017 $m	2016 $m	2015 $m	2014 $m
Net interest income		30,489	28,176	29,813	32,531	34,705
Net fee income		12,620	12,811	12,777	14,705	15,957
Net income from financial instruments held for trading or managed on a fair value basis	44, 45	9,531	8,426	7,521	8,717	6,730
Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss	45	(1,488)	2,836	1,262	565	1,865
Change in fair value of long-term debt and related derivatives	44	(97)	155	(1,997)	973	638
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss	45	695	N/A	N/A	N/A	N/A
Gains less losses from financial investments		218	1,150	1,385	2,068	1,335
Dividend income		75	106	95	123	311
Net insurance premium income		10,659	9,779	9,951	10,355	11,921
Other operating income/(expense)		885	337	(971)	1,055	1,131
Total operating income		63,587	63,776	59,836	71,092	74,593
Net insurance claims and benefits paid and movement in liabilities to policyholders		(9,807)	(12,331)	(11,870)	(11,292)	(13,345)
Net operating income before change in expected credit losses and other credit impairment charges/Loan impairment charges and other credit risk provisions	26	53,780	51,445	47,966	59,800	61,248
Change in expected credit losses and other credit impairment charges		(1,767)	N/A	N/A	N/A	N/A
Loan impairment charges and other credit risk provisions		N/A	(1,769)	(3,400)	(3,721)	(3,851)
Net operating income		52,013	49,676	44,566	56,079	57,397
Total operating expenses		(34,659)	(34,884)	(39,808)	(39,768)	(41,249)
Operating profit		17,354	14,792	4,758	16,311	16,148
Share of profit in associates and joint ventures		2,536	2,375	2,354	2,556	2,532
Profit before tax		19,890	17,167	7,112	18,867	18,680
Tax expense		(4,865)	(5,288)	(3,666)	(3,771)	(3,975)
Profit for the year		15,025	11,879	3,446	15,096	14,705
Attributable to:						
– ordinary shareholders of the parent company		12,608	9,683	1,299	12,572	13,115
– preference shareholders of the parent company		90	90	90	90	90
– other equity holders		1,029	1,025	1,090	860	483
– non-controlling interests		1,298	1,081	967	1,574	1,017
Profit for the year		15,025	11,879	3,446	15,096	14,705

Five-year financial information

	Footnotes	2018 $	2017 $	2016 $	2015 $	2014 $
Basic earnings per share		0.63	0.48	0.07	0.65	0.69
Diluted earnings per share		0.63	0.48	0.07	0.64	0.69
Dividends per ordinary share	46	0.51	0.51	0.51	0.50	0.49
		%	%	%	%	%

Dividend payout ratio	47	81.0	106.3	728.6	76.5	71.0
Post-tax return on average total assets		0.6	0.5	0.1	0.6	0.5
Return on average risk-weighted assets	48	2.3	2.0	0.7	1.6	1.5
Return on average ordinary shareholders' equity		7.7	5.9	0.8	7.2	7.3
Return on average tangible equity		8.6	6.8	2.6	8.1	8.5

For footnotes, see page 89.

Unless stated otherwise, all tables in the Annual Report and Accounts 2018 are presented on a reported basis.

For a summary of our financial performance in 2018, see page 14.

For further financial performance data for each global business and geographical region, see pages 65 to 70 and 76 to 84, respectively.

Group performance by income and expense item

Net interest income

	Footnotes	2018 $m	2017 $m	2016 $m
Interest income		49,609	40,995	42,414
Interest expense		(19,120)	(12,819)	(12,601)
Net interest income		30,489	28,176	29,813
Average interest-earning assets		1,839,346	1,726,120	1,723,702
		%	%	%
Gross interest yield	49	2.70	2.37	2.46
Less: cost of funds		(1.21)	(0.88)	(0.87)
Net interest spread	50	1.49	1.49	1.59
Net interest margin	51	1.66	1.63	1.73

For footnotes, see page 89.

Summary of interest income by type of asset

	Footnotes	2018 Average balance $m	2018 Interest income $m	2018 Yield %	2017 Average balance $m	2017 Interest income $m	2017 Yield %	2016 Average balance $m	2016 Interest income $m	2016 Yield %
Short-term funds and loans and advances to banks		233,637	2,475	1.06	236,126	2,030	0.86	203,799	1,510	0.74
Loans and advances to customers		972,963	33,285	3.42	902,214	28,751	3.19	865,356	29,272	3.38
Reverse repurchase agreements – non-trading		205,427	3,739	1.82	173,760	2,191	1.26	168,207	1,227	0.73
Financial investments		386,230	9,166	2.37	389,807	7,440	1.91	430,775	7,248	1.68
Other interest-earning assets		41,089	944	2.30	24,213	583	2.41	55,565	3,157	5.68
Total interest-earning assets		1,839,346	49,609	2.70	1,726,120	40,995	2.37	1,723,702	42,414	2.46
Trading assets and financial assets designated and otherwise mandatorily measured at fair value through profit or loss	52,53	195,922	5,215	2.66	N/A	N/A	N/A	N/A	N/A	N/A
Trading assets and financial assets designated at fair value		N/A	N/A	N/A	186,673	4,245	2.27	179,780	3,897	2.17
Expected credit losses provision		(7,816)			N/A	N/A	N/A	N/A	N/A	N/A
Impairment allowance		N/A	N/A	N/A	(7,841)			(9,127)		
Non-interest-earning assets		584,524			616,688			653,115		
Year ended 31 Dec		2,611,976	54,824	2.10	2,521,640	45,240	1.79	2,547,470	46,311	1.82

For footnotes, see page 89.

Summary of interest expense by type of liability and equity

	Footnotes	2018 Average balance $m	2018 Interest expense $m	2018 Cost %	2017 Average balance $m	2017 Interest expense $m	2017 Cost %	2016 Average balance $m	2016 Interest expense $m	2016 Cost %
Deposits by banks	54	44,530	506	1.14	47,337	451	0.95	49,782	342	0.69
Financial liabilities designated at fair value – own debt issued	55	50,840	1,421	2.80	60,566	1,261	2.08	62,042	942	1.52
Customer accounts	56	1,138,620	8,287	0.73	1,094,920	5,405	0.49	1,074,661	5,492	0.51
Repurchase agreements – non-trading		161,204	3,409	2.11	136,561	1,665	1.22	118,789	626	0.53
Debt securities in issue		132,594	4,254	3.21	108,677	3,130	2.88	114,343	2,807	2.45
Other interest-bearing liabilities		53,731	1,243	2.31	7,009	907	12.94	22,387	2,392	10.68

Total interest-bearing liabilities	1,581,519	19,120	1.21	1,455,070	12,819	0.88	1,442,004	12,601	0.87
Trading liabilities and financial liabilities designated at fair value (excluding own debt issued)	142,184	3,524	2.48	153,776	2,325	1.51	138,486	1,986	1.43
Non-interest bearing current accounts	211,815			197,104			184,016		
Total equity and other non-interest bearing liabilities	676,458			715,690			782,964		
Year ended 31 Dec	2,611,976	22,644	0.87	2,521,640	15,144	0.60	2,547,470	14,587	0.57

For footnotes, see page 89.

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Significant items and currency translation

	2018	2017
	$m	$m
Significant items	53	(105)
– customer redress programmes	53	(108)
– currency translation on significant items		3
Currency translation		99
Year ended 31 Dec	53	(6)

Net interest income of $30.5bn increased by $2.3bn or 8% compared with 2017. This included the minimal effects of significant items and foreign currency translation differences.

Net interest margin of 1.66% was 3 basis points ('bps') higher than in 2017. This included the minimal effects of significant items and foreign currency translation differences. The rise in net interest margin mainly reflected the effect of rate rises on asset yields, notably on term lending in Asia and on surplus liquidity in most regions. This was partly offset by the higher cost of customer accounts, notably in Asia and Europe, and the higher cost of debt issued to meet regulatory requirements.

The increase in net interest margin in 2018 includes the fourth-quarter impact of increased liquidity requirements in Europe and the increased cost of customer accounts in Asia.

Interest income

Interest income increased by $8.6bn compared with 2017. This included the minimal adverse effects of significant items and foreign currency translation. The increase in interest income was mainly driven by higher income from lending, surplus liquidity and reverse repurchase agreements.

Interest income on loans and advances to customers increased by $4.5bn compared with 2017. This included the minimal favourable effects of customer redress programmes and foreign currency translation differences, and reflected increases in all regions, notably:

- in Asia, where growth was mainly due to central bank rate rises resulting in higher yields on term lending and mortgages, and volume growth; and
- in Europe, where growth was mainly in the UK, reflecting higher yields on term lending following a central bank rate rise and growth in mortgage balances, although yields decreased.

Interest income on short-term funds and financial investments increased by $2.2bn compared with 2017, which included the

adverse effects of customer redress programmes and foreign currency translation differences of $0.1bn. This increase was across all regions, but mainly in Asia and North America, primarily on debt securities, following central bank rate rises.

Interest income on reverse repurchase agreements increased by $1.5bn compared with 2017, notably in North America and Europe, following central bank rate rises.

Interest expense

Reported interest expense increased by $6.3bn, which included the favourable effects of significant items and foreign currency translation differences of $0.1bn. Excluding these impacts, interest expense was $6.4bn higher, primarily due to increases in interest expense on customer accounts, repurchase agreements and debt.

Interest expense on customer accounts was $2.9bn higher. This included the favourable effects of customer redress programmes and foreign currency translation differences of $0.1bn, and reflected average balance growth in most regions. The net increase also reflected changes in interest rates in key markets, including:

- central bank rate rises in Asia, notably in Hong Kong, as well as a change in portfolio mix;
- the 2018 increase in the UK base rate; and
- rate rises in Latin America and North America.

Interest expense on repurchase agreements increased by $1.7bn, broadly in line with the increase in interest income on reverse repurchase agreements, notably in North America and Europe, reflecting increased balances and higher market

rates.

Interest expense on debt securities in issue and own debt at fair value was $1.3bn higher. The increase reflected a rise in the external cost of debt, together with an increase in debt issued by HSBC Holdings to meet regulatory requirements.

Net fee income

	2018	2017	2016
	$m	$m	$m
Funds under management	2,221	2,188	2,076
Account services	2,177	2,244	2,417
Cards	1,956	1,994	1,970
Credit facilities	1,723	1,718	1,795
Broking income	1,210	1,191	1,060
Unit trusts	1,038	1,010	863
Remittances	778	759	766
Global custody	736	692	662
Underwriting	723	829	705
Imports/exports	709	736	820
Insurance agency commission	404	410	419
Other	2,369	2,082	2,116
Fee income	16,044	15,853	15,669
Less: fee expense	(3,424)	(3,042)	(2,892)
Year ended 31 Dec	12,620	12,811	12,777

Significant items and currency translation

	2018	2017
	$m	$m
Significant items	—	—
Currency translation		(76)
Year ended 31 Dec	—	(76)

Net fee income of $12.6bn was $0.2bn lower compared with 2017 and included the favourable effects of foreign currency translation differences of $0.1bn. This decrease was mainly due to lower fee income from underwriting and corporate finance (disclosed within 'other') in GB&M and an increase in fee expense.

Fee income from underwriting and corporate finance decreased by $0.2bn as a result of lower volumes in investment banking products and reduced client activity, mainly in Europe and North America.

Fee income from cards also decreased, partly due to a reclassification from cards to interbank and clearing fees. This was

partly offset by an increase in cards volumes, notably in Hong Kong and the US, from new product launches and campaigns, together with increased activity.

In addition, fee expense increased by $0.4bn, in part from cards due to increased customer activity in Hong Kong.

These factors were partly offset by an increase in Other fee income due in part to an increase in interbank and clearing fees in the UK and Mexico, following the reclassification of interchange fee income from cards with effect from 1 January 2018.

Net income from financial instruments measured at fair value through profit or loss

	Footnotes	2018 $m	2017 $m	2016 $m
Trading activities	44	7,234	8,131	8,110
Other trading income – hedge ineffectiveness		(45)	(1)	18
– on cash flow hedges		(8)	(5)	(5)
– on fair value hedges		(37)	4	23
Fair value movement on non-qualifying hedges	57	(207)	106	(655)
Other instruments designated and managed on a fair value basis and related derivatives		2,549	190	48
Net income from financial instruments held for trading or managed on a fair value basis		9,531	8,426	7,521
Financial assets held to meet liabilities under insurance and investment contracts		(1,585)	3,211	1,480
Liabilities to customers under investment contracts		97	(375)	(218)
Net income from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss		(1,488)	2,836	1,262
Changes in fair value of long-term debt and related derivatives	44	(97)	155	(1,997)
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss		695	N/A	N/A
Year ended 31 Dec		8,641	11,417	6,786

For footnotes, see page 89.

Significant items and currency translation

	Footnotes	2018 $m	2017 $m
Significant items		(108)	(258)
– disposals, acquisitions and investment in new businesses		(8)	—
– fair value movement on financial instruments	57	(100)	(245)
– currency translation on significant items			(13)
Currency translation			(123)
Year ended 31 Dec		(108)	(381)

For footnotes, see page 89.

Net income from financial instruments measured at fair value of $8.6bn was $2.8bn lower than in 2017. This included favourable effects of foreign currency translation differences and significant items relating to favourable fair value movements on financial instruments, including non-qualifying hedges and debit valuation adjustments.

'Net expense from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss' was $1.5bn, compared with net income of $2.8bn in 2017. This decrease primarily reflected unfavourable equity market performance in 2018 compared with 2017 in Hong Kong and France, resulting in revaluation losses on the equity and unit trust assets supporting insurance and investment contracts.
Corresponding movements were recorded in the liabilities to customers, reflecting the extent to which they participate in the investment performance of the associated assets. For investment contracts, the offsetting movements are recorded in 'Liabilities to customers under investment contracts', and for insurance contracts in 'Net insurance claims and benefits paid and movement in liabilities to policyholders'.
'Changes in fair value on long-term debt and related derivatives' were $0.1bn adverse in 2018, compared with favourable movements of $0.2bn in 2017. These movements were driven by changes in interest rates between the periods, notably in US dollars and pounds sterling.

'Net income from financial instruments held for trading or managed on a fair value basis' increased by $1.1bn. This included favourable foreign currency translation differences ($0.1bn), and a favourable movement in significant items ($0.1bn). The increase also included a number of accounting reclassifications under IFRS 9, which comprised:

- a reclassification from 1 January 2018 of net income related to structured notes from 'trading activities' to 'other instruments designated and managed on a fair value basis and related derivatives';
- a change in accounting treatment on 1 January 2018 of issued debt securities, which resulted in the fair value movements relating to changes in credit spreads on structured liabilities being reported in other comprehensive income. This compared with an expense of $0.5bn recognised in 'trading activities' in 2017;
- a reclassification on 1 January 2018 of stock lending and borrowing instruments in Hong Kong from 'amortised cost' to 'held for trading'. This resulted in the income relating to these instruments no longer being recognised in net interest income, and instead being recognised in 'trading activities'. See Note 37 on the Financial Statements for further details.

The favourable effect of these reclassifications, as well as revaluation gains on US dollar-denominated capital in mainland China, were partly offset by a decrease in revenue from trading activities in GB&M. This decrease was primarily in Europe, as our

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Global Markets business experienced lower client activity, notably in Rates and Credit, which was partly offset by an increase in the US from higher metals and emerging markets trading activity.
We also recorded net adverse movements on derivatives, as well as on the revaluation of foreign exchange positions in France.
'Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss' – a new financial statement line item under IFRS 9 – recorded revenue of $0.7bn in 2018. This revenue was mainly in the UK,

reflecting fair value gains on underlying equities in GB&M and on disposal of investments, notably in Principal Investments, as well as fair value gains on debt securities.
The majority of our financial liabilities designated at fair value are fixed-rate, long-term debt issuances, and are managed in conjunction with interest rate swaps as part of our interest rate management strategy. These liabilities are discussed further on page 48.

Gains less losses from financial investments

	2018	2017	2016
	$m	$m	$m
Net gains from disposal of	218	1,248	1,421
– debt securities	220	403	357
– equity securities	N/A	838	1,058
– other financial investments	(2)	7	6
Impairment of available-for-sale equity securities	N/A	(98)	(36)
Year ended 31 Dec	218	1,150	1,385

Significant items and currency translation

	2018	2017
	$m	$m
Significant items	—	434
– disposals, acquisitions and investment in new businesses	—	434
– currency translation on significant items		—
Currency translation		(17)
Year ended 31 Dec	—	417

Gains less losses from financial investments of $0.2bn decreased by $0.9bn compared with 2017. Following the implementation of IFRS 9, 'net gains on the disposal of equity securities' and 'impairment of available-for-sale equity securities' are no longer reported within 'gains less losses from financial investments'. These are now reported within 'net income/(expense) from financial instruments measured at fair value through profit or loss'.
Net gains from the disposal of equity securities were $0.8bn in 2017 and included disposals, acquisitions and investment in new businesses of $0.4bn. This comprised a gain on the disposal of our

membership interest in Visa Inc. in the US of $0.3bn and gains on the disposal of our investment in Vietnam Technological and Commercial Joint Stock Bank ('Techcombank') of $0.1bn. The remaining balance in 2017 included net gains from the disposal of equity securities in GB&M, mainly in the UK, France and the US.
Net gains from the disposal of debt securities were $0.2bn lower. This reduction was mainly in Corporate Centre and related to net losses on disposals in legacy credit, as well as lower gains on disposals in Balance Sheet Management.

Net insurance premium income

	2018	2017	2016
	$m	$m	$m
Gross insurance premium income	11,338	10,802	10,588
Reinsurance premiums	(679)	(1,023)	(637)

Year ended 31 Dec	10,659	9,779	9,951

Significant items and currency translation

	2018	2017
	$m	$m
Significant items	—	—
Currency translation		(68)
Year ended 31 Dec	—	(68)

Net insurance premium income was $0.9bn higher than in 2017, and included the effects of foreign currency translation differences.

The increase in insurance premiums was driven by higher new business volumes, particularly in Hong Kong and France, and lower reinsurance ceded in Hong Kong.

Other operating income

	2018	2017	2016
	$m	$m	$m
Rent received	152	171	157
Gains/(losses) recognised on assets held for sale	12	214	(1,949)
Gains on investment properties	82	48	4
Gain on disposal of property, plant and equipment, intangible assets and non-financial investments	33	46	35
Change in present value of in-force long-term insurance business	681	24	902
Other	(75)	(166)	(120)
Year ended 31 Dec	885	337	(971)

Change in present value of in-force long-term insurance business

	2018	2017	2016
	$m	$m	$m
Value of new business	1,117	919	900
Expected return	(719)	(599)	(532)
Assumption changes and experience variances	292	(280)	513
Other adjustments	(9)	(16)	21
Year ended 31 Dec	681	24	902

Significant items and currency translation

	2018	2017
	$m	$m
Significant items	(107)	(154)
– disposals, acquisitions and investment in new businesses	(107)	(160)
– currency translation on significant items		6
Currency translation		(19)
Year ended 31 Dec	(107)	(173)

Other operating income of $0.9bn in 2018 increased by $0.5bn compared with 2017. This was primarily due to a higher favourable change in the present value of in-force long-term insurance business ('PVIF') in 2018 (up $0.7bn). This increase in PVIF reflected a favourable movement in 'assumption changes and experience variances' of $0.6bn, from the future sharing of investment returns with policyholders, primarily in Hong Kong. In addition, the value of new business written increased by $0.2bn during 2018 to $1.1bn. For further details, please see Note 21 on the Financial Statements.

Gains on assets held for sale were $0.2bn lower, mainly as gains in 2017 included the sale of our holding in VocaLink in the UK and the sale of our operations in Lebanon.

In Other, we recorded lower losses related to the early redemption of subordinated debt linked to the US run-off portfolio ($0.1bn). In addition, 2018 included the adverse effects of hyperinflation accounting in Argentina ($0.1bn), while 2017 included a $0.1bn charge arising from the opportunity to increase our investment in new businesses.

Net insurance claims and benefits paid and movement in liabilities to policyholders

	2018	2017	2016
	$m	$m	$m
Gross	10,221	13,208	12,508
Less reinsurers' share	(414)	(877)	(638)
Year ended 31 Dec	9,807	12,331	11,870

Significant items and currency translation

	2018	2017
	$m	$m
Significant items	—	—

Currency translation		68
Year ended 31 Dec	—	68

Net insurance claims and benefits paid and movement in liabilities to policyholders were $2.5bn lower than 2017. This decrease was primarily due to lower returns on financial assets supporting contracts where the policyholder is subject to part or all of the investment risk. This reflected unfavourable equity market performance in Hong Kong and France compared with favourable performance in 2017 as well as higher claims and benefits paid.

These decreases were partly offset by the impact of higher new business volumes in Hong Kong and France and lower reinsurance ceded in Hong Kong.

The gains or losses recognised on the financial assets measured at fair value through profit and loss that are held to support these insurance contract liabilities are reported in 'Net income from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss' on page 39.

Change in expected credit losses and other credit impairment charges/Loan impairment charges and other credit risk provisions[58]

	2018	2017	2016
	$m	$m	$m
Loans and advances to banks and customers	1,896	1,992	3,350
– new allowances net of allowance releases	2,304	2,636	3,977
– recoveries of amounts previously written off	(408)	(644)	(627)
Loan commitments and guarantees	(3)	(50)	63
Other financial assets	(21)	17	50
Debt instruments measured at fair value through other comprehensive income	(105)	N/A	N/A
Available-for-sale-debt securities	N/A	(190)	(63)
Change in expected credit losses and other credit impairment charges/Loan impairment charges and other credit risk provisions	1,767	1,769	3,400

For footnotes, see page 89.

Significant items and currency translation

	2018	2017
	$m	$m
Significant items	—	—
Currency translation		56
Year ended 31 Dec	—	56

Changes in expected credit losses and other credit impairment charges ('ECL') of $1.8bn in 2018 mainly reflected charges in RBWM and CMB. These were partly offset by net releases in Corporate Centre and GB&M.

In 2017, loan impairment charges and other credit risk provisions ('LICs') of $1.8bn were primarily in RBWM, CMB and GB&M, partly offset by releases in Corporate Centre. The effects of currency translation between the periods were minimal.

ECL in 2018

In 2018, ECL in RBWM of $1.2bn primarily comprised new allowances in Mexico ($0.4bn), the UK ($0.4bn) and Asia ($0.3bn), and related to unsecured lending balances. The charge in the UK also included charges relating to the current economic uncertainty. The overall allowance for ECL remained broadly unchanged compared with 1 January 2018, as these new allowances broadly offset releases, mainly from write-offs and derecognition of assets.

In CMB, ECL of $0.7bn were predominantly against a small number of specific exposures across various sectors. In Asia, charges of $0.3bn were mainly in Hong Kong, mainland China and Indonesia. In Europe, the charge was primarily in the UK ($0.2bn) against a small number of customers, and reflected the current economic uncertainty. In Middle East and North Africa ('MENA'), ECL of $0.2bn were against a small number of customers in Turkey and the UAE, as well as charges reflecting the challenging economic conditions in Turkey. In Latin America, charges of $0.1bn were driven by Mexico and Argentina. These charges were partly offset by net releases of $0.1bn in North America across various sectors.

In GB&M, a net ECL release of $26m was driven by the US ($0.2bn) relating to a small number of clients, notably within the oil and gas, construction and mining sectors. These releases were partly offset by charges against two large corporate exposures in the UK in the retail and construction sectors.

In Corporate Centre, a net ECL release of $0.1bn related to legacy credit in the UK.

LICs in 2017

In 2017, LICs in RBWM were $1.0bn, of which the largest portion of the charge was in Mexico ($0.4bn), reflecting our strategic growth in unsecured lending, together with an associated rise in delinquency. LICs in the UK were $0.1bn, and in Hong Kong were $0.1bn, primarily relating to our unsecured lending exposure. LICs in RBWM also included charges in MENA of $0.1bn.

In CMB, LICs of $0.5bn were driven by an increase in allowances in Hong Kong ($0.2bn) and in the UK ($0.1bn), related to a small number of clients across various sectors. These charges were partly offset by releases in North America.

In GB&M, LICs of $0.5bn were primarily in the UK ($0.4bn) against specific customers in the construction and retail sectors, and in Hong Kong ($0.1bn) against a small number of exposures. These charges were partly offset by releases in the US, particularly in the oil and gas sector.

In Corporate Centre, a net release of LICs of $0.2bn was mainly related to our legacy credit portfolio in the UK.

Operating expenses

Operating expenses

	2018	2017	2016
	$m	$m	$m
By expense category			
Employee compensation and benefits	17,373	17,315	18,089
Premises and equipment (excluding depreciation and impairment)	3,422	3,530	3,758
General and administrative expenses	11,931	12,177	12,715
Administrative expenses	32,726	33,022	34,562
Depreciation and impairment of property, plant and equipment	1,119	1,166	1,229
Amortisation and impairment of intangible assets	814	696	777
Goodwill impairment	—	—	3,240
Year ended 31 Dec	34,659	34,884	39,808

Staff numbers (full-time equivalents)

	2018	2017	2016
Global businesses			
Retail Banking and Wealth Management	133,644	129,402	124,810
Commercial Banking	44,805	44,871	44,712
Global Banking and Markets	48,500	45,725	46,659
Global Private Banking	6,819	7,250	8,054
Corporate Centre	1,449	1,439	10,940
At 31 Dec	235,217	228,687	235,175

Significant items and currency translation

	2018	2017
	$m	$m
Significant items	1,669	3,796
– costs to achieve	—	3,002
– costs of structural reform	361	420
– customer redress programmes	146	655
– disposals, acquisitions and investment in new businesses	52	53
– gain on partial settlement of pension obligation	—	(188)
– past service costs of guaranteed minimum pension benefits equalisation	228	—
– restructuring and other related costs	66	—
– settlements and provisions in connection with legal and regulatory matters	816	(198)
– currency translation on significant items		52
Currency translation		(143)
Year ended 31 Dec	1,669	3,653

Reported operating expenses of $34.7bn were $0.2bn lower than in 2017. This reflected a net favourable movement in significant items of $2.1bn, which included:

- the non-recurrence of costs to achieve, which were $3.0bn in 2017; and
- customer redress programme costs of $0.1bn in 2018, compared with $0.7bn in 2017.

These items were partly offset by:

- settlements and provisions in connection with legal and regulatory matters of $0.8bn in 2018, compared with a net release of $0.2bn in 2017;
- a provision in relation to past service costs in connection with guaranteed minimum pension benefits equalisation of $0.2bn; and
- the non-recurrence of gains on the partial settlement of pension obligations of $0.2bn in 2017.

The reduction in reported operating expenses also included an adverse effect of foreign currency translation differences of $0.1bn.

Excluding significant items and foreign currency translation differences, operating expenses of $33.0bn were $1.8bn higher than in 2017. This increase mainly reflected near- and medium- term investments to grow the business ($0.9bn), primarily in RBWM and GB&M. We also increased our investment in productivity programmes ($0.3bn), mainly in Technology and Operations.

Performance-related pay was higher by $0.2bn, and Operations and transaction volume-related operating expenses increased by $0.2bn.

The cost savings from our productivity programmes absorbed the impact of inflation. Our UK bank levy charge remained broadly unchanged, at $964m.

We maintained our momentum in growing the business during 2018.

- In RBWM, we made investments to develop digital capabilities and recruit front-line staff to deliver improved customer service, as well as to grow the business, particularly in the UK, Hong Kong, mainland China (including the Pearl River Delta) and the US.
-

- In GB&M, we made strategic hires in Global Markets and Global Banking, and continued to invest in mainland China as well as in new digital capabilities and functionalities for Securities Services and Global Liquidity and Cash Management businesses.
- In CMB, we invested in digital offerings to improve customer journeys, such as on-boarding and credit, as well as market-leading innovations including landmark trade transactions on the Voltron and we.trade platforms.

The number of employees expressed in FTEs at 31 December 2018 was 235,217, an increase of 6,530 since 31 December 2017. This was primarily driven by investments in business growth programmes across RBWM, GB&M and CMB. The number of contractors as at 31 December 2018 was 10,854, a decrease of 2,040 from 31 December 2017.

Share of profit in associates and joint ventures

	2018	2017	2016
	$m	$m	$m
Share of profit in associates	2,519	2,349	2,326
– Bank of Communications Co., Limited	2,032	1,863	1,892
– The Saudi British Bank	421	422	415
– other	66	64	19
Share of profit in joint ventures	17	26	28
Year ended 31 Dec	2,536	2,375	2,354

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Our share of profit in associates and joint ventures was $2.5bn, an increase of $161m or 7% compared with 2017, and included the favourable effects of foreign currency translation differences of $41m.
Excluding the effects of foreign currency translation differences, our share of profit in associates and joint ventures increased by $120m compared with 2017. This primarily reflected an increase in income from Bank of Communications Co., Limited ('BoCom').
At 31 December 2018, we performed an impairment review of our investment in BoCom and concluded that it was not impaired, based on our value-in-use ('VIU') calculation (for more information on the key assumptions in our VIU calculation, including the sensitivity of the VIU to each key assumption (see Note 18 on the Financial Statements).

As discussed in Note 18 on the Financial Statements, in future periods the VIU may increase or decrease depending on the effect of changes to model inputs. It is expected that the carrying amount will increase due to retained profits earned by BoCom. At the point where the carrying amount exceeds the VIU, impairment would be recognised. We would continue to recognise our share of BoCom's profit or loss, but the carrying amount would be reduced to equal the VIU, with a corresponding reduction in income. An impairment review would continue to be performed at each subsequent reporting period, with the carrying amount and income adjusted accordingly.

Tax expense

	2018	2017	2016
	$m	$m	$m
Profit before tax	19,890	17,167	7,112
Tax expense	(4,865)	(5,288)	(3,666)
Profit after tax for the year ended 31 Dec	15,025	11,879	3,446
Effective tax rate	24.5%	30.8%	51.5%

The effective tax rate for 2018 of 24.5% is lower than the 30.8% for 2017 as 2017 included a charge of $1.3bn due to the remeasurement of US deferred tax balances to reflect the reduction in the US federal tax rate from 35% to 21%. This charge increased the 2017 effective tax rate by 7.5%.
Further detail is provided in Note 8 on the Financial Statements.

2017 compared with 2016

Net interest income

In July 2016, we completed the disposal of our operations in Brazil. During 2016, we earned net interest income of $0.9bn in Brazil from average interest earning assets of $25.8bn. In 2016, our net interest margin excluding Brazil was 1.70%.
Net interest income of $28.2bn decreased by $1.6bn or 5% compared with 2016, including the effects of significant items and foreign currency translation differences between 2017 and 2016 of $1.7bn. Excluding these, our net interest income remained broadly unchanged from 2016.
Net interest margin of 1.63% was 10 basis points ('bps') lower than in 2016, including the effects of the significant items and foreign currency translation differences noted above, which decreased net interest margin by 7bps in total. Excluding these factors, net interest margin decreased by 3bps, mainly reflecting the run-off of our US CML portfolio, pressures on asset yields, notably in Europe and Asia, and higher cost of Group debt. These were partly offset by higher yields on surplus liquidity due to US dollar and Hong Kong dollar rate rises.

Interest income

Interest income decreased by $1.4bn compared with 2016, including the adverse effects of the significant items and foreign currency translation differences between 2017 and 2016 of $3.7bn. Excluding these, interest income increased by $2.3bn mainly driven by higher income on surplus liquidity and reverse repurchase agreements.
Interest income on short-term funds and financial investments increased by $0.7bn compared with 2016, which included adverse effects of the disposal of our operations in Brazil and currency translation differences between 2017 and 2016 of $0.2bn. Excluding these impacts, interest income on short-term funds and financial investments increased by $0.9bn, primarily in Asia and North America, reflecting the central bank rate rises. This was partly offset by a reduction in Europe, notably due to the base rate cut in the UK in 2016.

Interest income on reverse repurchase agreements – non-trading was $1.0bn higher, driven by increased income in all regions, notably in Asia and North America, reflecting higher balances and increased market rates. This movement is in line with an increase in interest expense on repurchase agreements.

Interest income on loans and advances to customers was marginally higher, excluding the adverse effects of the UK customer redress programme, the disposal of our operations in Brazil and foreign currency translation differences between 2017 and 2016 of $0.7bn, reflecting increases in:

- Asia, mainly due to growth in term lending and mortgage balances, although term lending yields decreased as a result of competitive pressures; and
- Latin America, notably in Mexico reflecting higher yields on mortgages and term lending driven by central bank rate rises, and growth in mortgage balances.

These increases were partly offset by lower income in:

- North America, primarily as a result of the continuing run-off of the higher-yielding CML portfolio in the US; and
- Europe, as the effects of decreased lending yields more than offset balance growth in mortgages, term lending and overdrafts, resulting from lower central bank rates, negative interest rates in continental Europe, and market competition.

Interest expense

Reported interest expense increased by $0.2bn, including the effects of the disposal of our operations in Brazil in 2016 and foreign currency translation differences between 2017 and 2016 of $2.0bn. Excluding these impacts, interest expense was $2.2bn higher, primarily due to increases in interest expense on repurchase agreements and Group debt.

Interest expense on repurchase agreements increased by $1.0bn, in line with the increase in interest income on reverse repurchase agreements, notably in North America reflecting increased balances and higher market rates, and in Europe reflecting increased balances.

Interest expense on debt securities in issue and own debt at fair value was $0.6bn higher. The increase reflected a rise in the cost of funds, although average balances fell as an increase in debt issued by HSBC Holdings to meet regulatory requirements was more than offset by redemptions of senior debt across the Group.

The increase in the cost of debt reflected both longer maturities and the structural subordination of our new issuances.

Interest expense on customer accounts was $0.1bn higher, excluding the effects of the disposal of our operations in Brazil and foreign currency translation differences between 2017 and 2016,

reflecting average balance growth in most of our geographical regions. The net increase also reflects changes in interest rates in key markets, including:

- rate rises in North America and Mexico; partly offset by,
- the 2016 reduction in the UK base rate and negative interest rates in continental Europe on current and savings and deposit accounts; and
- central bank rate reductions in Asia, notably in India and Australia, and a change in portfolio mix.

Net fee income

Net fee income of $12.8bn was broadly unchanged compared with 2016 and included the disposal of our operations in Brazil, which reduced net fee income by $0.2bn, notably fee income from account services and cards. It also included the adverse effects of currency translation differences between 2017 and 2016 of $0.1bn.

Excluding the effects of the disposal of our operations in Brazil and currency translation differences noted above, net fee income increased by $0.4bn, mainly due to higher fee income from broking and unit trusts in RBWM and higher fee income from corporate finance (disclosed within 'Other') and underwriting in GB&M.

Fee income from broking and unit trusts increased by $0.3bn, largely due to a strong performance in Hong Kong as renewed investor confidence resulted in higher sales of mutual funds and retail securities compared to a weaker performance in 2016.

Fee income from corporate finance and underwriting increased by $0.2bn, reflecting continued momentum across our investment banking products, primarily in the UK, the US and Hong Kong.

Fee income from funds under management rose by $0.1bn, notably in Hong Kong, reflecting higher turnover due to a more favourable equity market environment.

These increases were partly offset by lower fee income from credit facilities, primarily due to lower commercial lending activity in the US in CMB.

In addition, fee expense increased by $0.2bn, in part from cards due to increased customer activity in Hong Kong.

Net income/(expense) from financial instruments held at fair value through profit and loss

Net income from financial instruments measured at fair value of $11.4bn was $4.6bn higher than in 2016. This included a net favourable movement in significant items of $1.7bn, primarily due to $1.8bn of adverse fair value movements on our own debt designated at fair value due to movements in our own credit spread in 2016. These movements are now reported in other comprehensive income. This reclassification is discussed further on page 37 of the Annual Report and Accounts 2017.

Net income from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss increased by $1.6bn primarily due to improved equity market performance in Asia and Europe in 2017.

Net income arising from financial assets held to meet liabilities under insurance and investment contracts results in a corresponding movement in liabilities to customers, reflecting the extent to which they participate in the investment performance of the associated asset portfolio. These offsetting movements are recorded in 'Net income/(expense) arising from liabilities to customers under investment contracts' and 'Net insurance claims and benefits paid and movement in liabilities to policyholders'.

Changes in fair value of long-term debt and related derivatives increased by $2.2bn and included the effects of adverse fair value movements attributable to changes in our own credit spread on our own debt designated at fair value of $1.8bn in 2016. These changes are now reported in other comprehensive income.

In addition, we recorded favourable movements in 2017 compared with adverse movements in 2016 on foreign currency debt designated at fair value and issued as part of our overall funding strategy.

The increase also reflected favourable movements in 2017, compared with adverse movements in 2016, relating to the economic hedging of interest and exchange rate risk on our long-term debt, reported in Corporate Centre.

Net income from financial instruments held for trading or managed on a fair value basis increased by $0.9bn, which included fair value movements on non-qualifying hedges, debit valuation adjustments on derivative contracts and the effect of the disposal of our operations in Brazil. In addition, the increase included small rises in RBWM and CMB.

These increases were partly offset by a decrease in revenue from trading activities in GB&M ($0.2bn) notably in Foreign Exchange and Rates, reflecting subdued trading activity in the fourth quarter, partly offset by Credit and

Equities, where we gained market share in Prime Financing. We also recorded adverse movements of $0.3bn in credit and funding valuation adjustments compared with adverse movements of $0.1bn in the prior year, primarily relating to movements in our own credit spread on structured liabilities.

The majority of our financial liabilities designated at fair value are fixed-rate, long-term debt issuances, and are managed in conjunction with interest rate swaps as part of our interest rate management strategy. These liabilities are discussed further on page 48 of the Annual Report and Accounts 2018.

Gains less losses from financial investments

Gains less losses from financial investments of $1.2bn decreased by $0.2bn compared with 2016. This was largely due to a decrease in gains on the disposal of equity securities $0.2bn, notably the non-recurrence of the gain on disposal of our membership interest in Visa Europe of $0.6bn in 2016. This was partly offset by higher gains on disposal resulting from the sale of our shares in Visa Inc. of $0.3bn, compared with $0.1bn in 2016. We also recorded gains on disposal of our investment in Vietnam Technological and Commercial Joint Stock Bank (‘Techcombank’) of $0.1bn in 2017. In addition, the decrease in gains less losses from financial investments included higher impairments of AFS equity securities in GB&M.

These decreases were partly offset by gains on disposal of debt securities, which included higher gains on disposal of AFS assets in Balance Sheet Management ('BSM') in Corporate Centre, notably in the UK and Hong Kong.

Net insurance premium income

Net insurance premium income was $0.2bn lower than in 2016, and included reductions due to the disposal of our operations in Brazil ($0.4bn) and minimal currency translation differences between 2017 and 2016.

Excluding these, net insurance premium income increased by $0.2bn due to the following:

- growth in Hong Kong driven by increased gross premium income, partly offset by the effect of a new reinsurance agreement;
- an increase in France, driven by higher volumes of unit-linked products.

This was partly offset by:

- lower sales through third-party channels in Singapore.

Other operating income

Other operating income was $0.3bn in 2017, compared with a net expense of $1.0bn in 2016. This was primarily due to net losses recognised on assets held for sale in 2016, most notably a loss of $1.8bn from the disposal of our operations in Brazil. This compared with gains of $0.2bn on assets held for sale in 2017, which included a gain on the sale of our holding in VocaLink in the UK, and a gain on the sale of our operations in Lebanon.

This increase was partly offset by lower favourable movements of $0.9bn in the present value of in-force ('PVIF') long-term insurance business, of which $0.8bn related to 'Assumption changes and experience variances' (for further details, please see Note 20 on the Financial Statements of the Annual Report and Accounts 2017). This reflected:

- adverse movements in Hong Kong of $0.4bn, reflecting the future sharing of investment returns with policyholders; and
- adverse movements in Hong Kong and Singapore of $0.4bn, reflecting adjustments offsetting the impact of regulatory-driven changes in the valuation of liabilities (the corresponding movement is recorded in 'Net insurance claims and benefits paid and movement in liabilities to policyholders').

These adverse movements were partly offset by favourable movements in France, due to market-driven changes in interest rate assumptions.

Net insurance claims and benefits paid and movement in liabilities to policyholders

Net insurance claims and benefits paid and movement in liabilities to policyholders were $0.5bn higher compared with 2016, and included reductions due to the disposal of our operations in Brazil ($0.5bn).

This increase was primarily due to improved returns on financial assets supporting contracts where the policyholder shares the investment risk, reflecting improved equity market performance in Hong Kong and France compared with 2016.

In addition, movements in liabilities to policyholders were higher due to increased premium income.

These increases were partly offset by the impact of regulatory-driven changes in the valuation of liabilities in Hong Kong and Singapore (the corresponding movement is recorded in 'Assumption changes and experience variances' in PVIF).

The gains or losses recognised on the financial assets designated at fair value that are held to support these insurance contract liabilities are reported in 'Net income/(expense) from financial instruments designated at fair value' on page 37 of the Annual Report and Accounts 2017.

Loan impairment charges and other credit risk provisions

Loan impairment charges and other credit risk provisions ('LICs') of $1.8bn were $1.6bn or 48% lower compared with 2016. This reduction included the favourable effects of the disposal of our operations in Brazil ($0.9bn) in July 2016, which was partly offset by the impact of adverse foreign currency translation differences between 2017 and 2016.

Excluding these factors, LICs decreased by $0.8bn or 32%, driven by lower LICs in our CMB and RBWM businesses.

Individually assessed LICs of $1.1bn were $0.7bn or 39% lower compared with 2016. This included a reduction of $0.2bn following the disposal of our operations in Brazil.

The remaining variance arose:

- In CMB (down $0.5bn), notably in North America primarily against exposures in the oil and gas sector, as well as reductions in France, Spain and Singapore, as 2016 included a small number of specific charges in relation to corporate exposures. This was partly offset by higher individually assessed LICs in Hong Kong relating to a small number of customers across various sectors.
- In GB&M, individually assessed LICs were broadly unchanged, with LICs in 2017 primarily related to two large corporate exposures in Europe, partly offset by a net release of allowances in the US. In 2016, individually assessed LICs included charges in the US against exposures in the oil and gas sector, as well as a single mining-related corporate client.

Collectively assessed LICs of $0.9bn were $0.6bn or 42% lower compared with 2016. This included a reduction of $0.6bn following the disposal of our operations in Brazil and the adverse foreign currency translation differences between 2017 and 2016 of $48m.

The remaining variance arose:

- In Corporate Centre (down $0.1bn), driven by the run-off of the CML portfolio in the US.
- In RBWM (down $0.1bn), notably in Turkey reflecting improved credit quality and lower lending balances, and in the US and Hong Kong from improvements in credit quality. These decreases were partly offset by increased collective allowances in Mexico, reflecting growth in unsecured lending balances and an increase in delinquencies. In addition,

we increased collective allowances in the UK against our mortgages and cards exposures, in part offset by a release following the sale of a portfolio of loans. LICs in the UK were at low levels, representing approximately 10bps of the overall portfolio.

This was partly offset:

- In GB&M (up $0.1bn), notably in the UK, as 2016 included net releases of collective allowances.
- In CMB (up $38m), notably in Hong Kong in part due to asset growth and an increase in historical loss rates, partly offset by lower charges in the UK relating to reduced exposures in the oil and gas sector.

In 2017, we recorded higher net releases of impairment allowances against available-for-sale debt securities ($0.2bn). These were primarily related to asset-backed securities in our legacy credit portfolio in Corporate Centre and reflected an improvement in collateral values.

A net release of other credit risk provisions of $33m in 2017 largely related to oil and gas sector exposures in the US and the construction sector in Canada. This compared with a net charge in the prior year in these markets, also related to the oil and gas sector.

Operating expenses

Excluding the significant items and currency translation differences between 2017 and 2016, operating expenses of $31.1bn were $1.1bn higher than in 2016. This increase reflected investments in business growth programmes (up $0.6bn), primarily in RBWM, where investments were partly funded by the proceeds from our disposal of Visa Inc. shares, as well as higher performance-related pay (up $0.4bn). The impact of our cost-saving initiatives more than offset inflation and continued investment in regulatory programmes and compliance.

Our total investment in regulatory programmes and compliance was $3.0bn, up $0.2bn or 7% compared with 2016. This reflected the continued implementation of our Global Standards programme to enhance our financial crime risk controls and capabilities.

In 2017, we realised $2.1bn of cost savings, and achieved annualised run-rate savings of $6.1bn since our Investor Update in June 2015. We completed our ‘costs to achieve’ transformation programme, incurring a total cost of $7.0bn since 2015, and continue to realise the benefits of our cost-saving initiatives:

- In global businesses, savings of $0.6bn reflected the impact of our branch optimisation programme enabled by our digital initiatives as well as transformation of online and mobile banking for corporates.
- In Operations and Technology, savings of $1.1bn reflected migrations to lower cost locations, automation, the simplification of our IT structure and the implementation of target operating models.
- In our back office functions, savings of $0.4bn were realised as a result of the re-engineering and simplification of processes and the implementation of global operating models.

The number of employees expressed in full-time equivalent staff ('FTEs') at 31 December 2017 was 228,687, a decrease of 6,488 since 31 December 2016. This included a 18,601 reduction realised across global businesses and global functions from our transformation programme, partly offset by investment in Global

Standards of 3,016 FTEs and an increase of 9,097 FTEs, in part attributable to investment for growth.

Share of profit in associates and joint ventures

Our share of profit in associates and joint ventures was $2.4bn, an increase of $21m or 1% compared with 2016 and including the adverse currency translation differences between 2017 and 2016 of $33m.

Excluding the effects of currency translation, our share of profit in associates and joint ventures increased by $53m, compared with 2016. This mainly comprised gains from the sale of investments held by Business Growth Fund, a joint venture with other UK banks to support small- and medium-sized enterprises ('SMEs') in the UK.

Our share of profit in our largest associate, BoCom, was $1.9bn. This was broadly unchanged from 2016 after excluding currency translation differences between 2017 and 2016. At 31 December 2017, we performed an impairment review of our investment in BoCom and concluded that it was not impaired, based on our value in use calculation (see Note 17 on the Financial Statements of the Annual Report and Accounts 2017 for further details).

In future periods, the value in use may increase or decrease depending on the effect of changes to model inputs. At the point where the carrying amount exceeds the value in use, HSBC will determine whether an impairment exists. If so, we would continue to recognise our share of BoCom's profit or loss, but the carrying amount would be reduced to equal the value in use, with a corresponding reduction in income, unless the market value has increased to a level above the carrying amount.

Tax expense

The effective tax rate for 2017 of 30.8% includes a charge of $1.3bn due to the remeasurement of US deferred tax balances to reflect the reduction in the US federal tax rate from 35% to 21% from 2018. This charge increased the 2017 effective tax rate by 7.5%. The effective tax rate in 2017 was lower than the 51.6% in 2016 as 2016 included the unfavourable impact of a non-deductible goodwill write-down and loss on disposal of operations in Brazil. Further detail is provided in Note 7 on the Financial Statements of the the Financial Statements of the Annual Report and Accounts 2017.

Consolidated balance sheet

Five-year summary consolidated balance sheet

		2018	2017	2016	2015	2014
	Footnotes	$m	$m	$m	$m	$m
Assets						
Cash and balances at central banks		162,843	180,624	128,009	98,934	129,957
Trading assets		238,130	287,995	235,125	224,837	304,193
Financial assets designated and otherwise mandatorily measured at fair value through profit or loss		41,111	N/A	N/A	N/A	N/A
Financial assets designated at fair value		N/A	29,464	24,756	23,852	29,037
Derivatives		207,825	219,818	290,872	288,476	345,008
Loans and advances to banks		72,167	90,393	88,126	90,401	112,149
Loans and advances to customers	59	981,696	962,964	861,504	924,454	974,660
Reverse repurchase agreements – non-trading		242,804	201,553	160,974	146,255	161,713
Financial investments		407,433	389,076	436,797	428,955	415,467
Other assets		204,115	159,884	148,823	183,492	161,955
Total assets at 31 Dec		2,558,124	2,521,771	2,374,986	2,409,656	2,634,139
Liabilities and equity						
Liabilities						
Deposits by banks		56,331	69,922	59,939	54,371	77,426
Customer accounts		1,362,643	1,364,462	1,272,386	1,289,586	1,350,642
Repurchase agreements – non-trading		165,884	130,002	88,958	80,400	107,432
Trading liabilities		84,431	184,361	153,691	141,614	190,572
Financial liabilities designated at fair value		148,505	94,429	86,832	66,408	76,153
Derivatives		205,835	216,821	279,819	281,071	340,669

Debt securities in issue	85,342	64,546	65,915	88,949	95,947
Liabilities under insurance contracts	87,330	85,667	75,273	69,938	73,861
Other liabilities	167,574	113,690	109,595	139,801	121,459
Total liabilities at 31 Dec	2,363,875	2,323,900	2,192,408	2,212,138	2,434,161
Equity					
Total shareholders' equity	186,253	190,250	175,386	188,460	190,447
Non-controlling interests	7,996	7,621	7,192	9,058	9,531
Total equity at 31 Dec	194,249	197,871	182,578	197,518	199,978
Total liabilities and equity at 31 Dec	2,558,124	2,521,771	2,374,986	2,409,656	2,634,139

For footnotes, see page 89.

A more detailed consolidated balance sheet is contained in the Financial Statements on page 255.

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Five-year selected financial information

	Footnotes	2018 $m	2017 $m	2016 $m	2015 $m	2014 $m
Called up share capital		10,180	10,160	10,096	9,842	9,609
Capital resources	60	173,238	182,383	172,358	189,833	190,730
Undated subordinated loan capital		1,969	1,969	1,967	2,368	2,773
Preferred securities and dated subordinated loan capital	61	35,014	42,147	42,600	42,844	47,208
Risk-weighted assets		865,318	871,337	857,181	1,102,995	1,219,765
Total shareholders' equity		186,253	190,250	175,386	188,460	190,447
Less: preference shares and other equity instruments		(23,772)	(23,655)	(18,515)	(16,517)	(12,937)
Total ordinary shareholders' equity		162,481	166,595	156,871	171,943	177,510
Less: goodwill and intangible assets (net of tax)		(22,425)	(21,680)	(19,649)	(24,626)	(26,196)
Tangible ordinary shareholders' equity		140,056	144,915	137,222	147,317	151,314
Financial statistics						
Loans and advances to customers as a percentage of customer accounts		72.0%	70.6%	67.7%	71.7%	72.2%
Average total shareholders' equity to average total assets		7.16%	7.33%	7.37%	7.31%	7.01%
Net asset value per ordinary share at year-end ($)	62	8.13	8.35	7.91	8.77	9.28
Tangible net asset value per ordinary share at year-end ($)		7.01	7.26	6.92	7.51	7.91
Number of $0.50 ordinary shares in issue (millions)		20,361	20,321	20,192	19,685	19,218
Basic number of $0.50 ordinary shares outstanding (millions)		19,981	19,960	19,838	19,604	19,119
Basic number of $0.50 ordinary shares outstanding and dilutive potential ordinary shares (millions)		20,059	20,065	19,933	19,744	19,209
Closing foreign exchange translation rates to $:						
$1: £		0.783	0.740	0.811	0.675	0.642
$1: €		0.873	0.834	0.949	0.919	0.823

For footnotes, see page 89.

Balance sheet commentary compared with 1 January 2018

The effect of the adoption of IFRS 9 'Financial Instruments' on 1 January 2018 was a reduction in our total assets of $3.3bn from 31 December 2017, and the reclassification of certain items within the balance sheet. The commentary that follows compares our balance sheet at 31 December 2018 with that at 1 January 2018.

At 31 December 2018, our total assets were $2.6tn, an increase of $40bn or 2% on a reported basis and $118bn or 5% on a constant currency basis. The increase reflected targeted lending growth, notably in Asia.

Our ratio of customer advances to customer accounts was 72%, up from 70% at 1 January 2018.

Assets

Cash and balances at central banks decreased by $18bn or 10% and included an adverse effect of foreign currency translation differences of $7bn. Excluding this, cash and balances at central banks decreased by $11bn, mainly in Europe, reflecting the redeployment of our commercial surplus.

Trading assets decreased by $16bn or 6%, mainly driven by an adverse effect of foreign currency translation differences of $10bn. Excluding this, trading assets decreased by $6bn, reflecting a reduction in equity security holdings, notably in the UK. This was partly offset by increased debt securities and government bonds held in the US and Hong Kong.

Derivative assets decreased by $12bn or 5%, mainly reflecting an adverse effect of foreign currency translation differences of $10bn. Excluding this, derivative assets decreased by $2bn, which is consistent with the decrease in derivative liabilities, since the underlying risk is broadly matched.

'Reverse repurchase agreements – non-trading' increased by $41bn or 20%, notably in the UK and France, mainly driven by customer demand in our Global Markets business. This was partly offset by a reduction in the US, reflecting a decrease in the commercial surplus due to lower customer deposits and the repayment of long-term debt.

Financial investments increased by $24bn or 6%, mainly in Hong Kong due to an increase in investments in government bonds and debt securities. Financial investments were also higher in the US, reflecting increased investment in mortgage-backed securities and corporate bonds.

Loans and advances to customers

Loans and advances to customers increased by $32bn or 3% on a reported basis. This included an adverse effect of foreign currency translation differences of $34bn, resulting in growth of $66bn or 7% on a constant currency basis.

Loans and advances to customers increased by $69bn or 8%, after excluding the effects of foreign currency translation differences, and a reduction in corporate current account balances of $4bn relating to CMB and GB&M customers in the UK that settled their overdraft and deposit balances on a net basis.

This growth was primarily in Asia (up $38bn). The increase in Asia was notably in RBWM (up $15bn) as we continued to increase personal lending, primarily in Hong Kong (up $12bn), reflecting our strategy to maintain our leading position in mortgages and personal lending. Customer lending was also higher in CMB (up $13bn) and GB&M (up $11bn), reflecting higher term lending in Hong Kong resulting from our continued strategic focus on loan growth in the region, as well as from an increase in customer demand.

In Europe, customer lending increased by $20bn, notably in the UK from growth in mortgage balances (up $11bn), due to our focus on broker-originated mortgages. We also grew balances in CMB in the UK (up $6bn), driven by business growth aligned to the Group strategy, which resulted in higher term lending and overdraft balances, primarily to mid-market and commercial real estate clients.

In North America, loans and advances to customers increased by $6bn, primarily in Canada ($5bn) in CMB ($4bn), mainly from new to bank client acquisition and higher facility utilisation on term lending, and in RBWM ($1bn) from increased residential mortgage lending.

Liabilities

'Repurchase agreements – non-trading' increased by $36bn or 28%, primarily in the US and France, mainly driven by the increased use of repurchase agreements for funding in our Global Markets business.

Debt securities in issue increased by $19bn or 28%, notably relating to an increase in commercial paper issuances, primarily US dollar-denominated. In addition, there was an increase in senior MREL issuances in the period as well as sterling- and euro-denominated medium term notes, primarily in the UK.

Derivative liabilities fell by $11bn or 5%, mainly reflecting the adverse effect of foreign currency translation differences of $9bn. Excluding this, derivative liabilities decreased by $2bn, which is consistent with the decrease in derivative assets, since the underlying risk is broadly matched.

Customer accounts

Customer accounts increased by $2bn on a reported basis, including the adverse effect of foreign currency translation differences of $43bn, resulting in growth of $45bn or 3% on a constant currency basis.

Customer accounts rose by $49bn, after excluding the impacts of foreign currency translation differences and a reduction in corporate current account balances of $4bn, relating to CMB and GB&M customers in the UK that settled their overdraft and deposit balances on a net basis.

This growth in customer accounts was notably in Europe (up $29bn). GB&M balances rose by $11bn as we targeted balance growth to support funding in the non-ring-fenced bank, mainly in GLCM in the UK. CMB balances increased by $9bn, notably reflecting growth in GLCM within the UK ring-fenced bank. Customer accounts were also higher in RBWM (up $8bn) mainly in the UK, from higher current accounts and savings balances.

In Asia, we grew customer accounts by $18bn, notably in RBWM (up $10bn) and in GB&M (up $9bn) primarily in savings, reflecting higher customer inflows due to competitive rates.

Customer accounts increased in Latin America (up $4bn), notably in Argentina and Mexico, reflecting higher savings and term deposits, and the impact of currency devaluation on foreign currency deposits booked on our Argentina balance sheet.

These increases were partly offset in North America (down $5bn), notably in CMB (down $2bn) due to balance outflows in Bermuda and a reduction in savings deposits in the US. GB&M balances fell by $2bn driven by a decrease in demand deposits in the US.

Equity

Total shareholders' equity of $186bn decreased by $2bn or 1%. The effects of profits generated in the period ($14bn) and favourable changes in fair value attributable to changes in own credit risk ($3bn) were more than offset by an increase in accumulated foreign exchange losses ($7bn) and dividends paid to shareholders ($12bn).

Risk-weighted assets

Risk-weighted assets ('RWAs') were $865.3bn at 31 December 2018. Excluding the $0.8bn impact of IFRS 9 implementation on 1 January 2018 and foreign currency translation differences, RWAs increased by $16.6bn in 2018. This comprised growth of $27.6bn from asset size and $2.9bn from changes in asset quality. This was partly offset by a $10.0bn fall from changes to methodology and policy and a $3.9bn decrease due to model updates.

Asset size movements principally included:

- a $41.5bn growth predominantly in corporate and mortgage lending across CMB, RBWM and GB&M, most significantly in Asia; and
- a $11.3bn decrease in Corporate Centre RWAs, predominantly due to reductions in legacy portfolios.

Customer accounts by country/territory

	2018	2017
	$m	$m
Europe	503,154	505,182
– UK	399,487	401,733
– France	45,169	45,833
– Germany	16,713	17,355
– Switzerland	6,315	7,936
– other	35,470	32,325
Asia	664,824	657,395
– Hong Kong	484,897	477,104
– mainland China	45,712	45,991
– Singapore	42,323	41,144
– Australia	20,649	20,212
– Malaysia	13,904	14,027

– Taiwan	13,602	13,459
– India	14,210	13,228
– Indonesia	3,810	4,211
– other	25,717	28,019
Middle East and North Africa (excluding Saudi Arabia)	35,408	34,658
– United Arab Emirates	16,583	16,602
– Turkey	4,169	3,772
– Egypt	4,493	3,912
– other	10,163	10,372
North America	133,291	143,432
– US	82,523	89,887
– Canada	43,898	45,510
– other	6,870	8,035
Latin America	25,966	23,795
– Mexico	19,936	17,809
– other	6,030	5,986
At 31 Dec	1,362,643	1,364,462

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Loans and advances, Deposits by currency

	At 31 Dec 2018						
$m	USD	GBP	HKD	EUR	CNY	Others[63]	Total
Loans and advances to banks	23,469	4,351	3,241	3,462	7,418	30,226	72,167
Loans and advances to customers	176,907	243,541	220,458	86,583	29,973	224,234	981,696
Total loans and advances	200,376	247,892	223,699	90,045	37,391	254,460	1,053,863
Deposits by banks	17,802	5,777	3,748	15,923	4,065	9,016	56,331
Customer accounts	348,741	340,244	290,748	116,095	49,596	217,219	1,362,643
Total deposits	366,543	346,021	294,496	132,018	53,661	226,235	1,418,974

For footnotes, see page 89.

Average balance sheet

Average balance sheet and net interest income

Average balances and related interest are shown for the domestic operations of our principal commercial banks by geographical region. 'Other operations' comprise the operations of our principal commercial banking and consumer finance entities outside their domestic markets and all other banking operations, including investment banking balances and transactions.

Average balances are based on daily averages for the principal areas of our banking activities with monthly or less frequent averages used elsewhere. Balances and transactions with fellow subsidiaries are reported gross in the principal commercial banking and consumer finance entities, and the elimination entries are included within 'Other operations'.

Net interest margin numbers are calculated by dividing net interest income as reported in the income statement by the average interest-earning assets from which interest income is reported within the 'Net interest income' line of the income statement. Total interest-earning assets include credit-impaired loans where the carrying amount has been adjusted as a result of impairment allowances. In accordance with IFRSs, we recognise interest income on credit-impaired assets after the carrying amount has been adjusted as a result of impairment. Fee income that forms an integral part of the effective interest rate of a financial instrument is recognised as an adjustment to the effective interest rate and recorded in 'Interest income'.

Assets[56a]

	Footnote	2018 Average balance $m	Interest income $m	Yield %	2017 Average balance $m	Interest income $m	Yield %	2016 Average balance $m	Interest income $m	Yield %
Summary										
Interest-earning assets measured at amortised cost (itemised below)		1,839,346	49,609	2.70	1,726,120	40,995	2.37	1,723,702	42,414	2.46
Trading assets and financial assets designated and otherwise mandatorily measured at fair value through profit or loss		195,922	5,215	2.66	186,673	4,245	2.27	179,780	3,897	2.17
Expected credit losses provision		(7,816)			N/A	N/A	N/A	N/A	N/A	N/A
Impairment allowances		N/A	N/A	N/A	(7,841)			(9,127)		
Non-interest-earning assets		584,524			616,688			653,115		
Total assets and interest income		2,611,976	54,824	2.10	2,521,640	45,240	1.79	2,547,470	46,311	1.82
				2.69			2.37			2.43

Average yield on all interest-earning assets

Short-term funds and loans and advances to banks											
Europe	HSBC Bank plc	55a	113,605	471	0.41	97,645	299	0.31	74,067	303	0.41
	HSBC UK Bank plc	55a	22,457	147	0.65	—	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited		71,631	1,169	1.63	67,264	898	1.34	66,238	775	1.17
MENA	HSBC Bank Middle East Limited		3,419	52	1.52	2,556	39	1.53	3,658	30	0.82
North America	HSBC North America Holdings Inc.		23,949	643	2.68	41,516	461	1.11	35,600	214	0.60
	HSBC Bank Canada		620	12	1.94	366	3	0.82	745	2	0.27
Latin America	Grupo Financiero HSBC, S. A. de C. V.		2,435	178	7.31	2,165	150	6.93	2,215	92	4.17
	HSBC Argentina Holdings S.A.		37	1	2.70	1,083	1	0.09	820	8	0.93
	Brazil Operations		—	—	—	—	—	—	—	—	—
Other operations and intra-region eliminations			(4,516)	(198)	4.38	23,531	179	0.76	20,456	86	0.42
At 31 Dec			233,637	2,475	1.06	236,126	2,030	0.86	203,799	1,510	0.74

Assets (continued)

		Footnote	2018 Average balance $m	2018 Interest income $m	2018 Yield %	2017 Average balance $m	2017 Interest income $m	2017 Yield %	2016 Average balance $m	2016 Interest income $m	2016 Yield %
Loans and advances to customers											
Europe	HSBC Bank plc	55a	251,992	6,599	2.62	342,354	9,180	2.68	330,322	10,437	3.16
	HSBC UK Bank plc	55a	116,144	3,370	2.90	—	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited		440,143	14,466	3.29	395,062	11,716	2.97	351,962	10,775	3.06
MENA	HSBC Bank Middle East Limited		20,832	983	4.72	20,498	861	4.20	23,595	883	3.74
North America	HSBC North America Holdings Inc.		63,036	2,479	3.93	69,281	2,390	3.45	86,218	3,277	3.80
	HSBC Bank Canada		40,587	1,425	3.51	36,557	1,205	3.30	35,894	1,070	2.98
Latin America	Grupo Financiero HSBC, S. A. de C. V.		17,486	2,038	11.66	14,932	1,767	11.83	14,060	1,428	10.16
	HSBC Argentina Holdings S.A.		2,903	741	25.53	3,306	712	21.54	2,680	730	27.24
	Brazil Operations		—	—	—	—	—	—	—	—	—
Other operations and intra-region eliminations			19,840	1,184	5.97	20,224	920	4.55	20,625	672	3.26
At 31 Dec			972,963	33,285	3.42	902,214	28,751	3.19	865,356	29,272	3.38
Reverse repurchase agreements – non-trading											
Europe	HSBC Bank plc	55a	85,967	905	1.05	58,419	503	0.86	59,984	306	0.51
	HSBC UK Bank plc	55a	854	8	0.94	—	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited		50,730	902	1.78	45,772	612	1.34	41,848	333	0.80
MENA	HSBC Bank Middle East Limited		1,131	16	1.41	1,101	14	1.27	650	9	1.38
North America	HSBC North America Holdings Inc.		77,111	1,871	2.43	77,921	928	1.19	79,996	487	0.61
	HSBC Bank Canada		5,233	79	1.51	5,775	44	0.76	6,035	30	0.50
Latin America	Grupo Financiero HSBC, S. A. de C. V.		1,134	90	7.94	882	61	6.92	754	33	4.38
	HSBC Argentina Holdings S.A.		40	15	37.50	70	15	21.43	59	13	22.03
	Brazil Operations		—	—	—	—	—	—	—	—	—
Other operations and intra-region eliminations			(16,773)	(147)	0.88	(16,180)	14	(0.09)	(21,119)	16	(0.08)
At 31 Dec			205,427	3,739	1.82	173,760	2,191	1.26	168,207	1,227	0.73
Financial investments											
Europe	HSBC Bank plc	55a	69,552	1,205	1.73	83,213	1,219	1.46	103,000	1,322	1.28
	HSBC UK Bank plc	55a	7,830	104	1.33	—	—	—	—	—	—
Asia			218,439	5,074	2.32	216,233	4,094	1.89	228,927	3,724	1.63

	The Hongkong and Shanghai Banking Corporation Limited									
MENA	HSBC Bank Middle East Limited	6,317	134	2.12	6,406	83	1.30	6,654	68	1.02
North America	HSBC North America Holdings Inc.	45,668	1,134	2.48	47,021	945	2.01	52,483	953	1.82
	HSBC Bank Canada	18,424	341	1.85	17,304	214	1.24	17,769	209	1.18
Latin America	Grupo Financiero HSBC, S. A. de C. V.	7,154	494	6.91	6,296	366	5.81	5,440	286	5.26
	HSBC Argentina Holdings S.A.	750	217	28.93	600	98	16.33	809	189	23.36
	Brazil Operations	—	—	—	—	—	—	—	—	—
Other operations and intra-region eliminations		12,096	463	3.83	12,734	421	3.31	15,693	497	3.17
At 31 Dec		386,230	9,166	2.37	389,807	7,440	1.91	430,775	7,248	1.68

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Assets (continued)

		Footnote	2018 Average balance $m	Interest income $m	Yield %	2017 Average balance $m	Interest income $m	Yield %	2016 Average balance $m	Interest income $m	Yield %
Other interest-earning assets											
Europe	HSBC Bank plc	55a	35,757	808	2.26	6,540	444	6.79	15,087	273	1.81
	HSBC UK Bank plc	55a	226	2	0.88	—	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited		3,987	87	2.18	26,363	396	1.50	23,098	182	0.79
MENA	HSBC Bank Middle East Limited		(67)	25	(37.31)	4,044	66	1.63	1,942	80	4.12
North America	HSBC North America Holdings Inc.		5,522	122	2.21	3,375	225	6.67	4,871	93	1.91
	HSBC Bank Canada		262	10	3.82	510	10	1.96	303	6	1.98
Latin America	Grupo Financiero HSBC, S. A. de C. V.		763	8	1.05	843	8	0.95	587	1	0.17
	HSBC Argentina Holdings S.A.		330	154	46.67	59	1	1.69	76	—	—
	Brazil Operations		—	—	—	—	—	—	25,783	2,705	10.49
Other operations and intra-region eliminations			(5,691)	(272)		(17,521)	(567)		(16,182)	(183)	
At 31 Dec			41,089	944	2.30	24,213	583	2.41	55,565	3,157	5.68
Total interest-earning assets											
Europe	HSBC Bank plc	55a	556,873	9,988	1.79	588,171	11,645	1.98	582,460	12,641	2.17
	HSBC UK Bank plc	55a	147,511	3,631	2.46	—	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited		784,930	21,698	2.76	750,694	17,716	2.36	712,073	15,789	2.22
MENA	HSBC Bank Middle East Limited		31,632	1,210	3.83	34,605	1,063	3.07	36,499	1,070	2.93
North America	HSBC North America Holdings Inc.		215,286	6,249	2.90	239,114	4,949	2.07	259,168	5,024	1.94
	HSBC Bank Canada		65,126	1,867	2.87	60,512	1,476	2.44	60,746	1,317	2.17
			28,972	2,808	9.69	25,118	2,352	9.36	23,056	1,840	7.98

Latin America	Grupo Financiero HSBC, S. A. de C. V.									
	HSBC Argentina Holdings S.A.	4,060	1,128	27.78	5,118	827	16.16	4,444	940	21.15
	Brazil Operations	—	—	—	—	—	—	25,783	2,705	10.49
Other operations and intra-region eliminations		4,956	1,030		22,788	967		19,473	1,088	
At 31 Dec		1,839,346	49,609	2.70	1,726,120	40,995	2.37	1,723,702	42,414	2.46

Equity and liabilities[56a]

		2018			2017			2016		
	Footnote	Average balance $m	Interest expense $m	Cost %	Average balance $m	Interest expense $m	Cost %	Average balance $m	Interest expense $m	Cost %
Summary										
Interest-bearing liabilities measured at amortised cost (itemised below)		1,581,519	19,120	1.21	1,455,070	12,819	0.88	1,442,004	12,601	0.87
Trading liabilities and financial liabilities designated at fair value (excluding own debt issued)		142,184	3,524	2.48	153,776	2,325	1.51	138,486	1,986	1.43
Non-interest bearing current accounts		211,815			197,104			184,016		
Total equity and other non-interest bearing liabilities		676,458			715,690			782,964		
Total equity and liabilities		2,611,976	22,644	0.87	2,521,640	15,144	0.60	2,547,470	14,587	0.57
Average cost on all interest-bearing liabilities				1.31			0.94			0.92

Equity and liabilities (continued)

		Footnotes	2018 Average balance $m	Interest expense $m	Cost %	2017 Average balance $m	Interest expense $m	Cost %	2016 Average balance $m	Interest expense $m	Cost %
Deposits by banks		51a									
Europe	HSBC Bank plc	55a	28,960	207	0.71	20,624	83	0.40	20,624	87	0.42
	HSBC UK Bank plc	55a	281	9	3.20	—	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited		22,687	202	0.89	20,052	177	0.88	21,109	146	0.69
MENA	HSBC Bank Middle East Limited		1,596	41	2.57	695	10	1.44	492	4	0.81
North America	HSBC North America Holdings Inc.		5,079	132	2.60	3,632	41	1.13	5,316	30	0.56
	HSBC Bank Canada		716	17	2.37	231	1	0.43	358	1	0.28
Latin America	Grupo Financiero HSBC, S. A. de C. V.		1,245	99	7.95	1,820	120	6.59	1,631	70	4.29
	HSBC Argentina Holdings S.A.		82	9	10.98	3	1	33.33	2	—	—
	Brazil Operations		—	—	—	—	—	—	—	—	—
Other operations and intra-region eliminations			(16,116)	(210)	1.30	280	18	6.43	250	4	1.60
At 31 Dec			44,530	506	1.14	47,337	451	0.95	49,782	342	0.69
Financial liabilities designated at fair value through profit or loss – own debt issued		52a									
Europe	HSBC Holdings plc		25,138	1,095	4.36	30,506	944	3.09	26,972	609	2.26
	HSBC Bank plc	55a	21,576	251	1.16	22,692	279	1.23	24,369	240	0.98
	HSBC UK Bank plc	55a	—	—	—	—	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited		9,895	299	3.02	4,869	106	2.18	2,019	28	1.39
MENA	HSBC Bank Middle East Limited		705	14	1.99	—	—	—	—	—	—
			2,083	58	2.78	2,805	52	1.85	3,536	58	1.64

North America	HSBC North America Holdings Inc.										
	HSBC Bank Canada		—	—	—	84	1	1.19	308	3	0.97
Latin America	Grupo Financiero HSBC, S. A. de C. V.		—	—	—	—	—	—	—	—	—
	HSBC Argentina Holdings S.A.		—	—	—	—	—	—	—	—	—
	Brazil Operations		—	—	—	—	—	—	—	—	—
Other operations and intra-region eliminations			(8,557)	(296)	3.46	(390)	(121)	31.03	4,838	4	0.08
At 31 Dec			50,840	1,421	2.80	60,566	1,261	2.08	62,042	942	1.52
Customer accounts		53a									
Europe	HSBC Bank plc	55a	297,353	1,862	0.63	377,353	1,303	0.35	382,596	1,723	0.45
	HSBC UK Bank plc	55a	122,406	372	0.30	—	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited		585,575	3,742	0.64	566,309	2,430	0.43	544,615	2,571	0.47
MENA	HSBC Bank Middle East Limited		9,213	86	0.93	9,807	40	0.41	10,780	27	0.25
North America	HSBC North America Holdings Inc.		63,309	564	0.89	66,745	376	0.56	64,546	205	0.32
	HSBC Bank Canada		39,717	480	1.21	38,150	305	0.80	37,125	194	0.52
Latin America	Grupo Financiero HSBC, S. A. de C. V.		13,929	640	4.59	11,662	406	3.48	10,970	227	2.07
	HSBC Argentina Holdings S.A.		3,316	384	11.58	3,292	245	7.44	2,574	351	13.64
	Brazil Operations		—	—	—	—	—	—	—	—	—
Other operations and intra-region eliminations			3,802	157	4.13	21,602	300	1.39	21,455	194	0.90
At 31 Dec			1,138,620	8,287	0.73	1,094,920	5,405	0.49	1,074,661	5,492	0.51
Repurchase agreements – non-trading											
Europe	HSBC Bank plc	55a	66,045	826	1.25	50,844	340	0.67	46,194	88	0.19
	HSBC UK Bank plc	55a	238	2	0.84	—	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation		18,723	356	1.90	16,620	141	0.85	13,573	117	0.86

	Limited									
MENA	HSBC Bank Middle East Limited	47	1	2.13	32	1	3.13	—	—	—
North America	HSBC North America Holdings Inc.	82,178	1,970	2.40	77,704	890	1.15	73,843	310	0.42
	HSBC Bank Canada	5,932	87	1.47	4,158	30	0.72	4,777	14	0.29
Latin America	Grupo Financiero HSBC, S. A. de C. V.	5,297	458	8.65	3,845	259	6.74	2,085	94	4.51
	HSBC Argentina Holdings S.A.	20	3	15.00	15	3	20.00	7	2	28.57
	Brazil Operations	—	—	—	—	—	—	—	—	—
Other operations and intra-region eliminations		(17,276)	(294)	1.70	(16,657)	1	(0.01)	(21,690)	1	—
At 31 Dec		161,204	3,409	2.11	136,561	1,665	1.22	118,789	626	0.53

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Equity and liabilities (continued)

		Footnotes	2018 Average balance $m	Interest expense $m	Cost %	2017 Average balance $m	Interest expense $m	Cost %	2016 Average balance $m	Interest expense $m	Cost %
Debt securities in issue											
Europe	HSBC Holdings plc		59,904	2,195	3.66	43,121	1,533	3.56	25,145	1,087	4.32
	HSBC Bank plc	55a	46,635	812	1.74	21,266	353	1.66	32,527	348	1.07
	HSBC UK Bank plc	55a	2,471	69	2.79	—	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited		22,318	789	3.54	4,326	96	2.22	5,278	114	2.16
MENA	HSBC Bank Middle East Limited		2,338	81	3.46	1,329	20	1.50	1,793	20	1.12
North America	HSBC North America Holdings Inc.		24,560	900	3.66	29,520	857	2.90	40,148	954	2.38
	HSBC Bank Canada		10,134	254	2.51	7,466	163	2.18	8,026	192	2.39
Latin America	Grupo Financiero HSBC, S. A. de C. V.		1,339	84	6.27	1,198	77	6.43	928	60	6.47
	HSBC Argentina Holdings S.A.		421	113	26.84	55	15	27.27	—	—	—
	Brazil Operations		—	—	—	—	—	—	—	—	—
Other operations and intra-region eliminations			(37,526)	(1,043)	2.78	396	16	4.04	498	32	6.43
At 31 Dec			132,594	4,254	3.21	108,677	3,130	2.88	114,343	2,807	2.45
Other interest-bearing liabilities											
Europe	HSBC Bank plc	55a	43,648	987	2.26	31,948	1,331	4.17	28,051	975	3.48
	HSBC UK Bank plc	55a	104	1	0.96	—	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited		7,574	176	2.32	20,529	623	3.03	12,999	331	2.55
MENA	HSBC Bank Middle East Limited		—	—	—	2,414	73	3.02	2,994	82	2.74
			10,468	300	2.87	16,685	394	2.36	16,490	287	1.74

North America	HSBC North America Holdings Inc.										
	HSBC Bank Canada		1,430	31	2.17	3,022	67	2.22	1,915	63	3.29
Latin America	Grupo Financiero HSBC, S. A. de C. V.		—	—	—	61	22	36.07	782	20	2.56
	HSBC Argentina Holdings S.A.		462	72	15.58	97	4	4.12	53	5	9.43
	Brazil Operations		—	—	—	—	—	—	18,936	1,748	9.23
Other operations and intra-region eliminations			(9,955)	(324)		(67,747)	(1,607)		(59,833)	(1,119)	
At 31 Dec			53,731	1,243	2.31	7,009	907	12.94	22,387	2,392	10.68
Total interest-bearing liabilities											
Europe	HSBC Holdings plc		85,042	3,304	3.89	74,664	2,568	3.44	54,658	1,804	3.30
	HSBC Bank plc	55a	504,217	4,945	0.98	524,727	3,689	0.70	534,361	3,461	0.65
	HSBC UK Bank plc	55a	125,500	453	0.36	—	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited		666,772	5,564	0.83	632,705	3,573	0.56	599,593	3,307	0.55
MENA	HSBC Bank Middle East Limited		13,899	223	1.60	14,277	144	1.01	16,059	133	0.83
North America	HSBC North America Holdings Inc.		187,677	3,924	2.09	197,091	2,610	1.32	203,879	1,844	0.90
	HSBC Bank Canada		57,929	869	1.50	53,111	567	1.07	52,509	467	0.89
Latin America	Grupo Financiero HSBC, S. A. de C. V.		21,810	1,281	5.87	18,586	884	4.76	16,396	471	2.87
	HSBC Argentina Holdings S.A.		4,301	581	13.51	3,462	268	7.74	2,636	358	13.58
	Brazil Operations		—	—	—	—	—	—	18,936	1,748	9.23
Other operations and intra-region eliminations			(85,628)	(2,024)		(63,553)	(1,484)		(57,023)	(992)	
At 31 Dec			1,581,519	19,120	1.21	1,455,070	12,819	0.88	1,442,004	12,601	0.87

For footnotes, see page 89.

Net interest margin[54a, 56a]

		2018	2017	2016
		%	%	%
Europe	HSBC Bank plc[55a]	0.89	1.35	1.58
	HSBC UK Bank plc[55a]	2.16	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited	2.06	1.88	1.75
MENA	HSBC Bank Middle East Limited	3.12	2.62	2.51
North America	HSBC North America Holdings Inc.	1.08	0.98	1.23
	HSBC Bank Canada	1.53	1.50	1.40
Latin America	Grupo Financiero HSBC, S. A. de C. V.	5.27	5.85	5.93
	HSBC Argentina Holdings S.A.	13.44	10.94	13.09
	Brazil Operations	—	—	3.71
At 31 Dec		1.66	1.63	1.73

Distribution of average total assets[56a]

		2018	2017	2016
		%	%	%
Europe	HSBC Bank plc[55a]	38.0	43.0	44.0
	HSBC UK Bank plc[55a]	6.0	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited	40.0	40.0	37.0
MENA	HSBC Bank Middle East Limited	1.0	2.0	2.0
North America	HSBC North America Holdings Inc.	13.0	14.0	14.0
	HSBC Bank Canada	3.0	3.0	3.0
Latin America	Grupo Financiero HSBC, S. A. de C. V.	2.0	1.0	1.0
	HSBC Argentina Holdings S.A.	—	—	—
	Brazil Operations	—	—	1.0
Other operations and intra-region eliminations		(3.0)	(3.0)	(2.0)
At 31 Dec		100.0	100.0	100.0

For footnote, see page 89.

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Analysis of changes in net interest income and net interest expense

The following tables allocate changes in net interest income and net interest expense between volume and rate for 2018 compared with 2017, and for 2017 compared with 2016. We isolate volume variances and allocate any change arising from both volume and rate to rate.

Interest income[56a]

			Increase/(decrease) in 2018 compared with 2017			Increase/(decrease) in 2017 compared with 2016		
		2018	Volume	Rate	2017	Volume	Rate	2016
		$m	$m	$m	$m	$m	$m	$m
Short-term funds and loans and advances to banks								
Europe	HSBC Bank plc[55a]	471	74	98	299	70	(74)	303
	HSBC UK Bank plc[55a]	147	147	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited	1,169	76	195	898	10	113	775
MENA	HSBC Bank Middle East Limited	52	13	—	39	(17)	26	30
North America	HSBC North America Holdings Inc.	643	(470)	652	461	65	182	214
	HSBC Bank Canada	12	5	4	3	(3)	4	2
Latin America	Grupo Financiero HSBC, S. A. de C. V.	178	20	8	150	(3)	61	92
	HSBC Argentina Holdings S.A.	1	(28)	28	1	—	(7)	8
	Brazil Operations	—	—	—	—	—	—	—
Other operations and intra-region eliminations		(198)	(1,229)	852	179	23	70	86
At 31 Dec		2,475	(27)	472	2,030	275	245	1,510
Loans and advances to customers								
Europe	HSBC Bank plc[55a]	6,599	(2,376)	(205)	9,180	329	(1,586)	10,437
	HSBC UK Bank plc[55a]	3,370	3,370	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited	14,466	1,486	1,264	11,716	1,258	(317)	10,775
MENA	HSBC Bank Middle East Limited	983	15	107	861	(131)	109	883
North America	HSBC North America Holdings Inc.	2,479	(244)	333	2,390	(585)	(302)	3,277
	HSBC Bank Canada	1,425	143	77	1,205	20	115	1,070
Latin America	Grupo Financiero HSBC, S. A. de C. V.	2,038	296	(25)	1,767	104	235	1,428
	HSBC Argentina Holdings S.A.	741	(103)	132	712	135	(153)	730
	Brazil Operations	—	—	—	—	—	—	—
Other operations and intra-region eliminations		1,184	(23)	287	920	(18)	266	672
At 31 Dec		33,285	2,459	2,075	28,751	1,123	(1,644)	29,272
Reverse repurchase agreements – non-trading								
Europe	HSBC Bank plc[55a]	905	291	111	503	(13)	210	306
	HSBC UK Bank plc[55a]	8	8	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited	902	89	201	612	53	226	333
MENA	HSBC Bank Middle East Limited	16	—	2	14	6	(1)	9

North America	HSBC North America Holdings Inc.	1,871	(23)	966	928	(23)	464	487
	HSBC Bank Canada	79	(8)	43	44	(2)	16	30
Latin America	Grupo Financiero HSBC, S. A. de C. V.	90	20	9	61	9	19	33
	HSBC Argentina Holdings S.A.	15	(11)	11	15	2	—	13
	Brazil Operations	—	—	—	—	—	—	—
Other operations and intra-region eliminations		(147)	(4)	(157)	14	(4)	2	16
At 31 Dec		3,739	575	973	2,191	73	891	1,227

Interest income (continued)

		2018	Increase/(decrease) in 2018 compared with 2017		2017	Increase/(decrease) in 2017 compared with 2016		2016
			Volume	Rate		Volume	Rate	
		$m	$m	$m	$m	$m	$m	$m
Financial investments								
Europe	HSBC Bank plc[55a]	1,205	(239)	225	1,219	(288)	185	1,322
	HSBC UK Bank plc[55a]	104	104	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited	5,074	50	930	4,094	(225)	595	3,724
MENA	HSBC Bank Middle East Limited	134	(2)	53	83	(4)	19	68
North America	HSBC North America Holdings Inc.	1,134	(32)	221	945	(108)	100	953
	HSBC Bank Canada	341	21	106	214	(6)	11	209
Latin America	Grupo Financiero HSBC, S. A. de C. V.	494	59	69	366	50	30	286
	HSBC Argentina Holdings S.A.	217	43	76	98	(34)	(57)	189
	Brazil Operations	—	—	—	—	—	—	—
Other operations and intra-region eliminations		463	(24)	66	421	(98)	22	497
At 31 Dec		9,166	(67)	1,793	7,440	(799)	991	7,248

Interest expense

		2018	Increase/(decrease) in 2018 compared with 2017		2017	Increase/(decrease) in 2017 compared with 2016		2016
			Volume	Rate		Volume	Rate	
		$m	$m	$m	$m	$m	$m	$m
Deposits by banks								
Europe	HSBC Bank plc[55a]	207	60	64	83	—	(4)	87
	HSBC UK Bank plc[55a]	9	9	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited	202	23	2	177	(9)	40	146
MENA	HSBC Bank Middle East Limited	41	23	8	10	3	3	4
North America	HSBC North America Holdings Inc.	132	38	53	41	(19)	30	30
	HSBC Bank Canada	17	12	4	1	(1)	1	1
Latin America	Grupo Financiero HSBC, S. A. de C. V.	99	(46)	25	120	12	38	70
	HSBC Argentina Holdings S.A.	9	9	(1)	1	—	1	—
	Brazil Operations	—	—	—	—	—	—	—
Other operations and intra-region eliminations		(210)	(214)	(14)	18	2	12	4
At 31 Dec		506	(35)	90	451	(20)	129	342
Customer accounts								
Europe	HSBC Bank plc[55a]	1,862	(498)	1,057	1,303	(37)	(383)	1,723
	HSBC UK Bank plc[55a]	372	372	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited	3,742	123	1,189	2,430	77	(218)	2,571
MENA	HSBC Bank Middle East Limited	86	(5)	51	40	(4)	17	27
	HSBC North America Holdings Inc.	564	(32)	220	376	16	155	205

North America								
	HSBC Bank Canada	480	19	156	305	7	104	194
Latin America	Grupo Financiero HSBC, S. A. de C. V.	640	105	129	406	24	155	227
	HSBC Argentina Holdings S.A.	384	3	136	245	54	(160)	351
	Brazil Operations	—	—	—	—	—	—	—
Other operations and intra-region eliminations		157	(735)	592	300	1	105	194
At 31 Dec		8,287	254	2,628	5,405	128	(215)	5,492

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Interest expense (continued)

		2018	Increase/(decrease) in 2018 compared with 2017		2017	Increase/(decrease) in 2017 compared with 2016		2016
			Volume	Rate		Volume	Rate	
		$m	$m	$m	$m	$m	$m	$m
Repurchase agreements – non-trading								
Europe	HSBC Bank plc[55a]	826	191	295	340	30	222	88
	HSBC UK Bank plc[55a]	2	2	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited	356	40	175	141	25	(1)	117
MENA	HSBC Bank Middle East Limited	1	—	—	1	1	—	—
North America	HSBC North America Holdings Inc.	1,970	109	971	890	41	539	310
	HSBC Bank Canada	87	26	31	30	(5)	21	14
Latin America	Grupo Financiero HSBC, S. A. de C. V.	458	126	73	259	119	46	94
	HSBC Argentina Holdings S.A.	3	1	(1)	3	2	(1)	2
	Brazil Operations	—	—	—	—	—	—	—
Other operations and intra-region eliminations		(294)	(10)	(285)	1	(2)	2	1
At 31 Dec		3,409	529	1,215	1,665	219	820	626
Debt securities in issue								
Europe	HSBC Holdings	2,195	619	43	1,533	637	(191)	1,087
	HSBC Bank plc[55a]	812	442	17	353	(187)	192	348
	HSBC UK Bank plc[55a]	69	69	—	—	—	—	—
Asia	The Hongkong and Shanghai Banking Corporation Limited	789	636	57	96	(21)	3	114
MENA	HSBC Bank Middle East Limited	81	35	26	20	(7)	7	20
North America	HSBC North America Holdings Inc.	900	(181)	224	857	(306)	209	954
	HSBC Bank Canada	254	66	25	163	(12)	(17)	192
Latin America	Grupo Financiero HSBC, S. A. de C. V.	84	9	(2)	77	17	—	60
	HSBC Argentina Holdings S.A.	113	98	—	15	15	—	—
	Brazil Operations	—	—	—	—	—	—	—
Other operations and intra-region eliminations		(1,043)	(1,054)	(5)	16	(4)	(12)	32
At 31 Dec		4,254	765	359	3,130	(169)	492	2,807

Short-term borrowings

Short-term borrowings in the form of repurchase agreements – non-trading are shown separately on the face of the balance sheet. Other forms of short-term borrowings are included within customer accounts, deposits by banks, debt securities in issue and trading liabilities. Short-term borrowings are defined by the US Securities and Exchange Commission as Federal funds purchased and securities sold under agreements to repurchase, commercial paper and other short-term borrowings.

Our only significant short-term borrowings are securities sold under agreements to repurchase and certain debt securities in issue. For securities sold under agreements to repurchase, we run matched repo and reverse repo trading books. We generally observe lower year-end demand in our reverse repo lending business, which results in lower repo balances at the balance sheet date. Additional information on these is provided in the table below.

Repos and short-term bonds

	2018	2017	2016
	$m	$m	$m
Securities sold under agreements to repurchase			
Outstanding at 31 December	167,379	132,257	90,386
Average amount outstanding during the year	163,314	138,957	119,850
Maximum quarter-end balance outstanding during the year	172,150	148,259	110,362
Weighted average interest rate during the year	2.1%	1.2%	0.5%
Weighted average interest rate at the year-end	2.7%	1.4%	0.8%

Contractual obligations

The table below provides details of our material contractual obligations at 31 December 2018.

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
	$m	$m	$m	$m	$m
Long-term debt obligations	214,591	44,100	55,324	37,165	78,002
Term deposits and certificates of deposit	102,497	90,649	9,455	479	1,914
Capital (finance) lease obligations	23	6	1	4	12
Operating lease obligations	3,435	775	1,085	660	915
Purchase obligations	1,011	926	53	32	—
Short positions in debt securities and equity shares	69,157	69,038	90	21	8
Current tax liability	718	718	—	—	—
Pension/healthcare obligation	14,634	1,266	2,815	2,979	7,574
	406,066	207,478	68,823	41,340	88,425

Loan maturity and interest sensitivity analysis

At 31 December 2018, the geographical analysis of loan maturity and interest sensitivity by loan type on a contractual repayment basis was as follows.

	Europe	Asia	MENA	North America	Latin America	Total
	$m	$m	$m	$m	$m	$m
Maturity of 1 year or less						
Loans and advances to banks	10,023	36,101	5,623	3,047	4,523	59,317
Corporate and commercial	94,318	141,863	13,863	23,371	6,049	279,464
Non-bank financial institutions	16,017	15,079	213	4,404	243	35,956
	120,358	193,043	19,699	30,822	10,815	374,737
Maturity after 1 year but within 5 years						
Loans and advances to banks	4,551	6,353	594	171	—	11,669
Corporate and commercial	63,988	106,371	7,180	28,597	5,942	212,078
Non-bank financial institutions	5,364	10,200	109	5,119	1,321	22,113
	73,903	122,924	7,883	33,887	7,263	245,860
Interest rate sensitivity of loans and advances to banks and commercial loans to customers						
Fixed interest rate	54,016	3,025	3,175	5,311	6,821	72,348
Variable interest rate	19,887	119,899	4,708	28,576	442	173,512
	73,903	122,924	7,883	33,887	7,263	245,860
Maturity after 5 years						
Loans and advances to banks	161	807	201	25	—	1,194
Corporate and commercial	18,278	15,374	2,695	5,016	1,681	43,044
Non-bank financial institutions	1,146	2,006	—	124	61	3,337
	19,585	18,187	2,896	5,165	1,742	47,575
Interest rate sensitivity of loans and advances to banks and commercial loans to customers						
Fixed interest rate	7,843	646	1,007	1,120	1,730	12,346
Variable interest rate	11,742	17,541	1,889	4,045	12	35,229
	19,585	18,187	2,896	5,165	1,742	47,575

Deposits

The following tables summarise the average amount of bank deposits, customer deposits and certificates of deposit ('CDs') and other money market instruments (that are included within 'Debt securities in issue' in the balance sheet), together with the average interest rates paid thereon for each of the past three years. The geographical analysis of average deposits is based on the location of the office in which the deposits are recorded and excludes balances with HSBC companies.

Deposits by banks

	2018		2017		2016	
	Average balance	Average rate	Average balance	Average rate	Average balance	Average rate
	$m	%	$m	%	$m	%
Europe	28,609		33,483		32,232	
– demand and other – non-interest bearing	6,381	—	12,825	—	11,696	—
– demand – interest bearing	7,704	0.7	6,780	0.4	6,730	0.2
– time	14,503	0.9	11,747	0.3	8,426	0.4
– other	21	—	2,131	1.1	5,380	0.5
Asia	21,599		25,253		26,945	
– demand and other – non-interest bearing	3,305	—	5,201	—	5,835	—
– demand – interest bearing	13,775	0.8	12,521	0.5	13,230	0.4
– time	4,072	1.9	3,355	1.5	3,593	1.9
– other	447	—	4,176	1.6	4,287	0.6
Middle East and North Africa	981		1,311		1,158	
– demand and other – non-interest bearing	362	—	430	—	391	—
– demand – interest bearing	28	3.6	2	—	8	—
– time	475	5.5	871	3.0	742	2.2
– other	116	—	8	—	17	—
North America	3,818		5,721		7,594	
– demand and other – non-interest bearing	1,702	—	1,853	—	1,916	—
– demand – interest bearing	1,820	1.0	1,744	0.5	2,402	0.3
– time	296	1.0	2,116	1.6	3,185	0.8
– other	—	—	8	—	91	—
Latin America	1,289		2,042		1,820	
– demand and other – non-interest bearing	16	—	164	—	129	—
– demand – interest bearing	80	10.0	376	6.9	313	5.4
– time	1,193	6.6	1,502	6.5	1,378	5.7
– other	—	—	—	—	—	—
Total	56,296		67,810		69,749	
– demand and other – non-interest bearing	11,766	—	20,473	—	19,967	—
– demand – interest bearing	23,407	0.8	21,423	0.6	22,683	0.4
– time	20,539	1.6	19,591	1.2	17,324	1.3
– other	584	—	6,323	0.4	9,775	0.5

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Customer accounts

	2018 Average balance $m	2018 Average rate %	2017 Average balance $m	2017 Average rate %	2016 Average balance $m	2016 Average rate %
Europe	500,811		458,710		449,033	
– demand and other – non-interest bearing	91,866	—	76,205	—	64,779	—
– demand – interest bearing	332,031	0.4	310,887	0.3	312,808	0.3
– savings	42,220	0.6	39,488	0.4	39,032	0.5
– time	33,264	1.3	30,939	0.8	31,309	0.7
– other	1,430	8.5	1,191	1.8	1,105	2.4
Asia	657,549		639,925		613,303	
– demand and other – non-interest bearing	73,024	—	73,704	—	68,772	—
– demand – interest bearing	455,443	0.2	459,067	0.1	433,656	0.1
– savings	107,078	2.1	87,551	1.8	90,175	2.0
– time	20,872	1.7	17,183	1.0	19,530	0.8
– other	1,132	0.9	2,420	0.3	1,170	0.4
Middle East and North Africa	35,074		35,105		40,036	
– demand and other – non-interest bearing	17,716	—	17,977	—	19,548	—
– demand – interest bearing	5,944	0.8	6,586	0.5	9,558	0.3
– savings	11,201	3.8	9,734	2.9	10,034	3.5
– time	213	2.3	808	1.6	896	4.1
– other	—	—	—	—	—	—
North America	134,486		141,192		140,491	
– demand and other – non-interest bearing	25,249	—	28,542	—	30,350	—
– demand – interest bearing	37,614	0.7	39,050	0.3	37,382	0.2
– savings	64,538	1.0	63,786	0.7	64,464	0.4
– time	7,079	1.7	9,769	1.1	8,251	0.5
– other	6	133.3	45	—	44	—
Latin America	24,193		21,865		20,699	
– demand and other – non-interest bearing	5,638	—	5,451	—	5,454	—
– demand – interest bearing	9,092	3.8	7,217	2.1	6,629	1.3
– savings	3,464	8.9	3,830	6.2	3,451	32.9
– time	5,906	6.4	5,346	5.3	5,145	3.2
– other	93	15.1	21	—	20	10.0
Total	1,352,113		1,296,797		1,263,562	
– demand and other – non-interest bearing	213,493	—	201,879	—	188,903	—
– demand – interest bearing	840,124	0.3	822,807	0.2	800,033	0.2
– savings	228,501	1.7	204,389	1.3	207,156	1.8
– time	67,334	1.9	64,045	1.3	65,131	1.0
– other	2,661	5.9	3,677	1.0	2,339	1.9

Certificates of deposit and other money market instruments

	2018 Average balance $m	2018 Average rate %	2017 Average balance $m	2017 Average rate %	2016 Average balance $m	2016 Average rate %
Europe	19,034	1.7	12,506	0.6	22,188	0.5

Asia	2,107	2.3	523	2.7	609	2.3
North America	7,497	2.4	6,950	1.6	12,387	0.9
Latin America	1,986	4.7	1,333	5.4	1,135	6.2
Total	30,624	2.1	21,312	1.3	36,319	0.9

Certificates of deposit and other time deposits

The maturity analysis of certificates of deposit ('CDs') and other wholesale time deposits is expressed by remaining maturity. The majority of CDs and time deposits are in amounts of $100,000 and over or the equivalent in other currencies.

	At 31 Dec 2018				
	3 months or less	After 3 months but within 6 months	After 6 months but within 12 months	After 12 months	Total
	$m	$m	$m	$m	$m
Europe	37,017	3,150	1,411	8,761	50,339
– certificates of deposit	921	1,978	715	1,378	4,992
– time deposits:					
banks	4,242	201	423	7,211	12,077
customers	31,854	971	273	172	33,270
Asia	24,758	2,593	1,329	863	29,543
– certificates of deposit	690	1,291	286	844	3,111
– time deposits:					
banks	1,194	419	280	—	1,893
customers	22,874	883	763	19	24,539
Middle East and North Africa	309	49	187	258	803
– certificates of deposit	—	—	—	—	—
– time deposits:					
banks	59	49	177	258	543
customers	250	—	10	—	260
North America	7,096	2,951	1,416	438	11,901
– certificates of deposit	1,775	1,814	517	—	4,106
– time deposits:					
banks	16	—	—	—	16
customers	5,305	1,137	899	438	7,779
Latin America	4,549	2,113	1,721	1,528	9,911
– certificates of deposit	831	102	346	978	2,257
– time deposits:					
banks	741	—	170	498	1,409
customers	2,977	2,011	1,205	52	6,245
Total	73,729	10,856	6,064	11,848	102,497
– certificates of deposit	4,217	5,185	1,864	3,200	14,466
– time deposits:					
banks	6,252	669	1,050	7,967	15,938
customers	63,260	5,002	3,150	681	72,093

Global businesses and geographical regions

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Summary

(Audited)

The Group Chief Executive and the rest of the Group Management Board ('GMB') review operating activity on a number of bases, including by global business and geographical region. Global businesses are our reportable segments under IFRS 8 'Operating Segments'.

Basis of preparation

The Group Chief Executive, supported by the rest of the GMB, is considered the Chief Operating Decision Maker ('CODM') for the purposes of identifying the Group's reportable segments. Global business results are assessed by the CODM on the basis of adjusted performance that removes the effects of significant items and currency translation from reported results. We therefore present these results on an adjusted basis as required by IFRSs. The 2017 and 2016 adjusted performance information is presented on a constant currency basis as described on page 34.

As required by IFRS 8, reconciliations of the total adjusted global business results to the Group reported results are presented on page 65. Supplementary reconciliations from reported to adjusted results by global business are presented on pages 67 to 69 for information purposes.

Global business performance is also assessed using return on tangible equity ('RoTE'), excluding significant items and the UK bank levy. A reconciliation of global business RoTE, excluding significant items and the UK bank levy to the Group's RoTE is provided in the reconciliations of non-GAAP financial measures at 31 December 2018.

Our operations are closely integrated and, accordingly, the presentation of data includes internal allocations of certain items of income and expense. These allocations include the costs of certain support services and global functions to the extent that they can be meaningfully attributed to global businesses and geographical regions. While such allocations have been made on a systematic and consistent basis, they necessarily involve a degree of subjectivity. Costs that are not allocated to global businesses are included in Corporate Centre.

Where relevant, income and expense amounts presented include the results of inter-segment funding along with inter-company and inter-business line transactions. All such transactions are undertaken on arm's length terms. The intra-Group elimination items for the global businesses are presented in Corporate Centre.

The expense of the UK bank levy is included in the Europe geographical region as HSBC regards the levy as a cost of being headquartered in the UK. For the purposes of the presentation by global business, the cost of the levy is included in the Corporate Centre.

The results of geographical regions are presented on a reported basis.

Geographical information is classified by the location of the principal operations of the subsidiary or, for The Hongkong and Shanghai Banking Corporation Limited, HSBC Bank plc, HSBC UK Bank plc, HSBC Bank Middle

East Limited and HSBC Bank USA, by the location of the branch responsible for reporting the results or providing funding.

A description of the global businesses is provided in the Strategic Report, pages 3 and 18 to 21.

Analysis of adjusted results by global business
(Audited)
HSBC adjusted profit before tax and balance sheet data

	Footnotes	Retail Banking and Wealth Management	Commercial Banking	Global Banking and Markets	Global Private Banking	Corporate Centre	Total
		2018					
		$m	$m	$m	$m	$m	$m
Net operating income before change in expected credit losses and other credit impairment charges	26	21,935	14,885	15,512	1,785	(177)	53,940
– external		17,270	14,652	17,986	1,497	2,535	53,940
– inter-segment		4,665	233	(2,474)	288	(2,712)	—
of which: net interest income/(expense)		15,822	10,666	5,259	888	(2,199)	30,436
Change in expected credit losses and other credit impairment charges		(1,177)	(739)	26	8	115	(1,767)
Net operating income/(expense)		20,758	14,146	15,538	1,793	(62)	52,173
Total operating expenses		(13,711)	(6,477)	(9,460)	(1,449)	(1,893)	(32,990)
Operating profit/(loss)		7,047	7,669	6,078	344	(1,955)	19,183
Share of profit in associates and joint ventures		33	—	—	—	2,503	2,536
Adjusted profit before tax		7,080	7,669	6,078	344	548	21,719
		%	%	%	%	%	%
Share of HSBC's adjusted profit before tax		32.6	35.3	28.0	1.6	2.5	100.0
Adjusted cost efficiency ratio		62.5	43.5	61.0	81.2	(1,069.5)	61.2
Adjusted balance sheet data		$m	$m	$m	$m	$m	$m
Loans and advances to customers (net)		361,872	333,162	244,978	39,217	2,467	981,696
Interests in associates and joint ventures		397	—	—	—	22,010	22,407
Total external assets		476,784	360,216	1,012,272	43,790	665,062	2,558,124
Customer accounts		640,924	357,596	290,914	64,658	8,551	1,362,643
Adjusted risk-weighted assets (unaudited)	64	126,865	321,244	281,021	16,824	118,550	864,504
		2017					
Net operating income before loan impairment charges and other credit risk provisions	26	20,220	13,247	15,285	1,723	1,186	51,661
– external		17,024	13,378	16,557	1,453	3,249	51,661
– inter-segment		3,196	(131)	(1,272)	270	(2,063)	—
of which: net interest income/(expense)		13,927	9,060	4,851	825	(481)	28,182
Loan impairment charges and other credit risk provisions/(recoveries)		(969)	(465)	(446)	(16)	183	(1,713)
Net operating income		19,251	12,782	14,839	1,707	1,369	49,948
Total operating expenses		(12,786)	(5,953)	(8,991)	(1,411)	(2,090)	(31,231)
Operating profit/(loss)		6,465	6,829	5,848	296	(721)	18,717

Share of profit in associates and joint ventures	14	—	—	—	2,402	2,416
Adjusted profit before tax	6,479	6,829	5,848	296	1,681	21,133
	%	%	%	%	%	%
Share of HSBC's adjusted profit before tax	30.6	32.3	27.7	1.4	8.0	100.0
Adjusted cost efficiency ratio	63.2	44.9	58.8	81.9	176.2	60.5
Adjusted balance sheet data	$m	$m	$m	$m	$m	$m
Loans and advances to customers (net)	332,261	305,213	244,476	39,597	7,294	928,841
Interests in associates and joint ventures	363	—	—	—	21,656	22,019
Total external assets	451,516	336,163	946,747	46,247	662,364	2,443,037
Customer accounts	621,092	351,617	273,080	64,957	10,883	1,321,629
Adjusted risk-weighted assets (unaudited) [64]	118,131	289,824	293,135	15,795	128,795	845,680

For footnotes, see page 89.

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HSBC adjusted profit before tax and balance sheet data (continued)

		2016					
		Retail Banking and Wealth Management	Commercial Banking	Global Banking and Markets	Global Private Banking	Corporate Centre	Total
	Footnotes	$m	$m	$m	$m	$m	$m
Net operating income before loan impairment charges and other credit risk provisions	26	18,483	12,656	14,807	1,770	1,544	49,260
– external		16,050	12,656	17,488	1,512	1,554	49,260
– inter-segment		2,433	—	(2,681)	258	(10)	—
of which: net interest income		12,906	8,506	4,800	813	1,176	28,201
Loan impairment charges and other credit risk provisions		(1,101)	(986)	(461)	—	(24)	(2,572)
Net operating income		17,382	11,670	14,346	1,770	1,520	46,688
Total operating expenses		(12,144)	(5,747)	(8,846)	(1,484)	(1,926)	(30,147)
Operating profit/(loss)		5,238	5,923	5,500	286	(406)	16,541
Share of profit in associates and joint ventures		20	—	—	—	2,345	2,365
Adjusted profit before tax		5,258	5,923	5,500	286	1,939	18,906
		%	%	%	%	%	%
Share of HSBC's adjusted profit before tax		27.8	31.3	29.1	1.5	10.3	100.0
Adjusted cost efficiency ratio		65.7	45.4	59.7	83.8	124.7	61.2
Adjusted balance sheet data		$m	$m	$m	$m	$m	$m
Loans and advances to customers (net)		312,393	285,253	230,171	36,222	12,331	876,370
Interests in associates and joint ventures		391	—	—	—	19,635	20,026
Total external assets		421,559	309,905	949,732	43,663	692,740	2,417,599
Customer accounts		595,765	346,746	261,949	71,389	14,344	1,290,193
Adjusted risk-weighted assets (unaudited)	64	111,617	276,705	301,728	15,418	149,680	855,148

For footnotes, see page 89.

Reconciliation of reported and adjusted items

(Audited)

Adjusted results reconciliation

		2018			2017				2016		
		Adjusted	Significant items	Reported	Adjusted	Currency translation	Significant items	Reported	Adjusted	Currency translation	Sign items
	Footnotes	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Revenue	26	53,940	(160)	53,780	51,661	(133)	(83)	51,445	49,260	803	(2,0
ECL		(1,767)	—	(1,767)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LICs		N/A	N/A	N/A	(1,713)	(56)	—	(1,769)	(2,572)	(24)	(804
Operating expenses		(32,990)	(1,669)	(34,659)	(31,231)	143	(3,796)	(34,884)	(30,147)	(361)	(9,3
		2,536	—	2,536	2,416	(41)	—	2,375	2,365	(10)	(1

Share of profit in associates and joint ventures										
Profit/(loss) before tax	21,719	(1,829	) 19,890	21,133	(87	) (3,879	) 17,167	18,906	408	(12,

For footnotes, see page 89.

Adjusted balance sheet reconciliation

	2018	2017			2016		
	Reported and adjusted	Adjusted	Currency translation	Reported	Adjusted	Currency translation	Reported
	$m	$m	$m	$m	$m	$m	$m
Loans and advances to customers (net)	981,696	928,841	34,123	962,964	876,370	(14,866)	861,504
Interests in associates and joint ventures	22,407	22,019	725	22,744	20,026	3	20,029
Total external assets	2,558,124	2,443,037	78,734	2,521,771	2,417,599	(42,613)	2,374,986
Customer accounts	1,362,643	1,321,629	42,833	1,364,462	1,290,193	(17,807)	1,272,386

Adjusted profit reconciliation

	Footnotes	2018 $m	2017 $m	2016 $m
Year ended 31 Dec				
Adjusted profit before tax		21,719	21,133	18,906
Significant items		(1,829)	(3,879)	(12,202)
– customer redress programmes (revenue)		53	(108)	2
– disposals, acquisitions and investment in new businesses (revenue)		(113)	274	264
– fair value movements on financial instruments	65, 66	(100)	(245)	(2,453)
– costs of structural reform		(361)	(420)	(223)
– costs to achieve		—	(3,002)	(3,118)
– customer redress programmes (operating expenses)		(146)	(655)	(559)
– disposals, acquisitions and investment in new businesses (operating expenses)		(52)	(53)	(1,087)
– disposals, acquisitions and investment in new businesses (LICs)		—	—	(748)
– gain on partial settlement of pension obligation		—	188	—
– impairment of GPB – Europe goodwill		—	—	(3,240)
– past service costs of guaranteed minimum pension benefits equalisation		(228)	—	—
– restructuring and other related costs		(66)	—	—
– settlements and provisions in connection with legal and other regulatory matters		(816)	198	(1,025)
– disposals, acquisitions and investment in new businesses (share of profit in associates and joint ventures)		—	—	(1)
– currency translation on significant items			(56)	(14)
Currency translation			(87)	408
Reported profit before tax		19,890	17,167	7,112

For footnotes, see page 89.

Reconciliation of reported and adjusted items – global businesses

Supplementary unaudited analysis of significant items by global business is presented below.

		2018					
		Retail Banking and Wealth Management	Commercial Banking	Global Banking and Markets	Global Private Banking	Corporate Centre	Total
	Footnotes	$m	$m	$m	$m	$m	$m
Revenue	26						
Reported		21,928	14,938	15,634	1,790	(510)	53,780
Significant items		7	(53)	(122)	(5)	333	160
– customer redress programmes		—	(53)	—	—	—	(53)
– disposals, acquisitions and investment in new businesses		7	—	—	(5)	111	113
– fair value movements on financial instruments	65	—	—	(122)	—	222	100
Adjusted		21,935	14,885	15,512	1,785	(177)	53,940
Change in expected credit losses and other credit impairment charges							
Reported		(1,177)	(739)	26	8	115	(1,767)
Adjusted		(1,177)	(739)	26	8	115	(1,767)
Operating expenses							
Reported		(13,902)	(6,480)	(9,348)	(1,550)	(3,379)	(34,659)
Significant items		191	3	(112)	101	1,486	1,669

– costs of structural reform	2	8	41	—	310	361
– customer redress programmes	173	(5)	(22)	—	—	146
– disposals, acquisitions and investment in new businesses	—	—	—	52	—	52
– past service costs of guaranteed minimum pension benefits equalisation	—	—	—	—	228	228
– restructuring and other related costs	—	—	—	7	59	66
– settlements and provisions in connection with legal and regulatory matters	16	—	(131)	42	889	816
Adjusted	(13,711)	(6,477)	(9,460)	(1,449)	(1,893)	(32,990)
Share of profit in associates and joint ventures						
Reported	33	—	—	—	2,503	2,536
Adjusted	33	—	—	—	2,503	2,536
Profit/(loss) before tax						
Reported	6,882	7,719	6,312	248	(1,271)	19,890
Significant items	198	(50)	(234)	96	1,819	1,829
– revenue	7	(53)	(122)	(5)	333	160
– operating expenses	191	3	(112)	101	1,486	1,669
Adjusted	7,080	7,669	6,078	344	548	21,719
Loans and advances to customers (net)						
Reported	361,872	333,162	244,978	39,217	2,467	981,696
Adjusted	361,872	333,162	244,978	39,217	2,467	981,696
Customer accounts						
Reported	640,924	357,596	290,914	64,658	8,551	1,362,643
Adjusted	640,924	357,596	290,914	64,658	8,551	1,362,643

For footnotes, see page 89.

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Reconciliation of reported and adjusted items (continued)

		2017					
		Retail Banking and Wealth Management	Commercial Banking	Global Banking and Markets	Global Private Banking	Corporate Centre	Total
	Footnotes	$m	$m	$m	$m	$m	$m
Revenue	26						
Reported		20,519	13,120	14,617	1,723	1,466	51,445
Currency translation		(67)	27	181	21	(29)	133
Significant items		(232)	100	487	(21)	(251)	83
– customer redress programmes		3	103	2	—	—	108
– disposals, acquisitions and investment in new businesses		(235)	—	99	(20)	(118)	(274)
– fair value movements on financial instruments	65	—	—	373	—	(128)	245
– currency translation on significant items		—	(3)	13	(1)	(5)	4
Adjusted		20,220	13,247	15,285	1,723	1,186	51,661
LICs							
Reported		(980)	(496)	(459)	(16)	182	(1,769)
Currency translation		11	31	13	—	1	56
Adjusted		(969)	(465)	(446)	(16)	183	(1,713)
Operating expenses							
Reported		(13,734)	(6,001)	(8,723)	(1,586)	(4,840)	(34,884)
Currency translation		38	(6)	(112)	(18)	(45)	(143)
Significant items		910	54	(156)	193	2,795	3,796
– costs of structural reform		6	3	8	—	403	420
– costs to achieve		270	44	240	3	2,445	3,002
– customer redress programmes		637	16	2	—	—	655
– disposals, acquisitions and investment in new businesses		—	—	—	31	22	53
– gain on partial settlement of pension obligation		(26)	(9)	(9)	(3)	(141)	(188)
– settlements and provisions in connection with legal and regulatory matters		—	—	(376)	164	14	(198)
– currency translation on significant items		23	—	(21)	(2)	52	52
Adjusted		(12,786)	(5,953)	(8,991)	(1,411)	(2,090)	(31,231)
Share of profit in associates and joint ventures							
Reported		18	—	—	—	2,357	2,375
Currency translation		(4)	—	—	—	45	41
Adjusted		14	—	—	—	2,402	2,416
Profit/(loss) before tax							
Reported		5,823	6,623	5,435	121	(835)	17,167
Currency translation		(22)	52	82	3	(28)	87

Significant items	678	154	331	172	2,544	3,879
– revenue	(232)	100	487	(21)	(251)	83
– operating expenses	910	54	(156)	193	2,795	3,796
Adjusted	6,479	6,829	5,848	296	1,681	21,133
Loans and advances to customers (net)						
Reported	346,148	316,533	252,474	40,326	7,483	962,964
Currency translation	(13,887)	(11,320)	(7,998)	(729)	(189)	(34,123)
Adjusted	332,261	305,213	244,476	39,597	7,294	928,841
Customer accounts						
Reported	639,592	362,908	283,943	66,512	11,507	1,364,462
Currency translation	(18,500)	(11,291)	(10,863)	(1,555)	(624)	(42,833)
Adjusted	621,092	351,617	273,080	64,957	10,883	1,321,629

For footnotes, see page 89.

Reconciliation of reported and adjusted items (continued)

		2016					
		Retail Banking and Wealth Management	Commercial Banking	Global Banking and Markets	Global Private Banking	Corporate Centre	Total
	Footnotes	$m	$m	$m	$m	$m	$m
Revenue	26						
Currency translation							
Reported		20,338	13,405	15,213	1,745	(2,735)	47,966
Currency translation		(374)	(214)	(89)	14	(140)	(803)
Significant items		(1,481)	(535)	(317)	11	4,419	2,097
– customer redress programmes		—	—	—	(2)	—	(2)
– disposals, acquisitions and investment in new businesses		(1,413)	(518)	(268)	14	1,921	(264)
– fair value movements on financial instruments	65, 66	—	—	(26)	—	2,479	2,453
– currency translation on significant items		(68)	(17)	(23)	(1)	19	(90)
Adjusted		18,483	12,656	14,807	1,770	1,544	49,260
LICs							
Reported		(1,633)	(1,272)	(471)	1	(25)	(3,400)
Currency translation		33	(4)	(5)	(1)	1	24
Significant items		499	290	15	—	—	804
– disposals, acquisitions and investment in new businesses		462	272	14	—	—	748
– currency translation on significant items		37	18	1	—	—	56
Adjusted		(1,101)	(986)	(461)	—	(24)	(2,572)
Operating expenses							
Reported		(14,138)	(6,087)	(9,302)	(5,074)	(5,207)	(39,808)
Currency translation		249	83	16	(19)	32	361
Significant items		1,745	257	440	3,609	3,249	9,300
– costs of structural reform		2	1	—	—	220	223
– costs to achieve		393	62	233	6	2,424	3,118
– customer redress programmes		497	34	28	—	—	559
– disposals, acquisitions and investment in new businesses		805	155	82	18	27	1,087
– impairment of GPB – Europe goodwill		—	—	—	3,240	—	3,240
– settlements and provisions in connection with legal and regulatory matters		—	—	94	341	590	1,025
– currency translation on significant items		48	5	3	4	(12)	48
Adjusted		(12,144)	(5,747)	(8,846)	(1,484)	(1,926)	(30,147)
Share of profit in associates and joint ventures							
Reported		20	—	—	—	2,334	2,354
Currency translation		—	—	—	—	10	10

Significant items	—	—	—	—	1	1
– disposals, acquisitions and investment in new businesses	—	—	—	—	1	1
– currency translation on significant items	—	—	—	—	—	—
Adjusted	20	—	—	—	2,345	2,365
Profit/(loss) before tax						
Reported	4,587	6,046	5,440	(3,328)	(5,633)	7,112
Currency translation	(92)	(135)	(78)	(6)	(97)	(408)
Significant items	763	12	138	3,620	7,669	12,202
– revenue	(1,481)	(535)	(317)	11	4,419	2,097
– LICs	499	290	15	—	—	804
– operating expenses	1,745	257	440	3,609	3,249	9,300
– share of profit in associates and joint ventures	—	—	—	—	1	1
Adjusted	5,258	5,923	5,500	286	1,939	18,906
Loans and advances to customers (net)						
Reported	306,056	281,930	225,855	35,456	12,207	861,504
Currency translation	6,337	3,323	4,316	766	124	14,866
Adjusted	312,393	285,253	230,171	36,222	12,331	876,370
Customer accounts						
Reported	590,502	341,729	256,095	69,850	14,210	1,272,386
Currency translation	5,263	5,017	5,854	1,539	134	17,807
Adjusted	595,765	346,746	261,949	71,389	14,344	1,290,193

For footnotes, see page 89.

Reconciliation of reported and adjusted risk-weighted assets

		At 31 Dec 2018					
		Retail Banking and Wealth Management	Commercial Banking	Global Banking and Markets	Global Private Banking	Corporate Centre	Total
	Footnotes	$bn	$bn	$bn	$bn	$bn	$bn
Risk-weighted assets							
Reported		126.9	321.2	281.0	16.8	119.4	865.3
Disposals		—	—	—	—	(0.8)	(0.8)
– operations in Brazil		—	—	—	—	(0.8)	(0.8)
Adjusted	64	126.9	321.2	281.0	16.8	118.6	864.5
		At 31 Dec 2017					
Risk-weighted assets							
Reported		121.5	301.0	299.3	16.0	133.5	871.3
Currency translation		(3.4)	(11.2)	(6.1)	(0.2)	(2.0)	(22.9)
Disposals		—	—	—	—	(2.7)	(2.7)
– operations in Brazil		—	—	—	—	(2.6)	(2.6)
– operations in Lebanon		—	—	—	—	(0.1)	(0.1)
Adjusted	64	118.1	289.8	293.2	15.8	128.8	845.7
		At 31 Dec 2016					
Risk-weighted assets							
Reported		115.1	275.9	300.4	15.3	150.5	857.2
Currency translation		(0.1)	2.2	2.0	0.1	(0.1)	4.1
Disposals		(3.4)	(1.4)	(0.7)	—	(0.7)	(6.2)
– operations in Brazil		(3.2)	(1.0)	(0.7)	—	(0.2)	(5.1)
– operations in Lebanon		(0.2)	(0.4)	—	—	(0.5)	(1.1)
Adjusted	64	111.6	276.7	301.7	15.4	149.7	855.1

For footnotes, see page 89.

Retail Banking and Wealth Management

2018 compared with 2017

Adjusted profit before tax of $7.1bn was $0.6bn or 9% higher, reflecting revenue growth, partly offset by higher operating expenses.

Adjusted revenue of $21.9bn was $1.7bn or 8% higher, with an increase in Retail Banking partly offset by Wealth Management. Revenue growth was strong in Hong Kong and the UK in particular, with notable increases in India and mainland China, and in our Latin American markets.

In Retail Banking, revenue was up $1.8bn or 13%. This reflected improved deposit margins from rising interest rates, together with deposit balance growth of $21bn or 3% and lending balance growth of $31bn or 9%. These factors were partly offset by mortgage margin compression from higher funding costs, primarily in Hong Kong and the UK.

In Wealth Management, revenue was down $0.1bn or 2% due to net adverse movements in market impacts of $0.6bn in life insurance manufacturing. In Wealth Management:

– life insurance manufacturing revenue decreased by $0.2bn or 11%, reflecting adverse movements in market impacts of $0.3bn in 2018, compared with a favourable movement of $0.3bn in 2017. This was partly offset by growth in the value of new business written ($0.2bn) and favourable actuarial assumption changes and experience variances ($0.2bn); and

–investment distribution revenue increased by $0.1bn due to higher sales of insurance products and bonds. Revenue from the sale of equity and mutual funds was stable as strong trading conditions in the first half of the year were offset by a slowdown in the second half of the year.

In 2018, the credit quality of our loan portfolio remained stable at 34 basis points of average gross loans. Adjusted expected credit losses and other credit impairment charges ('ECL') of $1.2bn mainly related to charges in Mexico, the UK and Asia, notably against unsecured lending. In the UK, ECL also included charges

related to the current economic uncertainty. This compared with adjusted LICs of $1.0bn in 2017, notably related to charges in Mexico, the UK and Hong Kong against unsecured lending balances.

Adjusted operating expenses of $13.7bn were $0.9bn or 7% higher. This primarily reflected a $0.6bn increase relating to investments, including $0.4bn in marketing and digital capabilities to help deliver improved customer service, and $0.1bn in staff to support business growth, particularly in the UK, Hong Kong, mainland China (including the Pearl River Delta) and the US.

2017 compared with 2016

Adjusted profit before tax of $6.5bn was $1.2bn or 23% higher. This reflected strong revenue growth, notably in net interest income from deposits, and an increase in Wealth Management, as well as lower LICs. This was partly offset by higher operating expenses.

Adjusted revenue of $20.2bn was $1.7bn or 9% higher, reflecting:

Higher revenue in Retail Banking (up $0.8bn or 6% to $13.5bn):

- Growth in revenue from current accounts, savings and deposits (up $1.1bn to $6.3bn) from higher net interest income due to wider spreads and higher balances, primarily in Hong Kong and also in the US and Mexico.

This was partly offset by:

- Lower personal lending revenue (down $0.3bn to $7.2bn), reflecting mortgage spread compression, primarily in Hong Kong, mainland China and the US. This was partly offset by lending growth of $19.9bn, notably driven by mortgages in the UK and Hong Kong, where we grew our market share.

Higher revenue in Wealth Management (up $1.0bn or 19% to $6.2bn):

- Growth in insurance manufacturing revenue (up $0.5bn to $1.9bn) was a significant factor in the rise in other income. This included favourable movements in market impacts of $0.3bn in

2017 compared with adverse movements of $0.4bn in 2016, due to interest rate and equity market movements, notably in Asia and France, and to a lesser extent higher insurance sales in Asia.

- Higher investment distribution revenue (up $0.4bn to $3.3bn), driven by an increase in fee income, primarily from higher sales of mutual funds and retail securities in Hong Kong, reflecting increased investor confidence.

Adjusted LICs of $1.0bn were $0.1bn or 12% lower, reflecting reductions in Turkey and the US as credit quality improved. This was partly offset in Mexico where higher LICs reflected targeted growth in unsecured lending and associated higher delinquency rates. In the UK, LICs were marginally higher, but remained at very low levels (10bps of the portfolio) as higher LICs relating to mortgages and unsecured lending were partly offset by a release from the sale of a loan portfolio.

Adjusted operating expenses of $12.8bn were $0.6bn or 5% higher, mainly due to investment in growth initiatives, notably in retail business banking, in our international proposition as we introduced new products and services, and in mainland China. Transformational and other cost savings partly offset inflation and higher performance-related pay.

Supplementary tables for RBWM

A breakdown of RBWM by business unit is presented below to reflect the basis of how the revenue performance of the business units is assessed and managed.

RBWM – adjusted profit before tax data

			Consists of		
		Total RBWM	Banking operations	Insurance manufacturing	Asset management
	Footnotes	$m	$m	$m	$m
Year ended 31 Dec 2018					
Net operating income before change in expected credit losses and other credit impairment charges	26	21,935	19,053	1,816	1,066
– net interest income		15,822	13,759	2,063	—
– net fee income/(expense)		5,198	4,723	(579)	1,054
– other income		915	571	332	12
ECL		(1,177)	(1,175)	(2)	—
Net operating income		20,758	17,878	1,814	1,066
Total operating expenses		(13,711)	(12,517)	(472)	(722)
Operating profit		7,047	5,361	1,342	344
Share of profit in associates and joint ventures		33	2	31	—
Profit before tax		7,080	5,363	1,373	344

Year ended 31 Dec 2017					
Net operating income before loan impairment charges and other credit risk provisions	26	20,220	17,182	1,971	1,067
– net interest income		13,927	11,914	2,013	—
– net fee income/(expense)		5,150	4,628	(498)	1,020
– other income		1,143	640	456	47
LICs		(969)	(969)	—	—
Net operating income		19,251	16,213	1,971	1,067
Total operating expenses		(12,786)	(11,681)	(403)	(702)
Operating profit		6,465	4,532	1,568	365
Share of profit in associates and joint ventures		14	4	10	—
Profit before tax		6,479	4,536	1,578	365

For footnotes, see page 89.

RBWM insurance manufacturing adjusted revenue of $1,816m (2017: $1,971m) was disclosed within the management view of adjusted revenue on page 18, as follows: Wealth Management $1,656m (2017: $1,870m) and Other $160m (2017: $101m).

RBWM Insurance manufacturing adjusted results
The following table shows the results of our insurance manufacturing operations by income statement line item. It shows

the results of insurance manufacturing operations for RBWM and for all global business segments in aggregate, and separately the insurance distribution income earned by HSBC bank channels.
Adjusted results of insurance manufacturing operations and insurance distribution income earned by HSBC bank channels[67]

		2018		2017	
		RBWM	All global businesses	RBWM	All global businesses
	Footnotes	$m	$m	$m	$m
Net interest income		2,063	2,227	2,013	2,193
Net fee income		(579)	(567)	(498)	(485)
– fee income		182	275	233	330
– fee expense		(761)	(842)	(731)	(815)
Net income from financial instruments held for trading or managed on a fair value basis		216	204	(37)	13
Net income/(expense) from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss		(1,562)	(1,578)	2,878	2,837
Gains less losses from financial investments		59	58	23	31
Net insurance premium income		10,235	10,716	9,470	9,895
Other operating income		712	766	61	97
Of which: PVIF		640	681	11	21
Total operating income		11,144	11,826	13,910	14,581
Net insurance claims and benefits paid and movement in liabilities to policyholders		(9,328)	(9,786)	(11,939)	(12,391)
Net operating income before change in expected credit losses and other credit impairment charges		1,816	2,040	1,971	2,190
Change in expected credit losses and other credit impairment charges		(2)	(2)	—	—
Net operating income		1,814	2,038	1,971	2,190
Total operating expenses		(472)	(491)	(403)	(434)
Operating profit		1,342	1,547	1,568	1,756
Share of profit in associates and joint ventures		31	31	10	10
Profit before tax of insurance manufacturing operations	68	1,373	1,578	1,578	1,766
Annualised new business premiums of insurance manufacturing operations		3,173	3,252	2,666	2,725
Insurance distribution income earned by HSBC bank channels		945	1,067	908	1,033

For footnotes, see page 89.

Insurance manufacturing
The following commentary, unless otherwise specified, relates to the 'All global businesses' results.
HSBC recognises the present value of long-term in-force insurance contracts and investment contracts with discretionary participation features ('PVIF') as an asset on the balance sheet. The overall balance sheet equity, including PVIF, is therefore a measure of the embedded value in the insurance manufacturing entities, and the movement in this embedded value in the period drives the overall income statement result.

Adjusted profit before tax of $1.6bn decreased by $0.2bn or 11%. This was mainly due to adverse market impacts of $0.3bn in 2018, which primarily reflected unfavourable equity market performance. This compared with favourable market impacts of $0.3bn in 2017. This reduction was partly offset by a $0.2bn increase in the value of new business written, as well as favourable actuarial assumptions and methodology updates of $0.1bn (2017: $0.1bn adverse).

Adjusted revenue was $0.2bn or 6.8% lower than 2017. This reflected the following:

- 'Net expense from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit or loss' of $1.6bn in 2018 compared with net income of $2.8bn in 2017, due to unfavourable equity market performance in Hong Kong and France in 2018 compared with 2017, resulting in revaluation losses on equity and unit trust assets supporting insurance and investment contracts. This negative movement resulted in a corresponding movement in liabilities to policyholders and PVIF (see 'Other operating income' below), reflecting the extent to which policyholders participate in the investment performance of the associated asset portfolio.
- Net insurance premium income of $10.7bn was $0.8bn higher. This was driven by higher new business volumes, particularly in Hong Kong and France, and lower reinsurance ceded in Hong Kong.
- Other operating income of $0.8bn increased by $0.7bn, mainly from favourable movements in PVIF. This reflected an increase in 'assumption changes and experience variances' of $0.6bn, primarily in Hong Kong, from the future sharing of investment returns with policyholders. In addition, the value of new business written increased by $0.2bn to $1.1bn. For further details, please see Note 21 on the Financial Statements.
- Net insurance claims and benefits paid and movement in liabilities to policyholders of $9.8bn were $2.6bn lower than 2017. This was primarily due to lower returns on financial assets supporting contracts where the policyholder is subject to part or all of the investment risk, partly offset by the impact of higher new business volumes in Hong Kong and France, and lower reinsurance ceded in Hong Kong.

Adjusted operating expenses of $0.5bn increased by $0.1bn or 13% compared with 2017, reflecting investment in core insurance functions and capabilities.

Annualised new business premiums ('ANP') is used to assess new insurance premium generation by the business. It is calculated as 100% of annualised first year regular premiums and 10% of single premiums, before reinsurance ceded. Growth in ANP during the period reflected new business growth, mainly in Hong Kong.

Insurance distribution income from HSBC channels included $663m (2017: $642m) on HSBC manufactured products, for which a corresponding fee expense is recognised within insurance manufacturing, and $404m (2017: $391m) products manufactured by third-party providers. The RBWM component of this distribution income was $588m (2017: $571m) from HSBC manufactured products and $357m (2017: $337m) from third-party products.

Commercial Banking

2018 compared with 2017

Adjusted profit before tax of $7.7bn was $0.8bn or 12% higher, driven by increased revenue, partly offset by higher operating expenses. ECL of $0.7bn in 2018 compared with LICs of $0.5bn in 2017.

Adjusted revenue of $14.9bn was $1.6bn or 12% higher with increases in all products, most notably Global Liquidity and Cash Management ('GLCM').

–In GLCM, revenue was $1.0bn or 22% higher, with growth across all regions. The increase was mainly in Hong Kong from wider margins, and in the UK from wider margins and average balance sheet growth. In Credit and Lending ('C&L'), revenue growth of $0.2bn or 5% reflected average balance sheet growth in the UK and Hong Kong, partly offset by margin compression. In addition, revenue increased by $44m or 2% in Global Trade and Receivables Finance ('GTRF') despite challenging market conditions, with growth reflecting higher average balances in Asia and the UK.

–Revenue growth was primarily in Asia (up 18%), mainly from increases in Hong Kong (up 21%) and mainland China (up 22%), as well as in the UK (up 10%). There was also notable revenue growth in the US (up 7%), Canada (up 8%), Latin America (up 20%) and Middle East and North Africa (‘MENA’) (up 5%).

–Corporate customer value from our international subsidiary banking proposition grew by 19%*.

Adjusted ECL were $0.7bn in 2018, reflecting charges across most regions, including a charge in the UK related to uncertainty in the economic outlook, partly offset by releases in North America. This compared with adjusted LICs of $0.5bn in 2017, which reflected charges in Asia, the UK, Mexico and the UAE, partly offset by net releases in North America.

Adjusted operating expenses of $6.5bn were $0.5bn or 9% higher, reflecting increased staff costs (up $0.2bn), including higher performance-related pay. In addition, we continued to increase our investment in digital capabilities (up $0.1bn), improvements in operational efficiency and customer experience, as well as regulatory and compliance.

* Analysis relates to corporate client income, which includes total income from GB&M synergy products, including foreign exchange and debt capital markets. This measure differs from reported revenue in that it excludes Business Banking and Other and internal cost of funds.

2017 compared with 2016

Adjusted profit before tax of $6.8bn was $0.9bn or 15% higher, reflecting higher revenue and lower LICs. This was partly offset by an increase in operating expenses.

Adjusted revenue of $13.2bn was $0.6bn or 5% higher, notably in net interest income, as strong growth in GLCM and increased revenue in C&L were partly offset by a reduction in GTRF revenue.

- In GLCM, revenue increased by $526m or 12% to $4.8bn, notably in Hong Kong and mainland China, as higher net interest income reflected wider spreads. Average balances grew 5%, reflecting customer deposit retention and new customer acquisitions. In the UK, average balance sheet growth of 10% was more than offset by narrower spreads due to the impact of the base rate reduction in 2016.
- In C&L, revenue increased by $48m or 1% to $5.1bn. In the UK, net interest income increased as lending growth more than offset narrower spreads. By contrast, revenue in Asia was lower, mainly driven by lower net interest income, as balance growth in Hong Kong was more than offset by the effects of spread compression in Hong Kong and mainland China, in part reflecting competitive pressures. Revenue in the US was lower, as we repositioned the portfolio towards higher returns.
- In GTRF, revenue was $12m or 1% lower at $1.8bn, representing a stabilisation in performance following a challenging 2016. Notably, revenue increased in both Asia and

the UK, reflecting balance sheet growth. However, this was more than offset by a reduction in revenue in MENA, reflecting the effect of managed customer exits in the UAE.

Adjusted LICs of $0.5bn were $0.5bn or 53% lower, notably in North America and the UK, primarily related to exposures in the oil and gas sectors, and were also lower in France and Spain. In Asia, lower LICs in Singapore and mainland China were largely offset by higher LICs in Hong Kong, across various sectors.

Adjusted operating expenses of $6.0bn were $0.2bn or 4% higher. This reflected our continued investment in Global Standards and digital capabilities, as well as inflation. This was partly offset by a reduction from our cost-saving initiatives.

Global Banking and Markets

2018 compared with 2017

Adjusted profit before tax of $6.1bn was $0.2bn or 4% higher, reflecting increased revenue and a $26m release of ECL in 2018, compared with LICs of $0.4bn in 2017. This was partly offset by higher operating expenses as we continued to invest in the business. We have continued to deliver risk-weighted asset ('RWA') savings, with net reductions of 4% ($12bn), including savings from management initiatives of $30bn during 2018. This reduction was partly offset by targeted lending growth.

With effect from the fourth quarter of 2018, interest earned on capital deployed, which was previously disclosed within 'Other' revenue, has been allocated to product lines. The 2017 comparatives have been re-presented on the new basis, with no effect on total adjusted revenue.

Adjusted revenue of $15.5bn was $0.2bn or 1% higher, and included a net favourable movement of $0.1bn on credit and funding valuation adjustments. The increase in revenue primarily reflected the strength of our transaction banking franchises, which more than offset the effects of economic uncertainty and reduced client activity.

–GLCM recorded double-digit growth (up $0.4bn or 20%) as we increased average balances by 4% through continued momentum in winning client mandates, and from favourable interest rate movements, notably in Asia.

–Securities Services revenue rose $0.2bn or 11% as we grew average assets under management and average assets under custody from increased client mandates, growth in equity markets early in 2018, and higher interest rates.

–Global Banking revenue increased $67m or 2% as growth in secured lending balances, gains on corporate lending restructuring and lower adverse movements on portfolio hedges were partly offset in our capital markets businesses, due to challenging market conditions and narrower spreads.

–GTRF revenue grew by 7% as we grew average lending balances while also reducing RWAs.

This was partly offset by the following:

–Global Markets revenue decreased by $0.5bn or 7% as economic uncertainty and reduced primary issuance led to subdued client activity and spread compression, which resulted in lower revenue in Rates (down $0.7bn or 31%) and Credit (down $0.2bn or 19%). This was partly offset by higher revenue in Foreign Exchange (up $0.4bn or 15%), from increased volatility in emerging markets.

–Principal Investments revenue fell by $0.1bn or 31% from lower gains on mark-to-market revaluation of investments, and on asset sales, compared with 2017.

Net adjusted ECL releases of $26m in 2018 related to releases against a small number of clients in the US and Europe, notably in

the oil and gas sector, partly offset by charges in the UK against exposures in the retail and construction sectors.
In 2017, adjusted LICs of $0.4bn were primarily against two large corporate exposures in Europe.
Adjusted operating expenses increased $0.5bn or 5%, as cost-saving initiatives were more than offset by investment in business growth and efficiency initiatives, and in regulatory programmes. We also incurred higher revenue-related taxes and costs.

2017 compared with 2016

Adjusted profit before tax of $5.8bn was $0.3bn or 6% higher, reflecting a strong revenue performance, partly offset by higher operating expenses.
With effect from 4Q18, interest earned on capital deployed previously disclosed within 'Other' revenue has been allocated to product lines. The 2017 figures have been presented on the new basis, with no effect on the total adjusted revenue. The 2016 figures have not been re-presented.
Adjusted revenue of $15.3bn was $0.5bn or 3% higher, with growth in all of our businesses. The increase included a net adverse movement of $0.2bn on credit and funding valuation adjustments. Excluding these movements, adjusted revenue increased by $0.7bn or 5%. The increase in revenue primarily reflected the following:

- Revenue growth in all of our transaction banking products, notably GLCM (up $0.3bn to $2.2bn) and Securities Services (up $0.2bn to $1.8bn). These increases reflected continued momentum as we won and retained client mandates, and benefited from higher interest rates, particularly in Asia and the US.
- Global Markets revenue of $7.0bn was $0.3bn higher. This was achieved despite lower volatility in 2017, compared with more robust trading conditions in 2016, and reflected an increase of $0.2bn in 2017 from the reallocation of the interest earned on capital deployed. In Equities revenue increased by $0.3bn to $1.3bn, as we continued to capture market share from Prime Financing products. This was partly offset by Foreign Exchange, where revenue decreased by $0.2bn, reflecting lower volatility and subdued trading conditions.
- Global Banking revenue was higher than 2016 (up $0.2bn to $4.0bn), reflecting higher lending balances and continued momentum in investment banking products, which broadly offset the effects of tightening spreads on lending in Asia. The remaining increase of $0.2bn was due to the reallocation of the interest earned on capital deployed.

Adjusted LICs of $0.4bn were broadly unchanged from the prior year. LICs in 2017 related to two large corporate exposures in Europe, compared with 2016, which included a small number of individually assessed LICs, notably on exposures in the oil and gas, and mining sectors in the US.
Adjusted operating expenses increased by $0.1bn or 2% to $9.0bn, reflecting higher performance-related pay, pension and severance costs. Our continued cost management and efficiency improvements, and savings from technology investments, broadly offset the effects of inflation.

Global Private Banking

2018 compared with 2017

Adjusted profit before tax of $344m was $48m or 16% higher, reflecting revenue growth and a net release of ECL, partly offset by higher operating expenses.
Adjusted revenue of $1.8bn increased by $62m or 4%, mainly in Hong Kong from higher deposit revenue as margins widened following interest rate rises, and from higher investment revenue from strong mandate flows. Other income decreased including lower revenue following client repositioning.

In 2018, there was a net release of adjusted ECL of $8m. This compared with adjusted LICs of $16m in 2017.
Adjusted operating expenses of $1.4bn were $38m or 3% higher, due to higher staff costs reflecting investment to support growth, mainly in Asia.
We had net new money inflows of $15bn in key markets targeted for growth, of which almost 60% was from collaboration with our other global businesses.

2017 compared with 2016

Adjusted profit before tax of $296m was $10m or 3% higher as a reduction in operating expenses was partly offset by lower revenue.

Adjusted revenue of $1.7bn was $47m or 3% lower, mainly due to a reduction in net trading income and net fee income, reflecting the continued impact of client repositioning. Revenue from the markets targeted for growth increased by 10%. This was mainly in Hong Kong, due to growth in investment fee income reflecting increased client activity, and higher net interest income from deposits reflecting wider spreads.

Adjusted LICs of $16m in 2017 primarily related to a single client in the UK.

Adjusted operating expenses of $1.4bn were $73m or 5% lower, mainly as a result of a managed reduction in FTEs and the impact of our cost-saving initiatives.

In 2017, net new money inflows of $15bn in key markets targeted for growth, especially in Hong Kong, were offset by outflows resulting from the repositioning of the business.

For GPB, a key measure of business performance is client assets, which is presented below.

GPB – reported client assets[69]

	2018	2017	2016
	$bn	$bn	$bn
At 1 Jan	330	298	349
Net new money	10	—	(17)
– of which: areas targeted for growth	15	15	2
Value change	(17)	21	(1)
Disposals	—	(10)	(24)
Exchange and other	(14)	21	(9)
At 31 Dec	309	330	298

GPB – reported client assets by geography

	Footnotes	2018	2017	2016
		$bn	$bn	$bn
Europe		149	161	147
Asia		124	130	108
North America		36	39	40
Latin America		—	—	3
Middle East	70	—	—	—
At 31 Dec		309	330	298

For footnotes, see page 89.

Corporate Centre

2018 compared with 2017

Adjusted profit before tax of $0.5bn was $1.1bn or 67% lower, reflecting lower revenue and higher ECL, partly offset by lower operating expenses.

We recorded negative adjusted revenue of $0.2bn in 2018 compared with adjusted revenue of $1.2bn in 2017. This reduction reflected lower revenue in Central Treasury and legacy portfolios, and a reduction in Other income.

Central Treasury revenue was $1.1bn lower, reflecting:

– higher interest expense on debt issued by HSBC Holdings (up $0.4bn), from an increase in issuances and higher average cost of debt issued;

–lower revenue in BSM (down $0.3bn), mainly from de-risking activities undertaken during 2017 in anticipation of interest rate rises, lower reinvestment yields and lower gains on disposals;
–adverse fair value movements of $0.3bn in 2018 compared with favourable movements of $0.1bn in 2017, relating to the economic hedging of interest rate and exchange rate risk on our long-term debt with long-term derivatives; and
–a $0.2bn loss arising from adverse swap mark-to-market movements following a bond reclassification under IFRS 9 'Financial Instruments'.

Revenue from legacy portfolios was down $0.1bn, reflecting losses on disposals.

Other income decreased by $0.2bn, mainly from the adverse effects of hyperinflation accounting in Argentina.

Adjusted ECL releases of $0.1bn in 2018 and net adjusted LICs releases of $0.2bn in 2017 were both primarily related to our legacy credit portfolio.

Adjusted operating expenses of $1.9bn were $0.2bn or 9% lower due to the favourable impact of hyperinflation accounting in Argentina and lower costs in relation to the run-off of the CML portfolio, which was completed during 2017.

Adjusted income from associates increased by $0.1bn or 4%. Our associate, The Saudi British Bank, announced a merger agreement with Alawwal Bank in Saudi Arabia. The merger, subject to shareholder and regulatory approval, is expected to be completed in 2019 and would dilute HSBC's shareholding in the merged bank from 40% to 29.2%.

2017 compared with 2016

Adjusted profit before tax of $1.7bn was $0.3bn or 13% lower, reflecting lower revenue and higher operating expenses, partly offset by a fall in LICs.

Adjusted revenue fell by $0.4bn or 23% to $1.2bn. In Central Treasury revenue was broadly unchanged (up $22m), due to:

- favourable fair value movements relating to the economic hedging of interest and exchange rate risk on our long-term debt with long-term derivatives of $0.1bn, compared with adverse movements of $0.3bn in 2016; partly offset by:
- higher interest on our debt (up $0.2bn), mainly from higher costs of debt issued to meet regulatory requirements; and
- a reduction in revenue in BSM ($0.3bn) reflecting lower yield rates and increased utilisation of the Group's surplus liquidity by the global businesses.

Other income decreased by $0.3bn, mainly due to a decrease related to the US run-off portfolio with respect to the disposal of the remaining loan portfolio during 2017.

Net adjusted loan impairment releases of $183m compared with adjusted LICs of $24m in 2016. This reflected lower LICs in the US run-off portfolio, and higher net releases related to our legacy credit portfolio.

Adjusted operating expenses of $2.1bn were $0.2bn or 9% higher due to investment in regulatory programmes and compliance, partly offset by lower US run-off portfolio costs.

Adjusted income from associates rose by $57m or 2%.

Analysis of reported results by geographical regions

HSBC reported profit/(loss) before tax and balance sheet data

		2018						
		Europe	Asia	MENA	North America	Latin America	Intra-HSBC items	Total
	Footnotes	$m	$m	$m	$m	$m	$m	$m
Net interest income		6,841	16,108	1,763	3,521	2,020	236	30,489
Net fee income		3,996	5,676	607	1,854	498	(11)	12,620
Net income from financial instruments held for trading or managed on a fair value basis		3,942	4,134	285	728	736	(294)	9,531
Net income from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit and loss		(789)	(717)	—	—	18	—	(1,488)
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss		601	(26)	(1)	36	27	58	695
Other income	71	3,113	3,609	33	586	(237)	(5,171)	1,933
Net operating income before change in expected credit losses and other credit impairment charges/recoveries	26	17,704	28,784	2,687	6,725	3,062	(5,182)	53,780
Change in expected credit losses and other credit impairment charges/recoveries		(609)	(602)	(209)	223	(570)	—	(1,767)
Net operating income		17,095	28,182	2,478	6,948	2,492	(5,182)	52,013
Total operating expenses		(17,934)	(12,466)	(1,357)	(6,149)	(1,935)	5,182	(34,659)
Operating profit/(loss)		(839)	15,716	1,121	799	557	—	17,354
Share of profit in associates and joint ventures		24	2,074	436	—	2	—	2,536
Profit/(loss) before tax		(815)	17,790	1,557	799	559	—	19,890
		%	%	%	%	%		%
Share of HSBC's profit before tax		(4.1)	89.5	7.8	4.0	2.8		100.0
Cost efficiency ratio		101.3	43.3	50.5	91.4	63.2		64.4
Balance sheet data		$m	$m	$m	$m	$m	$m	$m
Loans and advances to customers (net)		373,073	450,545	28,824	108,146	21,108	—	981,696
Total assets		1,150,235	1,047,636	57,455	390,410	51,923	(139,535)	2,558,124
Customer accounts		503,154	664,824	35,408	133,291	25,966	—	1,362,643
Risk-weighted assets	72	298,056	363,894	56,689	131,582	38,341	—	865,318

For footnotes, see page 67.

HSBC reported profit/(loss) before tax and balance sheet data (continued)

		2017						
		Europe	Asia	MENA	North America	Latin America	Intra-HSBC items	Total
	Footnotes	$m	$m	$m	$m	$m	$m	$m
Net interest income		6,970	14,153	1,752	3,441	2,098	(238)	28,176
Net fee income		4,161	5,631	619	1,880	520	—	12,811
Net income from financial instruments held for trading or managed on a fair value basis	44, 45	4,066	2,929	180	527	486	238	8,426
Net income from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit and loss		769	2,003	—	—	64	—	2,836
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other income/(expense)	45, 71	1,454	1,090	109	865	57	(4,379)	(804)
Net operating income before loan impairment charges and other credit risk provisions	26	17,420	25,806	2,660	6,713	3,225	(4,379)	51,445
Loan impairment charges and other credit risk provisions		(658)	(570)	(207)	189	(523)	—	(1,769)
Net operating income		16,762	25,236	2,453	6,902	2,702	(4,379)	49,676
Total operating expenses		(18,665)	(11,790)	(1,394)	(5,305)	(2,109)	4,379	(34,884)
Operating profit/(loss)		(1,903)	13,446	1,059	1,597	593	—	14,792
Share of profit/(loss) in associates and joint ventures		39	1,883	442	4	7	—	2,375
Profit/(loss) before tax		(1,864)	15,329	1,501	1,601	600	—	17,167
		%	%	%	%	%		%
Share of HSBC's profit before tax		(10.8)	89.3	8.7	9.3	3.5		100.0
Cost efficiency ratio		107.1	45.7	52.4	79.0	65.4		67.8
Balance sheet data		$m	$m	$m	$m	$m	$m	$m
Loans and advances to customers (net)		381,547	425,971	28,050	107,607	19,789	—	962,964
Total assets		1,169,515	1,008,498	57,469	391,292	48,413	(153,416)	2,521,771
Customer accounts		505,182	657,395	34,658	143,432	23,795	—	1,364,462
Risk-weighted assets	72	311,612	357,808	59,196	131,276	36,372	—	871,337
		2016						
Net interest income		8,346	12,490	1,831	4,220	3,006	(80)	29,813
Net fee income		4,247	5,200	709	1,898	723	—	12,777
Net income from financial instruments held for trading or managed on a fair value basis	44, 45	3,018	3,127	385	462	449	80	7,521

Net income from assets and liabilities of insurance businesses, including related derivatives, measured at fair value through profit and loss		454	445	—	—	363	—	1,262
Changes in fair value of other financial instruments mandatorily measured at fair value through profit or loss		N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other income	45, 71	(549)	2,058	44	485	(1,855)	(3,590)	(3,407)
Net operating income before loan impairment charges and other credit risk provisions	26	15,516	23,320	2,969	7,065	2,686	(3,590)	47,966
Loan impairment charges and other credit risk provisions		(446)	(677)	(316)	(732)	(1,229)	—	(3,400)
Net operating income		15,070	22,643	2,653	6,333	1,457	(3,590)	44,566
Total operating expenses		(21,845)	(10,785)	(1,584)	(6,147)	(3,037)	3,590	(39,808)
Operating profit		(6,775)	11,858	1,069	186	(1,580)	—	4,758
Share of profit/(loss) in associates and joint ventures		1	1,921	434	(1)	(1)	—	2,354
Profit before tax		(6,774)	13,779	1,503	185	(1,581)	—	7,112
		%	%	%	%	%		%
Share of HSBC's profit before tax		(95.2)	193.7	21.1	2.6	(22.2)		100.0
Cost efficiency ratio		140.8	46.2	53.4	87.0	113.1		83.0
Balance sheet data		$m	$m	$m	$m	$m	$m	$m
Loans and advances to customers (net)		336,670	365,430	30,740	111,710	16,954	—	861,504
Total assets		1,068,446	965,730	60,472	409,021	43,137	(171,820)	2,374,986
Customer accounts		446,615	631,723	34,766	138,790	20,492	—	1,272,386
Risk-weighted assets	72	298,384	333,987	59,065	150,714	34,341	—	857,181

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Reconciliation of reported and adjusted items – geographical regions

Reconciliation of reported and adjusted items

		2018					
		Europe	Asia	MENA	North America*	Latin America†	Total
	Footnotes	$m	$m	$m	$m	$m	$m
Revenue	26						
Reported	73	17,704	28,784	2,687	6,725	3,062	53,780
Significant items		98	(38)	(1)	95	6	160
– customer redress programmes		(53)	—	—	—	—	(53)
– disposals, acquisitions and investment in new businesses		(5)	—	—	103	15	113
– fair value movements on financial instruments	65	156	(38)	(1)	(8)	(9)	100
Adjusted	73	17,802	28,746	2,686	6,820	3,068	53,940
Change in expected credit losses and other credit impairment charges							
Reported		(609)	(602)	(209)	223	(570)	(1,767)
Adjusted		(609)	(602)	(209)	223	(570)	(1,767)
Operating expenses							
Reported	73	(17,934)	(12,466)	(1,357)	(6,149)	(1,935)	(34,659)
Significant items		677	16	—	976	—	1,669
– costs of structural reform		352	9	—	—	—	361
– customer redress programmes		146	—	—	—	—	146
– disposals, acquisitions and investment in new businesses		52	—	—	—	—	52
– past service costs of guaranteed minimum pension benefits equalisation		228	—	—	—	—	228
– restructuring and other related costs		46	7	—	13	—	66
– settlements and provisions in connection with legal and regulatory matters		(147)	—	—	963	—	816
Adjusted	73	(17,257)	(12,450)	(1,357)	(5,173)	(1,935)	(32,990)
Share of profit in associates and joint ventures							
Reported		24	2,074	436	—	2	2,536
Adjusted		24	2,074	436	—	2	2,536
Profit/(loss) before tax							
Reported		(815)	17,790	1,557	799	559	19,890
Significant items		775	(22)	(1)	1,071	6	1,829
– revenue		98	(38)	(1)	95	6	160
– operating expenses		677	16	—	976	—	1,669
Adjusted	74	(40)	17,768	1,556	1,870	565	21,719
Loans and advances to customers (net)							
Reported		373,073	450,545	28,824	108,146	21,108	981,696
Adjusted		373,073	450,545	28,824	108,146	21,108	981,696
Customer accounts							
Reported		503,154	664,824	35,408	133,291	25,966	1,362,643
Adjusted		503,154	664,824	35,408	133,291	25,966	1,362,643

For footnotes, see page 89.

Reconciliation of reported and adjusted items (continued)

		2018				
		UK	Hong Kong	Mainland China	US*	Mexico†
	Footnotes	$m	$m	$m	$m	$m
Revenue	26					
Reported		13,597	18,231	2,888	4,741	2,294
Significant items		109	5	(1)	97	(7)
– customer redress programmes		(53)	—	—	—	—
– disposals, acquisitions and investment in new businesses		—	—	—	103	—
– fair value movements on financial instruments	65	162	5	(1)	(6)	(7)
Adjusted		13,706	18,236	2,887	4,838	2,287
Change in expected credit losses and other credit impairment charges						
Reported		(516)	(214)	(143)	199	(463)
Adjusted		(516)	(214)	(143)	199	(463)
Operating expenses						
Reported		(14,502)	(6,539)	(1,920)	(4,987)	(1,303)
Significant items		531	16	—	919	—
– costs of structural reform		294	9	—	—	—
– customer redress programmes		146	—	—	—	—
– disposals, acquisitions and investment in new businesses		—	—	—	—	—
– past service costs of guaranteed minimum pension benefits equalisation		228	—	—	—	—
– restructuring and other related costs		39	7	—	11	—
– settlements and provisions in connection with legal and regulatory matters		(176)	—	—	908	—
Adjusted		(13,971)	(6,523)	(1,920)	(4,068)	(1,303)
Share of profit in associates and joint ventures						
Reported		25	36	2,033	—	—
Adjusted		25	36	2,033	—	—
Profit/(loss) before tax						
Reported		(1,396)	11,514	2,858	(47)	528
Significant items		640	21	(1)	1,016	(7)
– revenue		109	5	(1)	97	(7)
– operating expenses		531	16	—	919	—
Adjusted		(756)	11,535	2,857	969	521
Loans and advances to customers (net)						
Reported		287,144	290,547	38,979	64,011	17,895
Adjusted		287,144	290,547	38,979	64,011	17,895
Customer accounts						
Reported		399,487	484,897	45,712	82,523	19,936
Adjusted		399,487	484,897	45,712	82,523	19,936

* Of which US (excluding CML run-off portfolio): adjusted revenue $4,792m (RBWM: $1,200m; CMB: $1,016m; GB&M $1,924m; GPB: $259m); adjusted ECL $199m; adjusted operating expenses $(3,996)m; adjusted profit before tax (‘PBT’) $996m (RBWM: $(180)m; CMB: $473m; GB&M $618m; GPB: $23m); adjusted RWAs (RBWM: $10.6bn; CMB: $27.8bn; GB&M $45.5bn; GPB: $4.1bn; Corporate Centre: $10.2bn).

†

Of which Mexico: adjusted revenue $2,287m (RBWM: $1,508m; CMB: $378m; GB&M $321m); adjusted ECL $(463)m; adjusted operating expenses $(1,303)m; adjusted PBT $521m (RBWM: $194m; CMB: $114m; GB&M $189m); adjusted RWAs (RBWM: $7.0bn; CMB: $6.9bn; GB&M $10.6bn; Corporate Centre: $3.0bn).

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Reconciliation of reported and adjusted items (continued)

		2017					
		Europe	Asia	MENA	North America*	Latin America†	Total
	Footnotes	$m	$m	$m	$m	$m	$m
Revenue	26						
Reported	73	17,420	25,806	2,660	6,713	3,225	51,445
Currency translation	73	751	(130)	(75)	—	(403)	133
Significant items		66	123	1	(93)	(14)	83
– customer redress programmes		108	—	—	—	—	108
– disposals, acquisitions and investment in new businesses		(98)	(27)	—	(130)	(19)	(274)
– fair value movements on financial instruments	65	54	148	1	37	5	245
– currency translation on significant items		2	2	—	—	—	4
Adjusted	73	18,237	25,799	2,586	6,620	2,808	51,661
LICs							
Reported		(658)	(570)	(207)	189	(523)	(1,769)
Currency translation		17	5	3	2	29	56
Adjusted		(641)	(565)	(204)	191	(494)	(1,713)
Operating expenses							
Reported	73	(18,665)	(11,790)	(1,394)	(5,305)	(2,109)	(34,884)
Currency translation	73	(565)	65	60	—	287	(143)
Significant items		2,876	634	28	201	57	3,796
– costs of structural reform		420	—	—	—	—	420
– costs to achieve		1,908	623	34	371	66	3,002
– customer redress programmes		655	—	—	—	—	655
– disposals, acquisitions and investment in new businesses		36	—	—	17	—	53
– gain on partial settlement of pension obligation		—	—	—	(188)	—	(188)
– settlements and provisions in connection with legal and regulatory matters		(215)	17	—	—	—	(198)
– currency translation on significant items		72	(6)	(6)	1	(9)	52
Adjusted	73	(16,354)	(11,091)	(1,306)	(5,104)	(1,765)	(31,231)
Share of profit in associates and joint ventures							
Reported		39	1,883	442	4	7	2,375
Currency translation		—	45	—	—	(4)	41
Adjusted		39	1,928	442	4	3	2,416
Profit/(loss) before tax							
Reported		(1,864)	15,329	1,501	1,601	600	17,167
Currency translation		203	(15)	(12)	2	(91)	87
Significant items		2,942	757	29	108	43	3,879
– revenue		66	123	1	(93)	(14)	83
– operating expenses		2,876	634	28	201	57	3,796
Adjusted		1,281	16,071	1,518	1,711	552	21,133
Loans and advances to customers (net)							
Reported		381,547	425,971	28,050	107,607	19,789	962,964
Currency translation		(19,881)	(8,138)	(1,177)	(3,194)	(1,733)	(34,123)

Adjusted	361,666	417,833	26,873	104,413	18,056	928,841
Customer accounts						
Reported	505,182	657,395	34,658	143,432	23,795	1,364,462
Currency translation	(26,838)	(8,991)	(1,112)	(3,619)	(2,273)	(42,833)
Adjusted	478,344	648,404	33,546	139,813	21,522	1,321,629

For footnotes, see page 89.

Reconciliation of reported and adjusted items (continued)

		2017				
		UK	Hong Kong	Mainland China	US*	Mexico†
	Footnotes	$m	$m	$m	$m	$m
Revenue	26					
Reported		12,922	16,117	2,379	4,876	2,160
Currency translation		550	(91)	58	—	(45)
Significant items		55	(51)	101	(99)	5
– customer redress programmes		108	—	—	—	—
– disposals, acquisitions and investment in new businesses		(78)	(126)	99	(130)	—
– fair value movements on financial instruments	65	24	75	2	31	5
– currency translation on significant items		1	—	—	—	—
Adjusted		13,527	15,975	2,538	4,777	2,120
LICs						
Reported		(492)	(396)	(67)	108	(473)
Currency translation		14	3	(3)	—	9
Adjusted		(478)	(393)	(70)	108	(464)
Operating expenses						
Reported		(15,086)	(6,131)	(1,687)	(4,267)	(1,297)
Currency translation		(424)	34	(35)	—	25
Significant items		2,537	306	71	119	45
– costs of structural reform		410	—	—	—	—
– costs to achieve		1,766	291	69	290	46
– customer redress programmes		655	—	—	—	—
– disposals, acquisitions and investment in new businesses		—	—	—	17	—
– gain on partial settlement of pension obligation		—	—	—	(188)	—
– settlements and provisions in connection with legal and regulatory matters		(362)	17	—	—	—
– currency translation on significant items		68	(2)	2	—	(1)
Adjusted		(12,973)	(5,791)	(1,651)	(4,148)	(1,227)
Share of profit in associates and joint ventures						
Reported		38	8	1,863	—	—
Currency translation		—	—	45	—	—
Adjusted		38	8	1,908	—	—
Profit/(loss) before tax						
Reported		(2,618)	9,598	2,488	717	390
Currency translation		140	(54)	65	—	(11)
Significant items		2,592	255	172	20	50
– revenue		55	(51)	101	(99)	5
– operating expenses		2,537	306	71	119	45
Adjusted		114	9,799	2,725	737	429
Loans and advances to customers (net)						
Reported		295,538	268,966	40,686	65,168	15,172
Currency translation		(16,216)	(582)	(2,194)	—	27
Adjusted		279,322	268,384	38,492	65,168	15,199
Customer accounts						

Reported	401,733	477,104	45,991	89,887	17,809
Currency translation	(22,062)	(1,033)	(2,481)	—	32
Adjusted	379,671	476,071	43,510	89,887	17,841

* Of which US (excluding CML run-off portfolio): adjusted revenue $4,737m (RBWM: $1,194m; CMB: $947m; GB&M $1,951m; GPB: $317m); adjusted LICs $118m; adjusted operating expenses $(3,936)m; adjusted PBT $920m (RBWM: $(58)m; CMB: $432m; GB&M $527m; GPB: $64m); adjusted RWAs (RBWM: $11.0bn; CMB: $25.1bn; GB&M $45.2bn; GPB: $4.2bn; Corporate Centre: $10.0bn).

† Of which Mexico: adjusted revenue $2,120m (RBWM: $1,413m; CMB: $342m; GB&M $277m); adjusted LICs $(464)m; adjusted operating expenses $(1,227)m; adjusted PBT $429m (RBWM: $143m; CMB: $103m; GB&M $158m); adjusted RWAs (RBWM: $7.0bn; CMB: $5.9bn; GB&M $8.3bn; Corporate Centre: $2.8bn).

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Reconciliation of reported and adjusted items (continued)

		2016					
		Europe	Asia	MENA	North America*	Latin America†	Total
	Footnotes	$m	$m	$m	$m	$m	$m
Revenue	26						
Reported	73	15,516	23,320	2,969	7,065	2,686	47,966
Currency translation	73	96	(166)	(448)	37	(336)	(803)
Significant items		1,774	(10)	(7)	155	185	2,097
– customer redress programmes		(2)	—	—	—	—	(2)
– disposals, acquisitions and investment in new businesses		(547)		(11)	21	273	(264)
– fair value movements on financial investments	65, 66	2,289	(6)	—	134	36	2,453
– currency translation on significant items		34	(4)	4	—	(124)	(90)
Adjusted	73	17,386	23,144	2,514	7,257	2,535	49,260
LICs							
Reported		(446)	(677)	(316)	(732)	(1,229)	(3,400)
Currency translation		—	1	59	(5)	(31)	24
Significant items		—	—	—	—	804	804
– disposals, acquisitions and investment in new businesses		—	—	—	—	748	748
– currency translation on significant items		—	—	—	—	56	56
Adjusted		(446)	(676)	(257)	(737)	(456)	(2,572)
Operating expenses							
Reported	73	(21,845)	(10,785)	(1,584)	(6,147)	(3,037)	(39,808)
Currency translation	73	(109)	72	225	(20)	207	361
Significant items		6,638	418	71	990	1,183	9,300
– costs of structural reform		223	—	—	—	—	223
– costs to achieve		2,098	476	103	402	39	3,118
– customer redress programmes		559	—	—	—	—	559
– disposals, acquisitions and investment in new businesses		28	—	—	—	1,059	1,087
– impairment of GPB – Europe goodwill		3,240	—	—	—	—	3,240
– settlements and provisions in connection with legal and regulatory matters		484	(46)	—	587	—	1,025
– currency translation on significant items		6	(12)	(32)	1	85	48
Adjusted	73	(15,316)	(10,295)	(1,288)	(5,177)	(1,647)	(30,147)
Share of profit in associates and joint ventures							
Reported		1	1,921	434	(1)	(1)	2,354
Currency translation		—	10	—	—	—	10
Significant items		—	—	—	—	1	1
– disposals, acquisitions and investment in new businesses		—	—	—	—	1	1
– currency translation on significant items		—	—	—	—	—	—
Adjusted		1	1,931	434	(1)	—	2,365
Profit/(loss) before tax							
Reported		(6,774)	13,779	1,503	185	(1,581)	7,112
Currency translation		(13)	(83)	(164)	12	(160)	(408)

Significant items	8,412	408	64	1,145	2,173	12,202
– revenue	1,774	(10)	(7)	155	185	2,097
– LICs	—	—	—	—	804	804
– operating expenses	6,638	418	71	990	1,183	9,300
– share of profit in associates and joint ventures	—	—	—	—	1	1
Adjusted	1,625	14,104	1,403	1,342	432	18,906
Loans and advances to customers (net)						
Reported	336,670	365,430	30,740	111,710	16,954	861,504
Currency translation	17,113	(481)	(1,370)	697	(1,093)	14,866
Adjusted	353,783	364,949	29,370	112,407	15,861	876,370
Customer accounts						
Reported	446,615	631,723	34,766	138,790	20,492	1,272,386
Currency translation	21,775	(1,617)	(1,450)	842	(1,743)	17,807
Adjusted	468,390	630,106	33,316	139,632	18,749	1,290,193

For footnotes, see page 89.

Reconciliation of reported and adjusted items (continued)

		2016				
		UK	Hong Kong	Mainland China	US*	Mexico†
	Footnotes	$m	$m	$m	$m	$m
Revenue	26					
Reported		10,893	14,014	2,343	5,239	1,963
Currency translation		(209)	(133)	(10)	—	(56)
Significant items		1,834	(1)	—	148	—
– customer redress programmes		(2)	—	—	—	—
– disposals, acquisitions and investment in new businesses		(441)	—	—	21	—
– fair value movements on financial instruments	65, 66	2,238	(1)	—	127	—
– currency translation on significant items		39	—	—	—	—
Adjusted		12,518	13,880	2,333	5,387	1,907
LICs						
Reported		(245)	(321)	(121)	(631)	(452)
Currency translation		12	3	—	—	13
Adjusted		(233)	(318)	(121)	(631)	(439)
Operating expenses						
Reported		(14,562)	(5,646)	(1,507)	(5,079)	(1,264)
Currency translation		106	54	(6)	—	36
Significant items		2,660	181	54	879	29
– costs of structural reform		223	—	—	—	—
– costs to achieve		1,838	229	54	292	30
– customer redress programmes		559	—	—	—	—
– settlements and provisions in connection with legal and regulatory matters		50	(46)	—	587	—
– currency translation on significant items		(10)	(2)	—	—	(1)
Adjusted		(11,796)	(5,411)	(1,459)	(4,200)	(1,199)
Share of profit in associates and joint ventures						
Reported		1	22	1,892	—	—
Currency translation		—	—	10	—	—
Adjusted		1	22	1,902	—	—
Profit/(loss) before tax						
Reported		(3,913)	8,069	2,607	(471)	247
Currency translation		(91)	(76)	(6)	—	(7)
Significant items		4,494	180	54	1,027	29
– revenue		1,834	(1)	—	148	—
– operating expenses		2,660	181	54	879	29
Adjusted		490	8,173	2,655	556	269
Loans and advances to customers (net)						
Reported		264,098	230,629	33,303	74,596	12,876
Currency translation		11,660	(2,181)	133	—	548
Adjusted		275,758	228,448	33,436	74,596	13,424
Customer accounts						
Reported		361,278	461,626	46,576	88,751	14,423
Currency translation		15,691	(4,370)	185	—	613
Adjusted		376,969	457,256	46,761	88,751	15,036

* Of which US (excluding CML run-off portfolio): adjusted revenue $4,698m (RBWM: $1,161m; CMB: $981m; GB&M $1,979m; GPB: $303m); adjusted LICs $(503)m; adjusted operating expenses $(3,808)m; adjusted PBT $387m (RBWM: $(81)m; CMB: $341m; GB&M $100m; GPB: $67m); adjusted RWAs (RBWM: $11.0bn; CMB: $26.8bn; GB&M $48.3bn; GPB: $4.1bn; Corporate Centre: $13.6bn).

† Of which Mexico: adjusted revenue $1,907m (RBWM: $1,256m; CMB: $330m; GB&M $214m; GPB: $13m); adjusted LICs $(439)m; adjusted operating expenses $(1,199)m; adjusted PBT $269m (RBWM: $97m; CMB: $83m; GB&M $78m; GPB: $5m); adjusted RWAs (RBWM: $6.4bn; CMB: $6.3bn; GB&M $6.7bn; Corporate Centre: $1.7bn).

For footnotes, see page 89.

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Analysis of reported results by country/territory

Profit/(loss) before tax by country/territory within global businesses

	Footnotes	Retail Banking and Wealth Management	Commercial Banking	Global Banking and Markets	Global Private Banking	Corporate Centre	Total
		$m	$m	$m	$m	$m	$m
Europe		440	2,289	690	(122)	(4,112)	(815)
– UK		476	1,901	409	23	(4,205)	(1,396)
of which: HSBC Holdings	75	(644)	(428)	(394)	(77)	(888)	(2,431)
– France		(56)	170	8	16	(101)	37
– Germany		14	85	99	8	(5)	201
– Switzerland		(1)	5	(1)	(100)	20	(77)
– other		7	128	175	(69)	179	420
Asia		6,190	4,176	3,773	353	3,298	17,790
– Hong Kong		5,951	3,114	1,670	333	446	11,514
– Australia		115	120	185	(1)	44	463
– India		20	143	387	—	275	825
– Indonesia		(1)	13	91	—	1	104
– mainland China		(200)	262	566	(4)	2,234	2,858
– Malaysia		130	82	132	—	30	374
– Singapore		75	98	230	25	63	491
– Taiwan		55	23	117	—	30	225
– other		45	321	395	—	175	936
Middle East and North Africa		182	108	733	7	527	1,557
– Egypt		34	54	202	—	43	333
– UAE		112	58	296	7	—	473
– Saudi Arabia		—	—	—	—	436	436
– other		36	(4)	235	—	48	315
North America		(96)	968	738	11	(822)	799
– US		(205)	473	624	23	(962)	(47)
– Canada		55	455	139	—	116	765
– other		54	40	(25)	(12)	24	81
Latin America		166	178	378	(1)	(162)	559
– Mexico		194	114	197	—	23	528
– other		(28)	64	181	(1)	(185)	31
Year ended 31 Dec 2018		6,882	7,719	6,312	248	(1,271)	19,890
Europe		(159)	1,899	777	(231)	(4,150)	(1,864)
– UK		(177)	1,539	192	(23)	(4,149)	(2,618)
of which: HSBC Holdings	75	(658)	(372)	(739)	(89)	(3,308)	(5,166)
– France		(12)	204	228	5	(156)	269
– Germany		21	61	141	9	39	271
– Switzerland		(2)	7	1	(192)	2	(184)
– other		11	88	215	(30)	114	398
Asia		5,372	3,394	3,135	285	3,143	15,329
– Hong Kong		5,039	2,460	1,357	257	485	9,598
– Australia		122	101	108	(1)	35	365
– India		21	159	362	—	374	916

– Indonesia	(24)	76	98	—	30	180
– mainland China	(44)	161	387	(4)	1,988	2,488
– Malaysia	85	50	162	—	28	325
– Singapore	69	94	202	34	64	463
– Taiwan	43	10	107	(1)	40	199
– other	61	283	352	—	99	795
Middle East and North Africa	144	199	593	—	565	1,501
– Egypt	26	69	164	—	46	305
– UAE	110	53	268	—	48	479
– Saudi Arabia	—	—	—	—	441	441
– other	8	77	161	—	30	276
North America	305	932	671	67	(374)	1,601
– US	166	435	494	66	(444)	717
– Canada	61	453	132	—	43	689
– other	78	44	45	1	27	195
Latin America	161	199	259	—	(19)	600
– Mexico	139	105	158	—	(12)	390
– other	22	94	101	—	(7)	210
Year ended 31 Dec 2017	5,823	6,623	5,435	121	(835)	17,167

Profit/(loss) before tax by country/territory within global businesses (continued)

	Footnotes	Retail Banking and Wealth Management	Commercial Banking	Global Banking and Markets	Global Private Banking	Corporate Centre	Total
		$m	$m	$m	$m	$m	$m
Europe		524	2,129	1,009	(3,695)	(6,741)	(6,774)
– UK		338	1,834	385	86	(6,556)	(3,913)
of which: HSBC Holdings	75,76	(676)	(379)	(425)	(63)	(3,748)	(5,291)
– France		147	198	289	9	(53)	590
– Germany		23	68	142	7	13	253
– Switzerland		—	9	—	(493)	(7)	(491)
– other		16	20	193	(3,304)	(138)	(3,213)
Asia		4,115	2,920	3,211	268	3,265	13,779
– Hong Kong		3,796	2,191	1,298	221	563	8,069
– Australia		108	74	156	—	31	369
– India		15	123	355	10	240	743
– Indonesia		(9)	66	110	—	11	178
– mainland China		(72)	68	456	(3)	2,158	2,607
– Malaysia		65	65	172	—	53	355
– Singapore		107	43	170	42	77	439
– Taiwan		24	10	102	(1)	13	148
– other		81	280	392	(1)	119	871
Middle East and North Africa		20	290	652	—	541	1,503
– Egypt		58	104	213	—	79	454
– UAE		83	94	298	—	5	480
– Saudi Arabia		1	—	—	—	434	435
– other		(122)	92	141	—	23	134
North America		64	648	259	90	(876)	185
– US		(28)	336	86	67	(932)	(471)
– Canada		46	292	155	—	47	540
– other		46	20	18	23	9	116
Latin America		(136)	59	309	9	(1,822)	(1,581)
– Mexico		94	84	79	5	(15)	247
– other		(230)	(25)	230	4	(1,807)	(1,828)
– of which: Brazil		(281)	(139)	176	4	(1,836)	(2,076)
Year ended 31 Dec 2016		4,587	6,046	5,440	(3,328)	(5,633)	7,112

For footnotes, see page 89.

Reconciliations of return on equity and return on tangible equity

Return on Equity and Return on Tangible Equity

	2018	2017	2016
	$m	$m	$m
Profit			
Profit/(loss) attributable to the ordinary shareholders of the parent company	12,608	9,683	1,299
Goodwill impairment	—	—	3,240
Increase/(decrease) in PVIF (net of tax)	(506)	16	(667)
Profit/(loss) attributable to the ordinary shareholders, excluding goodwill impairment and PVIF	12,102	9,699	3,872
Significant items (net of tax) and UK bank levy	2,590	3,827	8,740
Profit/(loss) attributable to the ordinary shareholders, excluding goodwill impairment, PVIF, significant items and UK bank levy	14,692	13,526	12,612
Equity			
Average ordinary shareholders' equity	163,483	163,419	170,168
Effect of goodwill, PVIF and other intangibles (net of deferred tax)	(22,102)	(20,721)	(23,577)
Average tangible equity	141,381	142,698	146,591
Fair value of own debt, DVA and other adjustments	2,439	2,788	(1,171)
Average tangible equity excluding fair value of own debt, DVA and other adjustments	143,820	145,486	145,420
	%	%	%
Ratio			
Return on equity	7.7	5.9	0.8
Return on tangible equity	8.6	6.8	2.6
Return on tangible equity excluding significant items and UK bank levy	10.2	9.3	8.7

Return on tangible equity by global business

	Year ended 31 Dec 2018					
	Retail Banking and Wealth Management	Commercial Banking	Global Banking and Markets	Global Private Banking	Corporate Centre	Total
	$m	$m	$m	$m	$m	$m
Profit before tax	6,882	7,719	6,312	248	(1,271)	19,890
Tax expense	(1,238)	(1,680)	(1,350)	(53)	(544)	(4,865)
Profit after tax	5,644	6,039	4,962	195	(1,815)	15,025
Less attributable to: preference shareholders, other equity holders, non-controlling interests	(763)	(746)	(659)	(19)	(230)	(2,417)
Profit attributable to ordinary shareholders of the parent company	4,881	5,293	4,303	176	(2,045)	12,608
Increase in PVIF (net of tax)	(483)	(21)	—	—	(2)	(506)
Significant items (net of tax) and UK bank levy	146	(36)	(168)	75	2,573	2,590
Balance Sheet Management allocation and other adjustments	555	581	851	82	(2,069)	—
Profit attributable to ordinary shareholders, excluding PVIF, significant items and UK bank	5,099	5,817	4,986	333	(1,543)	14,692

levy						
Average tangible shareholders' equity excluding fair value of own debt, DVA and other adjustments	24,287	41,550	47,477	3,376	27,130	143,820
Return on tangible equity excluding significant items and UK bank levy (%)	21.0%	14.0%	10.5%	9.9%	(5.7)%	10.2%
	Year ended 31 Dec 2017					
Profit before tax	5,823	6,623	5,435	121	(835)	17,167
Tax expense	(1,089)	(1,565)	(1,376)	(26)	(1,232)	(5,288)
Profit after tax	4,734	5,058	4,059	95	(2,067)	11,879
Less attributable to: preference shareholders, other equity holders, non-controlling interests	(723)	(678)	(522)	(22)	(251)	(2,196)
Profit attributable to ordinary shareholders of the parent company	4,011	4,380	3,537	73	(2,318)	9,683
Increase in PVIF (net of tax)	17	2	—	1	(4)	16
Significant items (net of tax) and UK bank levy	501	116	294	133	2,783	3,827
Balance Sheet Management allocation and other adjustments	630	663	913	107	(2,313)	—
Profit attributable to ordinary shareholders, excluding PVIF, significant items and bank levy	5,159	5,161	4,744	314	(1,852)	13,526
Average tangible shareholders' equity excluding fair value of own debt, DVA and other adjustments	23,838	36,935	44,664	4,400	35,649	145,486
Return on tangible equity excluding significant items and UK bank levy (%)	21.6%	14.0%	10.6%	7.1%	(5.2)%	9.3%

Other information

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Funds under management and assets held in custody

Funds under management

	Footnotes	2018 $bn	2017 $bn
Funds under management	77		
At 1 Jan		943	831
Net new money		22	2
Value change		(37)	77
Exchange and other		(29)	33
Disposals		—	—
At 31 Dec		899	943
Funds under management by business			
Global Asset Management		444	462
Global Private Banking		241	258
Affiliates		4	4
Other		210	219
At 31 Dec		899	943

For footnotes, see page 89.

Funds under management ('FuM') represents assets managed, either actively or passively, on behalf of our customers. At 31 December 2018, FuM amounted to $899bn, a decrease of 5% primarily reflecting adverse market performance together with adverse foreign exchange movements.

Global Asset Management FuM decreased by 4% to $444bn compared with 31 December 2017. The reduction primarily reflected adverse foreign exchange movements, together with adverse market performance of $14bn. This was partly offset by net new money, primarily from money market solutions across all regions.

GPB FuM decreased by 7% to $241bn compared with 31 December 2017. The reduction reflected adverse market movements of $17bn, together with adverse foreign exchange. This was partly offset by positive net new money, mainly in Hong Kong.

Other FuM, of which the main element is a corporate trust business in Asia, decreased by 4% to $210bn.

Assets held in custody[77] and under administration

Custody is the safekeeping and servicing of securities and other financial assets on behalf of clients. At 31 December 2018, we held assets as custodian of $7.4tn, 4% lower than the $7.7tn held at 31 December 2017. This decrease was mainly driven by adverse foreign exchange movements in Europe and Asia together with adverse market movements in Asia, which was partly offset by incremental assets under custody in North America.

Our Assets Under Administration business, which includes the provision of bond and loan administration services and the valuation of portfolios of securities and other financial assets on behalf of clients, complements the custody business.

At 31 December 2018, the value of assets held under administration by the Group amounted to $3.5tn, which was 2% lower than the $3.6tn held at 31 December 2017. This decrease was mainly driven by adverse foreign exchange movements which were partly offset by a net inflow of new assets in Europe and Asia.

Taxes paid by region and country/territory

The following table reflects a geographical view of HSBC's operations.

Taxes paid by HSBC relate to HSBC's own tax liabilities including tax on profits earned, employer taxes, bank levy and other
duties/levies such as stamp duty. Numbers are reported on a cash flow basis.

Taxes paid by country/territory

	2018	2017	2016
	$m	$m	$m
Europe	3,398	3,340	3,151
– UK	2,693	2,654	2,385
of which: HSBC Holdings	832	1,078	1,253
– France	536	530	553
– Germany	111	140	124
– Switzerland	13	(67)	34
– other	45	83	55
Asia	2,742	2,277	2,755
– Hong Kong	1,398	1,043	1,488
– Australia	140	142	147
– mainland China	235	227	241
– India	384	297	315
– Indonesia	44	84	46
– Malaysia	94	81	99
– Singapore	88	64	85
– Taiwan	53	42	35
– other	306	297	299
Middle East and North Africa	234	419	293
– Saudi Arabia	—	170	60
– UAE	67	101	89
– Egypt	104	58	97
– other	63	90	47
North America	399	317	276
– US	162	134	135
– Canada	240	182	141
– other	(3)	1	—
Latin America	281	443	965
– Mexico	90	129	79
– other	191	314	886
of which: Brazil	28	36	658
Year ended 31 Dec	7,054	6,796	7,440

Conduct-related matters

Conduct-related costs included in significant items

	2018	2017	2016
	$m	$m	$m
Income statement			
Net interest income/(expense)	53	(108)	2
– customer redress programmes	53	(108)	2
Operating expenses	(780)	(457)	(1,584)
– legal proceedings and regulatory matters	(634)	198	(1,025)
– customer redress programmes	(146)	(655)	(559)
Total charge for the year relating to significant items	(727)	(565)	(1,582)
Total provisions utilised during the year	1,759	1,136	2,265
Balance sheet at 31 Dec			
Total provisions	1,526	2,595	3,056
– legal proceedings and regulatory matters	872	1,248	2,060
– customer redress programmes	654	1,347	996
Accruals, deferred income and other liabilities	8	20	106

The table above provides a summary of conduct-related costs included in significant items (see pages 38 and 43).

The HSBC approach to conduct is designed to ensure that through our actions and behaviours we deliver fair outcomes for our customers, and do not disrupt the orderly and transparent operation of financial markets. The Board places a strong emphasis on conduct, requiring adherence to high behavioural standards and the HSBC Values. The Board oversight of conduct matters was transitioned to the Group Risk Committee following the demise of the Conduct & Values Committee during the first half of 2018. Additionally the Remuneration Committee also considers conduct and compliance-related matters relevant to remuneration. These committees' reports may be found on pages 206 to 209. For information on initiatives implemented in 2018 to raise our standards in relation to the conduct of our business, see page 123 under 'Conduct of business'.

Provisions relating to significant items raised for conduct costs in 2018 resulted from the ongoing consequences of a small number of historical events.

Operating expenses included significant items related to conduct matters in respect of legal proceedings and regulatory matters of $634m and customer remediation costs mainly in respect of the mis-selling of payment protection insurance of $172m. For further details on payment protection insurance and legal proceedings and regulatory matters, see Notes 27 and 35 on the Financial Statements, respectively.

Carbon dioxide emissions

We report our carbon emissions with reference to the GHG Protocol including the amendments to Scope 2 Guidance, which incorporate market-based emission methodology. We report carbon dioxide emissions resulting from energy use in our buildings and employees' business travel.

In 2018, we collected data on energy use and business travel for our operations in 28 countries and territories, which accounted for approximately 93% of our full-time employees ('FTEs'). To estimate the emissions of our operations in countries and territories where we have operational control and a small presence, we scale up the emissions data from 93% to 100%.

We then apply emission uplift rates to reflect uncertainty concerning the quality and coverage of emission measurement and estimation. The rates are 4% for electricity, 10% for other energy and 6% for business travel. This is consistent both with the Intergovernmental Panel on Climate Change's Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories and our internal analysis of data coverage and quality.

Carbon dioxide emissions in tonnes

	2018	2017

Total	559,000	580,000
From energy	437,000	473,000
From travel	122,000	107,000

Carbon dioxide emissions in tonnes per FTE

	2018	2017
Total	2.39	2.49
From energy	1.87	2.03
From travel	0.52	0.46

The reduction in our carbon emissions continues to be driven by energy efficiency initiatives, as well as our procurement of electricity from renewable sources under power purchase agreements. Travel emissions increased due to improved business travel data collection.

Our greenhouse gas reporting year runs from October to September. For the year from 1 October 2017 to 30 September 2018, carbon dioxide emissions from our global operations were 559,000 tonnes. Independent assurance of our carbon dioxide emissions will be available in the first half of 2019 on our website.

Disclosure controls

The Group Chief Executive and Group Chief Financial Officer, with the assistance of other members of management, carried out an evaluation of the effectiveness of the design and operation of HSBC Holdings' disclosure controls and procedures as at 31 December 2018. Based upon that evaluation, the Group Chief Executive and Group Chief Financial Officer concluded that the disclosure controls and procedures at 31 December 2018 were effective to provide reasonable assurance that information required to be disclosed in the reports that the company files and submits under the US Securities Exchange Act of 1934, as amended, is recorded, processed, summarised and reported as and when required. There are inherent limitations to the effectiveness of any system of disclosure controls and procedures, including the possibility of human error and the circumvention or overriding of the controls and procedures. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurance of achieving their control objectives.

There have been no changes in HSBC Holdings' internal control over financial reporting during the year ended 31 December 2018 that have materially affected, or are reasonably likely to materially affect, HSBC Holdings' internal control over financial reporting.

Management's assessment of internal controls over financial reporting

Management is responsible for establishing and maintaining an adequate internal control structure and procedures for financial reporting, and has completed an assessment of the effectiveness of the Group's internal controls over financial reporting for the year ended 31 December 2018. In making the assessment, management used the framework for internal control evaluation contained in the Financial Reporting Council's Guidance on Risk Management, Internal Control and Related Financial and Business Reporting (September 2014), as well as the criteria established by the Committee of Sponsoring Organizations of the Treadway Commission ('COSO') in 'Internal Control-Integrated Framework (2013)'.

Based on the assessment performed, management concluded that for the year ended 31 December 2018, the Group's internal control over financial reporting were effective.

PricewaterhouseCoopers LLP, which has audited the consolidated financial statements of the Group for the year ended 31 December 2018, has also audited the effectiveness of the Group's internal control over financial reporting under Auditing Standard No. 5 of the Public Company Accounting Oversight Board (United States) as stated in their report on page 252.

Footnotes to strategic report, financial summary, global businesses, geographical regions and other information

1 The Group has adopted the EU's regulatory transitional arrangements for IFRS 9 'Financial Instruments'. These apply to reported and adjusted RWAs, regulatory capital and related ratios for 2018 throughout the Annual Report and Accounts, unless otherwise stated.

2 Full-time equivalent staff.

3 Recognised by Euromoney Awards for Excellence 2018.

4 Source: Greenwich Associates – Large Corporate Banking; percentage of large corporates choosing HSBC as their lead international bank.

5 Revenue from international clients is derived from an allocation of adjusted revenue based on internal management information. International clients are businesses and individuals with an international presence.

6 Adjusted basis, geographical view; Group total and regional percentage composition excludes Holdings; regional percentage composition calculated with regional figures that include intra-Group revenue.

7 Our wealth business in Asia includes our asset management business in Asia, our insurance business in Asia, our private banking business Asia and the wealth portion of our RBWM business in Asia.

8 Source for market data is Bank of England mortgage data.

9 Both digital metrics include the following markets: the UK (excluding M&S Bank and John Lewis Finance customers), Hong Kong (excluding Hang Seng customers), Mexico, Malaysia, Singapore, UAE, mainland China,

Canada, Australia, the US, France, India, Indonesia, Turkey, Egypt, Argentina, and Taiwan. Digital sales also include M&S Bank customers in the UK. Digitally active customers are defined as percentage of customers who have logged on to HSBC digital channels at least once in the last 90 days. Percentage of sales include the sales of loans and deposits through digital channels.

10 Eight scale markets are UK, Hong Kong, Pearl River Delta, Singapore, Malaysia, Mexico, UAE and Saudi Arabia.

11 Commitment by 2025.

12 Excluding market impact in Insurance, which constitutes P&L impacts resulting from changes in financial market factors as compared with economic conditions in place at the start of the year.

13 Market shares: Saudi Arabia as of September 2018; UAE as of October 2018; HK, Mexico, PRD and Singapore as of November 2018; UK and Malaysia as of December 2018.

14 Revenue growth from international network includes transaction banking revenue growth and international client revenue growth.

15 Transaction banking includes GLCM, GTRF, Securities Services, and FX.

16 Market share data is as of 3Q 2018.

17 Top-three rank or improvement by two ranks; measured by customer recommendation for RBWM and customer satisfaction for CMB among relevant competitors.

18 Customer satisfaction metrics for Pearl River Delta will be available from 2019, therefore they have been excluded from the assessment. Surveys are based on a relevant and representative subset of the market. Data provided by Kantar.

19 Customer satisfaction metrics for Pearl River Delta will be available from 2019, therefore they have been excluded from the assessment. In HK, Singapore, Malaysia, Mexico and UAE, 2017 CMB performance is based on the bank that the customer defines as their main bank, whereas 2018 CMB performance for these markets is based on the bank that the customer defines as the most important. Surveys are based on a relevant and representative subset of the market. Data provided by RFi Group, Kantar and another third-party vendor.

20 Both digital metrics include the following markets: the UK (excluding M&S Bank and John Lewis Finance customers), Hong Kong (excluding Hang Seng customers), Mexico, Malaysia, Singapore, UAE, mainland China, Canada, Australia, the US, France, India, Indonesia, Turkey, Egypt, Argentina, and Taiwan. Digital sales also include M&S Bank customers in the UK. Digitally active customers are defined as percentage of customers who have logged on to HSBC digital channels at least once in the last 90 days. Percent of sales include the sales of loans and deposits through digital channels.

21 Based on Sustainalytics.

22 Costs relating to 'Settlements and provisions in connection with legal and regulatory matters', a significant item in 2018 includes a 1Q18 provision in relation to the US Department of Justice's ('DoJ') civil claims relating to its investigation of HSBC's legacy residential mortgage-backed securities origination and securitisation activities from 2005 to 2007. Refer to Note 35 'Legal proceedings and regulatory matters' for further details.

23 'Other personal lending' includes personal non-residential closed-end loans and personal overdrafts.

24 'Investment distribution' includes Investments, which comprises mutual funds (HSBC manufactured and third party), structured products and securities trading, and Wealth Insurance distribution, consisting of HSBC manufactured and third-party life, pension and investment insurance products.

25 'Other' mainly includes the distribution and manufacturing (where applicable) of retail and credit protection insurance.

26 Net operating income before change in expected credit losses and other credit impairment charges/Loan impairment charges and other credit risk provisions, also referred to as revenue.

27 Adjusted return on average risk-weighted assets ('Adjusted RoRWA') is a measure used to assess the performance of RBWM, CMB, GB&M and GPB. Adjusted RoRWA is calculated using profit before tax and reported average risk-weighted assets at constant currency adjusted for the effects of significant items.

28 'Markets products, Insurance and Investments and Other' includes revenue from Foreign Exchange, insurance manufacturing and distribution, interest rate management and global banking products.

29 From 1 January 2018, the qualifying components according to IFRS 7 'Financial Instruments: Disclosures' of fair value movements relating to changes in credit spreads on structured liabilities, were recorded through other comprehensive income. The residual movements remain in credit and funding valuation adjustments, and

comparatives have not been restated.

30 ‘Other’ in GB&M includes net interest earned on free capital held in the global business not assigned to products, allocated funding costs and gains resulting from business disposals. Within the management view of adjusted revenue, notional tax credits are allocated to the businesses to reflect the economic benefit generated by certain activities which is not reflected within operating income; for example, notional credits on income earned from tax-exempt investments where the economic benefit of the activity is reflected in tax expense. In order to reflect the total operating income on an IFRS basis, the offsets to these tax credits are included within ‘Other’.

31 Under the old revenue allocation, the 2017 results would have been: Global Markets: $6,840m; FICC: $5,555m; FX: $2,587m; Rates:$2,037m; Credit: $931m; Equities: $1,285m; Securities Services: $1,762m; Global Banking: $3,858m; GLCM: $2,199m; GTRF: $703m; Principal Investments: $322m; Credit and funding valuation adjustments: $(267)m; Other revenue: $(132)m. 2016 numbers have not been re-presented on the new basis.

32 Corporate Centre comprises Central Treasury, including Balance Sheet Management (‘BSM’), our legacy businesses, interests in our associates and joint ventures, central stewardship costs and the UK bank levy.

33 Central Treasury includes revenue relating to BSM of $2.5bn (2017: $2.7bn; 2016: $3.0bn), interest expense of $1,267m (2017: $888m; 2016: $707m) and adverse valuation differences on issued long-term debt and associated swaps of $313m (2017: gain of $120m; 2016: loss of $271m). Revenue relating to BSM includes other internal allocations, including notional tax credits to reflect the economic benefit generated by certain activities, which is not reflected within operating income, for example notional credits on income earned from tax-exempt investments where the economic benefit of the activity is reflected in tax expense. In order to reflect the total operating income on an IFRS basis, the offsets to these tax credits are included in other Central Treasury.

34 Other miscellaneous items in Corporate Centre includes internal allocations relating to Legacy Credit.

35 Complaint figures for 2017 restated and weighted by country volumes.

36 OECD, IEA, Investing in Climate, Investment in Growth, July 2017. The OECD estimates that for infrastructure to be consistent with a 2°C scenario, investment needs to amount to $6.9tn per year in the next 15 years, an increase of about 10% in total infrastructure investment from the reference estimate of $6.3tn.

37 Amounts shown in table include green and other sustainable finance loans, which support the transition to the low-carbon economy. The methodology for the quantification of our exposure to higher transition risk sectors will evolve over time as more data becomes available and is incorporated in our risk management systems and processes.
Counterparties are allocated to the higher transition risk sectors via a two-step approach:
1 - Where the main business of a group of connected counterparties is in a higher transition risk sector all lending to the group is included irrespective of the sector of each individual obligor within the group.
2 - Where the main business of a group of connected counterparties is not in a higher transition risk sector only lending to individual obligors in the higher transition risk sectors is included.
As a result of this methodology, this metric is not directly comparable to other financial statement disclosures.

38 60% of the 2012 annual incentive for Stuart Gulliver and Iain Mackay disclosed in the 2012 Directors’ remuneration report was deferred for five years. The vesting of these awards was subject to a service condition and satisfactory completion of the five-year deferred prosecution agreement ('AML DPA') with the US Department of Justice ('DoJ'). The AML DPA condition was satisfied in March 2018 and the awards were released to the executive Directors. For Marc Moses the value of the award attributable to services provided as an executive Director between 1 January 2014 and the vesting date has been included in the table.

39 The first long-term incentive (‘LTI’) award was made in February 2017, with a performance period ending in 2019. Vesting of the first LTI award will be included in the single figure of remuneration table for the financial year ending 31 December 2019.

40 John Flint succeeded Stuart Gulliver as Group Chief Executive with effect from 21 February 2018 and his remuneration in the single figure table of remuneration is in respect of services provided as an executive Director. For services rendered between 1 January 2018 and 20 February 2018, he received salary of £97,138, fixed pay allowance of £130,236, cash in lieu of pension of £27,999 and an annual incentive award of £272,000.

41

Stuart Gulliver stepped down from the Board on 20 February 2018 and retired from the Group on 11 October 2018. His remuneration in the single figure table of remuneration is in respect of services provided as an executive Director.

42 Iain Mackay stepped down as executive Director and Group Finance Director on 31 December 2018.

43 To meet regulatory deferral requirements for 2018, 60% of the annual incentive award of Stuart Gulliver and Iain Mackay will be deferred in awards linked to HSBC's shares and and will vest in five equal instalments between the third and seventh anniversary of the grant date. On vesting, the awards will be subject to a one-year retention period. The deferred awards are subject to the executive Director maintaining a good leaver status during the deferral period.

44 Prior to 2018, foreign exchange exposure on some financial instruments designated at fair value was presented in the same line in the income statement as the underlying fair value movement on these instruments. In 2018, we grouped the entire effect of foreign exchange exposure in the profit and loss and presented it within 'Net trading activities' in 'Net income from financial instruments held for trading or managed on a fair value basis'. Comparative data has been re-presented. There is no net impact on total operating income and the impact on 'changes in fair value of long-term debt and related derivatives' in 2017 was $(517)m, 2016: $1,978m, 2015: $110m and 2014: $130m.

45 The classification and measurement requirements under IFRS 9, which was adopted from 1 January 2018, are based on an entity's assessment of both the business model for managing the assets and the contractual cash flow characteristics of the assets. The standard contains a classification for items measured mandatorily at fair value through profit or loss as a residual category. Given its residual nature, the presentation of the income statement has been updated to separately present items in this category, which are of a dissimilar nature or function, in line with IAS 1 'Presentation of financial statements' requirements. Comparative data has been re-presented. There is no net impact on total operating income.

46 Dividends recorded in the financial statements are dividends per ordinary share declared in a year and are not dividends in respect of, or for, that year.

47 Dividends per ordinary share expressed as a percentage of basic earnings per share.

48 Return on average risk-weighted assets is calculated using profit before tax and reported average risk-weighted assets.

49 Gross interest yield is the average annualised interest rate earned on average interest-earning assets ('AIEA').

50 Net interest spread is the difference between the average annualised interest rate earned on AIEA, net of amortised premiums and loan fees, and the average annualised interest rate payable on average interest-bearing liabilities.

51 Net interest margin is net interest income expressed as an annualised percentage of AIEA.

51a This includes interest-bearing bank deposits only. See page 61 for an analysis of all bank deposits.

52 Interest income on trading assets is reported as 'Net income/(expense) from financial instruments held for trading or managed on a fair value basis' in the consolidated income statement.

52a Interest expense on financial liabilities designated at fair value is reported as 'Net income from financial instruments held for trading or managed on a fair value basis' in the consolidated income statement, other than interest on own debt, which is reported in 'Interest expense'.

53 Interest income on financial assets designated and otherwise mandatorily measured at fair value is reported as 'Net income/(expense) from financial instruments designated at fair value' in the consolidated income statement.

53a This includes interest-bearing customer accounts only. See page 62 for an analysis of all customer accounts.

54 Including interest-bearing bank deposits only.

54a Net interest margin is calculated as net interest income divided by average interest-earning assets.

55 Interest expense on financial liabilities designated at fair value is reported as 'Net income on financial instruments designated at fair value' in the consolidated income statement, other than interest on own debt, which is reported in 'Interest expense'.

55a Impacted by transfers from HSBC Bank plc to HSBC UK Bank plc on 1 July 2018 following the completion of ring-fencing activities in the UK under the Financial Services (Banking Reform) Act 2013.

56 Including interest-bearing customer accounts only.

56a Comparatives have been re-presented to align with current year presentation.

57 Trading income also includes movements on non-qualifying hedges. These hedges are derivatives entered into as part of a documented interest rate management strategy for which hedge accounting was not, nor could be, applied. They are principally cross-currency and interest rate swaps used to economically hedge fixed-rate debt issued by HSBC Holdings, and up until May 2016 to economically hedge floating rate debt issued by HSBC Finance. The size and direction of the changes in the fair value of non-qualifying hedges that are recognised in the income statement can be volatile from year-to-year, but do not alter the cash flows expected as part of the documented interest rate management strategy for both the instruments and the underlying economically hedged assets and liabilities if the derivative is held to maturity.

58 2018 ECL are prepared on an IFRS 9 basis and 2017/2016 LICs are prepared on an IAS 39 basis and are not comparable.

59 Net of impairment allowances.

60 Capital resources are regulatory capital, the calculation of which is set out on page 193.

61 Including perpetual preferred securities, details of which can be found in Note 28 on the Financial Statements.

62 The definition of net asset value per ordinary share is total shareholders' equity, less non-cumulative preference shares and capital securities, divided by the number of ordinary shares in issue excluding shares the company has purchased and are held in treasury. The comparative for 2015 have been re-presented to align with this definition.

63 Others include items with no currency information available ($10,351m for loans to banks, $64,999m for loans to customers, nil for deposits by banks and $29m for customer accounts).

64 Adjusted risk-weighted assets are calculated using reported risk-weighted assets adjusted for the effects of currency translation differences and significant items.

65 Excludes items where there are substantial offsets in the income statement for the same year.

66 'Fair value movements on financial instruments' includes the fair value movements on our long-term debt attributable to credit spread where the net result of such movements will be zero upon maturity of the debt ('own credit spread'). This does not include fair value changes due to own credit risk in respect of trading liabilities or derivative liabilities. From 1 January 2017, HSBC adopted, in its consolidated financial statements, the requirements of IFRS 9 'Financial Instruments' relating to the presentation of gains and losses on financial liabilities designated at fair value. As a result, the effects of changes in those liabilities' credit risk is presented in other comprehensive income. These requirements were adopted in the separate financial statements of HSBC Holdings plc on 1 January 2016. Refer to HSBC Holdings plc Annual Report and Accounts 2017 'Compliance with International Financial Reporting Standards' on page 186 for further detail.

67 The results presented for insurance manufacturing operations are shown before elimination of intercompany transactions with HSBC non-insurance operations.

68 The effect on the Insurance manufacturing operations of applying hyperinflation accounting in Argentina resulted in a reduction in adjusted revenue in 2018 of $29m and a reduction in PBT in 2018 of $27m. These effects are recorded in 'all global businesses', within Corporate Centre.

69 'Client assets' are translated at the rates of exchange applicable for their respective period-ends, with the effects of currency translation reported separately. The components of client assets were funds under management ($241bn at 31 December 2018), which were not reported on the Group's balance sheet, and customer deposits ($68bn at 31 December 2018), of which $65bn was reported on the Group's balance sheet and $3bn were off-balance sheet deposits.

70 Client assets related to our Middle East clients are booked across to various other regions, primarily in Europe.

71 'Other income' in this context comprises where applicable net income/expense from other financial instruments designated at fair value, gains less losses from financial investments, dividend income, net insurance premium income and other operating income less net insurance claims and benefits paid and movement in liabilities to policyholders.

72 Risk-weighted assets are non-additive across geographical regions due to market risk diversification effects within the Group.

73 Amounts are non-additive across geographical regions due to intercompany transactions within the Group.

74 Europe's adjusted 2018 loss of $40m includes a number of items incurred centrally on behalf of the Group as a whole, but which are disclosed in the Europe segment, including consolidation adjustments and Holdings costs such as interest costs on Group debt and the UK bank levy.

75 Excludes intra-Group dividend income.

76 For the purposes of the analysis of reported results by country/territory table, HSBC Holdings profit/(loss) is presented excluding the effect of the early adoption of the requirements of IFRS 9 'Financial Instruments' relating to the presentation of gains and losses on financial liabilities designated at fair value', which was early adopted in the separate financial statements of HSBC Holdings but not in the consolidated financial statements of HSBC.

77 Funds under management and assets held in custody are not reported on the Group's balance sheet, except where it is deemed that we are acting as principal rather than agent in our role as investment manager, and these assets are consolidated as Structured entities (see Note 20 on the Financial Statements).

Regulation and supervision

The ordinary shares of HSBC Holdings are listed in London, Hong Kong, New York, Paris and Bermuda. As a result of the listing in London, HSBC Holdings is subject to the Listing Rules of the Financial Conduct Authority (‘FCA’) in its role as the UK Listing Authority. As a result of the listing in Hong Kong, HSBC Holdings is subject to The Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (‘HKEx’). In the US, where the listing is through an American Depositary Receipt ('ADR') Programme, shares are traded in the form of American Depositary Shares ('ADS'), which are registered with the US Securities and Exchange Commission (‘SEC’). As a consequence of its US listing, HSBC Holdings is also subject to the reporting and other requirements of the US Securities Act of 1933, as amended; the Securities Exchange Act of 1934, as amended; and the New York Stock Exchange’s (‘NYSE’) Listed Company Manual, in each case as applied to foreign private issuers. In France and Bermuda, HSBC Holdings is subject to the listing rules of Euronext, Paris and the Bermuda Stock Exchange, respectively, applicable to companies with secondary listings.

A statement of our compliance with the provisions of the UK Corporate Governance Code issued by the Financial Reporting Council and with the Hong Kong Corporate Governance Code set out in Appendix 14 to the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited can be found in the ‘Report of the Directors: Corporate Governance Codes’ on page 216.

Our operations throughout the world are regulated and supervised globally by a large number of different regulatory authorities, central banks and other bodies in those jurisdictions in which we have offices, branches or subsidiaries. These authorities impose a variety of requirements and controls designed to provide financial stability, transparency in financial markets and a contribution to economic growth. Requirements to which our operations must adhere include those relating to capital and liquidity, disclosure standards and restrictions on certain types of products or transaction structures, requirements on recovery and resolution, governance standards, and those relating to conduct of business and financial crime.

The UK Prudential Regulation Authority (‘PRA’) is the HSBC Group’s consolidated lead regulator. The other UK regulator, the Financial Conduct Authority ('FCA'), supervises 17 HSBC-regulated entities in the UK, including eight where the PRA is responsible for prudential supervision. The FCA also supervises the Group globally in relation to financial crime matters. Additionally, both the PRA and FCA have certain direct supervisory powers over our unregulated qualifying parent company, HSBC Holdings, including (in the FCA’s case) pursuant to agreements entered into with HSBC Holdings as part of a global settlement with a number of US authorities in relation to the Group’s failure to comply with anti-money laundering (‘AML’) rules, US sanctions requirements and related matters (‘the FCA Requirements Notice’). In addition, each operating bank, finance company or insurance operation within HSBC is regulated by local supervisors.

The Group’s primary regulatory authorities are those in the UK, Hong Kong and the US, our principal jurisdictions of operation. However, and in addition, with the implementation of the European Union's ('EU’) Single Supervisory Mechanism (‘SSM’) in 2014, the European Central Bank (‘ECB’) assumed direct supervisory responsibility for HSBC France and HSBC Malta as ‘significant supervised entities’ within the eurozone for the purposes of the EU’s SSM Regulation, and HSBC Germany may also come under ECB supervision in the near future. Under the SSM, the ECB increasingly engages with the relevant ‘national competent authorities’ in relation to HSBC’s businesses in other eurozone countries and more widely with other HSBC regulators. It is therefore expected that we will continue to see changes in how the Group is regulated and supervised on a day-to-day basis in the eurozone and, more generally, as the ECB and other of our regulators develop their powers having regard to some of the regulatory initiatives highlighted in this report including the UK’s decision to exit the EU.

UK regulation and supervision

The UK financial services regulatory structure is comprised of three regulatory bodies: the Financial Policy Committee (‘FPC’), a committee of the Bank of England (‘BoE’); the PRA; and the FCA.

The FPC is responsible for macro-prudential supervision, focusing on systemic risks that may affect the UK's financial stability. The BoE prudentially regulates and supervises financial services firms through the PRA and in addition to its wider role as the UK's central bank, the BoE is also the resolution authority responsible for taking action to manage the failure of financial institutions in the UK if necessary. The latter involves a set of responsibilities and powers that apply outside of an actual bank failure and relate to general resolution planning, including an assessment of any barriers to resolution of banks, the exercise of powers to require the removal of impediments to resolvability, and the setting of minimum requirements for own funds and eligible liabilities ('MREL').

The PRA and the FCA are micro-prudential supervisors. The Group's banking subsidiaries, such as HSBC Bank plc and HSBC UK, are 'dual-regulated' firms, subject to prudential regulation by the PRA and to conduct regulation by the FCA. Other (generally smaller, non-bank) UK-based Group subsidiaries are 'solo regulated' by the FCA (i.e. the FCA is responsible for both prudential and conduct regulation of those subsidiaries). HSBC Group is subject to consolidated supervision by the PRA.

UK banking and financial services institutions are subject to multiple regulations. The primary UK statute in this context is the Financial Services and Markets Act 2000 ('FSMA'), as amended by subsequent legislation. Other UK financial services legislation currently includes that derived from EU directives and regulations relating to banking, securities, insurance, investments and sales of personal financial services. In particular, the Banking Act 2009 ('Banking Act') defines the UK resolution regime which applies to banks, building societies and certain investment firms, and their financial holding companies that are incorporated in the UK. It sets out the objectives that the BoE must pursue in its role of resolution authority and defines the responsibilities of other UK authorities (the PRA, the FCA and HM Treasury) in relation to specific aspects of the resolution regime. It also confers on the BoE a set of resolution tools to manage the failure of a bank and minimise the impact on financial stability. Further details can be found in the 'Recovery and resolution' section below.

The PRA and FCA are together responsible for authorising and supervising all our operating businesses in the UK that require authorisation under FSMA. These include deposit-taking, retail banking, consumer credit, life and general insurance, pensions, investments, mortgages, custody and share-dealing businesses, and treasury and capital markets activity. The FCA is also responsible for promoting effective competition in the interests of consumers, and an independent subsidiary of the FCA, the Payment Systems Regulator, regulates payment systems in the UK.

The PRA and FCA rules establish the minimum criteria for the authorisation of banks and other financial sector entities that carry out regulated activities. In the UK, the PRA and FCA have the right to object, on prudential grounds, to persons who hold, or intend to hold, 10% or more of the voting power or shares of a financial institution that they regulate, or of its parent undertaking. In its capacity as our supervisor on a consolidated basis, the PRA receives information on the capital adequacy of, and sets requirements for, the Group as a whole, as well as conducting stress tests both on HSBC's UK entities and more widely on the Group. Individual banking subsidiaries in the Group are directly regulated by their local banking supervisors, who set and monitor, inter alia, their capital adequacy requirements.

The Group is subject to capital requirements as set out in CRD IV and implemented by the PRA. The Pillar 1 regulatory capital framework has been, and continues to be, significantly enhanced. From 1 January 2019, the capital requirements framework was complemented by a requirement for total loss-absorbing capacity ('TLAC'), in accordance with the final standards adopted by the

Financial Stability Board. In the EU, the TLAC requirements have been introduced in the form of MREL as set out in the Bank Recovery and Resolution Directive ('BRRD'). These include own funds and liabilities that can be written down or converted into capital resources in order to absorb losses or recapitalise a bank in the event of its failure. These requirements are based on the resolution strategy for the Group, as agreed by the BoE in consultation with our local regulators.

The Group is also subject to liquidity requirements as set out in the Capital Requirements Regulation and Directive IV ('CRD IV') and implemented by the PRA, and will in due course become subject to the net stable funding requirements prescribed under Basel III and expected to be implemented in the first half of 2021 through changes to CRD IV.

The PRA and FCA monitor authorised institutions through ongoing supervision and the review of routine and ad hoc reports relating to financial, prudential and conduct of business matters. They may also obtain independent reports from a Skilled Person on the adequacy of procedures and systems covering internal control and governing records and accounting. The PRA meet regularly with the Group's senior executives to discuss our adherence to the PRA's prudential guidelines. In addition, both the PRA and FCA regularly discuss fundamental matters relating to our business in the UK and internationally with relevant management, including areas such as strategic and operating plans, risk control, loan portfolio composition and organisational changes, succession planning, and recovery and resolution arrangements.

There are a substantial number of other ongoing regulatory initiatives affecting the Group driven by or from the UK. Current and anticipated areas of particular focus for the UK regulators include:

- changes to UK law and regulation following the UK's decision to leave the EU;
- the UK's implementation of the final reforms to Basel III, including the changes to the market risk framework and the revised approaches to calculate credit, counterparty, operational and credit valuation adjustment ('CVA') risk, RWAs, changes to the leverage ratio framework and the application of capital floors;
- the UK's implementation of the outstanding elements of Basel III reforms, including the sovereign risk regime and the long-term treatment of International Financial Reporting Standard 9, Financial Instruments ('IFRS 9') expected credit loss provisions;
- the UK's implementation of any new MREL requirements that are expected to be implemented in EU legislation through changes to CRD IV and the BRRD;
- ongoing implementation of requirements regarding resolution plans (see further details outlined below under 'Recovery and resolution');
- implementation of revisions to the PRA's framework for groups policy (particularly double-leverage) and large exposures/intra-group regimes;
- the abolition of Libor and the transition to SONIA and other replacement reference rates;
- ongoing embedding of the Senior Managers and Certification Regime, aimed at strengthening accountability in banking and its extension from banks to all UK authorised firms during 2019;
- proposed plans to increase consumer access to financial advice in the UK;
- proposals driven by the UK Competition and Markets Authority's ('CMA') investigation into the supply of retail banking services in the UK that are designed to deliver increased transparency and innovation;
- proposals to provide greater levels of protection and remediation to SMEs, increasing the scope of customers eligible to refer matters to the UK's Financial Ombudsman Service and the level of compensation payable;
- continued high level of focus by the FCA on management of conduct of business and customer outcomes as well as on controls to combat financial crime (including market abuse and fraud);
- cyber risk, financial technology, operational resilience and data security initiatives that may require changes to systems and processes; and
- climate change, where the UK regulators expect firms to incorporate any financial risks arising within their Pillar 2 assessments.

Our UK ring-fenced bank, HSBC UK, was fully established in mid-2018, well ahead of the deadline of 1 January 2019.

The FCA also continues to apply close scrutiny to the Group’s financial crime control framework both generally in conjunction with the exercise of its wider powers under FSMA and more specifically under the FCA Requirements Notice described above.

As a result of the decision of the UK to leave the EU following the referendum on 23 June 2016, there could be changes to those EU laws applicable in the UK. Leaving the EU should not in and of itself affect existing UK laws. HMT, the FCA and the PRA have stated their intention that EU laws and regulations that are directly applicable to UK firms will be transposed into UK law and regulation ahead of the official date of exit. A series of draft statutory instruments and consultations to onshore EU law and regulation have been published. In the absence of a withdrawal agreement, such transposed laws will take effect on 29 March 2019, but should such agreement be reached and a transitional period agreed, existing EU law is likely to remain in place until the end of the transition period.

Hong Kong regulation and supervision

The Banking Ordinance provides the legal framework for banking supervision in Hong Kong. Section 7(1) of the Ordinance provides that the principal function of the Hong Kong Monetary Authority ('HKMA') is to “promote the general stability and effective working of the banking system”. The HKMA seeks to establish a regulatory framework in line with international standards, in particular those issued by the Basel Committee on Banking Supervision (‘Basel Committee’) and the Financial Stability Board. The objective is to maintain a prudential supervisory system that underpins the general stability and effective working of the banking system, while at the same time providing sufficient flexibility for authorised institutions to take commercial decisions. One of the principal functions of the HKMA is to promote the stability and integrity of the financial system, including the banking system in Hong Kong.

The HKMA is responsible for regulating and supervising banking business and the business of taking deposits in Hong Kong. Under the Banking Ordinance, the HKMA is the licensing authority responsible for the authorisation, suspension and revocation of authorised institutions. To provide checks and balances, the HKMA is required under the Ordinance to consult with the Financial Secretary on important authorisation decisions, such as suspension and revocation.

The Hongkong and Shanghai Banking Corporation Limited and its overseas branches and subsidiaries are licensed under the Banking Ordinance and hence subject to the supervision, regulation and examination of the HKMA.

The HKMA follows international practices as recommended by the Basel Committee to supervise authorised institutions. The HKMA adopts a risk-based supervisory approach based on a policy of ‘continuous supervision’ through on-site examinations, off-site reviews, prudential meetings, cooperation with external auditors and sharing information with other supervisors. The HKMA requires all authorised institutions to have adequate systems of internal control and requires the institutions’ external auditors, upon request, to report on those systems and other matters, such as the accuracy of information provided to the HKMA. In addition, the HKMA may from time to time conduct tripartite discussions with authorised institutions and their external auditors.

The HKMA aims to ensure that the standards for regulatory disclosure in Hong Kong remain in line with those of other leading

financial centres. The Banking (Disclosure) Rules take into account the latest disclosure standards released by the Basel Committee, which prescribe quarterly, semi-annual and annual disclosure of specified items, including in the form of standard templates and tables, in order to promote user-relevance and the consistency and comparability of regulatory disclosure among banks and across jurisdictions.

The HKMA's powers to collect prudential data from authorised institutions on a routine or ad hoc basis are provided by Section 63 of the Banking Ordinance. The same section of the Ordinance also empowers the HKMA to require any holding company or subsidiary or sister company of an authorised institution to submit such information as may be required for the exercise of the HKMA's functions under the Ordinance.

The HKMA has the power to serve a notice of objection on persons if they are no longer deemed to be fit and proper to be controllers of the authorised institution, if they may otherwise threaten the interests of depositors or potential depositors, or if they have contravened any conditions specified by the HKMA. The HKMA may revoke authorisation in the event of an institution's non-compliance with the provisions of the Banking Ordinance. These provisions require, among other things, the furnishing of accurate reports.

The HKMA is the relevant authority under the Anti-Money Laundering and Counter-Terrorist Financing (Financial Institutions) Ordinance ('AMLO') for supervising authorised institutions' compliance with the legal and supervisory requirements set out in the AMLO and the Guideline on Anti-Money Laundering and Counter-Terrorist Financing (for Authorised Institutions). The HKMA requires authorised institutions in Hong Kong and its overseas branches and subsidiaries to establish effective systems and controls to prevent and detect money laundering and terrorist financing. It works closely with other stakeholders within both the government and the industry to ensure that the banking sector is able to play its gatekeeper role in Hong Kong's anti-money laundering and counter-terrorist financing regime.

To enhance the exchange of supervisory information and cooperation, the HKMA has entered into a Memorandum of Understanding or other formal arrangements with a number of banking supervisory authorities within and outside Hong Kong.

The marketing of, dealing in and provision of advice and asset management services in relation to securities and futures in Hong Kong are subject to the provisions of the Securities and Futures Ordinance of Hong Kong. Entities engaging in activities regulated by the Ordinance are required to be licensed or registered with the Securities and Futures Commission ('SFC'). The HKMA is the front-line regulator for banks involved in the securities and futures business.

The HKMA and the SFC work very closely to ensure that there is an open market with a level playing field for all intermediaries in the securities industry of Hong Kong. The HKMA has entered into a Memorandum of Understanding with the SFC, which elaborates on the legal framework and sets out the operational details relating to the respective roles and responsibilities of the two regulators regarding the securities-related activities of authorised institutions. The HKMA and the SFC hold regular meetings under the Memorandum of Understanding to discuss matters of mutual interest. The training programmes of either regulator are also made available to the staff of the other where relevant.

Among other functions, the Securities and Futures Ordinance vested the SFC with powers to set and enforce market regulations, including investigating breaches of rules and market misconduct and taking appropriate enforcement action. The SFC is responsible for licensing and supervising intermediaries conducting SFC-regulated activities, such as investment advisers, fund managers and brokers. Additionally, the SFC sets standards for the authorisation and regulation of investment products, and reviews and authorises offering documents of retail investment products to be marketed to the public.

The HKMA and the Insurance Authority ('IA') have signed a Memorandum of Understanding to enhance the cooperation,

exchange of information and mutual assistance between the two authorities. Under this Memorandum of Understanding, the HKMA and the IA agree to work together to coordinate the supervision of the insurance-related activities of authorised institutions in Hong Kong (such as when they act as insurance intermediaries) and authorised

insurers that are connected to them, and to promote information exchange and sharing, as permitted under the Banking Ordinance and the Insurance Ordinance, between the HKMA and the IA in order to assist each other to exercise their respective statutory functions.
Under the statutory regime for the regulation of Mandatory Provident Fund ('MPF') intermediaries, the Mandatory Provident Fund Schemes Authority is the lead regulator in respect of regulation of MPF intermediaries whereas the HKMA, the IA and the SFC are the front-line regulators of the MPF intermediaries. A Memorandum of Understanding Concerning the Regulation of Regulated Persons with Respect to Registered Schemes under the Mandatory Provident Fund Schemes Ordinance has been signed by the four regulators. It sets out certain administrative and operational arrangements among the four regulators regarding the exercise of their respective functions under the Mandatory Provident Fund Schemes Ordinance concerning regulation of MPF intermediaries.
The Financial Institutions (Resolution) Ordinance ('FIRO') established the legal basis for a cross-sector resolution regime in Hong Kong, under which the HKMA is the resolution authority for banking sector entities, including all authorised institutions. The HKMA is also designated as the lead resolution authority for the cross-sectoral groups in Hong Kong that include banking sector entities within the scope of FIRO. The HKMA's function as a resolution authority is supported by the Resolution Office within the HKMA. The Resolution Office is operationally independent and has a direct reporting line to the chief executive of the HKMA.
In order to support capacity building and talent development, the HKMA is working with the banking industry and relevant professional bodies to implement an industry-wide enhanced competency framework ('ECF') for banking practitioners. The availability of a set of common and transparent competency standards enables more effective training for new entrants and professional development for existing practitioners. Authorised institutions are encouraged to adopt it as the benchmark for enhancing the level of core competence and ongoing professional development of banking practitioners.
Currently, the ECF for banking practitioners covers four professional work streams: anti-money laundering and counter-financing of terrorism; cybersecurity; treasury management; and retail and wealth management, with credit risk management, risk management and compliance to be launched in due course.
US regulation and supervision
The Group is subject to federal and state supervision and regulation in the US. Banking laws and regulations of the Federal Reserve Board ('FRB'), the Office of the Comptroller of the Currency (the 'OCC') and the Federal Deposit Insurance Corporation (the 'FDIC') (collectively, the 'US banking regulators') govern all aspects of our US business. Furthermore, since we have substantial operations outside the US that conduct many of their day-to-day transactions with the US, HSBC entities' operations outside the US are also subject to the extraterritorial effects of US regulation in many respects.
In September 2017, HSBC Holdings and HSBC North America Holdings Inc. ('HNAH') entered into a consent order with the FRB in connection with its investigation into HSBC's historical foreign exchange activities, which requires HSBC Holdings and HNAH to undertake certain remedial steps. In January 2018, HSBC Holdings entered into a three-year deferred prosecution agreement with the Criminal Division of the US Department of Justice ('DoJ') (the 'FX DPA'), resolving the DOJ's investigation into HSBC's historical foreign exchange activity. Under the terms of the FX DPA, HSBC is required to further enhance its internal controls and procedures regarding its Global Markets business. For further details, see Note 35 on the Financial Statements.

HSBC Holdings and its US operations are subject to supervision, regulation and examination by the FRB because HSBC Holdings is a 'bank holding company' under the US Bank Holding Company Act of 1956, as a result of its control of HSBC Bank USA, N.A., Tysons Corner, Virginia ('HSBC Bank USA') and HSBC Trust Company (Delaware), N.A., Wilmington, Delaware ('HTCD'). HNAH is also a 'bank holding company' and an intermediate holding company ('IHC'). Both HSBC Holdings and HNAH have elected to be financial holding companies pursuant to the provisions of the Gramm-Leach-Bliley Act (the 'GLBA') and, accordingly, may affiliate with securities firms and insurance companies, and engage in other activities that are financial in nature or incidental or complementary to activities that are financial in nature.

Under regulations implemented by the FRB, if any financial holding company, or any depositary institution controlled by a financial holding company, ceases to meet certain capital or management standards, the FRB may impose corrective capital and/or managerial requirements on the financial holding company and place limitations on its ability to conduct the broader financial activities permissible for financial holding companies. In addition, the FRB may require divestiture of the holding company's depositary institutions or its affiliates engaged in broader financial activities in reliance on the GLBA if the deficiencies persist. The regulations also provide that if any depositary institution controlled by a financial holding company fails to maintain a satisfactory rating under the Community Reinvestment Act of 1977, the FRB must prohibit the financial holding company and its subsidiaries from engaging in any additional activities other than those permissible for bank holding companies that are not financial holding companies.

The two US banks, HSBC Bank USA and HTCD, are subject to regulation and examination primarily by the OCC. HSBC Bank USA and HTCD are subject to additional regulation and supervision, secondly by the FDIC, and by the FRB and the Consumer Financial Protection Bureau ('CFPB'). Banking laws and regulations restrict many aspects of their operations and administration, including the establishment and maintenance of branch offices, capital and reserve requirements, deposits and borrowings, investment and lending activities, payment of dividends and numerous other matters.

In the US, parent company insolvencies are governed by the US Bankruptcy Code, 11 U.S.C. § 101 et seq. (the 'Bankruptcy Code'). Chapter 7 of the Bankruptcy Code sets forth the procedures for liquidation of a debtor company's assets for distribution to creditors, whereas Chapter 11 permits the operation of the debtor's business while either negotiating a plan of reorganisation with the company's creditors or liquidating the business. Subsidiary banks are subject to the Federal Deposit Insurance Act (the 'FDIA'). Under the FDIA, the FDIC has the authority as receiver to liquidate and wind up a bank's affairs and to succeed to all rights, titles, powers and privileges of the bank and relevant associated persons.

Under a special regime introduced by Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act ('Dodd-Frank'), the US Secretary of the Treasury has the authority to appoint the FDIC as receiver of certain qualifying parent companies and their subsidiaries under specified conditions. The FDIC's powers under what is referred to as the Orderly Liquidation Authority ('OLA') incorporate elements of both the FDIA and the Bankruptcy Code, and are intended to minimise the adverse effects of a complex financial group's failure on the financial stability of the US. In respect of a banking group with a parent company not organised under the laws of the US, any actions under the OLA would likely be directed at the US-based intermediate holding company.

Following implementation of the Basel III capital framework by the US banking regulators, HNAH, HSBC USA Inc. and HSBC Bank USA are required to maintain minimum capital ratios (exclusive of any countercyclical capital buffer), including a minimum supplementary leverage ratio of 3% and an effective minimum total risk-based capital ratio of 10.5%. The 10.5% ratio includes the capital conservation buffer, which is not a minimum requirement per se, but rather a necessary condition to allow

capital distributions. A countercyclical capital buffer requirement, applicable to banking organisations that meet the advanced approaches thresholds, also applies to HNAH and HSBC Bank USA, and the buffer has been currently set at 0%. Additionally, failure to maintain minimum regulatory ratios in simulated stress conditions, as required by the FRB's Comprehensive Capital Analysis and Review ('CCAR') programme, would restrict HNAH from engaging in capital distributions such as dividends or share repurchases. In addition to the CCAR stress testing requirements, the Dodd-Frank Act Stress Test ('DFAST') requires HNAH and HSBC Bank USA to undergo regulatory stress tests

conducted by the FRB annually, and requires HNAH to conduct and publish the results of their own internal stress tests periodically.
As part of the CCAR process, the FRB undertakes a supervisory assessment of the capital adequacy of bank holding companies, including HNAH, based on a review of a comprehensive capital plan submitted by each participating bank holding company to the FRB that describes the company’s planned capital actions, such as plans to pay or increase common stock dividends, reinstate or increase common stock repurchase programmes, or redeem preferred stock or other regulatory capital instruments, during the nine-quarter review period, as well as the results of stress tests conducted by both the company and the FRB under different hypothetical macroeconomic scenarios, including a severely adverse scenario provided by the FRB. The FRB can object to a capital plan for qualitative or quantitative reasons, in which case the company cannot make capital distributions without specific FRB approval.
HNAH submitted its latest CCAR capital plan and annual company-run DFAST results in April 2018. HSBC Bank USA is also subject to the OCC's DFAST requirements, which require certain banks to conduct annual company-run stress tests, and submitted its latest annual DFAST results in April 2018. The company-run stress tests are forward-looking exercises to assess the impact of hypothetical macroeconomic baseline and severely adverse scenarios provided by the FRB and the OCC for the annual exercise, and internally developed scenarios for both the annual periodic exercises, on the financial condition and capital adequacy of a bank-holding company or bank over a nine-quarter planning horizon.
In June 2018, the FRB informed HNAH that it did not object to HNAH’s capital plan or the planned capital distributions included in its 2018 CCAR submission.
In April 2018, the FRB issued a proposal to replace the capital conservation buffer with a stress capital buffer, which would be floored at 2.5%. Under the proposal, the stress capital buffer would equal (i) a bank holding company's projected decline in common equity tier 1 under the supervisory severely adverse stress testing scenario prior to any planned capital actions, plus (ii) one year of planned common stock dividends and would be reset each year based on the bank holding company's supervisory stress testing results.
Large international banks, such as HSBC Holdings (generally with regard to its US operations), and large insured depositary institutions, such as HSBC Bank USA, are required to file resolution plans identifying among other things, material subsidiaries and core business lines, and describing which strategy would be followed to resolve the institution in the event of significant financial distress, including identifying how insured bank subsidiaries would be adequately protected from risk created by other affiliates. The failure to cure deficiencies in a resolution plan would enable the FRB and the FDIC, acting jointly, to impose more stringent capital, leverage or liquidity requirements, or restrictions on growth, activities or operations and, if such failure persists, require the divestiture of assets or operations. In 2018, HSBC and HSBC Bank USA submitted their latest resolution plans.
In 2014, the FRB adopted a rule requiring enhanced supervision of the US operations of non-US banks such as HSBC Holdings. The rule required HSBC to establish a single intermediate holding company ('IHC') to hold their US bank and non-bank subsidiaries, although because the HSBC Group had been operating in the US through such an IHC structure (i.e. HNAH), the implementation of

this requirement did not itself have a significant impact on our US operations.
In June 2018, the FRB finalised a rule, consistent with the Dodd-Frank Act, to limit credit exposures to single counterparties for large bank holding companies and IHCs, including HNAH. As a result of the rule, HNAH, together with its subsidiaries, will be prohibited from having net credit exposure to a single unaffiliated counterparty in excess of 25% of HNAH’s tier 1 capital beginning July 1, 2020. In addition, HNAH, together with its subsidiaries, could become subject to a separate limit on its exposures to certain unaffiliated systemically important counterparties if its parent, HSBC Holdings, cannot certify its compliance with a large exposure regime in the UK that is consistent with the Basel large exposure framework by January 1, 2020. We continue to evaluate the potential effects of this rule on our operations.
An IHC may calculate its capital requirements under the US standardised approach, even if it meets the asset thresholds that would require a bank holding company to use advanced approaches. HNAH and HSBC Bank USA received regulatory approval to opt out of the advanced approach in 2015. In 2018, HSBC Bank USA submitted an annual statement to the OCC to renew its opt out of the advanced approaches. HNAH and HSBC Bank USA remain subject to the other capital requirements applicable to advanced-approaches banking organisations, such as the supplementary leverage ratio, the countercyclical capital buffer, stress testing requirements, certain deductions and adjustments to capital, enhanced risk management standards, enhanced governance and stress testing requirements for liquidity management, and other applicable prudential standards.
HNAH and HSBC Bank USA are required to maintain a liquidity coverage ratio ('LCR') of 100% under rules adopted by the US banking regulators implementing the LCR standard established by the Basel Committee. In 2016, the US banking regulators proposed a rule to implement the Basel Committee's final standard for a net stable funding requirement in the US. This proposal has not yet been finalised.
In 2018, the US banking regulators released a proposed rule for advanced approach firms to update the standardised approach for calculating the exposure amount of derivative contracts. The proposal would require HNAH to apply the standardised approach for measuring counterparty credit risk as a replacement for the current exposure method for purposes of calculating standardised risk-weighted assets and supplementary leverage ratio exposure for derivative contracts. The proposal would require full implementation by 1 July 2020.
In the US, the FRB adopted final rules implementing the FSB’s TLAC standard. The rules require, among other things, that IHC companies of non-US global systemically important banks ('G-SIBs'), including HNAH, maintain minimum amounts of TLAC that may include minimum levels of tier 1 capital and long-term debt satisfying certain eligibility criteria, and a related TLAC buffer commencing 1 January 2019 without the benefit of a phase-in period. The TLAC rules also include ‘clean holding company requirements’ that impose limitations on the types of financial transactions HSBC’s US intermediate holding company, HNAH, may engage in. In December 2018, the FRB formally approved HNAH’s TLAC structure. The FSB’s TLAC standard and the FRB’s TLAC rules represent a significant expansion of the current regulatory capital framework. To support compliance with the TLAC rules, HNAH has issued additional long-term debt that is TLAC-compliant and has modified the terms of existing long-term debt in order for that debt to be TLAC-compliant, and will be required to issue additional long-term debt that is TLAC-compliant in future periods.
In April 2018, the FRB issued a proposal to align the calculation of TLAC for US IHCs of non-US G-SIBs with the calculation methodology used by G-SIBs beginning on 1 January 2019. The proposal seeks to modify the leverage requirements related to TLAC and will likely impact the calculation of TLAC for HNAH. The comment period for the proposal closed on 25 June 2018.
HSBC Bank USA and HTCD are subject to risk-based assessments from the FDIC, which insures deposits generally to a maximum of

$250,000 per depositor for domestic deposits. Dodd-Frank changed the FDIC’s risk-based deposit insurance assessment framework primarily by basing assessments on an FDIC-insured institution’s total assets less tangible equity rather than US domestic deposits, which is expected to shift a greater portion of the aggregate assessments to large FDIC-insured institutions. In 2016, the FDIC imposed an additional temporary surcharge on the quarterly

assessments of insured depository institutions with total consolidated assets of $10bn or more, including HSBC Bank USA. The FDIC terminated this temporary surcharge in December 2018.

Title VII of Dodd-Frank provides for an extensive framework for the regulation of over-the-counter ('OTC') derivatives by the Commodity Futures Trading Commission ('CFTC') and the SEC, including mandatory clearing, exchange trading, and public and regulatory transaction reporting of certain OTC derivatives, as well as rules regarding the registration of swap dealers and major swap participants, and related capital, margin, business conduct, record keeping and other requirements applicable to such entities.

The CFTC has adopted rules implementing many of the most significant provisions of Title VII. In particular, HSBC Bank USA and HSBC Bank are provisionally registered as swap dealers with the CFTC. Because HSBC Bank is a non-US swap dealer, the CFTC generally limits its direct regulation of HSBC Bank's swap transactions to swaps with US persons and certain affiliates of US persons. However, the CFTC continues to consider whether to apply mandatory clearing, exchange trading, public transaction reporting, margin and business conduct rules to swaps with non-US persons arranged, negotiated or executed by US personnel or agents. The CFTC is also considering whether to apply regulatory transaction reporting requirements on all swaps entered into by a non-US swap dealer or instead to permit reliance on transaction reporting under comparable EU rules. The application of CFTC rules to HSBC Bank's swaps with non-US persons could have an adverse effect on the willingness of non-US counterparties to trade swaps with HSBC Bank, and we continue to assess how developments in these areas will affect our business. On 25 July 2017, the CFTC extended pre-existing relief from the requirement for non-US swap dealers (e.g., HSBC Bank) to comply with clearing, trade execution, reporting, and business conduct rules for swaps with non-US counterparties, when using personnel or agents located in the US to arrange, negotiate, or execute such swaps. This relief extends until the CFTC takes further action on whether to subject such swaps to particular rule requirements. HSBC Bank also relies on substituted compliance with comparable EU regulation to satisfy certain CFTC internal business conduct requirements. There is continued uncertainty regarding the ability of swap dealers located in UK to continue to rely on substituted compliance following the withdrawal of the UK from the EU. If the CFTC fails to provide relief or make a determination of equivalence with UK regulations, HSBC Bank would no longer permitted to rely on substituted compliance and would instead be forced to comply with US requirements. HSBC Bank would be subject to significant additional costs of compliance with Title VII by requiring the implementation of significant additional policies, procedures, documentation, systems and controls that could negatively affect its business and its ability to compete with swap dealers located outside the UK.

In 2016, the CFTC finalised rules that require additional interest rate swaps to be cleared, which have come into effect in phases based on the implementation of parallel clearing requirements in non-US jurisdictions, and are fully effective as of October 2018. In November of 2018, the CFTC proposed amendments to rules governing swap execution facilities ('SEFs') and the associated mandatory trading obligation that requires certain products subject to mandatory clearing to be executed on a SEF or a designated contract market ('DCM'). The proposed rules would significantly expand the mandatory trading requirement to effectively cover all swaps subject to mandatory clearing. The proposed expansion of the mandatory trading requirements would significantly increase the burden and cost of executing certain interest rate and credit-default swaps and may adversely affect HSBC to a greater extent than some of our competitors.

The CFTC has also proposed rules that would apply position limits to certain physical commodity swaps.
In 2014, the SEC finalised rules regarding the cross-border application of the security-based swap ('SBS') dealer and major SBS participant definitions. These rules share many similarities with parallel guidance finalised by the CFTC in July 2013. In January 2015, the SEC also finalised rules regarding reporting and public dissemination requirements for SBS transaction data. In August 2015, the SEC also finalised rules for the registration of SBS dealers and major SBS participants. The SEC has not yet finalised the implementation dates for these rules or finalised several related Title VII rules. Because our equity and credit derivatives businesses are also subject to the CFTC’s jurisdiction under Title VII, material differences between the final SEC rules and existing CFTC rules could materially increase our costs of compliance with Title VII by requiring the implementation of significant additional policies, procedures, documentation, systems and controls for those businesses. On 13 July 2016, the SEC delayed its SBS reporting requirement to one month after its SBS dealer registration rule takes effect. SBS dealer registration will not be required until six months after the SEC finalises a number of additional rules, including on capital, margin and segregation. The ultimate timeframe for finalisation and effectiveness of remaining SEC rulemakings, including SBS dealer and major SBS participant registration, remains uncertain.
In 2015, the OCC, jointly with other US banking regulators, adopted final rules establishing margin requirements for non-cleared swaps and SBS. Subject to certain exceptions, the final margin rules require HSBC Bank USA and HSBC Bank to collect and post initial and variation margin for certain non-cleared swaps and SBS entered into with other swap dealers and financial end-users that exceed a minimum threshold of transactional activity and for financial end-users that do not meet the minimum transactional activity threshold, to collect and post variation margin (but not initial margin).
The final margin rules also limit the types of assets that are eligible to satisfy initial and variation margin requirements, require initial margin to be segregated at a third-party custodian, impose requirements on internal models used to calculate initial margin requirements and contain specific provisions for cross-border transactions and inter-affiliate transactions. The final margin rules follow a phased implementation schedule with additional counterparties becoming subject to initial margin requirements in September 2019 and September 2020, depending on the transactional volume of the parties and their affiliates. These final rules, as well as parallel non-cleared swaps and SBS margin rules from the CFTC, the SEC and certain non-US regulators will increase the costs and liquidity burden associated with trading non-cleared swaps and SBS, and may adversely affect our business in such products. In particular, the imposition of initial margin requirements on inter-affiliate transactions will significantly increase the cost of certain consolidated risk management activities and may adversely affect HSBC to a greater extent than some of our competitors.
Dodd-Frank grants the SEC discretionary rule-making authority to modify the standard of care that applies to brokers, dealers and investment advisers when providing personalised investment advice to retail customers and to harmonise other rules applying to these regulated entities. Dodd-Frank also expands the extra-territorial jurisdiction of US courts over actions brought by the SEC or the US with respect to violations of the anti-fraud provisions in the Securities Act, the Securities Exchange Act of 1934 and the Investment Advisers Act of 1940. In addition, regulations which the FSOC, the CFPB or other regulators may adopt could affect the nature of the activities that our FDIC-insured depository institution subsidiaries may conduct, and may impose restrictions and limitations on the conduct of such activities.
The implementation of the remaining Dodd-Frank provisions, including those related to the recommended imposition of the fiduciary standard on broker-dealers, could result in additional costs or limit or restrict the way we conduct our business in the US.

Global and regional prudential and other regulatory developments
The Group is subject to regulation and supervision by a large number of regulatory bodies and other agencies. In addition to changes being introduced at a country level, changes are often driven by global bodies such as the G 20, the FSB and Basel Committee, which are then implemented at country level or regionally through the EU sometimes with modifications and with separate additional measures.
We are also subject to regulatory stress testing in many jurisdictions. These have increased both in frequency and in the granularity of information required by supervisors. They include the programmes of the BoE, the FRB (as

explained in the 'US regulation and supervision' section), the OCC, the EBA, the ECB, the HKMA and other regulators. For further details, see 'Stress testing' on page 115. On prudential changes, further details can be found in the 'Regulatory developments' section on page 4 of the Pillar 3 Disclosures at 31 December 2018.

Recovery and resolution

Although many elements of the approach are similar across jurisdictions, there is currently no consistent implementation and a number of key areas still need to be addressed, including an international framework for cross-border resolution. HSBC has engaged with the BoE's Resolution Directorate and the PRA on the topic of recovery and resolution planning.

The preferred resolution strategy for HSBC Group, as confirmed by the BoE is a multiple point of entry ('MPE') strategy, whereby each individual resolution group can be resolved by its respective local resolution authority. However, an enhancement to this approach was endorsed whereby the Group will issue TLAC to the market from HSBC Holdings only and then downstream the proceeds to subsidiaries as necessary and in accordance with set requirements from our regulators. This approach gives the option to host authorities to recapitalise their subsidiaries through the write-down of the internal TLAC resources, with the BoE applying the bail-in tool at the HSBC Holdings level where necessary and subsequently conducting any necessary restructuring and separation of the group in co-ordination with the host authorities.

Similar to all G-SIBs, we are working with our regulators to mitigate or remove critical inter-dependencies between our subsidiaries to further facilitate the resolution of the Group. In particular, in order to remove operational dependencies (where one subsidiary bank provides critical services to another), we have established a Service Company sub-group to house shared services to remove inter-bank dependencies across the Group. The process of transferring critical services from our subsidiary banks to the separate Service Company sub-group is largely complete.

The BoE and PRA have also published a consultation package on a revised resolvability assessment framework which requires additional disclosures about the resolvability of banking groups by June 2021.

European regulation

Through the UK's membership of the EU, HSBC has been both directly and indirectly subject to European financial services regulation. The continued applicability of European financial services regulation in the UK will be determined as part of the UK's deal on withdrawal from the EU and any associated transition period. In the absence of an exit agreement it is the intention of the UK parliament, the FCA and the PRA to transpose existing EU regulation into UK law to take effect 29 March 2019. Existing requirements to EU regulation may change as a result of such transposition. It is not clear how the UK will treat EU regulation that comes into effect after the exit date, which would include various proposals falling under the Capital Markets Union initiative in the areas of consumer protection and financial markets and various proposals in relation to cyber risk, use of financial technology and data processing. The Group continues to enhance and strengthen its governance and resourcing more generally in relation to regulatory change

Regulation and supervision

management and the implementation of required measures, actively to address this ongoing and significant agenda of regulatory change.

Financial crime regulation

HSBC operates in many countries around the world. As part of financial crime risk management, we have built a strong global financial crime compliance framework, and have a dedicated financial crime risk team. HSBC takes a comprehensive, risk-based approach to compliance with applicable financial crime-related laws and regulations, including anti-money laundering, sanctions, anti-bribery and corruption, fraud and tax transparency laws and regulations.

HSBC has established a global anti-money laundering ('AML') programme for this purpose. The objective of the AML programme is to ensure that money laundering risks identified by HSBC are appropriately mitigated. The AML programme is based upon various laws, regulations and regulatory guidance from the UK, the EU, Hong Kong, the US, and, as applicable, local jurisdictions in which HSBC does business.

HSBC continues to monitor and assess changes in financial crime regulations in the countries in which it operates. Where appropriate, HSBC will incorporate revised standards as part of its Global AML Programme. Where local country regulations have been amended, all such requirements must be followed by the HSBC entities that are located in that jurisdiction or are obligated through their legal structure to incorporate them.

While acknowledging the primacy of local laws, HSBC’s global sanctions policy is based on a comprehensive assessment of financial crime risk. It seeks to implement, with limited exceptions, the sanctions laws and regulations administered by the US, the United Nations, the UK, the EU and Hong Kong.

During 2018, the US reinstated certain sanctions against Iran that had been lifted under the Iran Nuclear Deal and expanded sanctions on Russia and Venezuela. Some of these US sanctions have extraterritorial effect and may affect non-US operators undertaking certain activity captured by these sanctions.

In August 2018, the EU amended the Annex to the EU Blocking Regulation No. 2271/96 (Regulation), and EU persons are now generally prohibited from complying with the US Iran-related sanctions laws and regulations listed in the Annex. As HSBC’s global sanctions policy is based on a comprehensive assessment of financial crime risk and acknowledges the primacy of local laws, no changes were required to our sanctions policy as a result of the updated Regulation.

We do not consider that our business activities with counterparties with whom transactions are restricted under applicable sanctions are material to our business for the year ended 31 December 2018.

HSBC requires compliance with all applicable anti-bribery and corruption laws in all markets and jurisdictions in which we operate. These laws include the UK Bribery Act, the US Foreign Corrupt Practices Act, and the Hong Kong Prevention of Bribery Ordinance, as well as other similar laws and regulations in the countries where we operate. We have a global anti-bribery and corruption policy, which gives practical effect to these laws and regulations.

Despite the expiration on 11 December 2017 of the five-year deferred prosecution agreement (‘DPA’) entered into with the US Department of Justice, and the dismissal of the charges contained within, we continue to take further steps to refine and strengthen our defences against financial crime by investing in advanced analytics and artificial intelligence.

HSBC Bank USA entered into a Consent Order with the Office of the Comptroller of the Currency, and HSBC North American Holdings (‘HNAH’) entered into a Consent Order with the Federal Reserve Board in October 2010. The Orders required improvement of our compliance risk management programme, including AML controls across our US businesses. These Orders were both terminated in 2018.

In 2012, Holdings entered into a Consent Order with the Federal Reserve Board and agreed to an undertaking with the UK Financial Conduct Authority (‘FCA’), both of which contained certain forward-looking obligations in relation to HSBC’s AML and sanctions compliance programme. This Consent Order and the undertaking, which is an FCA Direction, remain in effect as of year-end 2018.

Disclosures pursuant to Section 13(r) of the Securities Exchange Act

Section 13(r) of the Securities Exchange Act requires each issuer registered with the SEC to disclose in its annual or quarterly reports whether it or any of its affiliates have knowingly engaged in specified activities or transactions with persons or entities targeted by US sanctions programmes relating to Iran, terrorism, or the proliferation of weapons of mass destruction, even if those activities are not prohibited by US law and are conducted outside the US by non-US affiliates in compliance with local laws and regulations.

To comply with this requirement, HSBC Holdings plc (together with its affiliates, 'HSBC') has requested relevant information from its affiliates globally. The following activities conducted by HSBC are disclosed in response to Section 13(r):

Loans in repayment

Between 2001 and 2005, the Project and Export Finance division of HSBC arranged or participated in a portfolio of loans to Iranian energy companies and banks. All of these loans were guaranteed by European and Asian export credit agencies and had varied maturity dates with final maturity in 2018. We continued to seek repayment in accordance with our obligations to the supporting export credit agencies.

During 2018, the remaining five loans all matured. These loans were supported by the official export credit agencies of the UK, South Korea and Japan. We do not currently intend to extend any new loans. We generated the equivalent of approximately $4,400 of gross revenue and net profit from the loans maturing during 2018.

Legacy contractual obligations related to guarantees

Between 1996 and 2007, we provided guarantees to a number of our non-Iranian customers in Europe and the Middle East for various business activities in Iran. In a number of cases, we issued counter-indemnities in support of guarantees issued by Iranian banks as the Iranian beneficiaries of the guarantees required that they be backed directly by Iranian banks. The Iranian banks to which we provided counter indemnities included Bank Tejarat, Bank Melli, and the Bank of Industry and Mine.

There was no measurable gross revenue in 2018 under those guarantees and counter indemnities. We do not allocate direct costs to fees and commissions and, therefore, have not disclosed a separate net profit measure. We are seeking to cancel all relevant guarantees and counter indemnities, and do not currently intend to provide any new guarantees or counter indemnities involving Iran. Currently, approximately 15 remain outstanding.

Other relationships with Iranian banks

Activity related to US-sanctioned Iranian banks not covered elsewhere in this disclosure includes the following:

- We maintained an account in the UK for an Iranian-owned, UK-regulated financial institution during 2018. The account was generally no longer restricted under UK law, though we maintained restrictions on the account as a matter of policy. We exited this account in 2018. Estimated gross revenue in 2018 on this account, which includes fees and/or commissions, was approximately $106,300.
- We act as the trustee and administrator for a pension scheme involving eight employees of a US-sanctioned Iranian bank in Hong Kong, two of whom joined the scheme during 2018. Under the rules of this scheme, we accept contributions from

the Iranian bank each month and allocate the funds into the pension accounts of the Iranian bank's employees. We run and operate this pension scheme in accordance with Hong Kong laws and regulations. Estimated gross revenue, which includes fees and/or commissions, generated by this pension scheme during 2018 was approximately $634.

For the Iranian bank-related activity discussed above, we do not allocate direct costs to fees and commissions and, therefore, have not disclosed a separate net profit measure.

We have been holding a safe custody box for the Central Bank of Iran. For a number of years, the box has not been accessed by the Central Bank of Iran and no fees have been charged to the Central Bank of Iran.

We currently intend to continue to wind down the activity discussed in this section, to the extent legally permissible, and not enter into any new such activity.

Activity related to US Executive Order 13382

We maintained an account for an individual customer who is designated under Executive Order 13382. The customer used an HSBC credit card to make payments during 2018. The account was closed and exited during 2018. There was no measurable gross revenue or net profit generated from these transactions during 2018.

Other activity

We have an insurance company customer in the United Arab Emirates that, during 2018, made payments for the reimbursement of medical treatment to a hospital located in the United Arab Emirates and owned by the government of Iran. We processed all these payments to the hospital made by its customer.

We maintain accounts for certain customers in the United Arab Emirates that, during 2018, received cheque payments from two entities owned by the government of Iran.

We maintain accounts for certain customers in Europe and Asia that made payments to an Iranian-owned airline during 2018.

We maintain accounts for certain individual customers in Asia that have used HSBC credit cards to make travel-related payments to Iranian embassies during 2018.

We maintain an account for a customer in the United Arab Emirates that received a payment from an Iranian-owned bank during 2018.

For the activity in this section, there was no measurable gross revenue or net profit to HSBC during 2018.

Frozen accounts and transactions

We maintain several accounts that are frozen as a result of relevant sanctions programmes, and safekeeping boxes and other similar custodial relationships, for which no activity, except as licensed or otherwise authorised, took place during 2018. There was no measurable gross revenue or net profit to HSBC during 2018 relating to these frozen accounts.

Risk

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Our conservative risk appetite

Throughout its history, HSBC has maintained an evolving conservative risk profile. This is central to our business and strategy.

The following principles guide the Group's overarching risk appetite and determine how its businesses and risks are managed.

Financial position

- Strong capital position, defined by regulatory and internal capital ratios.
- Liquidity and funding management for each operating entity, on a stand-alone basis.

Operating model

- Ambition and capability to generate returns in line with a conservative risk appetite and strong risk management capability.
- Ambition and capability to deliver sustainable earnings and consistent returns for shareholders.

Business practice

- Zero tolerance for knowingly engaging in any business, activity or association where foreseeable reputational risk or damage has not been considered and/or mitigated.
- No appetite for deliberately or knowingly causing detriment to consumers, or incurring a breach of the letter or spirit of regulatory requirements.
- No appetite for inappropriate market conduct by a member of staff or by any Group business.

Enterprise-wide application

Our risk appetite encapsulates consideration of financial and non-financial risks and is expressed in both quantitative and qualitative terms. It is applied at the global business level, at the regional level, and to material operating entities.

Top and emerging risks

Our approach to identifying and monitoring top and emerging risks is described on page 115. During 2018, we made a number of changes to our top and emerging risks to reflect our assessment of the issues facing HSBC. Our current top and emerging risks are as follows.

Externally driven

Economic outlook and capital flows

Economic activity diverged across the global economy during 2018. The US benefited from a fiscal stimulus that helped to drive GDP growth above its long-term trend. The growth rate in trade-dependent regions like the European Union ('EU') declined on the back of a slowing Chinese economy, and trade and geopolitical tensions. Tightening global financial conditions alongside the tapering off of fiscal stimulus in the US is expected to lead to more moderate growth in global economic activity in 2019. Oil prices will likely remain volatile as contrasting supply and demand factors prevail in turn.

The stand-off between the US and China on a variety of economic and technological issues is likely to continue in 2019, although further liberalising initiatives in a vein similar to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership ('CPTPP') and the EU-Japan trade deal, as well as some re-organisation of global supply chains, could partly offset rising protectionism. Nevertheless, the net impact on trade flows could be negative, and may damage HSBC's traditional lines of business.

Emerging markets are set to face challenging cross-currents. The reduction in global liquidity and consequent increase in the cost of external funding could expose vulnerabilities that spread more broadly. However, China has pledged to enact some stimulus to offset the effects of tariff hikes. This should help emerging markets achieve reasonable growth rates even in the face of headwinds, though downside risks abound.

US midterm elections brought in a divided Congress, while two of Latin America's largest economies, Mexico and Brazil, elected new presidents. In Europe, populist parties have made political gains and could make further breakthroughs. In conjunction with continuing significant uncertainty around the ultimate shape of the UK's exit from the EU, as well as developments in countries such as Italy, severe bouts of economic and financial turbulence could spread beyond Europe. We believe HSBC's strong UK and European franchises are well placed to weather risks, but would nevertheless be affected by severe shocks.

Mitigating actions

- We actively assess the impact of economic developments in key markets on specific customer segments and portfolios and take appropriate mitigating actions. These actions include revising risk appetite and/or limits, as circumstances evolve.
- We use internal stress testing and scenario analysis, as well as regulatory stress test programmes, to evaluate the potential impact of macroeconomic shocks on our businesses and portfolios. Our approach to stress testing is described on page 115.
- We have carried out detailed reviews and stress tests of our wholesale credit, retail credit and trading portfolios to determine those sectors and customers most vulnerable to the UK's exit from the EU, in order to proactively manage and mitigate this risk.

Geopolitical risk

Our operations and portfolios are exposed to risks associated with political instability, civil unrest and military conflict, which could lead to disruption to our operations, physical risk to our staff and/or physical damage to our assets. In addition, rising protectionism and the increasing trend of using trade and investment policies as diplomatic tools may also adversely affect global trade flows.

Report of the Directors | Risk

Geopolitical risk remained heightened throughout 2018. The growing presence of populist parties means political systems across Europe are increasingly fragmented, volatile and less predictable. Political uncertainty remains high in the UK as its departure from the EU continues to dominate the political agenda in 2019 (see 'Process of UK withdrawal from the European Union' on page 111).

In the Middle East, the US has reinstated components of its Iran sanctions regime that were previously lifted to implement the Iran Nuclear Deal. The US is also putting pressure to end the war in Yemen and the boycott of Qatar. In Turkey, which has local elections in March 2019, the president may face increasing pressure to solve economic challenges after the Turkish lira came under pressure in 2018.

In Asia, US-China competition and confrontation across multiple dimensions will likely continue, including concerning economic power and technology leadership. US investment and export restrictions on Chinese imports could disrupt investment decisions, leading to a slow decoupling of the US and Chinese technology sectors.

Key presidential votes in HSBC markets Mexico and Brazil have changed the political status quo. A major source of uncertainty for Mexico was removed with the negotiation of the United States-Mexico-Canada Agreement ('USMCA'), which replaces NAFTA as a key driver of the Mexican economy, but still must be ratified. In Argentina, elections due in October 2019 will be shaped by economic factors and potential further market volatility. Corruption and security dynamics will continue to shape voter preferences.

Mitigating actions

We continually monitor the geopolitical outlook, in particular in countries where we have material exposures and/or a physical presence. We have also established dedicated forums to monitor geopolitical developments.

- We use internal stress tests and scenario analysis as well as regulatory stress test programmes, to adjust limits and exposures to reflect our risk appetite and mitigate risks as appropriate. Our internal credit risk ratings of sovereign counterparties take into account geopolitical developments that could potentially disrupt our portfolios and businesses.
- We continue to carry out contingency planning for the UK's exit from the EU and we are assessing the potential impact on our portfolios, operations and staff. This includes the increased possibility of an exit with no transition agreement.
- We have taken steps to enhance physical security in those geographical areas deemed to be at high risk from terrorism and military conflicts.

The credit cycle

Steadily rising US interest rates and the looming end of the ECB's quantative easing programme, alongside the uncertainty caused by trade and geopolitical tensions, caused a correction in stock indices and a widening in corporate bond spreads in the fourth quarter of 2018. The Bank for International Settlements ('BIS') estimates that 80% of US leveraged loans are 'covenant-lite'. Pressures in this segment could come to a head and spill over to other asset classes. The International Monetary Fund deems that thin liquidity coverage ratios ('LCRs') and stable funding ratios ('SFRs') for international banks' US dollar positions could cause offshore dollar liquidity to tighten abruptly during periods of high volatility, possibly affecting HSBC's positions.

After reining in excess leverage during 2018, China has pledged renewed stimulus in 2019 to counter various adverse effects on economic activity. This could lead to renewed global concerns about Chinese debt levels. In addition, debt-servicing burdens are high in some emerging markets, making them vulnerable to shocks.

Mitigating actions

- We closely monitor economic developments in key markets and sectors and undertake scenario analysis. This helps enable us to take portfolio actions where necessary, including

enhanced monitoring, amending our risk appetite and/or reducing limits and exposures.

- We stress test portfolios of particular concern to identify sensitivity to loss under a range of scenarios, with management actions being taken to rebalance exposures and manage risk appetite where necessary.
- We undertake regular reviews of key portfolios to help ensure that individual customer or portfolio risks are understood and our ability to manage the level of facilities offered through any downturn is appropriate.

Cyber threat and unauthorised access to systems

HSBC and other organisations continue to operate in an increasingly hostile cyber threat environment, which requires ongoing investment in business and technical controls to defend against these threats.

Key threats include unauthorised access to online customer accounts, advanced malware attacks and distributed denial of service ('DDOS') attacks.

Destructive malware (including ransomware), DDOS attacks and organised cyber criminals targeting payments are increasingly dominant threats across the industry. In 2018, the Group was subjected to a small number of DDOS attacks on our external facing websites, which were successfully mitigated across the Group with no destructive malware (including ransomware) or payment infrastructure attacks reported.

Mitigating actions

- We continue to strengthen and significantly invest in both business and technical controls in order to prevent, detect and respond to an increasingly hostile cyber threat environment. We continually evaluate the threat environment for the most prevalent attack types and their potential outcomes to determine the most effective controls to mitigate those threats.
- Specifically, we continue to enhance our controls to protect against advanced malware, data leakage, infiltration of payment systems and denial of service attacks as well as enhance our ability to quickly detect and respond to increasingly sophisticated cyber-attacks. Ensuring our staff continue to be 'cyber aware' is a key element of our defence strategy.
- Cyber risk is a priority area for the Board and is routinely reported at Board level to ensure appropriate visibility, governance and executive support for our ongoing cybersecurity programme.

Regulatory developments including conduct, with adverse impact on business model and profitability

Financial service providers continue to face stringent regulatory and supervisory requirements, particularly in the areas of capital and liquidity management, conduct of business, financial crime, internal control frameworks, the use of models and the integrity of financial services delivery. The competitive landscape in which the Group operates may be significantly altered by future regulatory changes and government intervention. Regulatory changes, including any resulting from the UK's exit from the EU, may affect the activities of the Group as a whole, or of some or all of its principal subsidiaries. This would include the loss of passporting rights and free movement of services, which are likely to arise in the event of the UK leaving the EU without an exit deal. Changes to business models and structures will be necessary to accommodate any such restrictions. For further details, see page 111.

Additionally, as described in Note 35 on the Financial Statements, we continue to be subject to a number of material legal proceedings, regulatory actions and investigations, including, for example, our January 2018 deferred prosecution agreement with the US DoJ arising from its investigation into HSBC's historical foreign exchange activities (the 'FX DPA').

Mitigating actions

- We are fully engaged, wherever possible, with governments and regulators in the countries in which we operate, to help ensure that new requirements are considered properly by regulatory authorities and the financial sector and can be implemented effectively. Significant regulatory programmes are overseen by the Group Change Committee.
- We hold regular meetings with all relevant authorities to discuss strategic contingency plans covering a wide range of scenarios relating to the UK's exit from the EU. In the absence of an agreement on the terms of the UK's withdrawal from the EU, these discussions increasingly focus on no deal scenarios and our plans to navigate the restrictions that are likely to arise regarding our ability to access EU markets and customers from the UK if passporting rights are withdrawn.
- We have invested significant resources and have taken, and will continue to take, a number of steps to improve our compliance systems and controls relating to our activities in global markets. These included enhancements to trade, voice and audio surveillance and the implementation of algorithmic trading for benchmark orders. For further details, see 'Regulatory compliance risk management' on page 123.

Financial crime risk environment

Financial institutions remain under considerable regulatory scrutiny regarding their ability to prevent and detect financial crime. Financial crime threats continue to evolve, often in tandem with geopolitical developments. The highly speculative, volatile and opaque nature of virtual currencies, as well as the pace of new currencies and associated technological developments, create challenges in effectively managing financial crime risks. The evolving regulatory environment continues to present execution challenge. An increasing trend towards greater data privacy requirements may affect our ability to effectively manage financial crime risks.

In December 2012, among other agreements, HSBC Holdings plc ('HSBC Holdings') consented to a cease-and-desist order with the US Federal Reserve Board ('FRB') and agreed to an undertaking with the UK Financial Conduct Authority ('FCA') to comply with certain forward-looking anti-money laundering ('AML') and sanctions-related obligations. HSBC Holdings also agreed to retain an independent compliance monitor – who is for FCA purposes a 'Skilled Person' under section 166 of the Financial Services and Markets Act, and for FRB purposes an 'Independent Consultant' – to produce periodic assessments of the Group's AML and sanctions compliance programme. In December 2012, HSBC Holdings also entered into an agreement with the Office of Foreign Assets Control ('OFAC') regarding historical transactions involving parties subject to OFAC sanctions. The Skilled Person/Independent Consultant will continue to conduct country reviews and provide periodic reports for a period of time at the FCA's and FRB's discretion. The role of the Skilled Person/Independent Consultant is discussed on page 124.

Mitigating actions

- We continued to enhance our financial crime risk management capabilities. We are investing in the next generation of tools to fight financial crime through the application of advanced analytics and artificial intelligence.
- We are developing procedures and controls to manage the risks associated with direct and indirect exposure to virtual currencies.
- We continue to work with jurisdictions and relevant international bodies to address data privacy challenges through international standards, guidance, and legislation to enable effective management of financial crime risk.
- We continue to take steps designed to ensure that the reforms we have put in place are both effective and sustainable over the long term.

Ibor transition

Interbank offered rates ('Ibors') are used to set interest rates on hundreds of trillions of US dollars' worth of different types of financial transactions and are used extensively for valuation purposes, risk measurement and performance benchmarking.

Following the recommendations of the Financial Stability Board, a fundamental review and reform of the major interest rates benchmarks, including Ibors, are underway across the world's largest financial markets. In some cases, the reform will include replacing interest rate benchmarks with alternative risk-free rates ('RFRs'). This replacement process is at different stages, and is progressing at different speeds, across several major currencies. There is therefore uncertainty as to the basis, method and timing of transition and their implications on the participants in the financial

markets.

HSBC has identified a number of potential prudential, conduct and systemic risks associated with the transition.

Mitigating actions

- We have established a global programme across all of our global businesses to coordinate HSBC's transition activities and to assess the potential risks and impacts of any transition.
- We will continue to engage with industry participants and the official sector to support an orderly transition.

Climate-related risks

Climate change can create physical risks such as severe weather events of increasing severity and/or frequency. The move to a low-carbon economy also creates transition risks both at idiosyncratic and systemic levels, such as through policy, regulatory and technological changes. These physical and transition risks create potential financial impacts for HSBC through higher risk-weighted assets ('RWAs), greater transactional losses and increased capital requirements.

There is potential for a rapid deterioration of credit quality in sectors and/or countries most exposed to transition risks, particularly if policy changes are radical or quickly enacted. HSBC could be significantly impacted by increased credit RWAs and losses through exposure to pools of stranded assets if the Group does not adequately respond to the changing landscape.

Physical risks from natural disasters, such as floods and hurricanes, could also impact credit RWAs, while the financial losses caused by these events could impair asset values and the creditworthiness of customers.

Mitigating actions

- We are increasingly incorporating climate-related risk, both physical and transition, into how we manage and oversee risks internally and with our customers.
- A programme of work to measure and monitor the transition risk of our portfolio is underway. This includes identifying those customers that need to adapt most rapidly to a transition to a low-carbon economy and integrating climate change risk considerations into credit risk analysis, decision making and credit policies.
- We have a number of sustainability risk policies covering sectors that have particular risks and/or public exposure. In 2018, we updated our energy policy to limit the financing of high-carbon intensity energy projects, while still supporting energy customers on their transition to a low-carbon economy.
- We continue to expand our thinking with regards to stress testing of climate risks. Over time, we will articulate narratives for a baseline and a number of alternative scenarios, as well as undertake portfolio-specific sensitivity tests. We expect to learn more about the impacts of climate risk as scenario analysis and stress testing evolves.
- Our enterprise risk management framework continues to be enhanced to develop and embed the measurement, monitoring and management of climate-related risks.

- An internal Climate Risk Council provides oversight by seeking to develop policy and limit frameworks in order to achieve desired portfolios over time, and protect the Group from climate-related risks that are outside of risk appetite.

Internally driven

IT systems infrastructure and resilience

We continue to invest in the reliability and resilience of our IT systems and critical services. We do so to help prevent disruption to customer services, which could result in reputational and regulatory damage.

Mitigating actions

- We continue to invest in transforming how software solutions are developed, delivered and maintained, with a particular focus on providing high-quality, stable and secure services. As part of this, we are concentrating on materially improving system resilience and service continuity testing. We have enhanced the security features of our software development life cycle and improved our testing processes and tools.
- We continue to upgrade our IT systems, simplify our service provision and replace older IT infrastructure and applications. Enhancements have led to continued global improvements in service availability for both our customers and employees.

Risks associated with workforce capability, capacity and environmental factors with potential impact on growth

Our success in delivering our strategic priorities, as well as proactively managing the regulatory environment, depends on the development and retention of our leadership and high-performing employees. The ability to continue to attract, train, motivate and retain highly qualified professionals in an employment market where expertise is often mobile and in short supply is critical, particularly as our business lines execute their strategic business outlooks. This may be affected by external and environmental factors, such as the UK's exit from the EU, changes to immigration policies and regulations and tax reforms in key markets that require active responses. Although potential people impacts related to the UK's exit from the EU have not yet materialised, we continue to monitor retention trends and the recruitment of key roles.

Mitigating actions

- HSBC University is focused on developing opportunities and tools for current and future skills, personal skills and leaders to create an environment for success.
- We continue to develop succession plans for key management roles, with actions agreed and reviewed on a regular basis by the Group Management Board.
- We actively respond to immigration changes through the global immigration programme. Other political and regulatory challenges are being closely monitored to minimise the impact on the attraction and retention of talent and key performers.
- HSBC is building the healthiest human system where colleagues can thrive. A number of initiatives have been launched to improve our ways of working and encourage an open and positive culture (e.g. simplifying processes and governance, and adopting new behaviours). We also promote a diverse and inclusive workforce and provide active support across a wide range of health and well-being activities.

Risks arising from the receipt of services from third parties

We utilise third parties for the provision of a range of services, in common with other financial service providers. Risks arising from the use of third-party service providers may be less transparent and therefore more challenging to manage or influence. It is critical that we ensure we have appropriate risk management policies, processes and practices. These should include adequate control over the selection, governance and oversight of third parties, particularly for key processes and controls that could affect operational resilience. Any deficiency in our management of

risks arising from the use of third parties could affect our ability to meet strategic, regulatory or client expectations.

Mitigating actions

- We continued to embed our delivery model in the first line of defence through a dedicated team. Processes, controls and technology to assess third-party service providers against key criteria and associated control monitoring, testing and assurance have been deployed.

- A dedicated oversight forum in the second line of defence monitors the embedding of policy requirements and performance against risk appetite. In the fourth quarter of 2018, regional second line of defence oversight capabilities were established in the major markets.

Enhanced model risk management expectations

We use models for a range of purposes in managing our business, including regulatory capital calculations, stress testing, credit approvals, financial crime risk management and financial reporting. Internal and external factors have had a significant impact on our approach to model risk management. Moreover, the adoption of more sophisticated modelling techniques and technology across the industry could also lead to increased model risk.

Mitigating actions

- We established a model risk management sub-function in the second line of defence to strengthen governance and oversight of this risk type.
- We further strengthened model oversight by reconfiguring the Global Model Oversight Committee, which is chaired by the Group Chief Risk Officer and attended by CEOs of the global businesses.
- We incorporated model risk-specific metrics within the Group risk appetite statement as part of the embedding of model risk as a risk discipline.
- We enhanced our model risk governance framework while partnering with the business to help enable more effective management of model risk in a commercial context. As we adopt new modelling technologies, we are updating our model risk management framework and governance standards to help drive the evolution of the overall governance framework to ensure best practice.
- We are refreshing the existing model risk controls to enable better understanding of control objectives and to provide the modelling areas with implementation guidance to enhance effectiveness.

Data management

The Group uses a large number of systems and applications to support key business processes and operations. As a result, we often need to reconcile multiple data sources, including customer data sources, to reduce the risk of error. HSBC, along with other organisations, also needs to meet external/regulatory obligations such as the General Data Protection Regulation ('GDPR'), which requires implementation of data privacy and protection capabilities across our customer data systems.

Mitigating actions

- We continue to improve data quality across a large number of systems globally. Our data management, aggregation and oversight continues to strengthen and enhance the effectiveness of internal systems and processes. We are implementing data controls for critical processes in the front-office systems to improve our data capture at the point of entry. We have achieved our objectives of meeting a 'largely compliant' rating in support of the Basel Committee for Banking Supervision (BCBS 239) principles.
- Through our global data management framework, we have commenced embedding governance processes to monitor proactively the quality of critical customer, product and transaction data and resolving associated data issues in a

timely manner. We continue to implement controls to improve the reliability of data used by our customers and staff.

- We are leveraging our investment in the GDPR initiative to roll out and implement a global and consistent data privacy framework.

Risk factors

We have identified a suite of risk factors that cover a broad range of risks our businesses are exposed to. These risks have the potential to have a material adverse effect on our business, financial condition, results of operations, prospects, capital position, strategy, reputation and/or customers. They may not necessarily be deemed as top or emerging risks; however, they inform the ongoing assessment of our top and emerging risks that may result in our risk appetite being revised. The risk factors are set out below.

Macroeconomic and geopolitical risk

Current economic and market conditions may adversely affect our results

Our earnings are affected by global and local economic and market conditions.

Uncertain and at times volatile economic conditions can create a challenging operating environment for financial services companies such as HSBC. In particular, we may face the following challenges to our operations and operating model in connection with these factors:

- the demand for borrowing from creditworthy customers may diminish if economic activity slows or remains subdued;
- if interest rates rise further, consumers and businesses may struggle with the additional debt burden, which could lead to increased delinquencies and expected credit losses ('ECLs');
- our ability to borrow from other financial institutions or to engage in funding transactions may be adversely affected by market disruption, for example in the event of contagion from stress in the eurozone and global sovereign and financial sectors; and
- market developments may depress consumer and business confidence beyond expected levels. If economic growth is subdued, for example, asset prices and payment patterns may be adversely affected, leading to greater than expected increases in delinquencies, default rates and ECLs. However, if growth is too rapid, new asset valuation bubbles could appear, particularly in the real estate sector, with potentially negative consequences for banks.

The occurrence of any of these events or circumstances could have a material adverse effect on our business, financial condition, results of operations, prospects and customers.

The UK's withdrawal from the European Union may adversely affect our operating model and financial results

The modalities of the UK's exit from the European Union, scheduled for end-March 2019, will likely have a significant impact on general economic conditions in the United Kingdom and the European Union. The UK's future relationship with the EU and its trading relationships with the rest of the world will likely take a number of years to resolve. This may result in a prolonged period of uncertainty, unstable economic conditions and market volatility, including currency fluctuations.

We also expect the UK's withdrawal to have implications for our London-based cross-border operations. The extent of these implications will depend on the outcome of negotiations. To ensure continuity of service, independent of the outcome of negotiations, HSBC assumes a scenario whereby the UK exits the EU without the existing passporting or regulatory equivalence framework that supports cross-border business. This scenario would impact (i) our legal

entities in the UK and the EU, (ii) our product offering, (iii) our clients and (iv) our employees.

We have made good progress in terms of ensuring we are prepared for the UK leaving the EU in the first quarter of 2019 (see 'Process of UK withdrawal from the European Union' on page 111). However, there remain execution risks, many of them linked to the uncertain outcome of negotiations and potentially tight timelines to implement significant changes to our UK and European operating models. If these risks materialise, HSBC's clients and employees are likely to be affected. The exact impact on our clients will depend on their individual circumstances and, in a worst case scenario, could include disruption to the provision of products and services.

We are likely to be affected by global geopolitical trends, including the risk of government intervention

While economic globalisation appears to remain deeply embedded in the international system, it is increasingly challenged by nationalism and protectionism and international institutions may be less capable of arresting this trend. A gradual shift in global power from the US and Europe towards China and emerging markets also appears to be occurring and may continue.

A rise in nationalism and protectionism, including trade barriers, may be driven by populist sentiment and structural challenges facing developed economies. Similarly, if capital flows are disrupted, some emerging markets may impose protectionist measures that could affect financial institutions and their clients, and other emerging, as well as developed, markets, may be tempted to follow suit. This rise could contribute to weaker global trade, potentially affecting HSBC's traditional lines of business.

The broad geographic footprint and coverage of HSBC will make us and our customers susceptible to protectionist measures taken by national governments and authorities, including imposition of trade tariffs, restrictions on market access, restrictions on the ability to transact on a cross border basis, expropriation, restrictions on international ownership, interest-rate caps, limits on dividend flows and increases in taxation.

There may be uncertainty as to the conflicting nature of such measures, their duration, the potential for escalation, and their potential impact on global economies. Whether these emerging trends are cyclical or permanent is hard to determine, and their causes are likely to be difficult to address. The occurrence of any of these events or circumstances could have a material adverse effect on our business, financial condition, results of operations and prospects.

We are subject to political, social and other risks in the countries in which we operate

We operate through an international network of subsidiaries and affiliates in over 65 countries and territories around the world. Our global operations are subject to potentially unfavourable political, social, environmental and economic developments in such jurisdictions, which may include:

- coups, civil wars or acts of terrorism;
- social instability;
- currency fluctuations;
- climate change and acts of God, such as natural disasters and epidemics; and
- infrastructure issues, such as transportation or power failures.

These risk events may give rise to disruption to our services and result in physical damage to our operations and/or risks to the safety of our personnel and customers.

Physical risks from natural disasters such as floods and hurricanes, could also impact credit RWAs, while the financial losses caused by these events could impair asset values and the creditworthiness of customers.

Such developments may result in a material adverse effect on our business, financial condition, results of operations, prospects and strategy.

Changes in foreign currency exchange rates may affect our results

We prepare our accounts in US dollars because the US dollar and currencies linked to it form the major currency bloc in which we transact and fund our business. However, a substantial portion of our assets, liabilities, assets under management, revenues and expenses are denominated in other currencies. Changes in foreign exchange rates, including those that may result from a currency becoming de-pegged from the US dollar, have an effect on our accounting standards, reported income, cash flows and shareholders' equity. For example, as a result of significant inflation, Argentina has been deemed a hyperinflationary economy effective July 1, 2018 and we are required to apply inflation accounting on a retrospective basis in accordance with IAS 29, as further described in our Financial Statements. Unfavourable changes in foreign exchange rates could have a material adverse effect on our business, financial condition, results of operations and prospects.

Macro-prudential, regulatory and legal risks to our business model

We are subject to unfavourable legislative or regulatory developments and changes in the policy of regulators or governments and we may fail to comply with all applicable regulations, particularly any changes thereto

Our businesses are subject to ongoing regulation and associated regulatory risks, including the effects of changes in the laws, regulations, policies, voluntary codes of practice and interpretations in the UK, the US, Hong Kong, the EU and the other markets in which we operate. This is particularly the case given the current post-financial crisis regulatory and economic environment, where we expect government and regulatory intervention in the banking sector to remain high for the foreseeable future. Additionally, many of these changes have an effect beyond the country in which they are enacted, as either regulators deliberately enact regulation with extra-territorial impact or our operations mean that the Group is obliged to give effect to 'local' laws and regulations on a wider basis.

In recent years, regulators and governments have focused on reforming both the prudential regulation of the financial services industry and the ways in which the business of financial services is conducted. Measures include enhanced capital, liquidity and funding requirements, the separation or prohibition of certain activities by banks, changes in the operation of capital markets activities, the introduction of tax levies and transaction taxes, changes in compensation practices and more detailed requirements on how business is conducted. The governments and regulators in the UK, the US, Hong Kong, the EU or elsewhere may intervene further in relation to areas of industry risk already identified, or in new areas, which could adversely affect us.

Specific areas where regulatory changes could have a material effect on our business, financial condition, results of operations, prospects, capital position, and reputation include, but are not limited to:

- general changes in government, central bank, regulatory or competition policy, or changes in regulatory regimes that may influence investor decisions in particular markets in which we operate;
- the structural separation of certain banking and other activities proposed or enacted in a number of jurisdictions;
- requirements flowing from arrangements for the resolution strategy of the Group and its individual operating entities that may have different effects in different countries;
- the implementation of extra-territorial laws, including initiatives to share tax information;
- the abolition of certain Ibor reference rates across the world and the transition to new replacement rates (as discussed further under 'We may not manage risks associated with the replacement of benchmark indices effectively');
- the UK's exit from the EU, and the transposition of existing EU financial services regulation into UK regulation;
- the treatment of 'third countries' under EU law with regard to their access to EU markets (which may have an adverse impact on the UK in the absence of/subject to the terms of a withdrawal agreement);
- the implementation of the European Commission's proposals for amendments to the BRRD and CRD IV, designed to implement various changes to the EU prudential framework and the subsequent implementation of these amendments in the UK;
- the completion of the outstanding work by the Basel Committee in relation to the Basel II framework, including the treatment of sovereign risk and the long-term regulatory treatment for International Financial Reporting Standard 9,

Financial Instruments ('IFRS 9') provisions;

- the implementation of the remaining reforms to the Basel III package, which include changes to the approaches to market risk, credit risk, operational risk, credit valuation adjustment, capital charges and the application of capital floors together with the amendments to the leverage ratio;
- the implementation of more stringent capital, liquidity and funding requirements, and adjustments in the use of models for measuring risk, particularly if capital requirements are increased;
- the proposal by the European Commission that EU banking groups with two or more institutions in the EU, but whose ultimate parent is outside the EU, must establish an EU parent undertaking that would be subject to consolidated prudential supervision in the EU and be subject to capital requirements, recovery and resolution measures, and separate reporting and disclosure requirements. It is unclear, particularly in light of the UK's exit from the EU, how these requirements will affect us or how we will arrange any required restructuring in order to comply with the requirements;
- the corporate governance, business conduct, capital, margin, reporting, clearing, execution and other regulatory requirements to which HSBC Bank USA and certain of our affiliates are or may become subject in their role as a swap dealer, including as imposed by the CFTC and the SEC;
- proposals by the US banking regulators applicable to foreign banking organisations regarding changes to the applicability thresholds for regulatory capital and liquidity requirements;
- the financial effects of climate changes being incorporated within the global prudential framework, including the transition risks resulting from a shift to a low carbon economy;
- the increasing focus by regulators, international bodies, organizations and unions on how institutions conduct business, particularly with regard to the delivery of fair outcomes for customers, promoting effective competition in the interests of consumers and ensuring the orderly and transparent operation of global financial markets;
- a continuing interest in financial services activities by competition authorities;
- restrictions on the structure of remuneration and increasing requirements to detail management accountability within the Group (e.g. the requirements of the Senior Managers and Certification Regime in the UK and similar regimes in Hong Kong and elsewhere that are under consideration/implementation);
- the implementation of any conduct measures as a result of regulators' increased focus on institutional culture, employee behaviour and whistleblowing, including measures resulting from ongoing thematic reviews into the workings of the retail, SME and wholesale banking

sectors and the provision of financial advice to consumers;

- the focus globally on data (including on data processing and subject rights/transfer of information), financial technology risks, operational resilience, crypto assets and cybersecurity and the introduction of new and/or enhanced standards in this area (as discussed further under 'We remain susceptible to a wide range of cyber risks that impact and/or are facilitated by technology, and our operations are highly dependent on our information technology systems' and 'Our data management policies and processes may not be sufficiently robust');
- changes in national or supra-national requirements regarding the ability to offshore or outsource the provision of services and resources or transfer material risk to financial services companies located in other countries, which impact our ability to implement globally consistent and efficient operating models;
- external bodies applying or interpreting standards or laws differently to us;
- further requirements relating to financial reporting, corporate governance and employee compensation;
- expropriation, nationalisation, confiscation of assets and changes in legislation or regulations relating to foreign ownership; and
- the application and enforcement of economic sanctions including those with extra-territorial effect.

We may not manage risks associated with the replacement of benchmark indices effectively

The expected discontinuation of certain key interbank offered rates ('Ibors') such as the London Interbank Offered Rate ('Libor'), and the adoption of alternative risk-free benchmark rates ('RFRs') by the market, introduces a number of risks for HSBC, its clients, and the financial services industry more widely. These include, but are not limited to:

- Legal risks, as changes required to documentation for new and existing transactions may be required;
- Financial risks, arising from any changes in the valuation of financial instruments linked to RFRs;
- Pricing risks, as changes to RFRs could impact pricing mechanisms on some instruments;
- Operational risks, due to the potential need to adapt IT systems, trade reporting infrastructure, operational processes and controls to accommodate one or more RFRs; and
- Conduct risks, through potentially material adverse impact on customers or financial markets.

The benchmark specifications together with the timetable and mechanisms for discontinuation of existing Ibors and implementation of RFRs have not yet been agreed across the industry and regulatory authorities. Accordingly, it is not currently possible to determine whether, or to what extent, any such changes would affect HSBC. However, the discontinuation of existing Ibors and implementation of RFRs could have a material adverse effect on our business, financial condition, results of operations, prospects and customers.

We are subject to the risk of current and future legal, regulatory or administrative actions and investigations, the outcomes of which are inherently difficult to predict

We face significant legal and regulatory risks in our business. The volume and amount of damages claimed in litigation, regulatory proceedings, administrative actions and other adversarial proceedings against financial institutions are increasing for many reasons, including a substantial increase in the number of regulatory changes taking place globally, increased media attention and higher expectations from regulators and the public. In addition, criminal prosecutions of financial institutions for, among other things, alleged conduct breaches, breaches of AML and sanctions regulations, antitrust violations, market manipulation, aiding and abetting tax evasion, and providing

unlicensed cross-border banking services, have become more commonplace and may increase in frequency due to increased media attention and higher expectations from prosecutors and the public. Any such legal, regulatory or administrative action against HSBC Holdings or one or more of our subsidiaries could result in, among other things, substantial fines, civil penalties, criminal penalties, cease and desist orders, forfeitures, the suspension or revocation of key licences, requirements to exit certain businesses, other disciplinary actions and/or withdrawal of funding from depositors and other stakeholders. Any threatened or actual litigation, regulatory proceeding, administrative action or other adversarial proceeding against HSBC Holdings or one or more of our subsidiaries could have a material adverse effect on our business, financial condition, results of operations, prospects and reputation.

Additionally, as described in Note 35 on the Financial Statements, we continue to be subject to a number of material legal proceedings, regulatory actions and investigations, including, for example, our January 2018 deferred prosecution agreement with the US DoJ arising from its investigation into HSBC's historical foreign exchange activities (the 'FX DPA'). It is inherently difficult to predict the outcome of many of the legal, regulatory and other

adversarial proceedings involving our businesses, particularly those cases in which the matters are brought on behalf of various classes of claimants, seek damages of unspecified or indeterminate amounts or involve novel legal claims. Potential consequences of breaching the FX DPA could include the imposition of additional terms and conditions on HSBC, an extension of the agreement or the criminal prosecution of HSBC, which could, in turn, entail further financial penalties and collateral consequences. Moreover, we may face additional legal proceedings, investigations or regulatory actions in the future, including in other jurisdictions and/or with respect to matters similar to, or broader than, the existing legal proceedings, investigations or regulatory actions. An unfavourable result in one or more of these proceedings could have a material adverse effect on our business, financial condition, results of operations, prospects and reputation.

We may fail to effectively manage affiliate risk

HSBC Bank USA, as the primary US dollar correspondent bank for the Group, is subject to heightened financial crime risk arising from business conducted on behalf of clients, as well as its non-US HSBC affiliates. If HSBC Bank USA fails to conduct adequate due diligence on clients, including its affiliates, or otherwise inappropriately processes US dollar payments on behalf of non-US HSBC affiliates, it could be in breach of applicable US AML and sanctions laws and regulations, become subject to legal or regulatory enforcement actions by OFAC or other US agencies and be required to pay substantial fines or penalties. Any such action against HSBC Bank USA could have a material adverse effect on our business, financial condition, results of operations, prospects and reputation.

We may fail to meet the requirements of regulatory stress tests

We are subject to regulatory stress testing in many jurisdictions, which are described on page 125. These exercises are designed to assess the resilience of banks to potential adverse economic or financial developments and ensure that they have robust, forward-looking capital planning processes that account for the risks associated with their business profile. Assessment by regulators is on both a quantitative and qualitative basis, the latter focusing on our data provision, stress testing capability and internal management processes and controls.

Failure to meet quantitative or qualitative requirements of regulatory stress test programmes, or the failure by regulators to approve our stress results and capital plans, could have a material adverse effect on our business, financial condition, results of operations, prospects, capital position and reputation.

We and our UK subsidiaries may become subject to stabilisation provisions under the Banking Act 2009, as amended, in certain significant stress situations

The Banking Act 2009, as amended, implements the BRRD in the UK and creates a special resolution regime (the 'SRR'). Under the SRR, HM Treasury, the BoE and the PRA and FCA (together, the 'Authorities') are granted substantial powers to resolve and stabilise UK-incorporated institutions with permission to accept deposits pursuant to Part 4A of the FSMA that are failing or are likely to fail to satisfy the threshold conditions (within the meaning of section 55B of the FSMA) where it is in the public interest to do so. The SRR presently consists of five stabilisation options: (i) transfer of all of the business of a relevant entity or the shares of the relevant entity to a private sector purchaser; (ii) transfer of all or part of the business of the relevant entity to a 'bridge bank' wholly owned by the BoE; (iii) transfer of part of the assets, rights or liabilities of the relevant entity to one or more asset management vehicles for management of the transferor's assets, rights or liabilities; (iv) the write-down, conversation, transfer, modification, or suspension of the relevant entity's equity, capital instruments and liabilities; and (v) temporary public ownership of the relevant entity. These tools may also be applied to a parent company or affiliate of a relevant entity where certain conditions are met. In addition, the SRR provides for modified insolvency and administration procedures for relevant entities. It also confers ancillary powers on the Authorities, including the power to modify or override certain contractual arrangements in certain circumstances. The Authorities are also empowered by order to amend the law for the purpose of enabling the powers under the SRR to be used effectively. Such orders may promulgate provisions with retrospective applicability.

In general, the Banking Act requires the Authorities to have regard to specified objectives in exercising the powers provided for by the Banking Act. One of the objectives (which is required to be balanced as appropriate with the other specified objectives) refers to the protection and enhancement of the stability of the financial system of the UK. The Banking Act includes provisions related to compensation in respect of transfer instruments and orders made under it.

There is considerable uncertainty about how the Authorities may exercise the powers granted to them under the Banking Act. However, if we are at or approaching the point of non-viability, such as to require regulatory intervention, any exercise of any resolution regime powers by the Authorities may result in holders of our ordinary shares or other instruments that may fall within the scope of the 'bail in' powers described above being adversely affected, including by the cancellation of shares, the write-down or conversion into shares of other instruments, the loss of rights associated with shares or other instruments (including rights to dividends or interest payments), the dilution of their percentage ownership of our share capital, and any corresponding material adverse effect on the market price of our ordinary shares and other instruments.

We are subject to tax-related risks in the countries in which we operate

We are subject to the substance and interpretation of tax laws in all countries in which we operate and are subject to routine review and audit by tax authorities in relation thereto. Our interpretation or application of these tax laws may differ from those of the relevant tax authorities and we provide for potential tax liabilities that may arise on the basis of the amounts expected to be paid to the tax authorities. The amounts ultimately paid may differ materially from the amounts provided depending on the ultimate resolution of such matters. For example, in the UK, the Finance Act 2019 contains certain changes to the taxation of regulatory capital securities which may have a material impact in future periods on corporation tax expense for the Group depending upon, among other things, any future guidance or amendments by way of regulation. In general, changes to tax laws and tax rates, and penalties for failing to comply, could have a material adverse effect on our business, financial condition, results of operations, prospects, capital position and reputation.

Risks related to our business, business operations, governance and internal control systems

Our operations are highly dependent on our information technology systems

The reliability and security of our information and technology infrastructure, and our customer databases are crucial to maintaining the service availability of banking applications and processes and to protecting the HSBC brand. The proper functioning of our payment systems, financial control, risk management, credit analysis and reporting, accounting, customer service and other information technology systems, as well as the communication networks between our branches and main data processing centres, are critical to our operations.

Critical system failure, any prolonged loss of service availability or any material breach of data security, particularly involving confidential customer data, could cause serious damage to our ability to service our clients, could breach regulations under which we operate and could cause long-term damage to our business and brand that could have a a material adverse effect on our business, financial condition, results of operations, prospects and reputation.

We remain susceptible to a wide range of cyber risks that impact and/or are facilitated by technology.

The threat from cyber-attacks remains a concern for our organisation, and failure to protect our operations from internet crime or cyber-attacks may result in financial loss, business disruption and/or loss of customer services and data or other sensitive information that could undermine our reputation and our ability to attract and keep customers. Destructive malware (including ransomware), distributed denial of service ('DDOS') attacks and organised cyber criminals targeting payments are increasingly dominant threats across the industry. In 2018, we were subjected to a small number of DDOS attacks on our external facing websites that were successfully mitigated across the Group with no destructive malware (including ransomware) or payment infrastructure attacks reported. Although cyber-attacks in 2018 had a negligible effect on our customers, services or firm, due to the increasing sophistication of cyber-attacks there is the potential for future attacks to have a material adverse effect on our business, financial condition, results of operations, prospects and reputation.

Our data management policies and processes may not be sufficiently robust

Critical business processes across the Group rely on large volumes of data from a number of different systems and sources. If data governance (including data retention and deletion, data quality and data architecture policies and procedures) is not sufficiently robust, manual intervention, adjustments and reconciliations may be required to reduce the risk of error in reporting to senior management or regulators. Inadequate policies and processes may also affect our ability to use data within the Group to service customers more effectively and/or improve our product offering. Moreover, financial institutions that fail to comply with in-country (local) and global regulatory and compliance requirements may face supervisory measures. In addition, failure to comply with new Global Data Privacy Requirements may result in regulatory sanctions. Any of these failures could have a material adverse effect on our business, financial condition, results of operations, prospects and reputation.

We could incur losses or be required to hold additional capital as a result of model limitations or failure

HSBC uses models for a range of purposes in managing our business, including regulatory capital calculations, stress testing, credit approvals, calculation of ECLs on an IFRS 9 basis, financial crime and fraud risk management and financial reporting. HSBC could face adverse consequences as a result of decisions that may lead to actions by management based on models that are poorly developed, implemented or used, or as a result of the modelled

outcome being misunderstood or the use of such information for purposes for which it was not designed. Regulatory scrutiny and supervisory concerns over banks' use of models is considerable, particularly the internal models and assumptions used by banks in the calculation of regulatory capital. Risks arising from the use of models could have a material adverse effect on our business, financial condition, results of operations, prospects, capital position and reputation.

Our operations utilise third-party suppliers and service providers

HSBC relies on third parties to supply goods and services. The use of third-party service providers by financial institutions is of particular focus to global regulators, including with respect to how outsourcing decisions are made and how key relationships are managed. The inadequate management of third-party risk could impact our ability to meet strategic, regulatory and client expectations. This may lead to a range of effects, including regulatory censure, civil penalties or damage both to shareholder value and to our reputation, which could have a material adverse effect on our business, financial condition, results of operations, prospects and strategy.

We rely on recruiting, retaining and developing appropriate senior management and skilled personnel

The demands being placed on the human capital of the Group are unprecedented. The cumulative workload arising from a regulatory reform programme that is often extra-territorial and regularly evolving consumes significant human resources, placing increasingly complex and conflicting demands on a workforce that operates in an employment market where expertise in key markets is often in short supply and mobile.

Our continued success depends in part on the retention of key members of our management team and wider employee base. The ability to continue to attract, train, motivate and retain highly qualified professionals is a key element of our strategy. The successful implementation of our growth strategy depends on the availability of skilled management in each of our global businesses and global functions, which may depend on factors beyond our control, including economic, market and regulatory conditions.

If global businesses or global functions fail to staff their operations appropriately or lose one or more of their key senior executives and fail to successfully replace them in a satisfactory and timely manner, or fail to implement successfully the organisational changes required to support the Group's strategy, our business, financial condition, results of operations and prospects, including control and operational risks, could be materially adversely affected.

We may suffer losses due to employee misconduct

Our businesses are exposed to risk from potential non-compliance with Group policies, including the HSBC Values, and related behaviours and employee misconduct such as fraud or negligence, all of which could result in regulatory sanctions and/or reputational or financial harm. In recent years, a number of multinational financial institutions have suffered material losses due to the actions of 'rogue traders' or other employees. It is not always possible to deter employee misconduct, and the precautions we take to prevent and detect this activity may not always be effective. Employee misconduct could have a material adverse effect on our business, financial condition, results of operations, prospects and reputation.

The delivery of our strategic actions is subject to execution risk

Effective management of transformation projects is required to effectively deliver the Group's strategic priorities, involving delivering both on externally driven programmes (e.g. regulatory), as well as key business initiatives to deliver revenue growth, product enhancement and operational efficiency outcomes. The magnitude, complexity and, at times, concurrent demands of the projects required to meet these can result in heightened execution risk, which we endeavour to manage through appropriate

governance. The failure to successfully deliver these key strategic initiatives may have material adverse effect on our business, financial condition, results of operations, prospects and reputation.

We may not achieve any of the expected benefits of our strategic initiatives

The Group's strategy (see pages 12 to 13) is built around two trends – the continued growth of international trade and capital flows, and wealth creation, particularly in faster-growing markets. We have analysed those trends and developed criteria to help us better deploy capital in response. The development and implementation of our strategy requires difficult, subjective and complex judgements, including forecasts of economic conditions in various parts of the world. We may fail to correctly identify the trends we seek to exploit and the relevant factors in making decisions as to capital deployment and cost reduction.

Key to achieving our growth strategy is increasing the number of HSBC products held by our customers through cross-selling and driving synergies across our global businesses to grow revenue and earnings. Key opportunities to drive business synergies arise between CMB and GB&M, and separately in RBWM, which are both areas where many of our competitors also focus. In both instances, this may limit our ability to cross-sell additional products to our customers or may influence us to sell our products at lower prices, reducing our net interest income and revenue from our fee-based products. A failure to deliver the cross-selling and/or business synergies required to achieve our growth strategy could have a material adverse effect on our business, financial condition, results of operations, prospects and reputation.

Our ability to execute our strategy may be limited by our operational capacity and the increasing complexity of the regulatory environment in which we operate. We continue to pursue our cost management initiatives, though they may not be as effective as expected, and we may be unable to meet the cost saving targets included in our productivity programmes.

In addition, factors beyond our control, including but not limited to economic and market conditions, could limit our ability to achieve any of the expected benefits of these initiatives. The global economic outlook is more uncertain, particularly with regard to UK economic risks, global trade tensions and revised interest rate expectations. There remains a risk that, in the absence of an improvement in economic conditions, our cost and investment actions may not be sufficient to achieve the expected benefits.

Failure to achieve any of the expected benefits of our strategic initiatives could have a material adverse effect on our business, financial condition, results of operations, prospects and reputation.

We operate in markets that are highly competitive

We compete with other financial institutions in a highly competitive industry that continues to undergo significant change as a result of financial regulatory reform, including Open Banking in the UK, as well as increased public scrutiny stemming from the financial crisis and continued challenging economic conditions.

We target internationally mobile clients who need sophisticated global solutions and generally compete on the basis of the quality of our customer service, the wide variety of products and services that we can offer our customers, and the ability of those products and services to satisfy our customers' needs, the extensive distribution channels available for our customers, our innovation and our reputation. Continued and increased competition in any one or all of these areas may negatively affect our market share and/or cause us to increase our capital investment in our businesses in order to remain competitive. Additionally, our products and services may not be accepted by our targeted clients.

In many markets, there is increased competitive pressure to provide products and services at current or lower prices. Consequently, our ability to reposition or reprice our products and services from time to time may be limited, and could be influenced significantly by the actions of our competitors who may or may

not charge similar fees for their products and services. Any changes in the types of products and services that we offer our customers, and/or the pricing for those products and services, could result in a loss of customers and market share. Further, new entrants to the market or new technologies could require us to spend more to modify or adapt our products to attract and retain customers. We may not respond effectively to these competitive threats from existing and new competitors, and may be forced to increase our investment in our business to modify or adapt our existing products and services or develop new products and services to respond to our customers' needs.

Any of these factors could have a material adverse effect on our business, financial condition, results of operations, prospects and reputation.

Our risk management measures may not be successful

The management of risk is an integral part of all our activities. Risk constitutes our exposure to uncertainty and the consequent variability of return. Specifically, risk equates to the adverse effect on profitability or financial condition arising from different sources of uncertainty, including retail and wholesale credit risk, market risk, non-traded market risk, operational risk, insurance risk, concentration risk, liquidity and funding risk, litigation risk, reputational risk, strategic risk, pension risk and regulatory risk.

While we employ a broad and diversified set of risk monitoring and mitigation techniques, such methods and the judgements that accompany their application cannot anticipate every unfavourable event or the specifics and timing of every outcome. Failure to manage risks appropriately could have a material adverse effect on our business, financial condition, results of operations, prospects, strategy and reputation.

Operational risks are inherent in our business, including the risk of fraudulent activity

We are exposed to many types of operational risk that are inherent in banking operations, including fraudulent and other criminal activities (both internal and external), breakdowns in processes or procedures and systems failure or non-availability. These risks are also present when we rely on outside suppliers or vendors to provide services to us and our customers.

In particular, fraudsters may target any of our products, services and delivery channels, including lending, internet banking, payments, bank accounts and cards. This may result in financial loss to the Group and/or our customers, an adverse customer experience, reputational damage and potential litigation, regulatory proceeding, administrative action or other adversarial proceeding in any jurisdiction in which we operate, depending on the circumstances of the event.

These operational risks could have a material adverse effect on our business, financial condition, results of operations, prospects, strategy and reputation.

Our operations have inherent reputational risk

Reputational risk is the risk of failing to meet stakeholder expectations as a result of any event, behaviour, action or inaction, either by HSBC Group, our employees or those with whom we are associated. Any material lapse in standards of integrity, compliance, customer service or operating efficiency may represent a potential reputational risk. Stakeholder expectations constantly evolve, and so reputational risk is dynamic and varies between geographical regions, groups and individuals.

Modern technologies, in particular online social media channels and other broadcast tools that facilitate communication with large audiences in short time frames and with minimal costs, may significantly enhance and accelerate the distribution and effect of damaging information and allegations. Reputational risk could also arise from negative public opinion about the actual, or perceived, manner in which we conduct our business activities, or our financial performance, as well as actual or perceived practices in banking and the financial services industry generally. Negative public opinion may adversely affect our ability to retain and attract

customers, in particular, corporate and retail depositors, and to retain and motivate staff, and could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Our financial statements are based in part on judgements, estimates and assumptions that are subject to uncertainty

The preparation of financial statements requires management to make judgements, estimates and assumptions that affect the reported amounts of assets, liabilities, income and expenses. Due to the inherent uncertainty in making

estimates, particularly those involving the use of complex models, actual results reported in future periods may be based upon amounts that differ from those estimates. Estimates, judgements, assumptions and models are continually evaluated, and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Revisions to accounting estimates are recognised in the period in which the estimate is revised and in any future periods affected. The accounting policies deemed critical to our results and financial position, based upon materiality and significant judgements and estimates, include impairment of loans and advances, goodwill, valuation of financial instruments, deferred tax assets, provisions and impairment of interests in associates, which are discussed in detail in 'Critical accounting estimates and judgements' on page 35.

The valuation of financial instruments measured at fair value can be subjective, in particular where models are used that include unobservable inputs. Given the uncertainty and subjectivity associated with valuing such instruments, future outcomes may differ materially from those assumed using information available at the reporting date. In addition, impairment testing on interests in associates involves significant judgements in determining the value in use, and in particular estimating the present values of cash flows expected to arise from continuing to hold the investment, based on a number of management assumptions. At 31 December 2018, we performed an impairment review of our investment in BoCom and concluded it was not impaired based on our value in use calculation. In future periods, the value in use may increase or decrease depending on the effect of changes to model inputs. The effect of these changes on the future results of operations and the future financial position of the Group may be material. For further details, see 'Critical accounting estimates and judgements' on page 35.

If the judgements, estimates and assumptions we use in preparing our consolidated financial statements are subsequently found to be materially different from those assumed using information available at the reporting date, it could have a material adverse effect on our business, financial condition, results of operations and prospects.

Changes in accounting standards may have a material impact on how we report our financial results and financial condition

We prepare our consolidated financial statements in accordance with International Financial Reporting Standards ('IFRSs') as issued by the International Accounting Standards Board ('IASB'), including interpretations ('IFRICS') issued by the IFRS Interpretations Committee, and as endorsed by the EU. From time to time, the IASB or the IFRS Interpretations Committee may issue new accounting standards or interpretations that could materially impact how we report and disclose our financial results and financial condition as well as affect the calculation of our capital ratios, including the CET1 ratio. We could also be required to apply new or revised standards retrospectively, resulting in our restating prior period financial statements in material amounts.

Third parties may use us as a conduit for illegal activities without our knowledge

We are required to comply with applicable AML laws and regulations, and have adopted various policies and procedures, including internal control and 'know your customer' procedures, aimed at preventing use of HSBC products and services for the

purpose of committing or concealing financial crime. A major focus of US and UK government policy relating to financial institutions in recent years has been combating money laundering and enforcing compliance with US and EU economic sanctions. This focus is reflected in part by our agreements with US and UK authorities relating to various investigations regarding past inadequate compliance with AML and sanctions laws. These consent orders do not preclude additional enforcement actions by bank regulatory, governmental or law enforcement agencies or private litigation.

A number of remedial actions have been taken as a result of the matters to which the AML DPA related, which are intended to ensure that the Group's businesses are better protected in respect of these risks. However, there can be no assurance that these will be completely effective.

Moreover, in relevant situations, and where permitted by regulation, we may rely upon certain counterparties to maintain and properly apply their own appropriate AML procedures. While permitted by regulation, such reliance may not be effective in preventing third parties from using us (and our relevant counterparties) as a conduit for money laundering, including illegal cash operations, without our knowledge (and that of our relevant counterparties). Becoming a party to money laundering, association with, or even accusations of being associated with, money laundering will damage our reputation and could make us subject to fines, sanctions and/or legal enforcement. Any one of these outcomes could have a material adverse effect on our business, financial condition, results of operations, prospects and reputation.

We have significant exposure to counterparty risk

We are exposed to counterparties that are involved in virtually all major industries, and we routinely execute transactions with counterparties in financial services, including brokers and dealers, central clearing counterparties, commercial banks, investment banks, mutual and hedge funds, and other institutional clients. Many of these transactions expose us to credit risk in the event of default by our counterparty or client. Our ability to engage in routine transactions to fund our operations and manage our risks could be materially adversely affected by the actions and commercial soundness of other financial services institutions. Financial institutions are necessarily interdependent because of trading, clearing, counterparty or other relationships. As a consequence, a default by, or decline in market confidence in, individual institutions, or anxiety about the financial services industry generally, can lead to further individual and/or systemic difficulties, defaults and losses.

Mandatory central clearing of OTC derivatives, including under Dodd-Frank and the EU's European Market Infrastructure Regulation, poses risks to the Group. As a clearing member, we are required to underwrite losses incurred at a Central Counterparty ('CCP') by the default of other clearing members and their clients. Increased moves towards central clearing brings with it a further element of interconnectedness between clearing members and clients that we believe may increase rather than reduce our exposure to systemic risk. At the same time, our ability to manage such risk ourselves will be reduced because control has been largely outsourced to CCPs, and it is unclear at present how, at a time of stress, regulators and resolution authorities will intervene.

Where bilateral counterparty risk has been mitigated by taking collateral, our credit risk may remain high if the collateral we hold cannot be realised or has to be liquidated at prices that are insufficient to recover the full amount of our loan or derivative exposure. There is a risk that collateral cannot be realised, including situations where this arises by change of law that may influence our ability to foreclose on collateral or otherwise enforce contractual rights.

The Group also has credit exposure arising from mitigants, such as credit default swaps ('CDSs'), and other credit derivatives, each of which is carried at fair value. The risk of default by counterparties to CDSs and other credit derivatives used as mitigants affects the fair value of these instruments

depending on the valuation and the perceived credit risk of the underlying instrument against which protection has been purchased. Any such adjustments or fair value changes could have a material adverse effect on our business, financial condition, results of operations and prospects.

Market fluctuations may reduce our income or the value of our portfolios

Our businesses are inherently subject to risks in financial markets and in the wider economy, including changes in, and increased volatility of, interest rates, inflation rates, credit spreads, foreign exchange rates, commodity, equity, bond and property prices, and the risk that our customers act in a manner inconsistent with our business, pricing and hedging assumptions.

Market movements will continue to significantly affect us in a number of key areas. For example, banking and trading activities are subject to interest rate risk, foreign exchange risk, inflation risk and credit spread risk. Changes in interest rate levels, interbank spreads over official rates and yield curves affect the interest rate spread realised between lending and borrowing costs. A declining or low interest rate environment could increase prepayment activity that reduces the weighted average lives of our interest-earning assets and could have a material adverse effect on us. The potential for future volatility and margin changes remains. Competitive pressures on fixed rates or product terms in existing loans and deposits sometimes restrict our ability to change interest rates applying to customers in response to changes in official and wholesale market rates. Our pension scheme assets include equity and debt securities, the cash flows of which change as equity prices and interest rates vary.

Our insurance businesses are exposed to the risk that market fluctuations will cause mismatches to occur between product liabilities and the investment assets that back them.

Market risks can affect our insurance products in a number of ways depending upon the product and associated contract. For example, mismatches between assets and liability yields and maturities give rise to interest rate risk. Some of these risks are borne directly by the customer and some are borne by the insurance businesses, with their excess capital invested in the markets. Some insurance contracts involve guarantees and options that increase in value in adverse investment markets. There is a risk that the insurance businesses will bear some of the cost of such guarantees and options. The performance of the investment markets will thus have a direct effect upon the value embedded in the insurance and investment contracts and our operating results, financial condition and prospects.

It is difficult to predict with any degree of accuracy changes in market conditions, and such changes could have a material adverse effect on our business, financial condition, results of operations and prospects.

Liquidity, or ready access to funds, is essential to our businesses

Our ability to borrow on a secured or unsecured basis, and the cost of doing so, can be affected by increases in interest rates or credit spreads, the availability of credit, regulatory requirements relating to liquidity or the market perceptions of risk relating to the Group or the banking sector, including our perceived or actual creditworthiness.

Current accounts and savings deposits payable on demand or at short notice form a significant part of our funding, and we place considerable importance on maintaining their stability. For deposits, stability depends upon preserving investor confidence in our capital strength and liquidity, and on comparable and transparent pricing. Although deposits have been a stable source of funding historically, this may not continue.

We also access wholesale markets in order to provide funding for entities that do not accept deposits, to align asset and liability maturities and currencies, and to maintain a presence in local markets. In 2018 we issued the equivalent of $34.9bn of debt securities in the public capital markets in a range of currencies and

maturities from a number of Group entities, including $19.6bn of senior securities issued by HSBC Holdings.

An inability to obtain financing in the unsecured long-term or short-term debt capital markets, or to access the secured lending markets, could have a material adverse effect on our liquidity. Unfavourable macroeconomic developments, market disruptions or regulatory developments may increase our funding costs or challenge our ability to raise funds to support or expand our businesses.

If we are unable to raise funds through deposits and/or in the capital markets, our liquidity position could be adversely affected, and we might be unable to meet deposit withdrawals on demand or at their contractual maturity, to repay borrowings as they mature, to meet our obligations under committed financing facilities and insurance contracts or to fund new loans, investments and businesses. We may need to liquidate unencumbered assets to meet our liabilities. In a time of reduced liquidity, we may be unable to sell some of our assets, or we may need to sell assets at reduced prices, which in either case could materially adversely affect our business, financial condition, results of operations and prospects.

Any reduction in the credit rating assigned to HSBC Holdings, any subsidiaries of HSBC Holdings or any of their respective debt securities could increase the cost or decrease the availability of our funding and adversely affect our liquidity position and net interest margin

Credit ratings affect the cost and other terms upon which we are able to obtain market funding. Rating agencies regularly evaluate HSBC Holdings and certain of its subsidiaries, as well as their respective debt securities. Their ratings are based on a number of factors, including their assessment of the relative financial strength of the Group or of the relevant subsidiary, as well as conditions affecting the financial services industry generally. There can be no assurance that the rating agencies will maintain HSBC Holdings' or the relevant subsidiary's current ratings or outlook, particularly given the rating agencies' current review of their bank rating methodologies and the potential impact on HSBC Holdings' or its subsidiaries' ratings.

At the date hereof, HSBC Holdings' long-term debt was rated 'AA-' by Fitch, 'A' by Standard and Poor's ('S&P') and 'A2' by Moody's.

The ratings outlook by Fitch was stable and the ratings outlooks by both S&P and Moody's were negative. Any reductions in these ratings and outlook could increase the cost of our funding, limit access to capital markets and require additional collateral to be placed and, consequently, materially adversely affect our interest margins and our liquidity position.

Under the terms of our current collateral obligations under derivative contracts, we could be required to post additional collateral as a result of a downgrade in HSBC Holdings' credit rating.

Risks concerning borrower credit quality are inherent in our businesses

Risks arising from changes in credit quality and the recoverability of loans and amounts due from borrowers and counterparties (e.g. reinsurers and counterparties in derivative transactions) are inherent in a wide range of our businesses. Adverse changes in the credit quality of our borrowers and counterparties arising from a general deterioration in economic conditions or systemic risks in the financial systems could reduce the recoverability and value of our assets, and require an increase in our ECLs.

We estimate and recognise ECLs in our credit exposure. This process, which is critical to our results and financial condition, requires difficult, subjective and complex judgements, including forecasts of how the economic conditions might impair the ability of our borrowers to repay their loans and the ability of other counterparties to meet their obligations. This assessment considers multiple alternative forward-looking economic

conditions and incorporates this into the ECL estimates to meet the measurement objective of IFRS 9. As is the case with any such assessments, we may fail to estimate accurately the effect of factors that we identify or fail to identify relevant factors. Further, the information we use to assess the creditworthiness of our counterparties may be inaccurate or incorrect. Any failure by us to accurately estimate the ability of our counterparties to meet their obligations could have a material adverse effect on our business, financial condition, results of operations and prospects.

Our insurance businesses are subject to risks relating to insurance claim rates and changes in insurance customer behaviour

We provide various insurance products for customers with whom we have a banking relationship, including several types of life insurance products. The cost of claims and benefits can be influenced by many factors, including mortality and morbidity rates, lapse and surrender rates and, if the policy has a savings element, the performance of assets to support the liabilities. Adverse developments in any of these factors could materially adversely affect our business, financial condition, results of operations and prospects.

HSBC Holdings is a holding company and, as a result, is dependent on loan payments and dividends from its subsidiaries to meet its obligations, including obligations with respect to its debt securities, and to provide profits for payment of future dividends to shareholders

HSBC Holdings is a non-operating holding company and, as such, its principal source of income is from operating subsidiaries that hold the principal assets of the Group. As a separate legal entity, HSBC Holdings relies on remittance of its subsidiaries' loan interest payments and dividends in order to be able to pay obligations to debt holders as they fall due, and to pay dividends to its shareholders. The ability of HSBC Holdings' subsidiaries and affiliates to pay remittances and dividends to HSBC Holdings could be restricted by changes in regulation, exchange controls and other requirements.

We may be required to make substantial contributions to our pension plans

We operate a number of pension plans throughout the world for our personnel, including defined benefit plans. Pension scheme obligations fluctuate with changes in long-term interest rates, inflation, salary levels and the longevity of scheme members. They can also be affected by operational and legal risks. The level of contributions we make to our pension plans has a direct effect on our cash flow. To the extent plan assets are insufficient to cover existing liabilities, higher levels of contributions will be required. As a result, deficits in those pension plans could have a material adverse effect on our business, financial condition, operations and prospects.

Areas of special interest

During 2018, a number of areas have been identified and considered as part of our top and emerging risks because of the effect they may have on the Group. We have placed particular focus on the UK withdrawal from the European Union ('EU') in this section.

Process of UK withdrawal from the European Union

The UK is due to formally leave the EU in March 2019. Before then, the UK and the EU have to finalise the Article 50 Withdrawal Agreement, which will need to be approved by their respective parliaments. A comprehensive trade deal will not be concluded within this time frame. A period of transition until 31 December 2020 has been agreed between the UK and the EU. However, there will be no legal certainty until this is enshrined in the Withdrawal Agreement. To ensure continuity of service, independent of the outcome of negotiations, our contingency plan is based on the assumption of a scenario whereby the UK exits the

EU without the existing passporting or regulatory equivalence framework that supports cross-border business.
Our programme to manage the impact of the UK leaving the EU was set up in 2017 and now has in excess of 1,000 employees covering all businesses and functions. It focuses on four main components: legal entity restructuring; product offering; customer migrations; and employees.

Legal entity restructuring

The Group currently has branches in seven European Economic Area ('EEA') countries (Belgium, the Netherlands, Luxembourg, Spain, Italy, Ireland and Czech Republic), which rely on passporting out of the UK. Assuming a UK departure from the EU without the existing passporting or regulatory equivalence framework that supports cross-border business, this will no longer be possible. As a result, we have now completed the establishment of new branches of HSBC France ('HBFR'), our primary banking entity authorised in the EU, after receiving regulatory approval in 2018. We are on track to complete the business transfer in the first quarter of 2019, and are making good progress on the operational integration of our EEA branch network into HBFR.

Product offering

To accommodate for customer migrations and new business after the UK's departure from the EU, we are expanding and enhancing our existing product offering in France, the Netherlands and Ireland. HBFR's euro clearing capabilities are now available and further product launches are planned during the first quarter of 2019.

Customer migrations

The UK's departure from the EU is likely to have an impact on our clients' operating models, including their working capital requirements, investment decisions and financial markets infrastructure access. Our priority is to provide continuity of service, and while our intention is to minimise the level of change for our customers, we will be required to migrate some EEA-incorporated clients from the UK to HBFR, or another EEA entity. We are in active dialogue with affected clients to make the transition as smooth as possible. We are organising client events and communications to provide clients with a better understanding of these implications.

Employees

The migration of EEA-incorporated clients will require us to strengthen our local teams in the EU, and France in particular. We expect the majority of roles to be filled through hires and we have started a recruitment process. Throughout, our objective is to minimise the level of change for our people and ensure any transition is as smooth as possible.
Given the scale and capabilities of our existing business in France, we are well prepared to take on additional roles and activities.
Looking beyond the transfer of roles to the EU, we are also providing support to our UK employees resident in EEA countries and EEA employees resident in the UK (e.g. on settlement applications).
Nevertheless, London will continue to be an important global financial centre and the best location for our global headquarters. As at 31 December 2018, HSBC employed approximately 39,000 people in the UK.

Across the programme, we have made good progress in terms of ensuring we are prepared for the UK leaving the EU in the first quarter of 2019 under the terms described above. However, there remain execution risks, many of them linked to the uncertain outcome of negotiations and potentially tight timelines to implement significant changes to our UK and European operating models. If these risks materialise, HSBC's clients and employees are likely to be affected. The exact impact on our clients will depend on their individual circumstances and, in a worst case scenario, could include disruption to the provision of products and services.
We have carried out detailed reviews of our credit portfolios to determine those sectors and customers most vulnerable to the UK's exit from the EU. For further details, please see 'Impact of UK economic uncertainty on ECL' on page 137.

Risk management

This section describes the enterprise-wide risk management framework, and the significant policies and practices employed by HSBC in managing its material risks, both financial and non-financial.

Our risk management framework

We use an enterprise-wide risk management framework across the organisation and across all risk types, underpinned by our risk culture.

The framework fosters continuous monitoring, promotes risk awareness and encourages sound operational and strategic decision making. It also ensures a consistent approach to monitoring, managing and mitigating the risks we accept and incur in our activities.
The following diagram and descriptions summarise key aspects of the framework, including governance and structure, our risk management tools and our risk culture, which together help align employee behaviour with our risk appetite.

Report of the Directors | Risk

Key components of our risk management framework
HSBC Values and risk culture

Risk governance	Non-executive risk governance	The Board approves the Group's risk appetite, plans and performance targets. It sets the 'tone from the top' and is advised by the Group Risk Committee and the Financial System Vulnerabilities Committee (see page 203).
	Executive risk governance	Our executive risk governance structure is responsible for the enterprise-wide management of all risks, including key policies and frameworks for the management of risk within the Group (see pages 113 and 115).
Roles and responsibilities	Three lines of defence model	Our 'three lines of defence' model defines roles and responsibilities for risk management. An independent Global Risk function helps ensure the necessary balance in risk/return decisions (see page 114).
Processes and tools	Risk appetite Enterprise-wide risk management tools Active risk management: identification/assessment, monitoring, management and reporting	The Group has several processes to identify/assess, monitor, manage and report risks to ensure we remain within our risk appetite (see pages 113 to 115).
Internal controls	Policies and procedures	Policies and procedures define the minimum requirements for the controls required to manage our risks.
	Control activities	The operational risk management framework defines minimum standards and processes for managing operational risks and internal controls (see page 123).
	Systems and infrastructure	The Group has systems and/or processes that support the identification, capture and exchange of information to support risk management activities.

Systems and tools

Our risk culture

Risk culture refers to HSBC's norms, attitudes and behaviours related to risk awareness, risk taking and risk management.

HSBC has long recognised the importance of a strong risk culture, the fostering of which is a key responsibility of senior executives. Our risk culture is reinforced by the HSBC Values and our Global Standards programme. It is instrumental in aligning the behaviours of individuals with our attitude to assuming and managing risk, which helps to ensure that our risk profile remains in line with our risk appetite.

We use clear and consistent employee communication on risk to convey strategic messages and to set the tone from senior management and the Board. We also deploy mandatory training on risk and compliance topics to embed skills and understanding in order to strengthen our risk culture and reinforce the attitude to risk in the behaviour expected of employees, as described in our risk policies.

We operate a global whistleblowing platform, HSBC Confidential, allowing staff to report matters of concern confidentially. We also maintain an external email address for concerns about accounting and internal financial controls or auditing matters (accountingdisclosures@hsbc.com). The Group has a strict policy prohibiting retaliation against those who raise their concerns. All allegations of retaliation reported are escalated to senior management. For further details on whistleblowing, see page 25. For details on the governance of our whistleblowing procedures, see page 203.

Our risk culture is also reinforced by our approach to remuneration. Individual awards, including those for senior executives, are based on compliance with the HSBC Values and the achievement of financial and non-financial objectives, which are aligned to our risk appetite and global strategy.

For further information on remuneration, see the Directors' remuneration report on page 217.

Risk governance

The Board has ultimate responsibility for the effective management of risk and approves HSBC's risk appetite. It is advised on risk-related matters by the Group Risk Committee ('GRC') and the Financial System Vulnerabilities Committee ('FSVC').

Executive accountability for the ongoing monitoring, assessment and management of the risk environment and the effectiveness of the risk management framework resides with the Group Chief Risk Officer. He is supported by the Risk Management Meeting of the Group Management Board ('RMM').

The management of financial crime risk resides with the Group Chief Compliance Officer. He is supported by the Financial Crime Risk Management Meeting, as described under 'Financial crime risk management' on page 124.

Day-to-day responsibility for risk management is delegated to senior managers with individual accountability for decision making. All employees have a role to play in risk management. These roles are defined using the three lines of defence model, which takes into account the Group's business and functional structures as described in the following commentary, under 'Our responsibilities'.

We use a defined executive risk governance structure to help ensure appropriate oversight and accountability of risk, which facilitates reporting and escalation to the RMM. This structure is summarised in the following table.

Governance structure for the management of risk

Authority	Membership	Responsibilities include:
Risk Management Meeting of the Group Management Board	Group Chief Risk Officer Chief Legal Officer Group Chief Executive Group Chief Financial Officer All other Group Managing Directors	• Supporting the Group Chief Risk Officer in exercising Board-delegated risk management authority • Overseeing the implementation of risk appetite and the enterprise risk management framework • Forward-looking assessment of the risk environment, analysing possible risk impacts and taking appropriate action • Monitoring all categories of risk and determining appropriate mitigating action • Promoting a supportive Group culture in relation to risk management and conduct
Global Risk Management Board	Group Chief Risk Officer Chief Risk Officers of HSBC's global businesses and regions Heads of Global Risk sub-functions	• Supporting the Group Chief Risk Officer in providing strategic direction for the Global Risk function, setting priorities and providing oversight • Overseeing a consistent approach to accountability for, and mitigation of, risk across the Global Risk function
Global business/regional risk management meetings	Global business/regional Chief Risk Officer Global business/regional Chief Executive Global business/regional Chief Financial Officer Global business/regional heads of global functions	• Supporting the Chief Risk Officer in exercising Board-delegated risk management authority • Forward-looking assessment of the risk environment, analysing the possible risk impact and taking appropriate action • Implementation of risk appetite and the enterprise risk management framework • Monitoring all categories of risk and determining appropriate mitigating actions • Embedding a supportive culture in relation to risk management and controls

The Board committees with responsibility for oversight of risk-related matters are set out on page 203.

Our responsibilities

All employees are responsible for identifying and managing risk within the scope of their role as part of the three lines of defence model.

Three lines of defence

To create a robust control environment to manage risks, we use an activity-based three lines of defence model. This model delineates management accountabilities and responsibilities for risk management and the control environment.

The model underpins our approach to risk management by clarifying responsibility, encouraging collaboration, and enabling efficient coordination of risk and control activities. The three lines of defence are summarised below:

- The first line of defence owns the risks and is responsible for identifying, recording, reporting and managing them, and ensuring that the right controls and assessments are in place to mitigate them.
- The second line of defence sets the policy and guidelines for managing specific risk areas, provides advice and guidance in relation to the risk, and challenges the first line of defence on effective risk management.
- The third line of defence is our Internal Audit function, which provides independent and objective assurance of the adequacy of the design and operational effectiveness of the Group's risk management framework and control governance process.

Global Risk function

We have a Global Risk function, headed by the Group Chief Risk Officer, which is responsible for the Group's risk management framework. This responsibility includes establishing global policy, monitoring risk profiles, and forward-looking risk identification and management. Global Risk is made up of sub-functions covering all risks to our operations. Global Risk forms part of the second line of defence. It is independent from the global businesses, including sales and trading functions, to provide challenge, appropriate oversight and balance in risk/return decisions.

Enterprise-wide risk management tools

The Group uses a range of tools to identify, monitor and manage risk. The key enterprise-wide risk management tools are as follows:

Risk appetite

The risk appetite statement ('RAS') sets out the aggregate level and types of risk that HSBC is willing to accept to achieve its business objectives. It provides a benchmark for business

decisions that are based on balancing risk and return, and making the best use of our capital. The Group RAS is interlinked with the Group's strategic and financial plans, as well as remuneration, and is therefore forward-looking in describing the Group's desired risk appetite profile. The RAS consists of qualitative statements and quantitative metrics, covering financial and non-financial risks and is formally approved by the Board every six months on the recommendation of the GRC. It is fundamental to the development of business line strategies, strategic and business planning, and senior management balanced scorecards.

At a Group level, performance against the RAS is reported to the GRMM on a monthly basis so that any actual performance that falls outside the approved risk appetite is discussed and appropriate mitigating actions are determined. This reporting allows risks to be promptly identified and mitigated, and informs risk-adjusted remuneration to drive a strong risk culture.

Global businesses, regions and strategically important countries are required to have their own RASs, which are monitored to ensure they remain aligned with the Group's. All RASs and business activities are guided and underpinned by qualitative principles. Additionally, for key risk areas, quantitative metrics are defined along with appetite and tolerance thresholds.

Risk map

The Group risk map provides a point-in-time view of the risk profiles of countries, regions and global businesses across HSBC's risk taxonomy. It assesses the potential for these risks to have a material impact on the Group's financial results, reputation and the sustainability of its business. Risks that have an 'amber' or 'red' risk rating require monitoring and mitigating action plans to be either in place or initiated to manage the risk down to acceptable levels.

Descriptions of our material banking and insurance risks are set out on page 116.

Top and emerging risks

We use a top and emerging risks process to provide a forward-looking view of issues with the potential to threaten the execution of our strategy or operations over the medium to long term.

We proactively assess the internal and external risk environment, as well as review the themes identified across our regions and global businesses, for any risks that may require global escalation, updating our top and emerging risks as necessary.

We define a 'top risk' as a thematic issue that may form and crystallise in between six months and one year, and that has the potential to materially affect the Group's financial results, reputation or business model. It may arise across any combination of risk types, regions or global businesses. The impact may be well

understood by senior management and some mitigating actions may already be in place. Stress tests of varying granularity may also have been carried out to assess the impact.

An 'emerging risk' is a thematic issue with large unknown components that may form and crystallise beyond a one-year time horizon. If it were to materialise, it could have a material effect on the Group's long-term strategy, profitability and/or reputation. Existing mitigation plans are likely to be minimal, reflecting the uncertain nature of these risks at this stage. Some high-level analysis and/or stress testing may have been carried out to assess the potential impact.

Our current top and emerging risks are discussed on page 100.

Stress testing

HSBC operates a wide-ranging stress testing programme that supports our risk management and capital planning. It includes execution of stress tests mandated by our regulators. Our stress testing is supported by dedicated teams and infrastructure, and is overseen at the most senior levels of the Group.

Our stress testing programme assesses our capital strength through a rigorous examination of our resilience to external shocks. It also helps us understand and mitigate risks and informs our decisions about capital levels. As well as undertaking regulatory-driven stress tests, we conduct our own internal stress tests.

Many of our regulators – including the Bank of England ('BoE'), the Federal Reserve Board ('FRB') and the Hong Kong Monetary Authority ('HKMA') – use stress testing as a prudential regulatory tool, and the Group has focused significant governance and resources to meet their requirements.

Bank of England stress test results for 2018

The annual cyclical scenario ('ACS') used in the BoE's 2018 stress test was the same as that used in 2017 to allow the BoE to isolate the impact on the stress results of the introduction of IFRS 9 in 2018. The scenario specified a global downturn with severe effects in the UK, US, Hong Kong and mainland China, which accounted for approximately two-thirds of HSBC's RWAs at the end of 2017. We estimated that the economic shock to global GDP in this scenario was about as severe as in the global financial crisis of 2007–2009, but with a greater impact on emerging markets. In this scenario for example, there was a 1.2% contraction in the Chinese economy in the first year. In addition, the ACS featured a 32% depreciation of sterling in the first year and a rise of UK base rates to 4%.

The assumed GDP growth rates are detailed in the following table.

	2017	2018	2019	2020
	%	%	%	%
UK	1.6	(4.7)	0.7	1.4
US	2.5	(3.5)	0.7	1.4
Mainland China	6.8	(1.2)	3.7	5.0
Hong Kong	3.3	(7.9)	1.1	2.3

Source: Bank of England.

PRA assumed GDP growth rates are shown in terms of fourth quarter on fourth quarter annual changes

In 2018, the results for HSBC as published by the BoE showed that our capital ratios, after taking account of CRD IV restrictions and strategic management actions, exceeded the BoE's requirements on both an IFRS 9 transitional and non-transitional basis.

This outcome reflected our strong capital position, conservative risk appetite and diversified geographical and business mix.

The following table shows the results of the stress test for the past three years, and reflects HSBC's resilience. From a starting CET1 ratio of 14.6% at the end of 2017, the BoE's 2018 stress test results showed a projected minimum stressed CET1 ratio of 9.1% on an IFRS 9 transitional basis, after the impact of strategic management actions.

Results of Bank of England stress tests for the past three years

	2018	2017	2016
	%	%	%
CET1 ratio at scenario start point	14.6	13.6	11.9

Minimum stressed CET1 ratio after strategic management actions	9.1	8.9	9.1
Fall in CET1 ratio	5.5	4.7	2.8

Source: Bank of England.
Data is presented in terms of the minimum CET1 ratio on an IFRS 9 transitional basis, reached net of strategic management actions.

Internal stress tests are an important element in our risk management and capital management frameworks. Our capital plan is assessed through a range of stress scenarios that explore risks identified by management. They include potential adverse macroeconomic, geopolitical and operational risk events, and other potential events that are specific to HSBC. The selection of scenarios reflects our top and emerging risks identification process and our risk appetite. Stress testing analysis helps management understand the nature and extent of vulnerabilities to which the Group is exposed. Using this information, management decides whether risks can or should be mitigated through management actions or, if they were to crystallise, should be absorbed through capital. This in turn informs decisions about preferred capital levels.

A particular area of focus during the year has been the analysis of the potential impact of a range of outcomes relating to the UK's exit from the EU. As part of our internal stress testing programme, a number of internal macroeconomic and event-driven scenarios were considered to support management's planning for, and assessment of, the impact of the UK's exit. In addition, the BoE judged the severity of the 2018 ACS sufficient to encompass outcomes based on a disorderly departure from the EU.

We conduct reverse stress tests each year at Group and, where required, subsidiary entity level in order to understand which potential extreme conditions would make our business model non-viable. Reverse stress testing identifies potential stresses and vulnerabilities we might face, and helps inform early warning triggers, management actions and contingency plans designed to mitigate risks.

In addition to the Group-wide stress testing scenarios, each major HSBC subsidiary conducts regular macroeconomic and event-driven scenario analyses specific to its region. They also participate, as required, in the regulatory stress testing programmes of the jurisdictions in which they operate, such as the Comprehensive Capital Analysis and Review and Dodd-Frank Act stress test programmes in the US, and the stress tests of the HKMA. Global functions and businesses also perform bespoke stress testing to inform their assessment of risks in potential scenarios.

The Group stress testing programme is overseen by the GRC and results are reported, where appropriate, to the RMM and GRC.

Our material banking and insurance risks

The material risk types associated with our banking and insurance manufacturing operations are described in the following tables:

Description of risks – banking operations

Risks	Arising from	Measurement, monitoring and management of risk
Credit risk (see page 118)		
Credit risk is the risk of financial loss if a customer or counterparty fails to meet an obligation under a contract.	Credit risk arises principally from direct lending, trade finance and leasing business, but also from certain other products such as guarantees and derivatives.	Credit risk is: • measured as the amount that could be lost if a customer or counterparty fails to make repayments; • monitored using various internal risk management measures and within limits approved by individuals within a framework of delegated authorities; and • managed through a robust risk control framework, which outlines clear and consistent policies, principles and guidance for risk managers.
Liquidity and funding risk (see page 119)		
Liquidity risk is the risk that we do not have sufficient financial resources to meet our obligations as they fall due or that we can only do so at an excessive cost. Funding risk is the risk that funding considered to be sustainable, and therefore used to fund assets, is not sustainable over time.	Liquidity risk arises from mismatches in the timing of cash flows. Funding risk arises when illiquid asset positions cannot be funded at the expected terms and when required.	Liquidity and funding risk is: • measured using a range of metrics, including liquidity coverage ratio and net stable funding ratio; • assessed through the internal liquidity adequacy assessment process ('ILAAP'); • monitored against the Group's liquidity and funding risk framework; and • managed on a stand-alone basis with no reliance on any Group entity (unless pre-committed) or central bank unless this represents routine established business-as-usual market practice.
Market risk (see page 120)		
Market risk is the risk that movements in market factors, such as foreign exchange rates, interest rates, credit spreads, equity prices and commodity prices, will reduce our income or the value of our portfolios.	Exposure to market risk is separated into two portfolios: trading and non-trading. Market risk exposures arising from our insurance operations are discussed on page 190.	Market risk is: • measured using sensitivities, value at risk ('VaR') and stress testing, giving a detailed picture of potential gains and losses for a range of market movements and scenarios, as well as tail risks over specified time horizons; •

		monitored using VaR, stress testing and other measures, including the sensitivity of net interest income and the sensitivity of structural foreign exchange; and • managed using risk limits approved by the RMM and the risk management meeting in various global businesses.
Operational risk (see page 123)		
Operational risk is the risk to achieving our strategy or objectives as a result of inadequate or failed internal processes, people and systems or from external events.	Operational risk arises from day-to-day operations or external events, and is relevant to every aspect of our business. Regulatory compliance risk and financial crime compliance risk are discussed below.	Operational risk is: • measured using the risk and control assessment process, which assesses the level of risk and the effectiveness of controls, and is also measured for economic capital management using risk event losses and scenario analysis; • monitored using key indicators and other internal control activities; and • managed primarily by global business and functional managers who identify and assess risks, implement controls to manage them and monitor the effectiveness of these controls using the operational risk management framework.
Regulatory compliance risk (see page 123)		
Regulatory compliance risk is the risk that we fail to observe the letter and spirit of all relevant laws, codes, rules, regulations and standards of good market practice, and incur fines and penalties and suffer damage to our business as a consequence.	Regulatory compliance risk is part of operational risk, and arises from the risks associated with breaching our duty to clients and other counterparties, inappropriate market conduct and breaching other regulatory requirements.	Regulatory compliance risk is: • measured by reference to identified metrics, incident assessments, regulatory feedback and the judgement and assessment of our regulatory compliance teams; • monitored against the first line of defence risk and control assessments, the results of the monitoring and control assurance activities of the second line of defence functions, and the results of internal and external audits and regulatory inspections; and • managed by establishing and communicating appropriate policies and procedures, training employees in them, and monitoring activity to help ensure their observance. Proactive risk control and/or remediation work is undertaken

		where required.
Financial crime risk (see page 124)		
Financial crime risk is the risk that we knowingly or unknowingly help parties to commit or to further potentially illegal activity through HSBC.	Financial crime risk is part of operational risk and arises from day-to-day banking operations.	Financial crime risk is: • measured by reference to identified metrics, incident assessments, regulatory feedback and the judgement and assessment of our financial crime risk teams; • monitored against our financial crime risk appetite statements and metrics, the results of the monitoring and control activities of the second line of defence functions, and the results of internal and external audits and regulatory inspections; and • managed by establishing and communicating appropriate policies and procedures, training employees in them, and monitoring activity to help ensure their observance. Proactive risk control and/or remediation work is undertaken where required.

Description of risks – banking operations (continued)

Risks	Arising from	Measurement, monitoring and management of risk
Other material risks		
Reputational risk (see page 125)		
Reputational risk is the risk of failing to meet stakeholder expectations as a result of any event, behaviour, action or inaction, either by HSBC, our employees or those with whom we are associated.	Primary reputational risks arise directly from an action or inaction by HSBC, its employees or associated parties that are not the consequence of another type of risk. Secondary reputational risks are those arising indirectly and are a result of a failure to control any other risks.	Reputational risk is: • measured by reference to our reputation as indicated by our dealings with all relevant stakeholders, including media, regulators, customers and employees; • monitored through a reputational risk management framework that is integrated into the Group's broader risk management framework; and • managed by every member of staff, and covered by a number of policies and guidelines. There is a clear structure of committees and individuals charged with mitigating reputational risk.
Pension risk (see page 126)		
Pension risk is the risk of increased costs to HSBC from offering post-employment benefit plans to its employees.	Pension risk arises from investments delivering an inadequate return, adverse changes in interest rates or inflation, or members living longer than expected. Pension risk also includes operational and reputational risk of sponsoring pension plans.	Pension risk is: • measured in terms of the scheme's ability to generate sufficient funds to meet the cost of their accrued benefits; • monitored through the specific risk appetite that has been developed at both Group and regional levels; and • managed locally through the appropriate pension risk governance structure and globally through the Global Pensions Oversight Forum and ultimately the RMM.
Sustainability risk (see page 126)		
Sustainability risk is the risk that financial services provided to	Sustainability risk arises from the provision of financial services to companies or	Sustainability risk is: •

customers by the Group indirectly result in unacceptable impacts on people or the environment.	projects that indirectly result in unacceptable impacts on people or on the environment.	measured by assessing the potential sustainability effect of a customer's activities and assigning a sustainability risk rating to all high-risk transactions; • monitored quarterly by the RMM and monthly by the Group's sustainability risk function; and • managed using sustainability risk policies covering project finance lending and sector-based sustainability policies for sectors and themes with potentially large environmental or social impacts.

Our insurance manufacturing subsidiaries are regulated separately from our banking operations. Risks in our insurance entities are managed using methodologies and processes that are subject to

Group oversight. Our insurance operations are also subject to some of the same risks as our banking operations, which are covered by the Group's risk management processes.

Description of risks – insurance manufacturing operations

Risks	Arising from	Measurement, monitoring and management of risk
Financial risk (see page 190)		
Our ability to effectively match liabilities arising under insurance contracts with the asset portfolios that back them is contingent on the management of financial risks and the extent to which these are borne by policyholders.	Exposure to financial risk arises from: • market risk affecting the fair values of financial assets or their future cash flows; • credit risk; and • liquidity risk of entities being unable to make payments to policyholders as they fall due.	Financial risk is: • measured (i) for credit risk, in terms of economic capital and the amount that could be lost if a counterparty fails to make repayments; (ii) for market risk, in terms of economic capital, internal metrics and fluctuations in key financial variables; and (iii) for liquidity risk, in terms of internal metrics including stressed operational cash flow projections; • monitored through a framework of approved limits and delegated authorities; and • managed through a robust risk control framework, which outlines clear and consistent policies, principles and guidance. This includes using product design, asset liability matching and bonus rates.
Insurance risk (see page 191)		
Insurance risk is the risk that, over time, the cost of insurance policies written, including claims and benefits, may exceed the total amount of premiums and investment income received.	The cost of claims and benefits can be influenced by many factors, including mortality and morbidity experience, as well as lapse and surrender rates.	Insurance risk is: • measured in terms of life insurance liabilities and economic capital allocated to insurance underwriting risk; •

monitored through a framework of approved limits and delegated authorities; and

- managed through a robust risk control framework, which outlines clear and consistent policies, principles and guidance. This includes using product design, underwriting, reinsurance and claims-handling procedures.

Credit risk management

Details of changes in our credit risk profile in 2018 can be found on page 127, in 'Key developments and risk profile in 2018'.

There were no material changes to the policies and practices for the management of credit risk in 2018.

Adoption of IFRS 9 'Financial Instruments'

HSBC adopted the requirements of IFRS 9 'Financial Instruments' on 1 January 2018, with the exception of the provisions relating to the presentation of gains and losses on financial liabilities designated at fair value, which were adopted on 1 January 2017.

The adoption of IFRS 9 did not result in any significant change to HSBC's business model, or that of our four global businesses. This included our strategy, country presence, product offerings and target customer segments.

We have established credit risk management processes and we actively assess the impact of economic developments in key markets on specific customers, customer segments or portfolios. If we foresee changes in credit conditions, we take mitigating action, including the revision of risk appetites or limits and tenors, as appropriate. In addition, we continue to evaluate the terms under which we provide credit facilities within the context of individual customer requirements, the quality of the relationship, local regulatory requirements, market practices and our local market position.

As a result of IFRS 9 adoption, management has additional insight and measures not previously utilised which, over time, may influence our risk appetite and risk management processes.

IFRS 9 process

The IFRS 9 process comprises three main areas: modelling and data; implementation; and governance.

Modelling and data

Prior to the implementation of IFRS 9, the Risk function had pre-existing Basel and behavioural scorecards in most geographies. These were then enhanced or supplemented to address the IFRS 9 requirements, with the appropriate governance and independent review.

Implementation

A centralised impairment engine performs the expected credit loss ('ECL') calculation using data, which is subject to a number of validation checks and enhancements, from a variety of client, finance and risk systems. Where possible, these checks and processes are performed in a globally consistent and centralised manner.

Governance

A series of regional management review forums has been established in key sites and regions in order to review and approve the impairment results. Regional management review forums have representatives from Credit Risk and Finance. The key site and regional approvals are reported up to the global business impairment committee for final approval of the Group's ECL for the period. Required members of the committee are the global heads of Wholesale Credit, Market Risk, and Retail Banking and Wealth Management ('RBWM') Risk, as well as the global business CFOs and the Group Chief Accounting Officer.

Credit risk sub-function

(Audited)

Credit approval authorities are delegated by the Board to the Group Chief Executive together with the authority to sub-delegate them. The Credit Risk sub-function in Global Risk is responsible for the key policies and processes for managing credit risk, which include formulating Group credit policies and risk rating frameworks, guiding the Group's appetite for credit risk exposures, undertaking independent reviews and objective assessment of credit risk, and monitoring performance and management of portfolios.

The principal objectives of our credit risk management are:

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

Concentration of exposure

(Audited)

Concentrations of credit risk arise when a number of counterparties or exposures have comparable economic characteristics, or such counterparties are engaged in similar activities or operate in the same geographical areas or industry sectors so that their collective ability to meet contractual obligations is uniformly affected by changes in economic, political or other conditions. We use a number of controls and measures to minimise undue concentration of exposure in our portfolios across industries, countries and global businesses. These include portfolio and counterparty limits, approval and review controls, and stress testing.

Credit quality of financial instruments

(Audited)

Our risk rating system facilitates the internal ratings-based approach under the Basel framework adopted by the Group to support the calculation of our minimum credit regulatory capital requirement.

The five credit quality classifications each encompass a range of granular internal credit rating grades assigned to wholesale and retail lending businesses, and the external ratings attributed by external agencies to debt securities.

For debt securities and certain other financial instruments, external ratings have been aligned to the five quality classifications based upon the mapping of related customer risk rating ('CRR') to external credit rating.

Wholesale lending

The CRR 10-grade scale summarises a more granular underlying 23-grade scale of obligor probability of default ('PD'). All corporate customers are rated using the 10- or 23-grade scale, depending on the degree of sophistication of the Basel approach adopted for the exposure.

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. This mapping between internal and external ratings is indicative and may vary over time.

Retail lending

Previously, we disclosed retail lending credit quality under IAS 39, which was based on expected-loss percentages. Now, retail lending credit quality is disclosed on an IFRS 9 basis, which is based on a 12-month point-in-time ('PIT') probability-weighted probability of default ('PD').

Credit quality classification

		Sovereign debt securities and bills	Other debt securities and bills	Wholesale lending and derivatives		Retail lending	
	Footnotes	External credit rating	External credit rating	Internal credit rating	12-month Basel probability of default %	Internal credit rating	12 month probability-weighted PD %
Quality classification							
Strong	1,2	BBB and above	A- and above	CRR 1 to CRR 2	0 – 0.169	Band 1 and 2	0.000 - 0.500
Good		BBB- to BB	BBB+ to BBB-	CRR 3	0.170 – 0.740	Band 3	0.501 - 1.500
Satisfactory		BB- to B and unrated	BB+ to B and unrated	CRR 4 to CRR 5	0.741 – 4.914	Band 4 and 5	1.501 - 20.000
Sub-standard		B- to C	B- to C	CRR 6 to CRR 8	4.915 – 99.999	Band 6	20.001 - 99.999
Credit impaired		Default	Default	CRR 9 to CRR 10	100	Band 7	100

For footnotes, see page 192.

Quality classification definitions

- ‘Strong’ exposures demonstrate a strong capacity to meet financial commitments, with negligible or low probability of default and/or low levels of expected loss.
- ‘Good’ exposures require closer monitoring and demonstrate a good capacity to meet financial commitments, with low default risk.
- ‘Satisfactory’ exposures require closer monitoring and demonstrate an average-to-fair capacity to meet financial commitments, with moderate default risk.
- ‘Sub-standard’ exposures require varying degrees of special attention and default risk is of greater concern.
- ‘Credit-impaired’ exposures have been assessed as described on Note 1.2(d) on the Financial Statements.

Renegotiated loans and forbearance

(Audited)

‘Forbearance’ describes concessions made on the contractual terms of a loan in response to an obligor’s financial difficulties.

A loan is classed as ‘renegotiated’ when we modify the contractual payment terms on concessionary terms because we have significant concerns about the borrowers’ ability to meet contractual payments when due.

Non-payment-related concessions (e.g. covenant waivers), while potential indicators of impairment, do not trigger identification as renegotiated loans.

Loans that have been identified as renegotiated retain this designation until maturity or derecognition.

For details of our policy on derecognised renegotiated loans, see Note 1.2(d) on the Financial Statements.

Credit quality of renegotiated loans

On execution of a renegotiation, the loan will also be classified as credit impaired if it is not already so classified. In wholesale lending, all facilities with a customer, including loans that have not been modified, are considered credit impaired following the identification of a renegotiated loan.

Those loans that are considered credit impaired retain this classification for a minimum of one year. Renegotiated loans will continue to be disclosed as credit impaired until there is sufficient evidence to demonstrate a significant reduction in the risk of non-payment of future cash flows (the evidence typically comprises a history of payment performance against the original or revised terms), and there is no other objective evidence of credit impairments. For retail lending generally, renegotiated loans retain this classification until maturity or write-off.

Renegotiated loans and recognition of expected credit losses

(Audited)

For retail lending, unsecured renegotiated loans are generally segmented from other parts of the loan portfolio. Renegotiated expected credit loss assessments reflect the higher rates of losses typically encountered with renegotiated loans. For wholesale lending, renegotiated loans are typically assessed individually. Credit risk ratings are intrinsic to the impairment assessments. The individual impairment assessment takes into account the higher risk of the future non-payment inherent in renegotiated loans.

Impairment assessment

(Audited)

For details of our impairment policies on loans and advances and financial investments, see Note 1.2(d) on the Financial Statements.

Write-off of loans and advances

(Audited)

For details of our policy on the write-off of loans and advances, see Note 1.2(d) on the Financial Statements.

Unsecured personal facilities, including credit cards, are generally written off at between 150 and 210 days past due. The standard period runs until the end of the month in which the account becomes 180 days contractually delinquent. Write-off periods may be extended, generally to no more than 360 days past due. However, in exceptional circumstances, they may be extended further.

For secured facilities, write-off should occur upon repossession of collateral, receipt of proceeds via settlement, or determination that recovery of the collateral will not be pursued.

Any secured assets maintained on the balance sheet beyond 60 months of consecutive delinquency-driven default require additional monitoring and review to assess the prospect of recovery.

There are exceptions in a few countries where local regulation or legislation constrain earlier write-off, or where the realisation of collateral for secured real estate lending takes more time. In the event of bankruptcy or analogous proceedings, write-off may occur earlier than the maximum periods stated above. Collection procedures may continue after write-off.

Liquidity and funding risk management

Details of HSBC's liquidity and funding risk management framework ('LFRF') can be found in the Group's Pillar 3 Disclosures at 31 December 2018.

Liquidity and funding risk management framework

The LFRF aims to allow us to withstand very severe liquidity stresses. It is designed to be adaptable to changing business models, markets and regulations. The Group Treasurer, who reports to the Group Chief Financial Officer, has responsibility for the oversight of the LFRF. Asset, Liability and Capital Management ('ALCM') teams are responsible for the application of the LFRF at a local operating entity level. This comprises the following elements:

- stand-alone management of liquidity and funding by operating entity;
- minimum liquidity coverage ratio ('LCR') requirement;
- minimum net stable funding ratio ('NSFR') requirement;
- legal entity depositor concentration limit;
- three-month and 12-month cumulative rolling term contractual maturity limits covering deposits from banks, deposits from non-bank financial institutions and securities issued;
- annual individual liquidity adequacy assessment by principal operating entity;
- minimum LCR requirement by currency;
- management and monitoring of intra-day liquidity;
- liquidity funds transfer pricing; and
- forward-looking funding assessments.

Risk governance and oversight

The elements of the LFRF are underpinned by a robust governance framework, the two major elements of which are:

- Group, regional and entity level Asset and Liability Management Committees ('ALCOs').
- Annual internal liquidity adequacy assessment process ('ILAAP') for principal operating entities used to validate risk tolerance and set risk appetite.

Liquidity and funding are predominantly managed at an entity level. Where appropriate, management may be expanded to cover a consolidated group of legal entities or narrowed to a principal office (branch) of a wider legal entity to reflect the management under internal or regulatory definitions.

The RMM reviews and agrees annually the list of countries, legal entities or consolidated groups it directly oversees and the composition of these entities. This list forms the basis of liquidity and funding risk disclosures.

There were no material changes to the policies and practices for the management of liquidity and funding risk in 2018.

HSBC Holdings

HSBC Holdings' primary sources of liquidity are dividends received from subsidiaries, interest on and repayment of intra-Group loans and securities, and interest earned on its own liquid funds. HSBC Holdings also raises funds in the debt capital markets to meet the Group's minimum requirement for own funds and eligible liabilities. HSBC Holdings uses this liquidity to meet its obligations, including interest and principal repayments on external debt liabilities, operating expenses and collateral on derivative transactions.

HSBC Holdings is also subject to contingent liquidity risk by virtue of credit-related commitments and guarantees and similar contracts issued relating to its subsidiaries. Such commitments and guarantees are only issued after due consideration of HSBC Holdings' ability to finance the commitments and guarantees and the likelihood of the need arising.

HSBC Holdings actively manages the cash flows from its subsidiaries to optimise the amount of cash held at the holding company level. During 2018, consistent with the Group's capital plan, the Group's subsidiaries did not experience any significant restrictions on paying dividends or repaying loans and advances. Also, there are no foreseen restrictions envisaged with regard to planned dividends or payments. However, the ability of subsidiaries to pay dividends or advance monies to HSBC Holdings depends on, among other things, their respective local regulatory capital and banking requirements, exchange controls, statutory reserves, and financial and operating performance.

HSBC Holdings currently has sufficient liquidity to meet its present requirements.

Market risk management

Details of changes in our market risk profile in 2018 can be found on page 127, in 'Key developments and risk profile in 2018'.

There were no material changes to our policies and practices for the management of market risk in 2018.

Market risk in global businesses

The following diagram summarises the main business areas where trading and non-trading market risks reside, and the market risk measures used to monitor and limit exposures.

Risk types	Trading risk	Non-trading risk
	•	•

	Foreign exchange and commodities • Interest rates • Credit spreads • Equities	Structural foreign exchange • Interest rates[3] • Credit spreads
Global business	GB&M and BSM[4]	GB&M, BSM[4], GPB, CMB and RBWM
Risk measure	VaR | Sensitivity | Stress testing	VaR | Sensitivity | Stress testing

For footnotes, see page 192.

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 to optimise return on risk while maintaining a market profile consistent with our established risk appetite.

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 the portfolio level.

Report of the Directors | Risk

Market risk governance

(Audited)

Market risk is managed and controlled through limits approved by the RMM for HSBC Holdings. These limits are allocated across business lines and to the Group's legal entities.

General measures

HSBC Holdings Board
q
Group Chairman/
Group Chief Executive
q
Risk Management
Meeting of the GMB
q
Group traded risk
q
Entity risk management
committee
q
Principal office
manager
q

Specific measures

Business/desk/trader

GB&M manages market risk, where the majority of HSBC's total VaR (excluding insurance) and almost all trading VaR resides, using risk limits approved by the RMM. VaR limits are set for portfolios, products and risk types, with market liquidity being a primary factor in determining the level of limits set. Global Risk is responsible for setting market risk management policies and measurement techniques.

Each major operating entity has an independent market risk management and control sub-function, which is responsible for measuring market risk exposures, 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 left.

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 GB&M unit for management, or to separate books managed under the supervision of the local ALCO.

Model risk is governed through Model Oversight Committees ('MOCs') at the regional and global Wholesale Credit and Market Risk levels. They have direct oversight and approval responsibility for all traded risk models used for risk measurement and management and stress testing. We are committed to the ongoing development of our in-house risk models.

The Markets MOC reports into the Group MOC, which oversees all model risk types at Group level. The Group MOC informs the RMM about material issues at least twice a year. The RMM is the Group's 'Designated Committee', according to regulatory rules, and has delegated day-to-day governance of all traded risk models to the Markets MOC.

Global Risk enforces trading in permissible instruments approved for each site, new product approval procedures, restricting trading in the more complex derivative products (which are only allowed in offices with appropriate levels of product expertise), and robust control systems.

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, VaR 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 a principal factor in determining the level.

Value at risk

(Audited)

Value at risk ('VaR') is a technique for estimating potential losses on risk positions as a result of movements in market rates and prices over a specified time horizon and to a given level of confidence. The use of VaR is integrated into market risk management and calculated for all trading positions regardless of how we capitalise them. Where there is not an approved internal model, we use the appropriate local rules to capitalise exposures. In addition, we calculate VaR for non-trading portfolios to have a complete picture of risk. Where we do not calculate VaR explicitly, we use alternative tools as summarised in the 'Stress testing' section below.

Our models are predominantly based on historical simulation that incorporates the following features:

- historical market rates and prices, which are calculated with reference to foreign exchange rates, commodity prices, interest rates, equity prices and the associated volatilities;
- potential market movements utilised for VaR, which are calculated with reference to data from the past two years; and
- VaR measures, which are calculated to a 99% confidence level and use a one-day holding period.

The models also incorporate the effect of option features on the underlying exposures. The nature of the VaR models means that an increase in observed market volatility will lead to an increase in VaR without any changes in the underlying positions.

VaR model limitations

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

- Use of historical data as a proxy for estimating future events may not encompass all potential events, particularly extreme ones.
- The use of a holding period assumes that all positions can be liquidated or the risks offset during that period, which 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 does not take into account losses that might occur beyond this level of confidence.
- VaR is calculated on the basis of exposures outstanding at the close of business and therefore does not necessarily reflect intra-day exposures.

Risk not in VaR framework

The risks not in VaR ('RNIV') framework aims to capture and capitalise material market risks that are not adequately covered in the VaR model.

Risk factors are reviewed on a regular basis and are 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 outcome of the VaR-based RNIV approach is included in the overall VaR calculation but excluded from the VaR measure used for regulatory back-testing. In addition, a stressed VaR RNIV is computed for the risk factors considered in the VaR-based RNIV approach.

Stress-type RNIVs include a gap risk exposure measure, to capture risk on non-recourse margin loans, and a de-peg risk measure, to capture risk to pegged and heavily-managed currencies.

Stress testing

Stress testing is an important procedure that is integrated into our market risk management framework to evaluate the potential impact on portfolio values of more extreme, although plausible,

events or movements in a set of financial variables. In such 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 set of scenarios is used consistently across all regions within the Group. Scenarios are tailored to capture the relevant potential 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 reverse stress tests are designed to identify vulnerabilities in our portfolios by looking for scenarios that lead to loss levels considered severe for the relevant portfolio. These scenarios may be quite local or idiosyncratic in nature, and complement the systematic top-down stress testing.

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.

Trading portfolios

Back-testing

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

We back-test our VaR at various levels of our Group entity hierarchy.

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 normally 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.

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. We hedge structural foreign exchange exposures only in limited circumstances.

For further details of our structural foreign exchange exposures, please see page 184.

Interest rate risk in the banking book

Overview

Interest rate risk in the banking book is the risk of an adverse impact to earnings or capital due to changes in market interest rates. It is generated by our non-traded assets and liabilities, specifically loans, deposits and financial instruments that are not held for trading intent or that are held in order to hedge positions held with trading intent. This risk is monitored and controlled by the ALCM function. Interest rate risk in the banking book is transferred to and managed by Balance Sheet Management ('BSM'), and also monitored by Wholesale Market Risk, Product Control and ALCM functions with reference to established risk appetites.

Governance and structure

The ALCM function monitors and controls non-traded interest rate risk. This includes reviewing and challenging the business prior to the release of new products and in respect of proposed behavioural assumptions used for hedging activities. The ALCM function is also responsible for maintaining and updating the transfer pricing framework, informing the ALCO of the Group's overall banking book interest rate risk exposure and managing the balance sheet in conjunction with BSM.

BSM manages the banking book interest rate positions transferred to it within the market risk limits approved by RMM. Effective governance of BSM is supported by the dual reporting lines it has to the Chief Executive Officer of

GB&M and to the Group Treasurer, with Risk acting as a second line of defence. The global businesses can only transfer non-trading assets and liabilities to BSM provided BSM can economically hedge the risk it receives. Hedging is generally executed through interest rate derivatives or fixed-rate government bonds. Any interest rate risk that BSM cannot economically hedge is not transferred and will remain within the global business where the risks originate.

Measurement of interest rate risk in the banking book

The ALCM function uses a number of measures to monitor and control interest rate risk in the banking book, including:

- non-traded VaR;
- net interest income sensitivity; and
- economic value of equity ('EVE').

Non-traded VaR

Non-traded VaR uses the same models as those used in the trading book and excludes both HSBC Holdings and the elements of risk that are not transferred to BSM.

NII sensitivity

A principal part of our management of non-traded interest rate risk is to monitor the sensitivity of expected net interest income ('NII') under varying interest rate scenarios (i.e. simulation modelling), where all other economic variables are held constant. This monitoring is undertaken at an entity level by local ALCOs, where entities forecast both one-year and five-year net interest income sensitivities across a range of interest rate scenarios.

Projected net interest income sensitivity figures represent the effect of pro forma movements in projected yield curves based on a static balance sheet size and structure. The exception to this is where the size of the balances or repricing is deemed interest rate sensitive, for example, non-interest-bearing current account migration and fixed-rate loan early prepayment. These sensitivity calculations do not incorporate actions that would be taken by BSM or in the business units to mitigate the effect of interest rate movements.

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 unless the central bank rate is already negative. In these cases, rates are not assumed to go further negative, which may, in certain currencies, effectively result in non-parallel shock. In addition, the net interest income sensitivity calculations take account of the effect of anticipated differences in changes between interbank and internally determined interest rates, where the entity has discretion in terms of the timing and extent of rate changes.

Tables showing our calculations of net interest income sensitivity can be found on page 184.

Economic value of equity

Economic value of equity ('EVE') represents the present value of the future banking book cash flows that could be distributed to equity providers under a managed run-off scenario. This equates to the current book value of equity plus the present value of future net interest income in this scenario. EVE can be used to assess the economic capital required to support interest rate risk in the banking book ('IRRBB'). An EVE sensitivity is the extent to which

the EVE value will change due to a pre-specified movements in interest rates, where all other economic variables are held constant. Operating entities are required to monitor EVE sensitivity as a percentage of capital resources.

HSBC Holdings

As a financial services holding company, HSBC Holdings has limited market risk activities. Its activities predominantly involve maintaining sufficient capital resources to support the Group's diverse activities; allocating these capital resources across the Group's businesses; earning dividend and interest income on its investments in the businesses; payment of operating expenses; providing dividend payments to its equity shareholders and interest payments to providers of debt capital; and maintaining a supply of short-term liquid assets for deployment under extraordinary circumstances.

The main market risks to which HSBC Holdings is exposed are banking book interest rate risk and foreign currency risk. Exposure to these risks arises from short-term cash balances, funding positions held, loans to subsidiaries, investments in long-term financial assets and financial liabilities including debt capital issued. The objective of HSBC Holdings' market risk management strategy is to reduce exposure to these risks and minimise volatility in capital resources, cash flows and distributable reserves. Market risk for HSBC Holdings is monitored by Holdings ALCO in accordance with its risk appetite statement.

HSBC Holdings uses interest rate swaps and cross-currency interest rate swaps to manage the interest rate risk and foreign currency risk arising from its long-term debt issues.

Operational risk management

Details of our operational risk profile in 2018 can be found on page 187, in 'Operational risk exposures in 2018'.

Overview

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

Key developments in 2018

During 2018, we continued to strengthen our approach to managing operational risk, as set out in the operational risk management framework ('ORMF'). The approach sets out the governance, appetite and provides a single view of non-financial risks that matter the most and associated controls. It incorporates a risk management system to help active risk management. The enhancement and embedding of the risk appetite framework for non-financial risk and the improvement of the consistency of the adoption of the end-to-end risk and control assessment processes were a particular focus in 2018. While there remains more to do, we made progress in strengthening the control environment and the management of non-financial risk.

Activity to strengthen the three lines of defence model continued to be a key focus in 2018. It sets our roles and responsibilities for managing operational risk on a daily basis.

Further information on the three lines of defence model can be found in the 'Our risk management framework' section on page 112.

Governance and structure

The ORMF defines minimum standards and processes, and the governance structure for the management of operational risk and internal control in our geographical regions, global businesses and global functions. The ORMF has been codified in a high-level standards manual, supplemented with detailed policies, which describes our approach to identifying, assessing, monitoring and controlling operational risk and gives guidance on mitigating action to be taken when weaknesses are identified.

We have a dedicated Global Operational Risk sub-function within our Global Risk function. It is responsible for establishing and maintaining the ORMF, monitoring the level of operational losses and the internal control environment supported by their second line of defence functions. It supports the Group Chief Risk Officer

and the Global Operational Risk Committee, which meets at least quarterly to discuss key risk issues and review implementation of the ORMF. The sub-function is also responsible for preparation of operational risk reporting at Group level, including reports for consideration by the RMM and Group Risk Committee. A formal governance structure provides oversight of the sub-function's management.

Key risk management processes

Business managers throughout the Group are responsible for maintaining an acceptable level of internal control commensurate with the scale and nature of operations, and 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.

A Group-wide risk management system is used to record the results of the operational risk management process. Operational risk and control self-assessments, along with issue and action plans, are entered and maintained by business units. Business and functional management monitor the progress of documented action plans to address shortcomings. To help 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 $10,000, and to aggregate all other operational risk losses under $10,000. Losses are entered into the Group-wide risk management system and reported to governance on a monthly basis.

Continuity of business operations

Every department within the organisation undertakes business continuity management, which incorporates the development of a plan including a business impact analysis assessing risk when business disruption occurs.

The Group maintains a number of dedicated work area recovery sites globally. Regular testing of these facilities is carried out with representation from each business and support function, to ensure business continuity plans remain accurate, relevant and fit for purpose. Where possible, the Group has ensured that its critical business systems are not co-located with business system users, thereby reducing concentration risk.

Regulatory compliance risk management

Overview

The Regulatory Compliance sub-function provides independent, objective oversight and challenge, and promotes a compliance-orientated culture that supports the business in delivering fair outcomes for customers, maintaining the integrity of financial markets and achieving HSBC's strategic objectives.

Key developments in 2018

There were no material changes to the policies and practices for the management of regulatory compliance risk in 2018, except for the following:

- The Board oversight of conduct matters was transitioned to the Group Risk Committee following the demise of the Conduct & Values Committee during the first half of 2018.
- We implemented a number of initiatives to raise our standards in relation to the conduct of our business, as described below under 'Conduct of business'.
- The reporting line of the Global Head of Regulatory Compliance was changed from reporting to the Group Chief Risk Officer to reporting to the Group Chief Compliance Officer from 1 November.

Governance and structure

Regulatory Compliance and Financial Crime Risk were integrated into a new Compliance function from 1 November, which is headed by the Group Chief Compliance Officer. Regulatory Compliance continues to be structured as a global function with regional and country Regulatory Compliance teams, which

support and advise each global business and global function.

Key risk management processes

We regularly review our policies and procedures. Global policies and procedures require the prompt identification and escalation of any actual or potential regulatory breach to Regulatory Compliance. Reportable events are escalated to the RMM and the Group Risk Committee, as appropriate. Matters relating to the Group's regulatory conduct of business are reported to the Group Risk Committee.

Conduct of business

In 2018, we continued to highlight conduct requirements as a global principle and elsewhere within the risk management framework, reflecting the individual responsibility and accountability we have for the delivery of fair conduct outcomes for customers and market integrity. Other key activities in 2018 included:

- the inclusion of an annual conduct objective in performance management scorecards for executive Directors, Group Managing Directors, Group general managers and country CEOs across all regions, business lines, global functions and HSBC Operations Services and Technology. Executive Directors are also now subject to a new separate conduct-focused long-term incentive measure;
- further development of digital products and supporting processes to ensure our digital offerings deliver fair outcomes for customers. Governance and controls continue to be strengthened to ensure they remain fit for purpose as new technology is introduced;
- enhanced global policy requirements helping customers who are, or may become, vulnerable. Business line-led initiatives in specific markets have addressed support for appointed representatives of vulnerable customers, customers in financial distress, financial inclusion, and a pilot programme of training to help customers with or affected by cancer or dementia; and
- the delivery of our fourth annual global mandatory training course on conduct for all employees. This is complemented by an ongoing programme of newsletter, intranet and live-streamed communications, internal surveys of staff sentiment regarding progress in delivering good conduct, and conduct awareness campaigns.

The Board maintains oversight of conduct matters through the Group Risk Committee.

Further details can be found under the 'Our conduct' section of www.hsbc.com/our-approach/risk-and-responsibility.

For conduct-related costs relating to significant items, see page 88.

Financial crime risk management

Overview

HSBC continued to embed a sustainable financial crime risk management capability across the Group. We are making good progress with enhancing our financial crime control framework, with the three-year programme that began in 2017 to further strengthen the management of anti-bribery and corruption risk. We continue to take further steps to refine and strengthen our defences against financial crime by applying advanced analytics and artificial intelligence.

Key developments in 2018

During 2018, HSBC continued to increase its efforts to strengthen its ability to combat financial crime. We integrated into our day-to-day operations the majority of the financial crime risk core capabilities delivered through the Global Standards programme, which we set up in 2013 to enhance our risk management policies, processes and systems. The programme infrastructure is expected to close in 2019.

We began several initiatives to define the next phase of financial crime risk management. We invested in the use of artificial intelligence and advanced analytics techniques to develop an intelligence-led financial crime risk management framework for the future.

Working in partnership with the public and private sector is vital to managing financial crime risk. HSBC is a strong proponent of public-private partnerships and information-sharing initiatives. During 2018, we created new alliances in Hong Kong and Singapore and continued to develop existing partnerships, which include UK Joint Money Laundering Intelligence Task Force, US AML Consortium, and partnerships in Australia and Canada in order to bring further benefit to the Group by enhancing the understanding of financial crime risks.

Key risk management processes

At a Group level, the Financial System Vulnerabilities Committee continues to report to the Board on matters relating to financial crime. Throughout 2018, the committee, which is attended by the Group Chief Compliance Officer,

received regular reports on actions being taken to address issues and vulnerabilities. We established an anti-bribery and corruption transformation programme to further enhance the policies and controls around identifying and managing the risks of bribery and corruption across our business. We also introduced a transformation programme to strengthen the anti-fraud capabilities of the Group, and have deployed anti-tax-evasion controls. We continue to strengthen our governance and policy frameworks, and improve our management information on standardised financial crime controls. We are investing in the next generation of capabilities to fight financial crime by applying advanced analytics and artificial intelligence. Our commitment to enhance our risk assessment capabilities remains, aiming to deliver more proactive risk management and improve the customer experience.

Skilled Person/Independent Consultant

Following expiration in December 2017 of the anti-money laundering deferred prosecution agreement entered into with the with the DoJ, the then Monitor has continued to work in his capacity as a Skilled Person under Section 166 of the Financial Services and Markets Act under the Direction issued by the UK Financial Conduct Authority ('FCA') in 2012. He has also continued to work in his capacity as an Independent Consultant under the 2012 Cease and Desist Order issued by the US Federal Reserve Board ('FRB'). The Skilled Person and the Independent Consultant will continue working for a period of time at the FCA's and FRB's discretion.

The Skilled Person has assessed HSBC's progress towards being able to effectively manage its financial risk on a business-as-usual basis. The Skilled Person issued five country reports and two quarterly reports in 2018. The Skilled Person has noted that HSBC continues to make material progress towards its financial crime risk target end state in terms of key systems, processes and people. Nonetheless, the Skilled Person has identified some areas that require further work before HSBC reaches a business-as-usual state.

The Independent Consultant completed his fifth annual assessment. The Independent Consultant concluded that HSBC continues to make significant strides toward establishing an effective sanctions compliance programme, commending HSBC on a largely successful affiliates remediation exercise. He has, however, determined that certain areas within HSBC's sanctions compliance programme require further work. The Independent Consultant has commenced his sixth annual assessment, which is due to conclude in March 2019.

Throughout 2018, the FSVC received regular reports on HSBC's relationship with the Skilled Person and Independent Consultant. The FSVC received regular updates on the Skilled Person's and Independent Consultant's reviews and has received the Skilled Person's country and quarterly reports and the Independent Consultant's fifth annual assessment report.

Insurance manufacturing operations risk management

Details of changes in our insurance manufacturing operations risk profile in 2018 can be found on page 188, under 'Insurance manufacturing operations risk profile'.

There were no material changes to our policies and practices for the management of risks arising in our insurance manufacturing operations in 2018.

Governance

(Audited)

Insurance risks are managed to a defined risk appetite, which is aligned to the Group's risk appetite and risk management framework, including its three lines of defence model. For details of the Group's governance framework, see page 112. The Global Insurance Risk Management Meeting oversees the control framework globally and is accountable to the RBWM Risk Management Meeting on risk matters relating to the insurance business.

The monitoring of the risks within our insurance operations is carried out by insurance risk teams. Specific risk functions (including Wholesale Credit and Market Risk, Operational Risk, Information Security Risk, and Compliance) support Insurance Risk teams in their respective areas of expertise.

Stress and scenario testing

(Audited)

Stress testing forms a key part of the risk management framework for the insurance business. We participate in local and Group-wide regulatory stress tests, including the Bank of England stress test of the banking system, the Hong Kong Monetary Authority stress test, the European Insurance and Occupational Pensions Authority stress test, and individual country insurance regulatory stress tests.

These have highlighted that a key risk scenario for the insurance business is a prolonged low interest rate environment. In order to mitigate the impact of this scenario, the insurance operations have taken a number of actions, including repricing some products to reflect lower interest rates, launching less capital intensive products, investing in more capital efficient assets and developing investment strategies to optimise the expected returns against the cost of economic capital.

Management and mitigation of key risk types

Market risk

(Audited)

All our insurance manufacturing subsidiaries have market risk mandates that specify the investment instruments in which they are permitted to invest and the maximum quantum of market risk that they may retain. They manage market risk by using, among others, some or all of the techniques listed below, depending on the nature of the contracts written:

- We are able to adjust bonus rates to manage the liabilities to policyholders for products with discretionary participating features ('DPF'). The effect is that a significant portion of the market risk is borne by the policyholder.
- We use asset and liability matching where asset portfolios are structured to support projected liability cash flows. The Group manages its assets using an approach that considers asset quality, diversification, cash flow matching, liquidity, volatility and target investment return. It is not always possible to match asset and liability durations, due to uncertainty over the receipt of all future premiums, the timing of claims and because the forecast payment dates of liabilities may exceed the duration of the longest dated investments available. We use models to assess the effect of a range of future scenarios on the values of financial assets and associated liabilities, and ALCOs employ the outcomes in determining how best to structure asset holdings to support liabilities.
- We use derivatives to protect against adverse market movements to better match liability cash flows.
- For new products with investment guarantees, we consider the cost when determining the level of premiums or the price structure.
- We periodically review products identified as higher risk, such as those that contain investment guarantees and embedded optionality features linked to savings and investment products, for active management.

We design new products to mitigate market risk, such as changing the investment return sharing portion between policyholders and the shareholder.

- We exit, to the extent possible, investment portfolios whose risk is considered unacceptable.
- We reprice premiums charged to policyholders.

Credit risk

(Audited)

Our insurance manufacturing subsidiaries are responsible for the credit risk, quality and performance of their investment portfolios. Our assessment of the creditworthiness of issuers and counterparties is based primarily upon internationally recognised credit ratings and other publicly available information.

Investment credit exposures are monitored against limits by our insurance manufacturing subsidiaries and are aggregated and reported to the Group Insurance Credit Risk and Group Credit Risk functions. Stress testing is performed on investment credit exposures using credit spread sensitivities and default probabilities.

We use a number of tools to manage and monitor credit risk. These include a credit report containing a watch-list of investments with current credit concerns, primarily investments that may be at risk of future impairment or where high concentrations to counterparties are present in the investment portfolio. Sensitivities to credit spread risk are assessed and monitored regularly.

Liquidity risk

(Audited)

Risk is managed by cash flow matching and maintaining sufficient cash resources, investing in high credit-quality investments with deep and liquid markets, monitoring investment concentrations and restricting them where appropriate, and establishing committed contingency borrowing facilities.

Insurance manufacturing subsidiaries complete quarterly liquidity risk reports and an annual review of the liquidity risks to which they are exposed.

Insurance risk

HSBC Insurance primarily uses the following techniques to manage and mitigate insurance risk:

- a formalised product approval process covering product design, pricing and overall proposition management (for example, management of lapses by introducing surrender charges);
- underwriting policy;
- claims management processes; and
- reinsurance which cedes risks above our acceptable thresholds to an external reinsurer thereby limiting our exposure.

Reputational risk management

Overview

Reputational risk is the risk of failing to meet stakeholder expectations as a result of any event, behaviour, action or inaction, either by HSBC, our employees or those with whom we are associated. Any material lapse in standards of integrity, compliance, customer service or operating efficiency may represent a potential reputational risk. Stakeholder expectations constantly evolve, and so reputational risk is dynamic and varies between geographical regions, groups and individuals. We have an unwavering commitment to operate at the high standards we set for ourselves in every jurisdiction.

Key developments in 2018

In the second half of 2018, as part of a revised enterprise risk management framework, it was agreed that reputational risk would be considered as a single risk type that spans both financial and non-financial risk categories. The oversight of reputational risk as a single risk type was transitioned to the Group Chief Risk Officer. He is supported by the Group Reputational Risk
Committee and a new reputational risk framework, which will be embedded during 2019. The governance structure, however, remains unchanged.

Governance and structure

The development of policies and an effective control environment for the identification, assessment, management and mitigation of reputational risk, are considered by the Group Reputational Risk Committee, which is chaired by the Group Chief Risk Officer. The focus of the Group Reputational Risk Committee is to consider matters arising from clients or transactions that either present a serious potential reputational risk to the Group or merit a Group-led decision to ensure a consistent risk management approach across the regions, global businesses and global functions. The committee is responsible for keeping the RMM apprised of areas and activities presenting significant reputational risk and, where appropriate, for making recommendations to the RMM to mitigate such risk.

Key risk management processes

Our Reputational Risk and Client Selection team oversees the identification, management and control of significant reputational risks across the Group. It is responsible for setting policies to guide the Group's reputational risk management, devising strategies to protect against reputational risk, and advising the global businesses and global functions to help them identify, assess and mitigate such risks, where possible. It is led by a central team supported by teams in each of the global businesses and regions. Each global business has an established reputational risk management governance process. The global functions manage and escalate reputational risks within established operational risk frameworks.

Our policies set out our risk appetite and operational procedures for all areas of reputational risk, including financial crime prevention, regulatory compliance, conduct-related concerns, environmental impacts, human rights matters and employee relations.

For further details of our financial crime risk management and regulatory compliance risk management, see 'Financial crime risk management' on page 124 and 'Regulatory compliance risk management' on page 123 respectively.
Further details can be found under the 'Reputational risk' section of
www.hsbc.com/our-approach/risk-and-responsibility.

Sustainability risk management

Overview

Assessing the environmental and social impacts of providing finance to our customers is integral to our overall risk management processes.

Key developments in 2018

We periodically review our Sustainability Risk policies. In 2018, we issued a revised energy policy to further support the transition to a low-carbon economy in line with the global ambition of the 2015 Paris Agreement of limiting climate change. We seek to ensure that our customers continue to have access to the capital required to develop their businesses, invest in more efficient technology and reduce their greenhouse gas emissions, although there are certain specific long-term assets that HSBC may choose not to finance.

Governance and structure

The Global Risk function is mandated to manage sustainability risk globally, working with the global businesses, global functions and local offices as appropriate. Sustainability risk managers have regional or national responsibilities for advising on and managing environmental and social risks.

Key risk management processes

The Global Risk function's responsibilities in relation to sustainability risk include:

- formulating sustainability risk policies. This includes work in several key areas: overseeing our sustainability risk standards; overseeing our application of the Equator Principles, which provide a framework for banks to assess and

manage the social and environmental impact of large projects to which they provide financing; overseeing our application of our sustainability policies, covering agricultural commodities, chemicals, defence, energy, forestry, mining and metals, UNESCO World Heritage Sites and the Ramsar Convention on Wetlands; undertaking reviews of transactions where sustainability risks are assessed to be high; and supporting our operating companies to assess similar risks of a lesser magnitude;

- building and implementing systems-based processes to help ensure consistent application of policies, and improving the efficiency of the sustainability risk review process. We also aim to capture management information to measure and report on the effect of our lending and investment activities on sustainable development; and
- providing training and capacity building within our operating companies to ensure sustainability risks are identified and mitigated consistently to appropriate standards.

Pension risk management

There were no material changes to our policies and practices for the management of pension risk in 2018.

Governance and structure

A global pension risk framework and accompanying global policies on the management of risks related to defined benefit and defined contribution plans are in place. Pension risk is managed by a network of local and regional pension risk forums. The Global Pensions Oversight Forum is responsible for the governance and oversight of all pension plans sponsored by HSBC around the world.

Key risk management processes

Our global pensions strategy is to move from defined benefit to defined contribution plans, where local law allows and it is considered competitive to do so.

In defined contribution pension plans, the contributions that HSBC is required to make are known, while the ultimate pension benefit will vary, typically with investment returns achieved by investment choices made by the employee. While the market risk to HSBC of defined contribution plans is low, the Group is still exposed to operational and reputational risk.

In defined benefit pension plans, the level of pension benefit is known. Therefore, the level of contributions required by HSBC will vary due to a number of risks, including:

- investments delivering a return below that required to provide the projected plan benefits;
- 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 plan liabilities; and
- plan members living longer than expected (known as longevity risk).

Pension risk is assessed using an economic capital model that takes into account potential variations in these factors.

The impact of these variations on both pension assets and pension liabilities is assessed using a one-in-200-year stress test. Scenario analysis and other stress tests are also used to support pension risk management.

To fund the benefits associated with 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 plan's trustees where relevant. These contributions are normally set to ensure that there are sufficient funds to meet the cost of the accruing benefits for the future service of active members. However, higher contributions are required when plan assets are considered insufficient to cover the existing pension liabilities. Contribution rates are typically revised annually or once every three years, depending on the plan.

The defined benefit plans invest contributions in a range of investments designed to limit the risk of assets failing to meet a plan's liabilities. Any changes in expected returns from the investments may also change future contribution requirements. In pursuit of these long-term objectives, an overall target allocation of the defined benefit plan assets between asset classes is established. In addition, each permitted asset class has its own benchmarks, such as stock-market or property valuation indices. The benchmarks are reviewed at least once every three to five years and more frequently if required by local legislation or circumstances. The process generally involves an extensive asset and liability review.

Key developments and risk profile in 2018

Key developments in 2018

In 2018, HSBC undertook a number of initiatives to enhance its approach to the management of risk. These included:

- We continued to strengthen the controls that manage our operational risks, as described on page 72 under 'Operational risk profile'.
- The Board oversight of conduct matters and whistleblowing arrangements were transitioned from the Conduct & Values Committee following its demise in the first half of 2018. The Group Risk Committee was given responsibility for the oversight of conduct matters and the Group Audit Committee has the overall responsibility for the Group's whistleblowing arrangements. For information on initiatives implemented in 2018 to raise our standards in relation to the conduct of our business, see page 123 under 'Conduct of business'. For further details on whistleblowing, see page 25.
- We integrated into our day-to-day operations the majority of the financial crime risk core capabilities delivered through the Global Standards programme, and expect to complete the transition to business and function management in the first half of 2019. We continue to take further steps to refine and strengthen our defences against financial crime by applying advanced analytics and artificial intelligence.
- We adopted IFRS 9, including the accounting for expected credit losses, which introduced new concepts and measures such as significant increase in credit risk and lifetime expected credit losses. Existing stress testing and regulatory models, skills and expertise were adapted in order to meet IFRS 9 requirements. Data from various client, finance and risk systems were integrated and validated. As a result of IFRS 9 adoption, management has additional insight and measures not previously utilised, which over time may influence our risk appetite and risk management processes.

Credit risk profile

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Credit risk is the risk of financial loss if a customer or counterparty fails to meet an obligation under a contract. Credit risk arises principally from direct lending, trade finance and leasing business, but also from other products such as guarantees and credit derivatives.

Comparative credit tables at 1 January 2018 reflecting the adoption of IFRS 9 as published in our Report on transition to IFRS 9 'Financial Instruments' 1 January 2018 have been included where available. Comparative credit tables at 31 December 2017 from our Annual Report and Accounts 2017, which do not reflect the adoption of IFRS 9, have been disclosed separately on pages 161 to 176 as they are not directly comparable.

Refer to 'Standards adopted during the year ended 31 December 2018' on page 263 and Note 37 'Effect of reclassification upon adoption of IFRS 9' for further details.

There were no material changes to the policies and practices for the management of credit risk. A summary of our current policies and practices for the management of credit risk is set out in 'Credit risk management' on page 118 of the Annual Report and Accounts 2018.

Credit risk in 2018

Gross loans and advances to customers of $990.3bn, as defined by IFRS 9, increased from $959.1bn at 1 January 2018. This increase includes adverse foreign exchange movements of $34.1bn. Loans and advances to banks of $72.2bn decreased from $82.6bn at 1 January 2018. This included adverse foreign exchange movements of $2.7bn.

Wholesale and personal lending movements are disclosed on pages 143 to 157.

The change in expected credit losses and other credit impairment charges, as it appears in the income statement, for the period was $1.8bn.

Income statement movements are analysed further on page 42.

Our maximum exposure to credit risk is presented on page 132 and credit quality on pages 139. While credit risk arises across most of our balance sheet, losses have typically been incurred on loans and advances and securitisation exposures and other structured products. As a result, our disclosures focus primarily on these two areas.

Summary of credit risk

The following disclosure presents the gross carrying/nominal amount of financial instruments to which the impairment requirements in IFRS 9 are applied and the associated allowance for ECL. Due to the forward-looking nature of IFRS 9, the scope of financial instruments on which ECL is recognised is greater than the scope of IAS 39.

The following tables analyse loans by industry sector and the extent to which they are exposed to credit risks.

The allowance for ECL, as defined by IFRS 9, decreased from $10.1bn at 1 January 2018 to $9.2bn at 31 December 2018. This decrease included favourable foreign exchange movements of $0.4bn.

The allowance for ECL at 31 December 2018 comprised of $8.7bn in respect of assets held at amortised cost, $0.4bn in respect of loan commitments and financial guarantees, and $0.1bn in respect of debt instruments measured at fair value through other comprehensive income ('FVOCI').

Summary of financial instruments to which the impairment requirements in IFRS 9 are applied

(Audited)

		31 Dec 2018		At 1 Jan 2018	
		Gross carrying/nominal amount	Allowance for ECL[5]	Gross carrying/nominal amount	Allowance for ECL[5]
	Footnotes	$m	$m	$m	$m
Loans and advances to customers at amortised cost		990,321	(8,625)	959,080	(9,343)
– personal		394,337	(2,947)	375,069	(3,047)
– corporate and commercial		534,577	(5,552)	520,137	(6,053)
– non-bank financial institutions		61,407	(126)	63,874	(243)
Loans and advances to banks at amortised cost		72,180	(13)	82,582	(23)
Other financial assets measured at amortised cost		582,917	(55)	557,864	(114)
– cash and balances at central banks		162,845	(2)	180,624	(3)
– items in the course of collection from other banks		5,787	—	6,628	—
– Hong Kong Government certificates of indebtedness		35,859	—	34,186	—
– reverse repurchase agreements – non-trading		242,804	—	201,553	—
– financial investments		62,684	(18)	59,539	(16)
– prepayments, accrued income and other assets	6	72,938	(35)	75,334	(95)

Total gross carrying amount on-balance sheet		1,645,418	(8,693)	1,599,526	(9,480)
Loans and other credit-related commitments		592,008	(325)	545,258	(376)
– personal		207,351	(13)	196,093	(14)
– corporate and commercial		271,022	(305)	262,391	(355)
– non-bank financial institutions	7	113,635	(7)	86,774	(7)
Financial guarantees	8	23,518	(93)	25,849	(97)
– personal		927	(1)	718	(4)
– corporate and commercial		17,355	(85)	19,965	(89)
– non-bank financial institutions		5,236	(7)	5,166	(4)
Total nominal amount off-balance sheet	9	615,526	(418)	571,107	(473)
		2,260,944	(9,111)	2,170,633	(9,953)
		Fair value	Memorandum allowance for ECL[10]	Fair value	Memorandum allowance for ECL[10]
		$m	$m	$m	$m
Debt instruments measured at fair value through other comprehensive income ('FVOCI')		343,110	(84)	322,163	(184)

For footnotes, see page 192.

The following table provides an overview of the Group's credit risk by stage and industry, and the associated ECL coverage. The financial assets recorded in each stage have the following characteristics:

- stage 1: unimpaired and without significant increase in credit risk on which a 12-month allowance for ECL is recognised;
- stage 2: a significant increase in credit risk has been experienced since initial recognition on which a lifetime ECL is recognised;
- stage 3: objective evidence of impairment, and are therefore considered to be in default or otherwise credit impaired on which a lifetime ECL is recognised; and
- purchased or originated credit impaired ('POCI'): purchased or originated at a deep discount that reflects the incurred credit losses on which a lifetime ECL is recognised.

Summary of credit risk (excluding debt instruments measured at FVOCI) by stage distribution and ECL coverage by industry sector at
31 December 2018
(Audited)

	Gross carrying/nominal amount[9]					Allowance for ECL					ECL coverage %				
	Stage 1	Stage 2	Stage 3	POCI[11]	Total	Stage 1	Stage 2	Stage 3	POCI[11]	Total	Stage 1	Stage 2	Stage 3	POCI[11]	Total
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	%	%	%	%	%
Loans and advances to customers at amortised cost	915,188	61,786	13,023	324	990,321	(1,276)	(2,108)	(5,047)	(194)	(8,625)	0.1	3.4	38.8	59.9	0.9
– personal	374,681	15,075	4,581	—	394,337	(534)	(1,265)	(1,148)	—	(2,947)	0.1	8.4	25.1	—	0.7
– corporate and commercial	481,262	44,779	8,212	324	534,577	(698)	(812)	(3,848)	(194)	(5,552)	0.1	1.8	46.9	59.9	1.0
– non-bank financial institutions	59,245	1,932	230	—	61,407	(44)	(31)	(51)	—	(126)	0.1	1.6	22.2	—	0.2
Loans and advances to banks at amortised cost	71,873	307	—	—	72,180	(11)	(2)	—	—	(13)	—	0.7	—	—	—
Other financial assets measured at amortised cost	581,118	1,673	126	—	582,917	(27)	(6)	(22)	—	(55)	—	0.4	17.5	—	—
Loan and other credit-related commitments	569,250	21,839	912	7	592,008	(143)	(139)	(43)	—	(325)	—	0.6	4.7	—	0.1
– personal	205,183	1,760	408	—	207,351	(12)	(1)	—	—	(13)	—	0.1	—	—	—
– corporate and commercial	251,478	19,034	503	7	271,022	(126)	(136)	(43)	—	(305)	0.1	0.7	8.5	—	0.1
– financial[7]	112,589	1,045	1	—	113,635	(5)	(2)	—	—	(7)	—	0.2	—	—	—
Financial guarantees[8]	20,884	2,334	297	3	23,518	(19)	(29)	(45)	—	(93)	0.1	1.2	15.2	—	0.4
– personal	920	3	4	—	927	(1)	—	—	—	(1)	0.1	—	—	—	0.1
– corporate and commercial	15,011	2,053	288	3	17,355	(16)	(25)	(44)	—	(85)	0.1	1.2	15.3	—	0.5
– financial	4,953	278	5	—	5,236	(2)	(4)	(1)	—	(7)	—	1.4	20.0	—	0.1
At 31 Dec 2018	2,158,313	87,939	14,358	334	2,260,944	(1,476)	(2,284)	(5,157)	(194)	(9,111)	0.1	2.6	35.9	58.1	0.4

For footnotes, see page 192.

Unless identified at an earlier stage, all financial assets are deemed to have suffered a significant increase in credit risk when they are 30 days past due ('DPD') and are transferred from stage 1 to stage 2. The following disclosure presents the ageing of stage 2 financial assets. It distinguishes those assets that are classified as

stage 2 when they are less than 30 days past due (1-29 DPD) from those that are more than 30 DPD (30 and >DPD). Past due financial instruments are those loans where customers have failed to make payments in accordance with the contractual terms of their facilities.

Stage 2 days past due analysis at 31 December 2018
(Audited)

	Gross carrying amount			Allowance for ECL			ECL coverage %		
		Of which:	Of which:		Of which:	Of which:		Of which:	Of which:
	Stage 2	1 to 29 DPD[12]	30 and > DPD[12]	Stage 2	1 to 29 DPD[12]	30 and > DPD[12]	Stage 2	1 to 29 DPD[12]	30 and > DPD[12]
	$m	$m	$m	$m	$m	$m	%	%	%
Loans and advances to customers at amortised cost	61,786	2,554	1,914	(2,108)	(204)	(254)	3.4	8.0	13.3
– personal	15,075	1,807	1,383	(1,265)	(165)	(220)	8.4	9.1	15.9
– corporate and commercial	44,779	737	485	(812)	(39)	(34)	1.8	5.3	7.0
– non-bank financial institutions	1,932	10	46	(31)	—	—	1.6	—	—
Loans and advances to banks at amortised cost	307	—	—	(2)	—	—	0.7	—	—
Other financial assets measured at amortised cost	1,673	10	26	(6)	—	—	0.4	—	—

For footnotes, see page 192.

Summary of credit risk (excluding debt instruments measured at FVOCI) by stage distribution and ECL coverage by industry sector at
1 January 2018 (continued)

	Gross carrying/nominal amount[9]					Allowance for ECL					ECL coverage %				
	Stage 1	Stage 2	Stage 3	POCI[11]	Total	Stage 1	Stage 2	Stage 3	POCI[11]	Total	Stage 1	Stage 2	Stage 3	POCI[11]	Tota
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	%	%	%	%	%
Loans and advances to customers at amortised cost	871,566	72,658	13,882	974	959,080	(1,309)	(2,201)	(5,591)	(242)	(9,343)	0.2	3.0	40.3	24.8	1.0
– personal	354,305	16,354	4,410	—	375,069	(581)	(1,156)	(1,310)	—	(3,047)	0.2	7.1	29.7	—	0.8
– corporate and commercial	456,837	53,262	9,064	974	520,137	(701)	(1,037)	(4,073)	(242)	(6,053)	0.2	1.9	44.9	24.8	1.2
– non-bank financial institutions	60,424	3,042	408	—	63,874	(27)	(8)	(208)	—	(243)	—	0.3	51.0	—	0.4
Loans and advances to banks at amortised cost	81,027	1,540	15	—	82,582	(17)	(4)	(2)	—	(23)	—	0.3	13.3	—	—
Other financial assets measured at amortised cost	556,185	1,517	155	7	557,864	(28)	(4)	(82)	—	(114)	—	0.3	52.9	—	—
Loan and other credit-related commitments	519,883	24,330	999	46	545,258	(126)	(183)	(67)	—	(376)	—	0.8	6.7	—	0.1
– personal	194,320	1,314	459	—	196,093	(13)	(1)	—	—	(14)	—	0.1	—	—	—
– corporate and commercial	240,854	20,951	540	46	262,391	(108)	(180)	(67)	—	(355)	—	0.9	12.4	—	0.1
– financial[7]	84,709	2,065	—	—	86,774	(5)	(2)	—	—	(7)	—	0.1	—	—	—
Financial guarantees[8]	22,021	3,619	187	22	25,849	(17)	(18)	(62)	—	(97)	0.1	0.5	33.2	—	0.4
– personal	703	10	5	—	718	(2)	—	(2)	—	(4)	0.3	—	40.0	—	0.6
–	16,597	3,164	182	22	19,965	(14)	(17)	(58)	—	(89)	0.1	0.5	31.9	—	0.4

corporate and commercial – financial	4,721	445	—	—	5,166	(1)	(1)	(2)	—	(4)	—	0.2	—	—	0.1
At 1 Jan 2018	2,050,682	103,664	15,238	1,049	2,170,633	(1,497)	(2,410)	(5,804)	(242)	(9,953)	0.1	2.3	38.1	23.1	0.5

For footnotes, see page 192.

Stage 2 days past due analysis at 1 January 2018

	Gross carrying amount			Allowance for ECL			ECL coverage %		
	Stage 2	Of which: 1 to 29 DPD[12]	Of which: 30 and > DPD[12]	Stage 2	Of which: 1 to 29 DPD[12]	Of which: 30 and > DPD[12]	Stage 2	Of which: 1 to 29 DPD[12]	Of which: 30 and > DPD[12]
	$m	$m	$m	$m	$m	$m	%	%	%
Loans and advances to customers at amortised cost	72,658	2,393	2,447	(2,201)	(261)	(261)	3.0	10.9	10.7
– personal	16,354	1,683	1,428	(1,156)	(218)	(230)	7.1	13.0	16.1
– corporate and commercial	53,262	684	977	(1,037)	(42)	(31)	1.9	6.1	3.2
– non-bank financial institutions	3,042	26	42	(8)	(1)	—	0.3	3.8	—
Loans and advances to banks at amortised cost	1,540	7	66	(4)	(2)	—	0.3	28.6	—
Other financial assets measured at amortised cost	1,517	133	46	(4)	—	(1)	0.3	—	2.2

For footnotes, see page 192.

Personal gross loans to customers over five years ($bn)
IAS 39 IFRS 9
Stage 1 and 2/Unimpaired Stage 3 and POCI/Impaired loans
Wholesale gross loans to customers and banks over five years ($bn)
IAS 39 IFRS 9
Stage 1 and 2/Unimpaired Stage 3 and POCI/Impaired loans

Loans and advances change in ECL/loan impairment charge ($bn)
IAS 39 IFRS 9
Personal Wholesale

Loan impairment charges by geographical region in 2017 ($bn)
Loans and advances change in ECL by geographical region in 2018 ($bn)
Loans and advances to customers change in ECL in 2018 ($bn)

Loans and advances to customers loan impairment charges by industry in 2017 ($bn)

Personal allowance for ECL/loan impairment allowance over five years ($bn)
IAS 39 IFRS 9
Allowance for ECL/loan impairment allowance ($bn)
Wholesale allowance for ECL/loan impairment allowance over five years ($bn)
IAS 39 IFRS 9
Allowance for ECL/loan impairment allowance ($bn)

Credit exposure

Maximum exposure to credit risk

(Audited)

This section provides information on balance sheet items and their offsets as well as loan and other credit-related commitments. Commentary on consolidated balance sheet movements in 2018 is provided on page 48.

The offset on derivatives remains in line with the movements in maximum exposure amounts.

'Maximum exposure to credit risk' table

The following table presents our maximum exposure before taking account of any collateral held or other credit enhancements (unless such enhancements meet accounting offsetting requirements). The table excludes financial instruments whose carrying amount best represents the net exposure to credit risk, and it excludes equity securities as they are not subject to credit risk. For the financial assets recognised on the balance sheet, the maximum exposure to credit risk equals their carrying amount; for financial guarantees and other guarantees granted, it is the maximum amount that we would have to pay if the guarantees were called upon. For loan commitments and other credit-related commitments, it is generally the full amount of the committed facilities.

The offset in the table relates to amounts where there is a legally enforceable right of offset in the event of counterparty default and where, as a result, there is a net exposure for credit risk purposes. However, as there is no intention to settle these balances on a net basis under normal circumstances, they do not qualify for net presentation for accounting purposes. No offset has been applied to off-balance sheet collateral. In the case of derivatives, the offset column also includes collateral received in cash and other financial assets.

Other credit risk mitigants

While not disclosed as an offset in the following 'Maximum exposure to credit risk' table, other arrangements are in place that reduce our maximum exposure to credit risk. These include a charge over collateral on borrowers' specific assets, such as residential properties, collateral held in the form of financial instruments that are not held on the balance sheet and short positions in securities. In addition, for financial assets held as part of linked insurance/investment contracts the risk is predominantly borne by the policyholder. See Note 30 and page 269 on the Financial Statements for further details of collateral in respect of certain loans and advances and derivatives. Collateral available to mitigate credit risk is disclosed in the Collateral section on page 148.

Maximum exposure to credit risk

(Audited)

	2018 Maximum exposure	Offset	Net
	$m	$m	$m
Loans and advances to customers held at amortised cost	981,696	(29,534)	952,162
– personal	391,390	(3,679)	387,711
– corporate and commercial	529,025	(23,421)	505,604
– non-bank financial institutions	61,281	(2,434)	58,847
Loans and advances to banks at amortised cost	72,167	—	72,167
Other financial assets held at amortised cost	585,600	(21,788)	563,812
– cash and balances at central banks	162,843	—	162,843
– items in the course of collection from other banks	5,787	—	5,787
– Hong Kong Government certificates of indebtedness	35,859	—	35,859
– reverse repurchase agreements – non-trading	242,804	(21,788)	221,016
– financial investments	62,666	—	62,666
– prepayments, accrued income and other assets	75,641	—	75,641
Derivatives	207,825	(194,306)	13,519
Total on-balance sheet exposure to credit risk	1,847,288	(245,628)	1,601,660
Total off-balance sheet	874,751	—	874,751
– financial and other guarantees	94,810	—	94,810
– loan and other credit-related commitments	779,941	—	779,941
At 31 Dec 2018	2,722,039	(245,628)	2,476,411

Concentration of exposure

The geographical diversification of our lending portfolio, and our broad range of global businesses and products, ensured that we did not overly depend on a few markets or businesses to generate growth in 2018.

For an analysis of:

- financial investments, see Note 16 on the Financial Statements;
- trading assets, see Note 11 on the Financial Statements;
- derivatives, see page 152 and Note 15 on the Financial Statements; and
- loans and advances by industry sector and by the location of the principal operations of the lending subsidiary (or, in the case of the operations of The Hongkong and Shanghai Banking Corporation, HSBC Bank plc, HSBC Bank Middle East Limited and HSBC Bank USA, by the location of the lending branch), see page 143 for wholesale lending and page 153 for personal lending.

Credit deterioration of financial instruments

(Audited)

A summary of our current policies and practices regarding the identification, treatment and measurement of stage 1, stage 2, stage 3 (credit impaired) and POCI financial instruments can be found in Note 1.2 on the Financial Statements.

Measurement uncertainty and sensitivity analysis of ECL estimates

(Audited)

Expected credit loss impairment allowances recognised in the financial statements reflect the effect of a range of possible economic outcomes, calculated on a probability-weighted basis, based on the economic scenarios described below. The recognition and measurement of expected credit losses (‘ECL’) involves the use of significant judgement and estimation. It is necessary to formulate multiple forward-looking economic forecasts and incorporate them into the ECL estimates. HSBC uses a standard framework to form economic scenarios to reflect assumptions about future

economic conditions, supplemented with the use of management judgement, which may result in using alternative or additional economic scenarios and/or management adjustments.

Methodology

HSBC has adopted the use of three scenarios, representative of our view of forecast economic conditions, sufficient to calculate unbiased expected loss in most economic environments. They represent a 'most likely outcome' (the Central scenario), and two, less likely 'outer' scenarios, referred to as the Upside and Downside scenarios. Each outer scenario is consistent with a probability of 10%, while the Central scenario is assigned the remaining 80%, according to the decision of HSBC's senior management. This weighting scheme is deemed appropriate for the unbiased estimation of ECL in most circumstances. Key scenario assumptions are set using the average of forecasts of external economists, helping to ensure that the IFRS 9 scenarios are unbiased and maximise the use of independent information. The Central, Upside and Downside scenarios selected with reference to external forecast distributions using the above approach are termed the 'consensus economic scenarios'.

For the Central scenario, HSBC sets key assumptions such as GDP growth, inflation, unemployment and policy interest rates, using either the average of external forecasts (commonly referred to as consensus forecasts) for most economies, or market prices. An external provider's global macro model, conditioned to follow the consensus forecasts, projects the other paths required as inputs to credit models. This external provider is subject to HSBC's risk governance framework, with oversight by a specialist internal unit.

The Upside and Downside scenarios are designed to be cyclical, in that GDP growth, inflation and unemployment usually revert back to the Central scenario after the first three years for major economies. We determine the maximum divergence of GDP growth from the Central scenario using the 10th and the 90th percentile of the entire distribution of forecast outcomes for major economies. While key economic variables are set with reference to external distributional forecasts, we also align the overall narrative of the scenarios to the macroeconomic risks described in HSBC's 'Top and emerging risks' on page 100. This ensures that scenarios remain consistent with the more qualitative assessment of these risks. We project additional variable paths using the external provider's global macro model.

We apply the following to generate the three economic scenarios:

- Economic risk assessment: We develop a shortlist of the upside and downside economic and political risks, most relevant to HSBC and the IFRS 9 measurement objective. These include local and global economic and political risks, which together affect economies that have a material effect on credit risk for HSBC, namely the UK, countries in the eurozone, Hong Kong,

mainland China and the US. We compile this shortlist by monitoring developments in the global economy, by reference to our top and emerging risks, and by consulting external and internal subject matter experts.

- Scenario generation: For the Central scenario, we obtain a pre-defined set of economic paths from the average taken from the consensus survey of professional forecasters. Paths for the two outer scenarios are benchmarked to the Central scenario and reflect the economic risk assessment. We select scenarios that in management's judgement are representative of the probability weighting scheme, informed by the current economic outlook, data analysis of past recessions, and transitions in and out of recession. The key assumptions made, and the accompanying paths, represent our 'best estimate' of a scenario at a specified probability. Suitable narratives are developed for the Central scenario and the paths of the two outer scenarios.
- Variable enrichment: We expand each scenario through enrichment of variables. This includes the production of more than 400 variables that are required to calculate ECL. The external provider expands these scenarios by using as inputs the agreed scenario narratives and the variables aligned to these narratives. Scenarios, once expanded, continue to be benchmarked to latest events and information. Late breaking events could lead to revision of scenarios to reflect management judgement.

The Upside and Downside scenarios are generated at the year-end and are only updated during the year if economic conditions change significantly. The Central scenario is generated every quarter. In quarters where only the Central scenario is updated, outer scenarios for use in wholesale are adjusted such that the relationship between the Central scenario and outer scenarios in the quarter is consistent with that observed at the last full scenario generation. In retail, three scenarios are run annually to establish the effect of multiple scenarios for each portfolio. This effect is then applied in each quarter with the understanding that the non-linearity of response to economic conditions should not change, unless a significant change in economic conditions occurs.

HSBC recognises that the consensus economic scenario approach, using three scenarios, will be insufficient in certain economic environments. Additional analysis may be requested at management's discretion. This may result in a change in the weighting scheme assigned to the three scenarios or the inclusion of extra scenarios. We anticipate that there will be only limited instances when the standard approach will not apply. We invoked this additional step on 1 January 2018, due to the specific

uncertainties facing the UK economy at that time, resulting in the recognition of additional ECL through a management adjustment for economic uncertainty (termed a 'management overlay' in the transitional disclosures). During 2018, we maintained additional ECL impairment allowances for the UK and made a further adjustment in respect of trade and tariff-related tensions. See 'Impact of UK economic uncertainty on ECL' below.

Description of consensus economic scenarios

The economic assumptions presented in this section have been formed internally by HSBC specifically for the purpose of calculating expected credit loss.

The consensus Central scenario

Consensus forecasts were stable over the course of 2018 and HSBC's Central scenario is one of moderate growth over the projection period 2019–2023. Global GDP growth is expected to be 2.9% on average over the period, which is marginally higher than the average growth rate over the period 2013–2017. Across the key markets, we note:

- Expected average rates of GDP growth over the 2019–2023 period are lower than average growth rates achieved over the 2013–2017 period for the US, UK, mainland China, Hong Kong, Canada, Mexico and the UAE. For the UK, this reflects expectations that the long-term impact of current economic uncertainty will be moderately adverse, while for China, it is consistent with the theme of ongoing rebalancing from an export-oriented economy to deeper domestic consumption.
- The average unemployment rate over the projection horizon is expected to remain at or below the averages observed in the 2013–2017 period across all of our major markets.
- Inflation is expected to be stable despite steady GDP growth and strong labour markets and will remain close to central bank targets in our core markets over the forecast period.
- Major central banks are expected to gradually raise their main policy interest rate. The US Federal Reserve Board ('FRB') will continue to reduce the size of its balance sheet and the European Central Bank is expected to raise interest rates from the second half of 2019. The Chinese Central Bank is expected to continue to rely on its toolkit of measures

to control capital flows and manage domestic credit growth.

- The West Texas Intermediate oil price is forecast to average $63 per barrel over the projection period.

The following table describes key macroeconomic variables and the probabilities assigned in the consensus Central scenario.

Central scenario (average 2019–2023)

	UK	France	Hong Kong	Mainland China	UAE	US	Canada	Mexico
GDP growth rate (%)	1.7	1.5	2.6	5.9	3.4	2.0	1.8	2.4
Inflation (%)	2.1	1.7	2.3	2.5	2.5	2.1	2.0	3.6
Unemployment (%)	4.5	7.8	3.1	4.0	2.1	4.0	6.1	3.7
Short-term interest rate (%)	1.2	0.2	2.6	4.0	3.2	2.8	2.5	8.0
10-year Treasury bond yields (%)	2.6	2.0	3.1	N/A	N/A	3.5	3.3	7.2
House price growth (%)	2.9	1.7	1.0	5.8	3.0	3.4	2.7	5.1
Equity price growth (%)	3.2	3.1	3.8	9.6	N/A	4.5	3.5	7.1
Probability (%)	50.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

Note: N/A – not required in credit models.

The consensus Upside scenario

The economic forecast distribution of risks (as captured by consensus probability distributions of GDP growth) has shown a marginal increase in upside risks for the US and the eurozone, but a decrease of the same for the UK over the course of 2018. Globally, real GDP growth rises in the first two years of the Upside scenario before converging to the Central scenario. Increased

confidence, de-escalation of trade tensions and removal of trade barriers, expansionary fiscal policy, positive resolution of economic uncertainty in the UK, stronger oil prices as well as calming of geopolitical tensions are the risk themes that support the 2018 year-end Upside scenario.

The following table describes key macroeconomic variables and the probabilities assigned in the consensus Upside scenario.

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Upside scenario (average 2019–2023)

	UK	France	Hong Kong	Mainland China	UAE	US	Canada	Mexico
GDP growth rate (%)	2.2	1.9	2.9	6.1	3.9	2.7	2.1	2.9
Inflation (%)	2.3	2.0	2.6	2.7	2.9	2.4	2.2	4.0
Unemployment (%)	4.2	7.4	2.9	3.7	1.7	3.6	5.9	3.3
Short-term interest rate (%)	1.3	0.2	2.6	4.1	3.3	3.0	2.5	8.2
10-year Treasury bond yields (%)	2.7	2.0	3.3	N/A	N/A	3.7	3.3	7.5
House price growth (%)	4.1	2.3	1.4	7.3	4.4	4.7	3.9	5.8
Equity price growth (%)	6.0	7.3	7.1	13.6	N/A	8.7	9.2	10.9
Probability (%)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

Note: N/A – not required in credit models.

The Downside scenarios

The consensus Downside scenario

The distribution of risks (as captured by consensus probability distributions of GDP growth) have shown a marginal increase in downside risks over the course of 2018 for the US, while they were broadly stable for the eurozone and the UK (but see discussion on UK economic uncertainty below). Globally, real GDP growth declines for two years in the Downside scenario before recovering to the Central scenario. House price growth either stalls or contracts and equity markets correct abruptly in our major

markets. The global slowdown in demand drives commodity prices lower and results in an accompanying fall in inflation. Central banks remain accommodative. This is consistent with the key risk themes of the downside, such as an intensification of global protectionism and trade barriers, faster than expected tightening of the Fed policy rate, a worsening of economic uncertainty in the UK, China choosing to rebalance with stringent measures, and weaker commodity prices.

The following table describes key macroeconomic variables and the probabilities assigned in the consensus Downside scenario.

Downside scenario (average 2019–2023)

	UK	France	Hong Kong	Mainland China	UAE	US	Canada	Mexico
GDP growth rate (%)	1.1	1.1	2.2	5.8	2.9	1.2	1.5	1.8
Inflation (%)	1.7	1.3	1.9	2.2	2.2	1.8	1.7	3.2
Unemployment (%)	4.8	8.2	3.5	4.2	2.5	4.6	6.5	4.2
Short-term interest rate (%)	0.3	(0.3)	0.6	3.6	1.2	0.8	0.9	6.8
10-year Treasury bond yields (%)	1.6	0.9	1.6	N/A	N/A	1.6	1.4	5.6
House price growth (%)	1.0	(1.3)	(0.8)	3.3	1.4	1.0	0.3	4.4
Equity price growth (%)	(0.2)	(2.4)	(1.6)	2.0	N/A	—	0.3	(0.4)
Probability (%)	—	10.0	5.0	5.0	10.0	10.0	10.0	10.0

Note: N/A – not required in credit models.

Alternative Downside scenarios for the UK

A number of events occurred over the course of 2018 that led management to re-evaluate the shape of the consensus distribution for the UK. Given the challenges facing economic forecasters in this environment, management was concerned that this distribution did not adequately represent downside risks for the UK. The high level of economic uncertainty that prevailed at the end of 2018, including the lack of progress in agreeing a clear plan for an exit from the EU and the uncertain performance of the UK economy after an exit, was a key factor in this consideration. In management's view, the extent of this uncertainty justifies the use of the following Alternative Downside scenarios, used in place of the consensus Downside, with the assigned probabilities:

Alternative Downside scenario 1 (‘AD1’): Economic uncertainty could have a large impact on the UK economy resulting in a long lasting recession with a weak recovery. This scenario reflects the consequences of such a recession with an initial risk-premium shock and weaker long-run productivity growth. This scenario has been used with a 30% weighting.
Alternative Downside scenario 2 (‘AD2’): This scenario reflects the possibility that economic uncertainty could result in a deep cyclical shock triggering a steep depreciation in sterling, a sharp increase in inflation and an associated monetary policy response. This represents a tail risk and has been assigned a 5% weighting.
Alternative Downside scenario 3 (‘AD3’): This scenario reflects the possibility that the adverse impact associated with economic uncertainty currently in the UK could manifest over a far longer period of time with the worst effects occurring later than in the above two scenarios. This scenario is also considered a tail risk and has been assigned a 5% weighting.

The table below describes key macroeconomic variables and the probabilities for each of the Alternative Downside scenarios:

Average 2019–2023

	Alternative Downside scenario 1	Alternative Downside scenario 2	Alternative Downside scenario 3
	%	%	%
GDP growth rate	0.5	(0.1)	(0.7)
Inflation	2.2	2.4	2.7
Unemployment	6.5	8.0	7.7
Short-term interest rate	0.4	2.5	2.5
10-year Treasury bond yields	1.8	4.0	4.0
House price growth	(1.5)	(3.3)	(4.8)
Equity price growth	(0.9)	(2.3)	(7.5)
Probability	30	5	5

Global trade Downside scenario

Continued escalation of trade- and tariff-related tensions throughout 2018 resulted in management modelling an additional Downside scenario for key Asia-Pacific economies. This additional scenario models the effects of a significant escalation in global tensions, stemming from trade disputes but going beyond increases in tariffs to affect non-tariff barriers, cross-border investment flows and threats to the international trade architecture. This scenario assumes actions that lie beyond currently enacted and proposed tariffs and has been modelled as an addition to the three consensus-driven scenarios for these economies. This scenario has been assigned a 5% weight, leaving 5% assigned to the consensus Downside scenario, and has been used in addition to the consensus economic scenarios for eight Asia-Pacific markets, including HSBC’s major markets of Hong Kong and mainland China. In management’s judgement, the

impact on the US and other countries is largely captured by the consensus Downside scenario.
Key macroeconomic variables are shown in the table below:
Average 2019–2023

	Hong Kong	Mainland China
GDP growth rate (%)	1.5	5.4
Inflation (%)	1.6	2.1
Unemployment (%)	4.7	4.3
Short-term interest rate (%)	1.0	3.1
10-year Treasury bond yields (%)	2.0	N/A
House price growth (%)	(2.0)	2.9
Equity price growth (%)	(3.5)	1.1
Probability (%)	5	5

The conditions that resulted in departure from the consensus economic forecasts will be reviewed regularly as economic conditions change in future to determine whether these adjustments continue to be necessary.
The tables above show the five-year average of GDP growth rate. The following graphs show the historical and forecasted GDP growth rate for the various economic scenarios in HSBC's four largest markets.
US
UK

Hong Kong
Mainland China
How economic scenarios are reflected in the wholesale calculation of ECL
HSBC has developed a globally consistent methodology for the application of forward economic guidance into the calculation of ECL by incorporating forward economic guidance into the estimation of the term structure of probability of default ('PD') and loss given default ('LGD'). For PDs, we consider the correlation of forward economic guidance to default rates for a particular industry in a country. For LGD calculations we consider the correlation of forward economic guidance to collateral values and realisation rates for a particular country and industry. PDs and LGDs are estimated for the entire term structure of each instrument.
For impaired loans, LGD estimates take into account independent recovery valuations provided by external consultants where available, or internal forecasts corresponding to anticipated economic conditions and individual company conditions. In estimating the ECL on impaired loans that are individually considered not to be significant, HSBC incorporates forward economic guidance proportionate to the probability-weighted outcome and the Central scenario outcome for non-stage 3 populations.
How economic scenarios are reflected in the retail calculation of ECL
HSBC has developed and implemented a globally consistent methodology for incorporating forecasts of economic conditions into ECL estimates. The impact of economic scenarios on PD is modelled at a portfolio level. Historical relationships between observed default rates and macroeconomic variables are integrated into IFRS 9 ECL estimates by leveraging economic response models. The impact of these scenarios on PD is modelled over a period equal to the remaining maturity of underlying asset or assets. The impact on LGD is modelled for mortgage portfolios by forecasting future loan-to-value ('LTV') profiles for the remaining maturity of the asset by leveraging national level forecasts of the house price index and applying the corresponding LGD expectation.

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Impact of UK economic uncertainty on ECL

On initial adoption of IFRS 9 on 1 January 2018, additional ECL impairment allowances of $245m were recognised compared with those implied by consensus forecasts, due to the specific uncertainties facing the UK economy at that time. This adjustment was described as a 'management overlay for economic uncertainty' in the transitional disclosures. While consensus forecasts for the UK remained broadly stable during 2018, management remained concerned that the consensus distribution did not adequately reflect downside risks, particularly towards the end of 2018 as the level of risk increased. At 31 December 2018, management determined that its view of the distribution of possible economic outcomes in the UK was better reflected by using three additional Downside scenarios in place of the UK consensus Downside scenarios. This resulted in the recognition of additional impairment allowances of $410m compared with those implied by consensus forecasts, an increase of $165m in the adjustment to the consensus position compared with

1 January 2018, to reflect the increased level of economic uncertainty in the UK.

We also considered developments after the balance sheet date and concluded that they did not necessitate any adjustment to the approach or judgements taken on 31 December 2018.

Economic scenarios sensitivity analysis of ECL estimates

The ECL outcome is sensitive to judgement and estimations made with regards to the formulation and incorporation of multiple forward-looking economic conditions described above. As a result, management assessed and considered the sensitivity of the ECL outcome against the forward-looking economic conditions as part of the ECL governance process by recalculating the ECL under each scenario described above for selected portfolios, applying a

100% weighting to each scenario in turn. The weighting is reflected in both the determination of significant increase in credit risk as well as the measurement of the resulting ECL. For wholesale credit risk exposures, the sensitivity analysis excludes ECL and financial instruments related to defaulted obligors because the measurement of ECL is relatively more sensitive to credit factors specific to the obligor than future economic scenarios.

The economic scenarios are generated to capture HSBC's view of a range of possible forecast economic conditions that is sufficient for the calculation of unbiased and probability-weighted ECL. Therefore, the ECL calculated for each of the scenarios represent a range of possible outcomes that have been evaluated to estimate ECL. As a result, the ECL calculated for the Upside and Downside scenarios should not be taken to represent the upper and lower limits of possible actual ECL outcomes. There is a high degree of estimation uncertainty in numbers representing tail risk scenarios when assigned a 100% weighting, and an indicative range is provided for the UK tail risk sensitivity analysis. A wider range of possible ECL outcomes reflects uncertainty about the distribution of economic conditions and does not necessarily mean that credit risk on the associated loans is higher than for loans where the distribution of possible future economic conditions is narrower. The recalculated ECL for each of the scenarios should be read in the context of the sensitivity analysis as a whole and in conjunction with the narrative disclosures provided below.

ECL under each scenario is given in dollar terms and as a percentage of the the gross carrying amount (and, for wholesale lending, the nominal amount for related-loan commitments and financial guarantees).

Wholesale analysis

IFRS 9 ECL sensitivity to future economic conditions[13]

	UK	US	Hong Kong	Mainland China	Canada	Mexico	UAE	France
ECL coverage of financial instruments subject to significant measurement uncertainty at 31 December 2018[14]	$m	$m	$m	$m	$m	$m	$m	$m
Reported ECL	906	163	162	83	81	76	74	46
Gross carrying value/nominal amount[15]	360,637	211,318	407,402	99,379	72,759	31,798	37,546	105,416

	%	%	%	%	%	%	%	%
Reported ECL coverage	0.25	0.08	0.04	0.08	0.11	0.24	0.20	0.04
Coverage ratios by scenario								
Consensus Central scenario	0.18	0.08	0.04	0.08	0.11	0.24	0.20	0.04
Consensus Upside scenario	0.17	0.07	0.04	0.08	0.10	0.19	0.18	0.04
Consensus Downside scenario	0.21	0.09	0.04	0.09	0.12	0.30	0.21	0.06
Coverage ratios for alternative scenarios								
UK AD 1	0.28							
Tail risk scenarios (UK AD 2–3)	0.46 – 0.52							
Trade Downside scenario			0.13	0.15				
ECL amounts for alternative scenarios	$m	$m	$m	$m	$m	$m	$m	$m
UK AD 1	1,000							
Tail risk scenarios (UK AD 2–3)	1,700 – 1,900							
Trade Downside scenario			500	150				

For footnotes see page 192.

ECL coverage rates reflect the underlying observed credit defaults, the sensitivity to economic environment, extent of security and the effective maturity of the book. In certain economies such as the UK, the book is longer-dated relative to other economies such as Hong Kong.
The additional scenarios for UK economic uncertainty could, if they occurred, increase ECL by three to 27 basis points compared with reported ECL for all wholesale financial instruments, and

four to 42 basis points for loans and advances to customers including loan commitments and financial guarantees. The additional scenarios represent the elasticity between macroeconomic factors such as GDP and the risk of default. Hong Kong is typically a short-dated book with low defaults, which is reflected in the low ECL coverage ratio.

Retail analysis

The geographies below were selected based on a 76% contribution to overall ECL within our retail lending business.

IFRS 9 ECL sensitivity to future economic conditions[16]

	UK	Mexico	Hong Kong	UAE	France	US	Malaysia	Singapore	Australia	Canada
ECL coverage of loans and advances to customers at 31 December 2018[17]	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Reported ECL	705	520	341	204	150	102	93	68	58	29
Gross carrying amount	138,026	6,098	92,356	3,453	21,622	15,262	5,906	7,378	14,156	19,992
	%	%	%	%	%	%	%	%	%	%
Reported ECL coverage	0.51	8.53	0.37	5.90	0.69	0.67	1.58	0.92	0.41	0.15
Coverage ratios by scenario										
Consensus Central scenario	0.39	8.49	0.37	5.89	0.69	0.66	1.56	0.89	0.41	0.15
Consensus Upside scenario	0.35	7.79	0.35	5.66	0.69	0.61	1.39	0.82	0.38	0.14
Consensus Downside scenario	0.46	9.25	0.37	6.06	0.70	0.75	1.75	0.91	0.44	0.16
Coverage ratios for alternative scenarios										
UK AD1	0.65									
Tail risk scenarios (UK AD 2–3)	0.83–0.96									
Trade Downside scenario			0.43				1.90	0.98	0.50	
ECL for alternative scenarios	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
UK AD1	900									
Tail risk scenarios (UK AD 2–3)	1100–1300									
Trade Downside scenario			400				110	70	70	

For footnotes see page 192.

The most significant level of retail ECL sensitivity is in the UK and reflects management's view on the level of economic uncertainty. Other key markets show similar relative levels of sensitivity regardless of differences in underlying levels of credit quality. Under certain economic conditions, economic factors can influence ECL in counter-intuitive ways (for example an increase in GDP growth accompanied by rising interest rates resulting in an increase in PDs) and it may be necessary to apply management judgement to the output, which following management review of the calculated ECL sensitivities, may require modelled output adjustments.

An example of this is in France, where the ECL sensitivity results have been adjusted to more accurately reflect management's views of ECL sensitivity under an upside and downside scenario by inverting the Upside and Downside ECL sensitivity.

For all the above sensitivity analyses, as the level of uncertainty, economic forecasts, historical economic variable correlations or credit quality changes, corresponding changes in the ECL sensitivity would occur.

Reconciliation of changes in gross carrying/nominal amount and allowances for loans and advances to banks and customers including loan commitments and financial guarantees

The following disclosure provides a reconciliation by stage of the Group's gross carrying/nominal amount and allowances for loans and advances to banks and customers, including loan commitments and financial guarantees.

The transfers of financial instruments represents the impact of stage transfers upon the gross carrying/nominal amount and associated allowance for ECL. The net remeasurement of ECL arising from stage transfers represents the increase or decrease due to these transfers, for example, moving from a 12-month (stage 1) to a lifetime (stage 2) ECL measurement basis. Net remeasurement excludes the underlying CRR/PD movements of the financial instruments transferring stage. This is captured, along with other credit quality movements in the 'changes in risk parameters – credit

quality' line item.
The 'Net new and further lending/repayments' represent the gross carrying/nominal amount and associated allowance ECL impact from volume movements within the Group's lending portfolio.

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Reconciliation of changes in gross carrying/nominal amount and allowances for loans and advances to banks and customers inc
loan commitments and financial guarantees[8]

(Audited)

	Non-credit impaired				Credit impaired				
	Stage 1		Stage 2		Stage 3		POCI		Total
	Gross carrying/ nominal amount	Allow-ance for ECL	Gross carrying/ nominal amount	Allow-ance for ECL	Gross carrying/ nominal amount	Allow-ance for ECL	Gross carrying/ nominal amount	Allow-ance for ECL	Gross carrying/ nominal amount
	$m	$m	$m	$m	$m	$m	$m	$m	$m
At 1 Jan 2018	1,446,857	(1,469)	102,032	(2,406)	15,083	(5,722)	1,042	(242)	1,565,014
Transfers of financial instruments:	(8,747)	(685)	3,582	1,185	5,165	(500)	—	—	—
– transfers from stage 1 to stage 2	(84,181)	319	84,181	(319)	—	—	—	—	—
– transfers from stage 2 to stage 1	77,325	(999)	(77,325)	999	—	—	—	—	—
– transfers to stage 3	(2,250)	35	(4,439)	607	6,689	(642)	—	—	—
– transfers from stage 3	359	(40)	1,165	(102)	(1,524)	142	—	—	—
Net remeasurement of ECL arising from transfer of stage	—	620	—	(605)	—	(103)	—	—	—
Net new and further lending/repayments	126,868	(512)	(16,162)	564	(2,902)	733	(587)	42	107,217
Changes in risk parameters – credit quality	—	423	—	(1,087)	—	(2,238)	—	(51)	—
Changes to model used for ECL calculation	—	—	—	—	—	—	—	—	—
Assets written off	—	—	—	—	(2,568)	2,552	(1)	1	(2,569)
Foreign exchange	(52,983)	76	(2,863)	99	(636)	232	(26)	6	(56,508)
Others	(156)	98	(348)	(28)	90	(89)	(94)	50	(508)
At 31 Dec 2018	1,511,839	(1,449)	86,241	(2,278)	14,232	(5,135)	334	(194)	1,612,646
ECL release/(charge) for the period		531		(1,128)		(1,608)		(9)	
Recoveries									
Others									
Total change in ECL for the period									

For footnotes, see page 192.

At 31 Dec 2018

12 months ended 31 Dec

	Gross carrying/nominal amount	Allowance for ECL	2018 ECL charge
	$m	$m	$m
As above	1,612,646	(9,056)	(1,893)
Other financial assets measured at amortised cost	582,917	(55)	21
Non-trading reverse purchase agreement commitments	65,381	—	—
Summary of financial instruments to which the impairment requirements in IFRS 9 are applied/Summary consolidated income statement	2,260,944	(9,111)	(1,872)
Debt instruments measured at FVOCI	343,110	(84)	105
Total allowance for ECL/total income statement ECL charge for the period	n/a	(9,195)	(1,767)

As shown in the above table, the allowance for ECL for loans and advances to customers and banks and relevant loan commitments and financial guarantees decreased $783m during the period from $9,839m at 1 January 2018 to $9,056m at 31 December 2018.

This decrease was primarily driven by:

- $827m relating to underlying net book volume movements, which included the ECL allowance associated with new originations, assets derecognised and net further lending;
- $2,553m of assets written off; and
- foreign exchange and other movements of $444m.

These decreases were partially offset by increases of:

- $2,953m relating to underlying credit quality changes, including the credit quality impact of financial instruments transferring between stages; and
- $88m relating to the net remeasurement impact of stage transfers.

The ECL charge for the period of $2,214m presented in the above table comprises $2,953m relating to underlying credit quality changes, including the credit quality impact of financial instruments transferring between stage, $88m relating to the net remeasurement impact of stage transfers, partly offset by $827m relating to underlying net book volume movements. Summary views of the movement in wholesale and personal lending are presented on pages 145 and 116.

Credit quality

Credit quality of financial instruments

(Audited)

We assess the credit quality of all financial instruments that are subject to credit risk. The credit quality of financial instruments is a point-in-time assessment of the probability of default of financial instruments, whereas IFRS 9 stages 1 and 2 are determined based on relative deterioration of credit quality since initial recognition. Accordingly, for non-credit-impaired financial instruments, there is no direct relationship between the credit quality assessment and IFRS 9 stages 1 and 2, though typically the lower credit quality bands exhibit a higher proportion in stage 2.

The five credit quality classifications each encompass a range of granular internal credit rating grades assigned to wholesale and personal lending businesses and the external ratings attributed by external agencies to debt securities, as shown in the table on page 119. Under IAS 39, personal lending credit quality was disclosed based on expected-loss percentages. Under IFRS 9, personal lending credit quality is now disclosed based on a 12-month point-in-time PD adjusted for multiple economic scenarios. The credit quality classifications for wholesale lending are unchanged and are based on internal credit risk ratings.

Distribution of financial instruments by credit quality (Audited)

	Gross carrying/notional amount						Allowance for ECL/ other credit provisions	Net
	Strong	Good	Satisfactory	Sub-standard	Credit impaired	Total		
	$m	$m	$m	$m	$m	$m	$m	$m
In-scope for IFRS 9								
Loans and advances to customers held at amortised cost	485,451	244,199	230,357	16,993	13,321	990,321	(8,625)	981,696
– personal	316,616	43,764	27,194	2,182	4,581	394,337	(2,947)	391,390
– corporate and commercial	140,387	181,984	189,357	14,339	8,510	534,577	(5,552)	529,025
– non-bank financial institutions	28,448	18,451	13,806	472	230	61,407	(126)	61,281
Loans and advances to banks held at amortised cost	60,249	7,371	4,549	11	—	72,180	(13)	72,167
Cash and balances at central banks	160,995	1,508	324	18	—	162,845	(2)	162,843
Items in the course of collection from other banks	5,765	21	1	—	—	5,787	—	5,787
Hong Kong Government certificates of indebtedness	35,859	—	—	—	—	35,859	—	35,859
Reverse repurchase agreements – non-trading	200,774	29,423	12,607	—	—	242,804	—	242,804
Financial investments	56,031	5,703	949	1	—	62,684	(18)	62,666
Prepayments, accrued income and other assets	55,424	8,069	9,138	181	126	72,938	(35)	72,903
– endorsements and acceptances	1,514	4,358	3,604	155	3	9,634	(11)	9,623
– accrued income and other	53,910	3,711	5,534	26	123	63,304	(24)	63,280
Debt instruments measured at fair value through other comprehensive income[18]	319,632	12,454	7,210	2,558	12	341,866	(84)	341,782
Out-of-scope for IFRS 9								
Trading assets	139,484	18,888	16,991	1,871	—	177,234	—	177,234
Other financial assets designated and otherwise mandatorily measured at fair value through profit or loss	6,079	2,163	6,683	9	—	14,934	—	14,934
Derivatives	169,121	31,225	6,813	625	41	207,825	—	207,825
Assets held for sale	—	—	—	—	—	—	—	—
Total gross carrying amount on balance sheet	1,694,864	361,024	295,622	22,267	13,500	2,387,277	(8,777)	2,378,500
Percentage of total credit quality	71.0%	15.1%	12.4%	0.9%	0.6%	100%		
Loan and other credit-related commitments	373,302	137,076	75,478	5,233	919	592,008	(325)	591,683
Financial guarantees	9,716	7,400	5,505	597	300	23,518	(93)	23,425

In-scope: Irrevocable loan commitments and financial guarantees	383,018	144,476	80,983	5,830	1,219	615,526	(418)	615,108
Loan and other credit-related commitments[19]	188,258	—	—	—	—	188,258	—	188,258
Performance and other guarantees	26,679	25,743	16,790	1,869	403	71,484	(99)	71,385
Out-of-scope: Revocable loan commitments and non-financial guarantees	214,937	25,743	16,790	1,869	403	259,742	(99)	259,643

For footnotes, see page 192.

Distribution of financial instruments to which the impairment requirements in IFRS 9 are applied, by credit quality and stage allocation
(Audited)

		Gross carrying/notional amount							
		Strong	Good	Satisfactory	Sub-standard	Credit impaired	Total	Allowance for ECL	Net
	Footnotes	$m	$m	$m	$m	$m	$m	$m	$m
Loans and advances to customers at amortised cost		485,451	244,199	230,357	16,993	13,321	990,321	(8,625)	981,696
– stage 1		483,907	233,843	191,851	5,587	—	915,188	(1,276)	913,912
– stage 2		1,544	10,356	38,506	11,380	—	61,786	(2,108)	59,678
– stage 3		—	—	—	—	13,023	13,023	(5,047)	7,976
– POCI		—	—	—	26	298	324	(194)	130
Loans and advances to banks at amortised cost		60,249	7,371	4,549	11	—	72,180	(13)	72,167
– stage 1		60,199	7,250	4,413	11	—	71,873	(11)	71,862
– stage 2		50	121	136	—	—	307	(2)	305
– stage 3		—	—	—	—	—	—	—	—
– POCI		—	—	—	—	—	—	—	—
Other financial assets measured at amortised cost		514,848	44,724	23,019	200	126	582,917	(55)	582,862
– stage 1		514,525	44,339	22,184	70	—	581,118	(27)	581,091
– stage 2		323	385	835	130	—	1,673	(6)	1,667
– stage 3		—	—	—	—	126	126	(22)	104
– POCI		—	—	—	—	—	—	—	—
Loan and other credit-related commitments		373,302	137,076	75,478	5,233	919	592,008	(325)	591,683
– stage 1		372,597	132,220	63,457	976	—	569,250	(143)	569,107
– stage 2		705	4,856	12,021	4,257	—	21,839	(139)	21,700
– stage 3		—	—	—	—	912	912	(43)	869
– POCI		—	—	—	—	7	7	—	7
Financial guarantees	8	9,716	7,400	5,505	597	300	23,518	(93)	23,425
– stage 1		9,582	6,879	4,264	159	—	20,884	(19)	20,865
– stage 2		134	521	1,241	438	—	2,334	(29)	2,305
– stage 3		—	—	—	—	297	297	(45)	252
– POCI		—	—	—	—	3	3	—	3
At 31 Dec 2018		1,443,566	440,770	338,908	23,034	14,666	2,260,944	(9,111)	2,251,833
Debt instruments at FVOCI	18								
– stage 1		319,623	12,358	6,856	2,218	—	341,055	(33)	341,022
– stage 2		9	96	354	340	—	799	(50)	749
– stage 3		—	—	—	—	8	8	(1)	7
– POCI		—	—	—	—	4	4	—	4
At 31 Dec 2018		319,632	12,454	7,210	2,558	12	341,866	(84)	341,782

For footnotes, see page 192.

Distribution of financial instruments to which the impairment requirements in IFRS 9 are applied, by credit quality and stage allocation (continued)

		Gross carrying/notional amount							
		Strong	Good	Satisfactory	Sub-standard	Credit impaired	Total	Allowance for ECL	Net
	Footnotes	$m	$m	$m	$m	$m	$m	$m	$m
Loans and advances to customers at amortised cost		479,067	227,146	220,089	17,922	14,856	959,080	(9,343)	949,737
– stage 1		475,881	211,084	180,002	4,599	—	871,566	(1,309)	870,257
– stage 2		3,186	16,062	40,087	13,323	—	72,658	(2,201)	70,457
– stage 3		—	—	—	—	13,882	13,882	(5,591)	8,291
– POCI		—	—	—	—	974	974	(242)	732
Loans and advances to banks at amortised cost		70,959	7,692	3,890	26	15	82,582	(23)	82,559
– stage 1		70,024	7,351	3,642	10	—	81,027	(17)	81,010
– stage 2		935	341	248	16	—	1,540	(4)	1,536
– stage 3		—	—	—	—	15	15	(2)	13
– POCI		—	—	—	—	—	—	—	—
Other financial assets measured at amortised cost		469,898	47,347	39,595	862	162	557,864	(114)	557,750
– stage 1		469,691	47,019	38,929	546	—	556,185	(28)	556,157
– stage 2		207	328	666	316	—	1,517	(4)	1,513
– stage 3		—	—	—	—	155	155	(82)	73
– POCI		—	—	—	—	7	7	—	7
Loan and other credit-related commitments	7	341,580	121,508	74,694	6,431	1,045	545,258	(376)	544,882
– stage 1		338,855	115,008	64,429	1,591	—	519,883	(126)	519,757
– stage 2		2,725	6,500	10,265	4,840	—	24,330	(183)	24,147
– stage 3		—	—	—	—	999	999	(67)	932
– POCI		—	—	—	—	46	46	—	46
Financial guarantees	8	10,339	7,086	7,408	807	209	25,849	(97)	25,752
– stage 1		9,608	6,590	5,500	323	—	22,021	(17)	22,004
– stage 2		731	496	1,908	484	—	3,619	(18)	3,601
– stage 3		—	—	—	—	187	187	(62)	125
– POCI		—	—	—	—	22	22	—	22
At 1 Jan 2018		1,371,843	410,779	345,676	26,048	16,287	2,170,633	(9,953)	2,160,680
Debt instruments at FVOCI	18								
– stage 1		297,753	6,678	12,941	2,450	—	319,822	(28)	319,794
– stage 2		208	108	147	1,826	—	2,289	(142)	2,147
– stage 3		—	—	—	—	584	584	(14)	570
– POCI		—	—	—	—	—	—	—	—
At 1 Jan 2018		297,961	6,786	13,088	4,276	584	322,695	(184)	322,511

For footnotes, see page 192.

Credit-impaired loans

(Audited)

HSBC determines that a financial instrument is credit impaired and in stage 3 by considering relevant objective evidence, primarily whether:

- contractual payments of either principal or interest are past due for more than 90 days;
- there are other indications that the borrower is unlikely to pay, such as when a concession has been granted to the borrower for economic or legal reasons relating to the borrower's financial condition; and
- the loan is otherwise considered to be in default. If such unlikeliness to pay is not identified at an earlier stage, it is deemed to occur when an exposure is 90 days past due, even

where regulatory rules permit default to be defined based on 180 days past due. Therefore, the definitions of credit impaired and default are aligned as far as possible so that stage 3 represents all loans that are considered defaulted or otherwise credit impaired.

Renegotiated loans and forbearance

The following table shows the gross carrying amounts of the Group's holdings of renegotiated loans and advances to customers by industry sector and by stages. Wholesale renegotiated loans are classified as stage 3 until there is sufficient evidence to demonstrate a significant reduction in the risk of non-payment of future cash flows, observed over a minimum one-year period, and there are no other indicators of impairment. Personal renegotiated loans are deemed to remain credit impaired until repayment or derecognition.

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Renegotiated loans and advances to customers at amortised cost by stage allocation

	Stage 1	Stage 2	Stage 3	POCI	Total
	$m	$m	$m	$m	$m
Gross carrying amount					
Personal	—	—	2,248	—	2,248
– first lien residential mortgages	—	—	1,641	—	1,641
– other personal lending	—	—	607	—	607
Wholesale	1,532	1,193	3,845	270	6,840
– corporate and commercial	1,517	1,193	3,789	270	6,769
– non-bank financial institutions	15	—	56	—	71
At 31 Dec 2018	1,532	1,193	6,093	270	9,088
Allowance for ECL					
Personal	—	—	(381)	—	(381)
– first lien residential mortgages	—	—	(186)	—	(186)
– other personal lending	—	—	(195)	—	(195)
Wholesale	(29)	(49)	(1,461)	(146)	(1,685)
– corporate and commercial	(29)	(49)	(1,438)	(146)	(1,662)
– non-bank financial institutions	—	—	(23)	—	(23)
At 31 Dec 2018	(29)	(49)	(1,842)	(146)	(2,066)

Renegotiated loans and advances to customers by geographical region

	Europe	Asia	MENA	North America	Latin America	Total	UK	Hong Kong
	$m	$m	$m	$m	$m	$m	$m	$m
At 31 Dec 2018	4,533	864	1,973	1,352	366	9,088	3,609	305

Wholesale lending

This section provides further detail on the regions, countries and products driving the movement in wholesale loans and advances to customers and banks, with the impact of foreign exchange separately identified. Product granularity is also provided by stage with geographical data presented for loans and advances to customers, banks, other credit commitments, financial guarantees and similar contracts. Additionally, this section provides a reconciliation of the opening 1 January 2018 to 31 December 2018 closing gross carrying/nominal amounts and the associated allowance for ECL.

Wholesale lending of $668bn increased by $1bn from $667bn since the Group transitioned to IFRS 9 on 1 January 2018. This increase included adverse foreign exchange movements of $23bn.

Excluding foreign exchange movements, the total wholesale lending growth was driven by a $32bn increase in corporate and commercial balances. The primary driver of this increase was Asia ($18.6bn), most notably in Hong Kong ($14bn), India ($1.5bn) and Australia ($1.1bn). Other notable increases were observed in the UK ($5.2bn), the UAE ($2.3bn) and Canada ($3.6bn). This growth was partly offset by a $7.7bn decrease in loans and advances to banks.

The allowance for ECL attributable to wholesale lending, excluding off-balance sheet commitments and financial guarantees, of $5.7bn, decreased from $6.3bn on 1 January 2018. This was primarily driven by releases related to the Group's oil and gas sector and by favourable foreign exchange movements.

Total wholesale lending for loans and advances to banks and customers by stage distribution

	Gross carrying amount					Allowance for ECL				
	Stage 1	Stage 2	Stage 3	POCI	Total	Stage 1	Stage 2	Stage 3	POCI	Total
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Corporate and commercial	481,262	44,779	8,212	324	534,577	(698)	(812)	(3,848)	(194)	(5,552)
– agriculture, forestry and fishing	5,361	1,102	236	2	6,701	(15)	(34)	(117)	(1)	(167)
– mining and quarrying	12,094	1,717	359	2	14,172	(29)	(51)	(94)	(2)	(176)
– manufacturing	92,606	11,404	1,569	125	105,704	(132)	(156)	(791)	(83)	(1,162)
– electricity, gas, steam and air-conditioning supply	14,522	1,422	40	60	16,044	(18)	(60)	(15)	(54)	(147)
– water supply, sewerage, waste management and remediation	3,335	164	24	—	3,523	(5)	(2)	(17)	—	(24)
– construction	12,919	1,116	1,168	51	15,254	(27)	(41)	(524)	(44)	(636)
– wholesale and retail trade, repair of motor vehicles and motorcycles	83,751	12,225	1,652	37	97,665	(115)	(128)	(968)	(7)	(1,218)
– transportation and storage	23,327	1,825	351	38	25,541	(37)	(46)	(82)	(1)	(166)
– accommodation and food	19,385	1,889	270	3	21,547	(43)	(41)	(83)	(1)	(168)
– publishing, audiovisual and broadcasting	19,758	1,224	189	1	21,172	(42)	(16)	(84)	—	(142)
– real estate	116,132	5,985	1,115	1	123,233	(97)	(80)	(594)	—	(771)
– professional, scientific and technical activities	21,282	941	350	—	22,573	(29)	(29)	(113)	—	(171)
– administrative and support services	22,820	1,843	437	3	25,103	(41)	(48)	(166)	(1)	(256)
– public administration and defence, compulsory social security	1,425	30	8	—	1,463	(1)	(3)	(5)	—	(9)
– education	1,713	102	14	—	1,829	(11)	(7)	(6)	—	(24)
– health and care	3,710	457	141	—	4,308	(10)	(16)	(33)	—	(59)
– arts, entertainment and recreation	4,326	676	39	—	5,041	(9)	(9)	(15)	—	(33)
– other services	13,259	411	242	1	13,913	(31)	(31)	(140)	—	(202)
– activities of households	770	59	1	—	830	—	—	—	—	—
– extra-territorial organisations and bodies activities	49	3	7	—	59	—	—	(1)	—	(1)
– government	7,905	168	—	—	8,073	(6)	(1)	—	—	(7)
– asset-backed securities	813	16	—	—	829	—	(13)	—	—	(13)
Non-bank financial institutions	59,245	1,932	230	—	61,407	(44)	(31)	(51)	—	(126)
Loans and advances to banks	71,873	307	—	—	72,180	(11)	(2)	—	—	(13)

	Stage 1	Stage 2	Stage 3	POCI	Total	Stage 1	Stage 2	Stage 3	POCI	Total
At 31 Dec 2018	612,380	47,018	8,442	324	668,164	(753)	(845)	(3,899)	(194)	(5,691)
By geography										
Europe	190,387	19,073	4,233	150	213,843	(366)	(529)	(1,598)	(102)	(2,595)
– of which: UK	133,004	15,370	2,928	8	151,310	(313)	(471)	(998)	—	(1,782)
Asia	314,591	17,729	1,736	92	334,148	(179)	(121)	(1,040)	(36)	(1,376)
– of which: Hong Kong	194,186	8,425	729	69	203,409	(99)	(54)	(413)	(35)	(601)
MENA	25,684	2,974	1,769	53	30,480	(73)	(77)	(974)	(46)	(1,170)
North America	62,631	6,928	314	—	69,873	(37)	(107)	(101)	—	(245)
Latin America	19,087	314	390	29	19,820	(98)	(11)	(186)	(10)	(305)
At 31 Dec 2018	612,380	47,018	8,442	324	668,164	(753)	(845)	(3,899)	(194)	(5,691)

Total wholesale lending for loans and other credit-related commitments and financial guarantees[8] by stage distribution

	Nominal amount					Allowance for ECL				
	Stage 1	Stage 2	Stage 3	POCI	Total	Stage 1	Stage 2	Stage 3	POCI	Total
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Corporate and commercial	266,489	21,087	791	10	288,377	(142)	(161)	(87)	—	(390)
Financial	117,542	1,323	6	—	118,871	(7)	(6)	(1)	—	(14)
At 31 Dec 2018	384,031	22,410	797	10	407,248	(149)	(167)	(88)	—	(404)
By geography										
Europe	203,092	9,726	614	10	213,442	(82)	(66)	(53)	—	(201)
– of which: UK	82,572	6,378	442	—	89,392	(69)	(57)	(39)	—	(165)
Asia	61,206	3,076	102	—	64,384	(39)	(16)	(28)	—	(83)
– of which: Hong Kong	27,022	1,115	89	—	28,226	(12)	(2)	(27)	—	(41)
MENA	5,304	732	18	—	6,054	(8)	(10)	(2)	—	(20)
North America	111,494	8,850	62	—	120,406	(17)	(75)	(4)	—	(96)
Latin America	2,935	26	1	—	2,962	(3)	—	(1)	—	(4)
At 31 Dec 2018	384,031	22,410	797	10	407,248	(149)	(167)	(88)	—	(404)

For footnotes, see page 192.

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Wholesale lending – reconciliation of changes in gross carrying/nominal amount and allowances for loans and advances to ban
customers including loan commitments and financial guarantees[8]

(Audited)

	Non-credit impaired				Credit impaired					
	Stage 1		Stage 2		Stage 3		POCI		Total	
	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allo for I
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
At 1 Jan 2018	897,529	(873)	84,354	(1,249)	10,209	(4,410)	1,042	(242)	993,134	(6,7
Transfers of financial instruments	(4,477)	(274)	1,535	386	2,942	(112)	—	—	—	—
Net remeasurement of ECL arising from transfer of stage	—	262	—	(231)	—	(92)	—	—	—	(61
Net new and further lending/repayments	74,107	(271)	(13,709)	342	(2,414)	406	(587)	42	57,397	519
Changes to risk parameters – credit quality	—	157	—	(301)	—	(1,041)	—	(51)	—	(1,2
Assets written off	—	—	—	—	(1,182)	1,172	(1)	1	(1,183)	1,17
Foreign exchange and other	(36,104)	97	(2,777)	41	(316)	90	(120)	56	(39,317)	284
At 31 Dec 2018	931,055	(902)	69,403	(1,012)	9,239	(3,987)	334	(194)	1,010,031	(6,0
ECL release/(charge) for the period		148		(190)		(727)		(9)		(778
Recoveries										118
Others										(69
Total change in ECL for the period										(729

For footnotes, see page 192.

As shown in the above table, the allowance for ECL for loans and advances to customers and banks and relevant loan commitments and financial guarantees decreased $679m during the period from $6,774m at 1 January 2018 to $6,095m at 31 December 2018.

This overall decrease was primarily driven by:

- $1,173m of assets written off;
- $519m relating to underlying net book volume movements, which included the ECL allowance associated with new originations, assets derecognised and net further lending; and
- foreign exchange and other movements of $284m.

These decreases were partially offset by increases of:

- $1,236m relating to underlying credit quality changes, including the credit quality impact of financial instruments transferring between stages; and

•$61m relating to the net remeasurement impact of stage transfers.

Wholesale lending – distribution of financial instruments by credit quality

	Gross carrying/nominal amount							
	Strong	Good	Satisfactory	Sub-standard	Credit impaired	Total	Allowance for ECL	Net
	$m	$m	$m	$m	$m	$m	$m	$m
By geography								
Europe	60,145	62,098	79,466	7,752	4,382	213,843	(2,595)	211,248
of which: UK	39,840	46,396	56,974	5,164	2,936	151,310	(1,782)	149,528
Asia	143,864	100,437	86,065	1,977	1,805	334,148	(1,376)	332,772
of which: Hong Kong	82,854	63,564	55,357	837	797	203,409	(601)	202,808
MENA	10,393	7,905	9,173	1,186	1,823	30,480	(1,170)	29,310
North America	10,952	31,278	24,708	2,621	314	69,873	(245)	69,628
Latin America	3,730	6,088	8,300	1,286	416	19,820	(305)	19,515
At 31 Dec 2018	229,084	207,806	207,712	14,822	8,740	668,164	(5,691)	662,473
Percentage of total credit quality	34.3%	31.1%	31.1%	2.2%	1.3%	100.0%		

Our risk rating system facilitates the internal ratings-based approach under the Basel framework adopted by the Group to support calculation of our minimum credit regulatory capital requirement. The customer risk rating ('CRR') 10-grade scale summarises a more granular underlying 23-grade scale of obligor probability of default ('PD'). All corporate customers are rated using the 10- or 23-grade scale, depending on the degree of sophistication of the Basel approach adopted for the exposure.

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. This mapping between internal and external ratings is indicative and may vary over time. The PD ranges above are the Basel one-year PD ranges. The credit quality classifications can be found on page 118.

Wholesale lending – credit risk profile by obligor grade for loans and advances at amortised cost

	Basel one-year PD range	Gross carrying amount					Allowance for ECL					ECL coverage	Mapped external rating
		Stage 1	Stage 2	Stage 3	POCI	Total	Stage 1	Stage 2	Stage 3	POCI	Total		
	%	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	%	
Corporate & commercial		481,262	44,779	8,212	324	534,577	(698)	(812)	(3,848)	(194)	(5,552)	1.0	
– CRR 1	0.000 to 0.053	45,401	67	—	—	45,468	(4)	(2)	—	—	(6)	—	AA- and above
– CRR 2	0.054 to 0.169	94,002	917	—	—	94,919	(17)	(4)	—	—	(21)	—	A+ to A-
– CRR 3	0.170 to 0.740	174,260	7,723	—	—	181,983	(162)	(85)	—	—	(247)	0.1	BBB+ to BBB-
– CRR 4	0.741 to 1.927	114,007	12,294	—	—	126,301	(231)	(114)	—	—	(345)	0.3	BB+ to BB-
– CRR 5	1.928 to 4.914	48,258	14,799	—	—	63,057	(209)	(252)	—	—	(461)	0.7	BB- to B
– CRR 6	4.915 to 8.860	3,787	4,419	—	22	8,228	(41)	(103)	—	—	(144)	1.8	B-
– CRR 7	8.861 to 15.000	1,235	2,875	—	4	4,114	(22)	(147)	—	—	(169)	4.1	CCC+
– CRR 8	15.001 to 99.999	312	1,685	—	—	1,997	(12)	(105)	—	—	(117)	5.9	CCC to C
– CRR 9/10	100.000	—	—	8,212	298	8,510	—	—	(3,848)	(194)	(4,042)	47.5	D
Non-bank financial institutions		59,245	1,932	230	—	61,407	(44)	(31)	(51)	—	(126)	0.2	
– CRR 1	0.000 to 0.053	13,256	—	—	—	13,256	(1)	—	—	—	(1)	—	AA- and above
– CRR 2	0.054 to 0.169	15,172	20	—	—	15,192	(2)	—	—	—	(2)	—	A+ to A-
– CRR 3	0.170 to 0.740	18,024	427	—	—	18,451	(13)	(1)	—	—	(14)	0.1	BBB+ to BBB-
– CRR 4	0.741 to 1.927	7,530	789	—	—	8,319	(10)	(2)	—	—	(12)	0.1	BB+ to BB-
– CRR 5	1.928 to 4.914	5,032	456	—	—	5,488	(14)	(5)	—	—	(19)	0.3	BB- to B
– CRR 6	4.915 to 8.860	61	133	—	—	194	—	(2)	—	—	(2)	1.0	B-
– CRR 7	8.861 to 15.000	169	23	—	—	192	(4)	(1)	—	—	(5)	2.6	CCC+
– CRR 8	15.001 to 99.999	1	84	—	—	85	—	(20)	—	—	(20)	23.5	CCC to C
– CRR 9/10	100.000	—	—	230	—	230	—	—	(51)	—	(51)	22.2	D
Banks		71,873	307	—	—	72,180	(11)	(2)	—	—	(13)	—	
– CRR 1	0.000 to 0.053	47,680	32	—	—	47,712	(3)	—	—	—	(3)	—	AA- and above
– CRR 2	0.054 to 0.169	12,519	18	—	—	12,537	(2)	—	—	—	(2)	—	A+ to A-

– CRR 3	0.170 to 0.740	7,250	121	—	—	7,371	(3)	(1)	—	—	(4)	0.1	BBB+ to BBB-
– CRR 4	0.741 to 1.927	4,032	118	—	—	4,150	(3)	(1)	—	—	(4)	0.1	BB+ to BB-
– CRR 5	1.928 to 4.914	381	18	—	—	399	—	—	—	—	—	—	BB- to B
– CRR 6	4.915 to 8.860	8	—	—	—	8	—	—	—	—	—	—	B-
– CRR 7	8.861 to 15.000	1	—	—	—	1	—	—	—	—	—	—	CCC+
– CRR 8	15.001 to 99.999	2	—	—	—	2	—	—	—	—	—	—	CCC to C
– CRR 9/10	100.000	—	—	—	—	—	—	—	—	—	—	—	D
At 31 Dec 2018		612,380	47,018	8,442	324	668,164	(753)	(845)	(3,899)	(194)	(5,691)	0.9	

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Wholesale lending – credit risk profile by obligor grade for loans and advances at amortised cost (continued)

	Basel one-year PD range	Gross carrying amount					Allowance for ECL					ECL coverage	Mapped external rating
		Stage 1	Stage 2	Stage 3	POCI	Total	Stage 1	Stage 2	Stage 3	POCI	Total		
	%	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m	%	
Corporate and commercial		456,837	53,262	9,064	974	520,137	(701)	(1,037)	(4,073)	(242)	(6,053)	1.2	
– CRR 1	0.000 to 0.053	43,578	440	—	—	44,018	(7)	(3)	—	—	(10)	—	AA- and above
– CRR 2	0.054 to 0.169	96,876	1,016	—	—	97,892	(25)	(1)	—	—	(26)	—	A+ to A-
– CRR 3	0.170 to 0.740	163,453	10,373	—	—	173,826	(173)	(86)	—	—	(259)	0.1	BBB+ to BBB-
– CRR 4	0.741 to 1.927	107,755	16,368	—	20	124,143	(256)	(232)	—	—	(488)	0.4	BB+ to BB-
– CRR 5	1.928 to 4.914	41,042	14,337	—	—	55,379	(190)	(192)	—	—	(382)	0.7	BB- to B
– CRR 6	4.915 to 8.860	2,641	6,363	—	27	9,031	(35)	(272)	—	(1)	(308)	3.4	B-
– CRR 7	8.861 to 15.000	881	2,528	—	—	3,409	(6)	(107)	—	—	(113)	3.3	CCC+
– CRR 8	15.001 to 99.999	611	1,837	—	—	2,448	(9)	(144)	—	—	(153)	6.3	CCC to C
– CRR 9/10	100.000	—	—	9,064	927	9,991	—	—	(4,073)	(241)	(4,314)	43.2	D
Non-bank financial institutions		60,424	3,042	408	—	63,874	(27)	(8)	(208)	—	(243)	0.4	
– CRR 1	0.000 to 0.053	14,210	1	—	—	14,211	(1)	—	—	—	(1)	—	AA- and above
– CRR 2	0.054 to 0.169	17,831	144	—	—	17,975	(2)	—	—	—	(2)	—	A+ to A-
– CRR 3	0.170 to 0.740	17,344	1,057	—	—	18,401	(7)	—	—	—	(7)	—	BBB+ to BBB-
– CRR 4	0.741 to 1.927	6,167	1,102	—	—	7,269	(4)	(2)	—	—	(6)	0.1	BB+ to BB-
– CRR 5	1.928 to 4.914	4,451	373	—	—	4,824	(4)	(3)	—	—	(7)	0.1	BB- to B
– CRR 6	4.915 to 8.860	417	345	—	—	762	(9)	(2)	—	—	(11)	1.4	B-
– CRR 7	8.861 to 15.000	4	8	—	—	12	—	—	—	—	—	—	CCC+
– CRR 8	15.001 to 99.999	—	12	—	—	12	—	(1)	—	—	(1)	8.3	CCC to C
– CRR 9/10	100.000	—	—	408	—	408	—	—	(208)	—	(208)	51.0	D
Banks		81,027	1,540	15	—	82,582	(17)	(4)	(2)	—	(23)	—	
– CRR 1		55,343	529	—	—	55,872	(4)	—	—	—	(4)	—	

	0.000 to 0.053												AA- and above
– CRR 2	0.054 to 0.169	14,681	406	—	—	15,087	(5)	(2)	—	—	(7)	—	A+ to A-
– CRR 3	0.170 to 0.740	7,351	341	—	—	7,692	(5)	(1)	—	—	(6)	0.1	BBB+ to BBB-
– CRR 4	0.741 to 1.927	3,072	47	—	—	3,119	(3)	—	—	—	(3)	0.1	BB+ to BB-
– CRR 5	1.928 to 4.914	570	201	—	—	771	—	(1)	—	—	(1)	0.1	BB- to B
– CRR 6	4.915 to 8.860	4	13	—	—	17	—	—	—	—	—	—	B-
– CRR 7	8.861 to 15.000	2	1	—	—	3	—	—	—	—	—	—	CCC+
– CRR 8	15.001 to 99.999	4	2	—	—	6	—	—	—	—	—	—	CCC to C
– CRR 9/10	100.000	—	—	15	—	15	—	—	(2)	—	(2)	13.3	D
At 1 Jan 2018		598,288	57,844	9,487	974	666,593	(745)	(1,049)	(4,283)	(242)	(6,319)	0.9	

Commercial real estate

Commercial real estate lending

	Europe	Asia	MENA	North America	Latin America	Total	UK	Hong Kong
	$m	$m	$m	$m	$m	$m	$m	$m
Gross loans and advances								
Stage 1	27,084	70,769	1,607	9,129	1,796	110,385	20,443	55,872
Stage 2	1,587	3,176	120	677	13	5,573	990	2,032
Stage 3	1,022	16	209	43	118	1,408	673	12
POCI	—	—	—	—	14	14	—	—
At 31 Dec 2018	29,693	73,961	1,936	9,849	1,941	117,380	22,106	57,916
– of which: renegotiated loans	944	1	186	1	—	1,132	816	—
Allowance for ECL	(364)	(59)	(171)	(9)	(52)	(655)	(282)	(33)

Commercial real estate lending includes the financing of corporate, institutional and high net worth customers who are investing primarily in income-producing assets and, to a lesser extent, in their construction and development. The portfolio is globally diversified with larger concentrations in Hong Kong, the UK and the US. The Group has aligned the definition of commercial real estate to reflect the internal risk management view, and the comparatives on pages 161 to 176 have been re-presented.

Our global exposure is centred largely on cities with economic, political or cultural significance. In more developed markets, our exposure mainly comprises the financing of investment assets, the redevelopment of existing stock and the augmentation of both commercial and residential markets to support economic and population growth. In less-developed commercial real estate markets, our exposures comprise lending for development assets on relatively short tenors with a particular focus on supporting

larger, better capitalised developers involved in residential construction or assets supporting economic expansion.

Commercial real estate lending grew $17.7bn, including foreign exchange movements, mainly in Hong Kong and, to a lesser extent, within the UK and Canada.

Refinance risk in commercial real estate

Commercial real estate lending tends to require the repayment of a significant proportion of the principal at maturity. Typically, a customer will arrange repayment through the acquisition of a new loan to settle the existing debt. Refinance risk is the risk that a customer, being unable to repay the debt on maturity, fails to refinance it at commercial rates. We monitor our commercial real estate portfolio closely, assessing indicators for signs of potential issues with refinancing.

Commercial real estate gross loans and advances maturity analysis

	Europe	Asia	MENA	North America	Latin America	Total	UK	Hong Kong
	$m	$m	$m	$m	$m	$m	$m	$m
On demand, overdrafts or revolving								
< 1 year	13,790	22,100	896	4,942	427	42,155	11,305	18,094
1–2 years	5,850	13,174	305	1,949	117	21,395	5,153	9,120
2–5 years	7,257	32,894	417	2,152	1,053	43,773	5,232	26,061
> 5 years	2,796	5,793	318	806	344	10,057	416	4,641
At 31 Dec 2018	29,693	73,961	1,936	9,849	1,941	117,380	22,106	57,916

Collateral and other credit enhancements

(Audited)

Although collateral can be an important mitigant of credit risk, it is the Group’s practice to lend on the basis of the customer’s ability to meet their obligations out of cash flow resources rather than placing primary reliance on collateral and other credit risk enhancements. Depending on the customer’s standing and the type of product, facilities may be provided without any collateral or other credit enhancements. For other lending, a charge over collateral is obtained and considered in determining the credit decision and pricing. In the event of default, the Group may utilise the collateral as a source of repayment.

Depending on its form, collateral can have a significant financial effect in mitigating our exposure to credit risk. Where there is sufficient collateral, an expected credit loss is not recognised. This is the case for reverse repurchase agreements and for certain loans and advances to customers where the loan to value (‘LTV’) is very low.

Mitigants may include a charge on borrowers’ specific assets, such as real estate or financial instruments. Other credit risk mitigants include short positions in securities and financial assets held as part of linked insurance/investment contracts where the risk is predominantly borne by the policyholder. Additionally, risk may be managed by employing other types of collateral and credit risk enhancements, such as second charges, other liens and unsupported guarantees. Guarantees are normally taken from corporates and export credit agencies (‘ECAs’). Corporates would normally provide guarantees as part of a parent/subsidiary relationship and span a number of credit grades. The ECAs will normally be investment grade.

Certain credit mitigants are used strategically in portfolio management activities. While single name concentrations arise in portfolios managed by Global Banking and Corporate Banking, it is only in Global Banking that their size requires the use of portfolio level credit mitigants. Across Global Banking, risk limits and utilisations, maturity profiles and risk quality are monitored and managed proactively. This process is key to the setting of risk appetite for these larger, more complex, geographically distributed customer groups. While the principal form of risk management continues to be at the point of exposure origination, through the lending decision-making process, Global Banking also utilises loan sales and credit default swap (‘CDS’) hedges to manage concentrations and reduce risk. These transactions are the responsibility of a dedicated Global Banking portfolio management team. Hedging activity is carried out within agreed credit parameters, and is subject to market risk limits and a robust governance structure. Where applicable, CDSs are 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.

CDS mitigants are held at portfolio level and are not included in the expected loss calculations. CDS mitigants are not reported in the following tables.

Collateral on loans and advances

Collateral held is analysed separately for commercial real estate and for other corporate, commercial and financial (non-bank) lending. The following tables include off-balance sheet loan commitments, primarily undrawn credit lines. The collateral measured in the following tables consists of fixed first charges on real estate, and charges over cash and marketable financial instruments. The values in the tables represent the expected market value on an open market basis. No adjustment has been made to the collateral for any expected costs of recovery. Marketable securities are measured at their fair value.

Other types of collateral such as unsupported guarantees and floating charges over the assets of a customer's business are not measured in the following tables. While such mitigants have value, often providing rights in insolvency, their assignable value is not sufficiently certain and they are therefore assigned no value for disclosure purposes.

The LTV ratios presented are calculated by directly associating loans and advances with the collateral that individually and uniquely supports each facility. When collateral assets are shared by multiple loans and advances, whether specifically or, more generally, by way of an all monies charge, the collateral value is pro-rated across the loans and advances protected by the collateral.

For credit-impaired loans, the collateral values cannot be directly compared with impairment allowances recognised. The LTV figures use open market values with no adjustments. Impairment allowances are calculated on a different basis, by considering other cash flows and adjusting collateral values for costs of realising collateral as explained further on page 267.

Commercial real estate loans and advances

The value of commercial real estate collateral is determined by using a combination of external and internal valuations and physical inspections. For CRR 1–7, local valuation policies determine the frequency of review on the basis of local market conditions because of the complexity of valuing collateral for commercial real estate. For CRR 8–10, almost all collateral would have been revalued within the last three years.

In Hong Kong, market practice is typically for lending to major property companies to be either secured by guarantees or unsecured. In Europe, facilities of a working capital nature are generally not secured by a first fixed charge, and are therefore disclosed as not collateralised.

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Wholesale lending – commercial real estate loans and advances including loan commitments by level of collateral for key countries/territories (by stage)
(Audited)

	Total		Of which: UK		Hong Kong		US	
	Gross carrying/nominal amount	ECL coverage	Gross carrying/nominal amount	ECL coverage	Gross carrying/nominal amount	ECL coverage	Gross carrying/nominal amount	ECL coverage
	$m	%	$m	%	$m	%	$m	%
Stage 1								
Not collateralised	62,123	0.1	10,557	0.2	31,224	—	—	—
Fully collateralised	87,530	0.1	17,766	0.1	39,174	—	4,862	—
LTV ratio:								
– less than 50%	46,983	0.1	8,006	0.1	25,870	—	3,463	—
– 51% to 75%	29,621	0.1	8,174	0.1	10,452	0.1	787	—
– 76% to 90%	5,167	0.1	1,038	—	1,168	0.1	519	—
– 91% to 100%	5,759	0.1	548	0.2	1,684	0.1	93	—
Partially collateralised (A):	6,129	0.1	515	0.2	2,130	—	—	—
– collateral value on A	3,735		285		1,401		—	
Total	155,782	0.1	28,838	0.1	72,528	—	4,862	—
Stage 2								
Not collateralised	2,249	1.1	446	2.5	1,140	0.2	—	—
Fully collateralised	4,739	1.3	782	4.5	1,576	0.4	439	0.5
LTV ratio:								
– less than 50%	2,039	1.1	394	3.6	795	0.4	303	0.7
– 51% to 75%	1,430	0.7	330	1.2	505	0.4	7	—
– 76% to 90%	363	5.0	34	44.1	29	—	129	—
– 91% to 100%	907	1.0	24	8.3	247	—	—	—
Partially collateralised (B):	261	1.5	24	12.5	15	—	—	—
– collateral value on B	156		20		5		—	—
Total	7,249	1.2	1,252	3.9	2,731	0.3	439	—
Stage 3								
Not collateralised	338	57.1	61	85.2	—	—	—	—

Fully collateralised	606	12.7	433	9.2	12	—	—	—
LTV ratio:								
– less than 50%	412	10.0	304	9.2	2	—	—	—
– 51% to 75%	88	27.3	58	6.9	10	—	—	—
– 76% to 90%	38	2.6	35	5.7	—	—	—	—
– 91% to 100%	68	16.2	36	16.7	—	—	—	—
Partially collateralised (C):	474	56.5	261	42.9	—	—	—	—
– collateral value on C	321		137		—		—	
Total	1,418	37.9	755	27.0	12	—	—	—
POCI								
Not collateralised	—	—	—	—	—	—	—	—
Fully collateralised	15	53.3	—	—	—	—	—	—
LTV ratio:								
– less than 50%	13	61.5	—	—	—	—	—	—
– 51% to 75%	2	—	—	—	—	—	—	—
– 76% to 90%	—	—	—	—	—	—	—	—
– 91% to 100%	—	—	—	—	—	—	—	—
Partially collateralised (C):	—	—	—	—	—	—	—	—
– collateral value on C	—		—		—		—	
Total	15	53.3	—	—	—	—	—	—
At 31 Dec 2018	164,464	0.5	30,845	0.9	75,271	—	5,301	0.1

Wholesale lending – commercial real estate loans and advances including loan commitments by level of collateral for key countries/territories
(Audited)

	Total Gross carrying/nominal amount	ECL coverage	Of which: UK Gross carrying/nominal amount	ECL coverage	Hong Kong Gross carrying/nominal amount	ECL coverage	US Gross carrying/nominal amount	ECL coverage
	$m	%	$m	%	$m	%	$m	%
Rated CRR/PD1 to 7								
Not collateralised	64,324	0.1	11,001	0.2	32,364	—	—	—
Fully collateralised	91,791	0.1	18,112	0.2	40,747	0.1	5,282	0.1
Partially collateralised (A):	6,377	0.2	532	0.6	2,145	—	—	—
– collateral value on A	3,879		299		1,406		—	
Total	162,492	0.1	29,645	0.3	75,256	—	5,282	0.1
Rated CRR/PD 8								
Not collateralised	49	2.0	2	—	—	—	—	—
Fully collateralised	477	1.5	435	1.1	3	33.3	19	—
LTV ratio:								
– less than 50%	178	1.7	149	1.3	3	33.3	19	—
– 51% to 75%	269	0.4	265	0.4	—	—	—	—
– 76% to 90%	13	7.7	7	14.3	—	—	—	—
– 91% to 100%	17	11.8	14	14.3	—	—	—	—
Partially collateralised (B):	13	7.7	8	12.5	—	—	—	—
– collateral value on B	12		6		—		—	
Total	539	1.7	445	1.3	3	33.3	19	—
Rated CRR/PD9 to 10								
Not collateralised	338	57.1	61	85.2	—	—	—	—
Fully collateralised	621	13.5	433	9.2	12	—	—	—
LTV ratio:								
	425	11.5	304	9.2	2	—	—	—

– less than 50%								
– 51% to 75%	90	26.7	58	6.9	10	—	—	—
– 76% to 90%	38	2.6	35	5.7	—	—	—	—
– 91% to 100%	68	16.2	36	16.7	—	—	—	—
Partially collateralised (C):	474	56.5	261	42.9	—	—	—	—
– collateral value on C	321		137		—		—	
Total	1,433	38.0	755	27.0	12	—	—	—
At 31 Dec 2018	164,464	0.5	30,845	0.9	75,271	—	5,301	0.1

Other corporate, commercial and financial (non-bank) loans and advances

Other corporate, commercial and financial (non-bank) loans are analysed separately in the following table, which focuses on the countries/territories containing the majority of our loans and advances balances. For financing activities in other corporate and commercial lending, collateral value is not strongly correlated to principal repayment performance.

Collateral values are generally refreshed when an obligor’s general credit performance deteriorates and we have to assess the likely performance of secondary sources of repayment should it prove necessary to rely on them. Accordingly, the following table reports values only for customers with CRR 8–10, recognising that these loans and advances generally have valuations that are comparatively recent.

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Wholesale lending – other corporate, commercial and financial (non-bank) loans and advances including loan commitments by level of collateral for key countries/territories (by stage)
(Audited)

	Total		Of which: UK		Hong Kong		US	
	Gross carrying/nominal amount	ECL coverage	Gross carrying/nominal amount	ECL coverage	Gross carrying/nominal amount	ECL coverage	Gross carrying/nominal amount	ECL coverage
	$m	%	$m	%	$m	%	$m	%
Stage 1								
Not collateralised	549,536	0.1	154,059	0.2	122,259	—	30,395	—
Fully collateralised	234,081	0.1	24,387	0.2	36,730	0.1	93,804	—
LTV ratio:								
– less than 50%	60,405	0.2	4,461	0.4	12,032	0.1	24,922	—
– 51% to 75%	82,590	—	9,510	0.2	14,264	0.1	7,267	—
– 76% to 90%	15,853	0.1	2,175	0.2	4,567	0.1	4,723	—
– 91% to 100%	75,233	—	8,241	—	5,867	0.1	56,892	—
Partially collateralised (A):	48,877	0.1	5,551	0.1	21,942	—	747	—
– collateral value on A	21,097		2,388		10,263		696	
Total	832,494	0.1	183,997	0.2	180,931	—	124,946	—
Stage 2								
Not collateralised	42,053	1.4	12,364	3.1	6,212	0.4	1,578	1.3
Fully collateralised	24,977	1.0	7,378	1.0	3,378	0.5	9,713	1.1
LTV ratio:								
– less than 50%	11,915	0.9	5,410	0.6	1,421	0.4	3,711	1.4
– 51% to 75%	5,344	1.3	1,042	3.5	1,290	0.6	810	1.4
– 76% to 90%	1,642	1.5	140	2.9	391	0.5	691	0.3
– 91% to 100%	6,076	0.8	786	0.1	276	0.4	4,501	0.9
Partially collateralised (B):	4,993	0.7	381	3.1	2,287	0.3	—	—
– collateral value on B	2,074		207		971		—	
Total	72,023	1.2	20,123	2.3	11,877	0.4	11,291	1.1
Stage 3								
	4,990	52.5	1,775	42.1	478	81.2	6	16.7

Not collateralised								
Fully collateralised	1,660	25.2	513	6.2	146	—	188	9.6
LTV ratio:								
– less than 50%	596	34.9	181	7.7	11	—	77	22.1
– 51% to 75%	487	10.5	172	1.7	62	—	103	1.0
– 76% to 90%	382	25.4	86	10.5	32	—	—	—
– 91% to 100%	195	31.8	74	8.1	41	—	8	—
Partially collateralised (C):	931	44.9	179	22.3	158	15.2	5	60.0
– collateral value on C	429		113		38		2	
Total	7,581	45.6	2,467	33.2	782	52.7	199	11.1
POCI								
Not collateralised	214	69.2	—	—	25	20.0	—	—
Fully collateralised	59	13.6	—	—	9	—	—	—
LTV ratio:								
– less than 50%	12	33.3	—	—	—	—	—	—
– 51% to 75%	16	25.0	—	—	—	—	—	—
– 76% to 90%	22	—	—	—	—	—	—	—
– 91% to 100%	9	—	—	—	9	—	—	—
Partially collateralised (C):	43	72.1	8	—	35	85.7	—	—
– collateral value on C	38		3		34		—	
Total	316	59.2	8	—	69	50.7	—	—
At 31 Dec 2018	912,414	0.6	206,595	0.8	193,659	0.3	136,436	0.1

Wholesale lending – other corporate, commercial and financial (non-bank) loans and advances including loan commitments by level
of collateral for key countries/territories
(Audited)

	Total		Of which: UK		Hong Kong		US	
	Gross carrying/nominal amount	ECL coverage	Gross carrying/nominal amount	ECL coverage	Gross carrying/nominal amount	ECL coverage	Gross carrying/nominal amount	ECL coverage
	$m	%	$m	%	$m	%	$m	%
Rated CRR/PD8								
Not collateralised	1,243	5.4	565	6.2	94	7.4	191	5.2
Fully collateralised	1,895	3.6	74	4.1	11	9.1	1,621	3.1
LTV ratio:								
– less than 50%	693	4.2	21	4.8	—	—	594	4.2
– 51% to 75%	292	2.7	49	2.0	11	9.1	169	2.4
– 76% to 90%	45	15.6	2	—	—	—	20	—
– 91% to 100%	865	2.8	2	—	—	—	838	—
Partially collateralised (A):	212	2.8	23	4.3	153	1.3	—	—
– collateral value on A	84		14		49		—	
Total	3,350	4.2	662	6	258	3.9	1,812	3.4
Rated CRR/PD9 to 10								
Not collateralised	5,199	53.2	1,775	42.1	503	78.1	6	16.7
Fully collateralised	1,719	24.8	513	6.2	155	—	188	9.6
LTV ratio:								
– less than 50%	608	36.0	181	7.7	11	—	77	22.1
– 51% to 75%	503	8.7	172	1.7	62	—	103	1.0
– 76% to 90%	405	24.2	86	10.5	32	—	—	—
– 91% to 100%	203	31.5	74	8.1	50	—	8	—
Partially collateralised (B):	974	46.1	187	21.9	193	28.0	5	60.0
– collateral value on B	466		116		73		2	
Total	7,892	46.1	2,475	33.2	851	52.6	199	11.1
At 31 Dec 2018	11,242	33.7	3,137	27.4	1,109	41.3	2,011	4.2

Other credit risk exposures

In addition to collateralised lending, other credit enhancements are employed and methods used to mitigate credit risk arising from financial assets. These are summarised below:

- Some securities issued by governments, banks and other financial institutions benefit from additional credit enhancements provided by government guarantees that cover the assets.
- Debt securities issued by banks and financial institutions include asset-backed securities ('ABSs') and similar instruments, which are supported by underlying pools of financial assets. Credit risk associated with ABSs is reduced through the purchase of credit default swap ('CDS') protection.

Disclosure of the Group's holdings of ABSs and associated CDS protection is provided on page 161.

- Trading loans and advances mainly pledged against cash collateral are posted to satisfy margin requirements. There is limited credit risk on cash collateral posted since in the event of default of the counterparty these would be set off against the related liability. Reverse repos and stock borrowing are by their nature collateralised.

Collateral accepted as security that the Group is permitted to sell or repledge under these arrangements is described on page 303 of the Financial Statements.

- The Group's maximum exposure to credit risk includes financial guarantees and similar contracts granted, as well as loan and other credit-related commitments. Depending on the terms of the arrangement, we may use additional credit mitigation if a guarantee is called upon or a loan commitment is drawn and subsequently defaults.

For further information on these arrangements, see Note 33 on the Financial Statements.

Derivatives

HSBC participates in transactions exposing us to counterparty credit risk. Counterparty credit risk is the risk of financial loss if the counterparty to a transaction defaults before satisfactorily settling it. It arises principally from over-the-counter ('OTC') derivatives and securities financing transactions and is calculated in both the trading and non-trading books. Transactions vary in value by reference to a market factor such as an interest rate, exchange rate or asset price.

The counterparty risk from derivative transactions is taken into account when reporting the fair value of derivative positions. The adjustment to the fair value is known as the credit value adjustment ('CVA').

For an analysis of CVAs, see Note 12 on the Financial Statements.

The following table reflects by risk type the fair values and gross notional contract amounts of derivatives cleared through an exchange, central counterparty and non-central counterparty.

Notional contract amounts and fair values of derivatives by product type

	2018			2017		
	Notional	Fair value		Notional	Fair value	
	amount	Assets	Liabilities	amount	Assets	Liabilities
	$m	$m	$m	$m	$m	$m
Foreign exchange	7,582,431	86,417	83,147	6,244,286	78,517	75,768
– exchange traded	10,139	173	38	13,520	37	105
– central counterparty cleared OTC	198,232	1,611	1,731	70,719	1,312	1,394
– non-central counterparty cleared OTC	7,374,060	84,633	81,378	6,160,047	77,168	74,269
Interest rate	24,753,187	156,373	156,518	19,929,866	236,795	233,031
– exchange traded	971,529	384	668	1,536,818	240	189
– central counterparty cleared OTC	17,611,891	49,417	49,974	11,730,237	114,003	115,020
– non-central counterparty cleared OTC	6,169,767	106,572	105,876	6,662,811	122,552	117,822
Equity	1,256,550	10,198	10,750	590,156	9,353	11,845
– exchange traded	1,020,423	1,766	3,517	313,483	1,104	2,463
– non-central counterparty cleared OTC	236,127	8,432	7,233	276,673	8,249	9,382
Credit	346,596	3,414	3,776	391,798	4,692	5,369
– central counterparty cleared OTC	128,912	1,396	1,140	107,370	2,715	2,980
– non-central counterparty cleared OTC	217,684	2,018	2,636	284,428	1,977	2,389
Commodity and other	74,159	1,134	1,355	59,716	886	1,233
– exchange traded	28,489	23	322	5,389	56	47
– non-central counterparty cleared OTC	45,670	1,111	1,033	54,327	830	1,186
Total OTC derivatives	31,982,343	255,190	251,001	25,346,612	328,806	324,442
– total OTC derivatives cleared by central counterparties	17,939,035	52,424	52,845	11,908,326	118,030	119,394
– total OTC derivatives not cleared by central counterparties	14,043,308	202,766	198,156	13,438,286	210,776	205,048
Total exchange traded derivatives	2,030,580	2,346	4,545	1,869,210	1,437	2,804
Gross	34,012,923	257,536	255,546	27,215,822	330,243	327,246
Offset		(49,711)	(49,711)		(110,425)	(110,425)
At 31 Dec		207,825	205,835		219,818	216,821

The purposes for which HSBC uses derivatives are described in Note 15 on the Financial Statements.

The International Swaps and Derivatives Association ('ISDA') master agreement is our preferred agreement for documenting derivatives activity. It is common, and our preferred practice, for the parties involved in a derivative transaction to execute a credit support annex ('CSA') in conjunction with the ISDA master agreement. Under a CSA, collateral is passed between the parties to mitigate the counterparty risk inherent in outstanding positions. The majority of our CSAs are with financial institutional clients.

We manage the counterparty exposure on our OTC derivative contracts by using collateral agreements with counterparties and netting agreements. Currently, we do not actively manage our general OTC derivative counterparty exposure in the credit markets, although we may manage individual exposures in certain circumstances.

We place strict policy restrictions on collateral types and as a consequence the types of collateral received and pledged are, by value, highly liquid and of a strong quality, being predominantly cash.

Where a collateral type is required to be approved outside the collateral policy, approval is required from a committee of senior representatives from Markets, Legal and Risk.

See page 323 and Note 30 on the Financial Statements for details regarding legally enforceable right of offset in the event of counterparty default and collateral received in respect of derivatives.

Personal lending

This section presents further disclosures related to personal lending. It provides details of the regions, countries and products which are driving the change observed in personal loans and advances to customers, with the impact of foreign exchange separately identified. Additionally, Hong Kong and UK mortgage book LTV data is provided.
This section also provides a reconciliation of the opening 1 January 2018 to 31 December 2018 closing gross carrying/nominal amounts and associated allowance for ECL.
Further product granularity is also provided by stage, with geographical data presented for loans and advances to customers, loan and other credit-related commitments and financial guarantees.

Total personal lending of $394bn increased by $19bn from $375bn since the Group transitioned to IFRS 9 on 1 January 2018. This increase included adverse foreign exchange movements of $14bn. Excluding foreign exchange movements, there was growth of $33bn primarily driven by Europe ($17bn) and Asia ($15bn).
The allowance for ECL attributable to personal lending, excluding off-balance sheet commitments and guarantees, remained flat from 1 January 2018 at $3bn. This was primarily driven by favourable foreign exchange movements and the stable credit environment.
Excluding foreign exchange movements, the total personal lending increase is primarily driven by mortgage balances, which grew by $26bn. Mortgages in Asia grew by $13bn, notably in Hong Kong ($9bn) and to a lesser extent in Australia ($2.6bn), as a result of continued business growth initiatives and property market growth. In Europe, mortgages grew by $12bn, notably in the UK ($11bn), driven by stronger acquisition performance, including the expanded use of broker relationships.
The quality of both our Hong Kong and UK mortgage books remained high, with negligible defaults and impairment allowances. The average LTV ratio on new mortgage lending in Hong Kong was 48%, compared with an estimated 42% for the overall mortgage portfolio. The average LTV ratio on new lending in the UK was 65%, compared with an estimated 49% for the overall mortgage portfolio. In 2018, we aligned our global approach in relation to LTV reporting. This resulted in Hong Kong and the UK changing from a simple average to a balance weighted average. They will no longer be comparable to previously reported amounts.
Excluding foreign exchange movements, other personal lending balances increased by $8bn since 1 January 2018. Loans and overdrafts grew by $5.3bn in the UK and France. Credit cards increased by $1bn, mainly in the US, Hong Kong and to a lesser extent China and the UK.

Total personal lending for loans and advances to customers at amortised cost by stage distribution

	Gross carrying amount				Allowance for ECL			
	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3	Total
	$m	$m	$m	$m	$m	$m	$m	$m
By portfolio								
First lien residential mortgages	284,103	6,286	2,944	293,333	(41)	(62)	(432)	(535)
– of which: interest only (including offset)	31,874	1,324	338	33,536	(3)	(13)	(92)	(108)
– affordability (including US adjustable rate mortgages)	16,110	1,065	507	17,682	(3)	(4)	(5)	(12)
Other personal lending	90,578	8,789	1,637	101,004	(493)	(1,203)	(716)	(2,412)
– other	67,196	4,400	1,121	72,717	(214)	(435)	(465)	(1,114)
– credit cards	20,932	4,259	453	25,644	(272)	(756)	(233)	(1,261)
– second lien residential mortgages	1,022	100	57	1,179	(2)	(9)	(13)	(24)
– motor vehicle finance	1,428	30	6	1,464	(5)	(3)	(5)	(13)
At 31 Dec 2018	374,681	15,075	4,581	394,337	(534)	(1,265)	(1,148)	(2,947)
By geography								
Europe	169,782	5,731	2,051	177,564	(105)	(453)	(450)	(1,008)
– of which: UK	139,237	4,308	1,315	144,860	(93)	(421)	(219)	(733)
Asia	155,661	5,413	693	161,767	(207)	(353)	(180)	(740)
– of which: Hong Kong	104,909	2,715	169	107,793	(71)	(220)	(39)	(330)
MENA	5,565	350	411	6,326	(61)	(70)	(263)	(394)
North America	38,283	2,552	1,186	42,021	(29)	(90)	(142)	(261)
Latin America	5,390	1,029	240	6,659	(132)	(299)	(113)	(544)
At 31 Dec 2018	374,681	15,075	4,581	394,337	(534)	(1,265)	(1,148)	(2,947)

Exposure to UK interest-only mortgage loans

The following information is presented for the Group's HSBC branded UK interest-only mortgage loans with balances of $14.4bn. This excludes offset mortgages in First Direct, Private Bank mortgages, endowment mortgages and other products.

At the end of 2018, the average LTV ratio in the portfolio was 46% and 96% of mortgages had an LTV ratio of 75% or less. Of the

interest-only mortgages that expired in 2016, 84% were repaid within 12 months of expiry with a total of 92% being repaid within 24 months of expiry. For interest-only mortgages expiring during 2017, 86% were fully repaid within 12 months of expiry.

The profile of maturing UK interest-only loans is as follows:

UK interest-only mortgage loans

	$m
Expired interest-only mortgage loans	175
Interest-only mortgage loans by maturity	
– 2019	361
– 2020	400
– 2021	510
– 2022	483
– 2023-2027	2,880
– Post 2027	9,561
At 31 Dec 2018	14,370

Total personal lending for loans and other credit-related commitments and financial guarantees[8] by stage distribution

	Nominal amount				Allowance for ECL			
	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3	Total
	$m	$m	$m	$m	$m	$m	$m	$m
Europe	52,719	291	290	53,300	(7)	—	—	(7)
– of which: UK	50,195	224	285	50,704	(5)	—	—	(5)
Asia	131,333	1,034	1	132,368	—	—	—	—
– of which: Hong Kong	102,156	366	—	102,522	—	—	—	—
MENA	3,264	67	23	3,354	—	—	—	—
North America	14,469	312	94	14,875	(1)	(1)	—	(2)
Latin America	4,318	59	4	4,381	(5)	—	—	(5)
At 31 Dec 2018	206,103	1,763	412	208,278	(13)	(1)	—	(14)

For footnotes, see page 192.

Personal lending – reconciliation of changes in gross carrying/nominal amount and allowances for loans and advances to customers
including loan commitments and financial guarantees[8]

(Audited)

	Non-credit impaired				Credit impaired			
	Stage 1		Stage 2		Stage 3		Total	
	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL	Gross carrying/ nominal amount	Allowance for ECL
	$m	$m	$m	$m	$m	$m	$m	$m
At 1 Jan 2018	549,328	(596)	17,678	(1,157)	4,874	(1,312)	571,880	(3,065)
Transfers of financial instruments	(4,270)	(411)	2,047	799	2,223	(388)	—	—
Net remeasurement of ECL arising from transfer of stage	—	358	—	(374)	—	(11)	—	(27)
Net new and further lending/repayments	52,761	(241)	(2,453)	222	(488)	327	49,820	308
Changes to risk parameters – credit quality	—	266	—	(786)	—	(1,197)	—	(1,717)
Assets written off	—	—	—	—	(1,386)	1,380	(1,386)	1,380
Foreign exchange and other	(17,035)	77	(434)	30	(230)	53	(17,699)	160
At 31 Dec 2018	580,784	(547)	16,838	(1,266)	4,993	(1,148)	602,615	(2,961)
ECL release/(charge) for the period		383		(938)		(881)		(1,436)
Recoveries								290
Others								(18)
Total change in ECL for the period								(1,164)

For footnotes, see page 192.

As shown in the above table, the allowance for ECL for loans and advances to customers and banks and relevant loan commitments and financial guarantees decreased $104m during the period from $3,065m at 1 January 2018 to $2,961m at 31 December 2018.

This overall decrease was primarily driven by:

- $1,380m of assets written off;
- $308m relating to underlying net book volume movements, which included the ECL allowance associated with new originations, assets derecognised and net further lending; and
- foreign exchange and other movements of $160m.

These decreases were partially offset by increases of:

- $1,717m relating to underlying credit quality changes, including the credit quality of financial instruments transferring between stages; and

• $27m relating to the net new measurement impact of stage transfers.

Personal lending – credit risk profile by internal PD band for loans and advances to customers at amortised cost

	PD range[20]	Gross carrying amount				Allowance for ECL				ECL coverage
		Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3	Total	
	%	$m	$m	$m	$m	$m	$m	$m	$m	%
First lien residential mortgages		284,103	6,286	2,944	293,333	(41)	(62)	(432)	(535)	0.2
– Band 1	0.000 to 0.250	247,046	308	—	247,354	(15)	—	—	(15)	—
– Band 2	0.251 to 0.500	15,458	78	—	15,536	(4)	—	—	(4)	—
– Band 3	0.501 to 1.500	17,987	1,881	—	19,868	(14)	(2)	—	(16)	0.1
– Band 4	1.501 to 5.000	3,295	1,575	—	4,870	(7)	(6)	—	(13)	0.3
– Band 5	5.001 to 20.000	301	1,445	—	1,746	(1)	(19)	—	(20)	1.1
– Band 6	20.001 to 99.999	16	999	—	1,015	—	(35)	—	(35)	3.4
– Band 7	100.000	—	—	2,944	2,944	—	—	(432)	(432)	14.7
Other personal lending		90,578	8,789	1,637	101,004	(493)	(1,203)	(716)	(2,412)	2.4
– Band 1	0.000 to 0.250	41,048	38	—	41,086	(95)	—	—	(95)	0.2
– Band 2	0.251 to 0.500	12,524	116	—	12,640	(34)	—	—	(34)	0.3
– Band 3	0.501 to 1.500	23,573	323	—	23,896	(122)	(26)	—	(148)	0.6
– Band 4	1.501 to 5.000	11,270	3,089	—	14,359	(131)	(285)	—	(416)	2.9
– Band 5	5.001 to 20.000	2,158	4,061	—	6,219	(111)	(465)	—	(576)	9.3
– Band 6	20.001 to 99.999	5	1,162	—	1,167	—	(427)	—	(427)	36.6
– Band 7	100.000	—	—	1,637	1,637	—	—	(716)	(716)	43.7
At 31 Dec 2018		374,681	15,075	4,581	394,337	(534)	(1,265)	(1,148)	(2,947)	0.7

For footnotes, see page 192.

Personal lending – credit risk profile by internal PD band for loans and advances to customers at amortised cost (continued)

	PD range[20]	Gross carrying amount Stage 1	Stage 2	Stage 3	Total	Allowance for ECL Stage 1	Stage 2	Stage 3	Total	ECL coverage
	%	$m	$m	$m	$m	$m	$m	$m	$m	%
First lien residential mortgages		266,879	8,299	2,921	278,099	(60)	(67)	(533)	(660)	0.2
– Band 1	0.000 to 0.250	235,249	339	—	235,588	(43)	(1)	—	(44)	—
– Band 2	0.251 to 0.500	17,350	535	—	17,885	(3)	(2)	—	(5)	—
– Band 3	0.501 to 1.500	9,316	3,975	—	13,291	(7)	(6)	—	(13)	0.1
– Band 4	1.501 to 5.000	3,524	1,236	—	4,760	(6)	(8)	—	(14)	0.3
– Band 5	5.001 to 20.000	1,414	1,177	—	2,591	(1)	(21)	—	(22)	0.8
– Band 6	20.001 to 99.999	26	1,037	—	1,063	—	(29)	—	(29)	2.7
– Band 7	100.000	—	—	2,921	2,921	—	—	(533)	(533)	18.2
Other personal lending		87,426	8,055	1,489	96,970	(521)	(1,089)	(777)	(2,387)	2.5
– Band 1	0.000 to 0.250	41,026	369	—	41,395	(73)	—	—	(73)	0.2
– Band 2	0.251 to 0.500	9,761	342	—	10,103	(48)	—	—	(48)	0.5
– Band 3	0.501 to 1.500	20,971	657	—	21,628	(117)	(1)	—	(118)	0.5
– Band 4	1.501 to 5.000	12,930	2,091	—	15,021	(172)	(157)	—	(329)	2.2
– Band 5	5.001 to 20.000	2,719	3,403	—	6,122	(111)	(469)	—	(580)	9.5
– Band 6	20.001 to 99.999	19	1,193	—	1,212	—	(462)	—	(462)	38.1
– Band 7	100.000	—	—	1,489	1,489	—	—	(777)	(777)	52.2
At 1 Jan 2018		354,305	16,354	4,410	375,069	(581)	(1,156)	(1,310)	(3,047)	0.8

For footnotes, see page 192.

Collateral on loans and advances

(Audited)

The following table provides a quantification of the value of fixed charges we hold over specific assets where we have a history of enforcing, and are able to enforce, collateral in satisfying a debt in the event of the borrower failing to meet its contractual obligations, and where the collateral is cash or can be realised by

sale in an established market. The collateral valuation excludes any adjustments for obtaining and selling the collateral and, in particular, loans shown as not collateralised or partially collateralised may also benefit from other forms of credit mitigants.

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Personal lending – residential mortgage loans including loan commitments by level of collateral for key countries/territories by stage
(Audited)

	Total		Of which: UK		Hong Kong		US	
	Gross carrying/nominal amount	ECL coverage	Gross carrying/nominal amount	ECL coverage	Gross carrying/nominal amount	ECL coverage	Gross carrying/nominal amount	ECL coverage
	$m	%	$m	%	$m	%	$m	%
Stage 1								
Fully collateralised	299,072	—	130,646	—	79,180	—	15,321	—
LTV ratio:								
– less than 50%	160,563	—	66,834	—	54,262	—	8,060	—
– 51% to 60%	51,415	—	20,937	—	11,591	—	3,382	—
– 61% to 70%	40,273	—	17,480	—	5,979	—	2,473	—
– 71% to 80%	28,383	—	15,086	—	2,986	—	1,113	—
– 81% to 90%	14,191	—	8,824	—	2,637	—	158	—
– 91% to 100%	4,247	0.1	1,485	—	1,725	—	135	—
Partially collateralised (A):	1,420	0.1	581	—	300	—	10	—
LTV ratio:								
– 101% to 110%	808	0.1	334	—	256	—	5	—
– 111% to 120%	184	0.2	46	—	41	—	2	—
– greater than 120%	428	0.2	201	—	3	—	3	—
Collateral value on A	1,266		493		284		8	
Total	300,492	—	131,227	—	79,480	—	15,331	—
Stage 2								
Fully collateralised	6,170	1.0	1,234	1.3	867	—	1,435	0.3
LTV ratio:								
– less than 50%	3,334	0.7	917	0.9	699	—	814	0.1
– 51% to 60%	932	1.1	113	3.0	74	—	268	0.4
– 61% to 70%	853	1.0	105	2.2	43	—	231	0.3
– 71% to 80%	586	1.3	39	3.4	28	—	79	0.9
– 81% to 90%	331	1.7	27	3.1	20	—	32	1.6
– 91% to 100%	134	2.4	33	1.5	3	—	11	0.8
Partially collateralised	123	2.9	46	0.2	1	—	5	0.3

(B):								
LTV ratio:								
– 101% to 110%	76	1.5	44	0.1	1	—	3	0.5
– 111% to 120%	17	4.5	1	4.3	—	—	1	—
– greater than 120%	30	5.3	1	0.6	—	—	1	—
Collateral value on B	118		44		1		4	
Total	6,293	1.0	1,280	1.3	868	—	1,440	0.3
Stage 3								
Fully collateralised	2,557	12.3	1,023	10.9	25	0.9	671	1.0
LTV ratio:								
– less than 50%	1,255	13.6	638	7.8	24	0.9	219	0.9
– 51% to 60%	359	8.3	151	11.3	1	—	107	0.9
– 61% to 70%	336	12.0	119	18.4	—	—	105	1.0
– 71% to 80%	280	9.9	70	14.8	—	—	114	0.9
– 81% to 90%	190	9.4	33	19.4	—	—	81	1.2
– 91% to 100%	137	19.8	12	45.9	—	—	45	2.2
Partially collateralised (C):	391	33.6	23	15.8	—	—	24	0.4
LTV ratio:								
– 101% to 110%	73	17.4	10	14.3	—	—	14	0.6
– 111% to 120%	68	24.2	5	26.4	—	—	6	0.3
– greater than 120%	250	40.8	8	11.1	—	—	4	0.2
Collateral value on C	372		20		—		22	
Total	2,948	15.1	1,046	11.0	25	0.9	695	1.0
At 31 Dec 2018	309,733	0.2	133,553	0.1	80,373	—	17,466	0.1

Supplementary information

Wholesale lending – loans and advances to customers at amortised cost by country/territory

	Gross carrying amount				Allowance for ECL			
	Corporate and commercial	Of which: real estate[21]	Non-bank financial institutions	Total	Corporate and commercial	Of which: real estate[21]	Non-bank financial institutions	Total
	$m	$m	$m	$m	$m	$m	$m	$m
Europe	176,577	25,715	22,529	199,106	(2,507)	(481)	(82)	(2,589)
– UK	127,093	18,384	17,703	144,796	(1,701)	(410)	(78)	(1,779)
– France	28,204	5,890	2,488	30,692	(405)	(36)	(1)	(406)
– Germany	10,454	246	1,371	11,825	(35)	—	—	(35)
– Switzerland	1,674	509	348	2,022	(1)	—	—	(1)
– other	9,152	686	619	9,771	(365)	(35)	(3)	(368)
Asia	263,608	79,941	27,284	290,892	(1,343)	(67)	(31)	(1,374)
– Hong Kong	168,621	63,287	15,062	183,683	(579)	(40)	(20)	(599)
– Australia	11,335	2,323	2,115	13,450	(68)	(3)	—	(68)
– India	6,396	1,408	2,846	9,242	(77)	(4)	(1)	(78)
– Indonesia	4,286	35	354	4,640	(269)	—	(2)	(271)
– mainland China	24,225	4,423	5,146	29,371	(172)	(15)	(6)	(178)
– Malaysia	7,924	1,649	274	8,198	(77)	(2)	—	(77)
– Singapore	17,564	4,463	431	17,995	(31)	(2)	—	(31)
– Taiwan	6,008	23	156	6,164	(2)	—	—	(2)
– other	17,249	2,330	900	18,149	(68)	(1)	(2)	(70)
Middle East and North Africa (excluding Saudi Arabia)	23,738	2,025	322	24,060	(1,167)	(178)	(1)	(1,168)
– Egypt	1,746	41	—	1,746	(125)	—	—	(125)
– UAE	14,445	1,849	206	14,651	(721)	(176)	(1)	(722)
– other	7,547	135	116	7,663	(321)	(2)	—	(321)
North America	56,983	14,169	9,647	66,630	(236)	(37)	(8)	(244)
– US	35,714	8,422	8,777	44,491	(103)	(8)	(2)	(105)
– Canada	20,493	5,354	770	21,263	(105)	(5)	(2)	(107)
– other	776	393	100	876	(28)	(24)	(4)	(32)
Latin America	13,671	1,383	1,625	15,296	(299)	(8)	(4)	(303)
– Mexico	11,302	1,354	1,567	12,869	(225)	(8)	(4)	(229)
– other	2,369	29	58	2,427	(74)	—	—	(74)
At 31 Dec 2018	534,577	123,233	61,407	595,984	(5,552)	(771)	(126)	(5,678)

For footnotes, see page 192.

Personal lending – loans and advances to customers at amortised costs by country/territory

	Gross carrying amount				Allowance for ECL			
	First lien residential mortgages	Other personal	Of which: credit cards	Total	First lien residential mortgages	Other personal	Of which: credit cards	Total
	$m	$m	$m	$m	$m	$m	$m	$m
Europe	131,557	46,007	9,790	177,564	(258)	(750)	(313)	(1,008)
– UK	124,357	20,503	9,356	144,860	(141)	(592)	(309)	(733)
– France	3,454	19,616	376	23,070	(43)	(114)	(4)	(157)
– Germany	—	288	—	288	—	—	—	—
– Switzerland	1,120	5,213	—	6,333	(2)	(19)	—	(21)
– other	2,626	387	58	3,013	(72)	(25)	—	(97)
Asia	119,718	42,049	11,900	161,767	(44)	(696)	(465)	(740)
– Hong Kong	79,059	28,734	8,124	107,793	(1)	(329)	(228)	(330)
– Australia	13,858	764	626	14,622	(5)	(55)	(54)	(60)
– India	1,030	608	228	1,638	(5)	(20)	(14)	(25)
– Indonesia	59	279	206	338	—	(34)	(27)	(34)
– mainland China	8,706	1,139	502	9,845	(2)	(57)	(50)	(59)
– Malaysia	2,890	3,209	888	6,099	(24)	(71)	(33)	(95)
– Singapore	5,991	5,353	434	11,344	—	(70)	(21)	(70)
– Taiwan	5,123	860	289	5,983	(1)	(20)	(5)	(21)
– other	3,002	1,103	603	4,105	(6)	(40)	(33)	(46)
Middle East and North Africa (excluding Saudi Arabia)	2,393	3,933	1,181	6,326	(88)	(306)	(148)	(394)
– Egypt	—	309	71	309	—	(5)	(1)	(5)
– UAE	1,974	1,477	538	3,451	(82)	(126)	(54)	(208)
– other	419	2,147	572	2,566	(6)	(175)	(93)	(181)
North America	36,964	5,057	1,341	42,021	(122)	(139)	(81)	(261)
– US	17,464	2,280	1,028	19,744	(13)	(106)	(75)	(119)
– Canada	18,267	2,562	265	20,829	(16)	(23)	(5)	(39)
– other	1,233	215	48	1,448	(93)	(10)	(1)	(103)
Latin America	2,701	3,958	1,432	6,659	(23)	(521)	(254)	(544)
– Mexico	2,550	3,192	1,121	5,742	(22)	(465)	(227)	(487)
– other	151	766	311	917	(1)	(56)	(27)	(57)
At 31 Dec 2018	293,333	101,004	25,644	394,337	(535)	(2,412)	(1,261)	(2,947)

Summary of financial instruments to which the impairment requirements in IFRS 9 are applied – by global business

	Gross carrying/nominal amount					Allowance for ECL				
	Stage 1	Stage 2	Stage 3	POCI	Total	Stage 1	Stage 2	Stage 3	POCI	Total
	$m	$m	$m	$m	$m	$m	$m	$m	$m	$m
Loans and advances to customers at amortised cost	915,188	61,786	13,023	324	990,321	(1,276)	(2,108)	(5,047)	(194)	(8,625)
– RBWM	340,606	19,228	4,960	—	364,794	(544)	(1,250)	(1,129)	—	(2,923)
– CMB	304,103	27,529	5,732	298	337,662	(538)	(659)	(3,110)	(194)	(4,501)
– GB&M	230,250	14,112	1,683	25	246,070	(188)	(182)	(718)	—	(1,088)
– GPB	37,970	724	618	1	39,313	(5)	(3)	(89)	—	(97)
– Corporate Centre	2,259	193	30	—	2,482	(1)	(14)	(1)	—	(16)
Loans and advances to banks at amortised cost	71,873	307	—	—	72,180	(11)	(2)	—	—	(13)
– RBWM	5,801	5	—	—	5,806	(1)	—	—	—	(1)
– CMB	1,912	15	—	—	1,927	(1)	—	—	—	(1)
– GB&M	25,409	212	—	—	25,621	(7)	(2)	—	—	(9)
– GPB	46	—	—	—	46	—	—	—	—	—
– Corporate Centre	38,705	75	—	—	38,780	(2)	—	—	—	(2)
Other financial assets measured at amortised cost	581,118	1,673	126	—	582,917	(27)	(6)	(22)	—	(55)
– RBWM	49,142	184	32	—	49,358	(14)	(2)	(1)	—	(17)
– CMB	15,082	774	60	—	15,916	(7)	(3)	(21)	—	(31)
– GB&M	272,028	703	20	—	272,751	(1)	(1)	—	—	(2)
– GPB	924	1	2	—	927	—	—	—	—	—
– Corporate Centre	243,942	11	12	—	243,965	(5)	—	—	—	(5)
Total gross carrying amount on balance sheet at 31 Dec 2018	1,568,179	63,766	13,149	324	1,645,418	(1,314)	(2,116)	(5,069)	(194)	(8,693)
Loans and other credit-related commitments	569,250	21,839	912	7	592,008	(143)	(139)	(43)	—	(325)
– RBWM	164,589	1,792	399	—	166,780	(6)	(1)	(1)	—	(8)
– CMB	113,753	9,345	308	5	123,411	(72)	(52)	(40)	—	(164)
– GB&M	252,910	9,658	194	2	262,764	(58)	(86)	(2)	—	(146)
– GPB	33,885	1,044	11	—	34,940	—	—	—	—	—
– Corporate Centre	4,113	—	—	—	4,113	(7)	—	—	—	(7)
Financial guarantees[8]	20,884	2,334	297	3	23,518	(19)	(29)	(45)	—	(93)
– RBWM	54	3	3	—	60	—	—	—	—	—
– CMB	7,629	1,203	230	3	9,065	(10)	(11)	(39)	—	(60)
– GB&M	12,093	1,115	63	—	13,271	(8)	(18)	(5)	—	(31)
– GPB	1,053	13	—	—	1,066	(1)	—	—	—	(1)
– Corporate Centre	55	—	1	—	56	—	—	(1)	—	(1)
Total nominal amount off balance sheet at 31 Dec 2018	590,134	24,173	1,209	10	615,526	(162)	(168)	(88)	—	(418)
RBWM	13,160	153	—	—	13,313	(5)	—	—	—	(5)
CMB	226	—	—	1	227	(2)	—	—	—	(2)
GB&M	1,994	—	—	—	1,994	(5)	—	—	—	(5)
GPB	—	—	—	—	—	—	—	—	—	—
Corporate Centre	326,795	770	7	4	327,576	(21)	(50)	(1)	—	(72)

Debt instruments measured at FVOCI at 31 Dec 2018	342,175	923	7	5	343,110	(33)	(50)	(1)	—	(84)

For footnotes, see page 192.

HSBC Holdings

(Audited)

Risk in HSBC Holdings is overseen by the HSBC Holdings Asset and Liability Management Committee ('Holdings ALCO'). The major risks faced by HSBC Holdings are credit risk, liquidity risk and market risk (in the form of interest rate risk and foreign exchange risk).

Credit risk in HSBC Holdings primarily arises from transactions with Group subsidiaries and from guarantees issued in support of obligations assumed by certain Group operations in the normal conduct of their business. It principally represents claims on Group subsidiaries in Europe and North America.

In HSBC Holdings, the maximum exposure to credit risk arises from two components:

- financial instruments on the balance sheet (see page 260); and
- financial guarantees and similar contracts, where the maximum exposure is the maximum that we would have to pay if the guarantees were called upon (see Note 33).

In the case of our derivative balances, we have amounts with a legally enforceable right of offset in the case of counterparty

default that are not included in the carrying value. These offsets also include collateral received in cash and other financial assets. The total offset relating to our derivative balances is $1.5bn at 31 December 2018 (2017: $2.1bn).

The credit quality of loans and advances and financial investments, both of which consist of intra-Group lending, is assessed as 'strong' or 'good', with 100% of the exposure being neither past due nor impaired (2017: 100%). For further details of credit quality classification, see page 118.

Securitisation exposures and other structured products

The following table summarises the carrying amount of our ABS exposure by categories of collateral. It includes assets held in the legacy credit portfolio held within Corporate Centre with a carrying value of $5.9bn (2017: $9bn).

At 31 December 2018, the FVOCI reserve in respect of ABSs was a deficit of $179m (2017: deficit of $466m). For 2018, the impairment write-back in respect of ABSs was $106m (2017: write-back of $240m).

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Carrying amount of HSBC's consolidated holdings of ABSs

	Trading	Financial investments at FVOCI	Held at amortised cost	Financial assets designated and otherwise mandatorily measured at fair value through profit and loss	Total	Of which held through consolidated SEs
	$m	$m	$m	$m	$m	$m
Mortgage-related assets	1,680	15,422	15,498	127	32,727	208
– sub-prime residential	17	587	—	—	604	50
– US Alt-A residential	—	87	2	94	183	42
– US Government agency and sponsored enterprises: MBSs[22]	153	14,627	14,657	—	29,437	—
– UK buy-to-let residential	—	—	—	—	—	—
– other residential	924	15	780	—	1,719	10
– commercial property	586	106	59	33	784	106
Leveraged finance-related assets	306	40	—	21	367	200
Student loan-related assets	149	1,815	—	1	1,965	1,800
Auto finance-related assets	282	—	2,577	—	2,859	—
Other assets	1,136	718	2,323	7	4,184	204
At 31 Dec 2018	3,553	17,995	20,398	156	42,102	2,412

For footnotes, see page 192.

Selected 2017 credit risk disclosures

The below disclosures were included in our 2017 external reports and do not reflect the adoption of IFRS 9. As these tables are not

directly comparable to the current 2018 credit risk tables, which are disclosed on an IFRS 9 basis, these 2017 disclosures have been shown below and not adjacent to 2018 tables.

Summary of credit risk

	At 31 Dec 2017
	$bn
Maximum exposure to credit risk	3,078
– total assets subject to credit risk	2,306
– off-balance sheet commitments subject to credit risk[23]	772
Gross loans and advances	1,060
– personal lending	376
– wholesale lending	684
Impaired loans	15
– personal lending	5
– wholesale lending	10
Impaired loans as a % of gross loans and advances	%
Personal lending	1.3
Wholesale lending	1.5
Total	1.5
	$bn

Impairment allowances	7.5
– personal lending	1.7
– wholesale lending	5.8
Loans and advances net of impairment allowances	1,053

	For year ended 31 Dec 2017
	$bn
Loan impairment charge	2.0
– personal lending	1.0
– wholesale lending	1.0
Other credit risk provisions	(0.2)
	1.8

For footnotes, see page 192.

Credit exposure (2017)
Maximum exposure to credit risk
(Audited)

	2017		
	Maximum exposure	Offset	Net
	$m	$m	$m
Derivatives	219,818	(204,829)	14,989
Loans and advances to customers held at amortised cost	962,964	(35,414)	927,550
– personal	374,762	(2,946)	371,816
– corporate and commercial	516,754	(29,459)	487,295
– non-bank financial institutions	71,448	(3,009)	68,439
Loans and advances to banks at amortised cost	90,393	(273)	90,120
Reverse repurchase agreements – non-trading	201,553	(3,724)	197,829
Total on–balance sheet exposure to credit risk	2,305,592	(244,240)	2,061,352
Total off–balance sheet	771,908	—	771,908
– financial guarantees and similar contracts[23]	41,422	—	41,422
– loan and other credit-related commitments[7]	730,486	—	730,486
At 31 Dec 2017	3,077,500	(244,240)	2,833,260

For footnotes, see page 192.

Distribution of financial instruments by credit quality
(Audited)

	Neither past due nor impaired				Past due but not impaired	Impaired	Total gross amount	Impairment allowances	Total
	Strong	Good	Satisfactory	Sub-standard					
	$m	$m	$m	$m	$m	$m	$m	$m	$m
Cash and balances at central banks	179,155	1,043	407	19			180,624		180,624
Items in the course of collection from other banks	6,322	29	273	4			6,628		6,628
Hong Kong Government certificates of indebtedness	34,186	—	—	—			34,186		34,186
Trading assets	137,983	22,365	26,438	1,949			188,735		188,735
– treasury and other eligible bills	15,412	531	491	1,098			17,532		17,532
– debt securities	84,493	9,517	12,978	498			107,486		107,486
– loans and advances to banks	15,496	5,778	4,757	26			26,057		26,057
– loans and advances to customers	22,582	6,539	8,212	327			37,660		37,660
Financial assets designated at fair value	3,378	269	1,029	28			4,704		4,704
Derivatives	181,195	31,827	5,874	922			219,818		219,818
Loans and advances to customers held at amortised cost	503,759	222,343	204,162	16,114	8,600	15,470	970,448	(7,484)	962,964
– personal	324,960	26,612	14,549	780	4,658	4,922	376,481	(1,719)	374,762
– corporate and commercial	140,382	176,745	176,661	14,784	3,422	10,254	522,248	(5,494)	516,754

– non-bank financial institutions	38,417	18,986	12,952	550	520	294	71,719	(271)	71,448
Loans and advances to banks held at amortised cost	77,175	9,026	4,144	39	9	—	90,393	—	90,393
Reverse repurchase agreements – non-trading	143,154	32,321	25,636	442	—	—	201,553	—	201,553
Financial investments	356,065	10,463	15,017	2,886	—	728	385,159		385,159
Other assets	12,714	6,526	10,705	681	107	143	30,876	(48)	30,828
– endorsements and acceptances	1,430	4,636	3,455	183	15	31	9,750		9,750
– accrued income and other	11,175	1,837	7,124	361	91	56	20,644		20,644
– assets held for sale	109	53	126	137	1	56	482	(48)	434
At 31 Dec 2017	1,635,086	336,212	293,685	23,084	8,716	16,341	2,313,124	(7,532)	2,305,592
	%	%	%	%	%	%	%		
Percentage of total gross amount	70.7	14.5	12.7	1.0	0.4	0.7	100.0		

Past due but not impaired gross financial instruments (2017)

Past due but not impaired gross financial instruments by geographical region

(Audited)	Europe	Asia	MENA	North America	Latin America	Total
	$m	$m	$m	$m	$m	$m
At 31 Dec 2017	1,324	3,892	852	2,015	633	8,716

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Ageing analysis of days for past due but not impaired gross financial instruments

(Audited)	Up to 29 days	30–59 days	60–89 days	90–179 days	180 days and over	Total
	$m	$m	$m	$m	$m	$m
Loans and advances to customers and banks held at amortised cost	6,837	1,255	493	10	14	8,609
– personal	3,455	866	337	—	—	4,658
– corporate and commercial	2,899	343	156	10	14	3,422
– financial	483	46	—	—	—	529
Other financial instruments	33	12	18	12	32	107
At 31 Dec 2017	6,870	1,267	511	22	46	8,716

Impaired loans (2017)

Movement in impaired loans by industry sector

(Audited)

	Personal	Corporate and commercial	Financial	Total
	$m	$m	$m	$m
At 1 Jan 2017	6,490	11,362	376	18,228
Classified as impaired during the year	2,671	3,691	17	6,379
Transferred from impaired to unimpaired during the year	(677)	(1,324)	(8)	(2,009)
Amounts written off	(1,330)	(1,257)	(53)	(2,640)
Net repayments and other	(2,232)	(2,218)	(38)	(4,488)
At 31 Dec 2017	4,922	10,254	294	15,470

Impaired loans by industry sector and geographical region

	Europe	Asia	MENA	North America	Latin America	Total
	$m	$m	$m	$m	$m	$m
Non-renegotiated impaired loans	4,551	1,645	870	1,180	452	8,698
– personal	1,648	475	227	665	280	3,295
– corporate and commercial	2,895	1,146	639	508	172	5,360
– financial	8	24	4	7	—	43
Renegotiated impaired loans	3,491	604	1,079	1,426	172	6,772
– personal	381	125	120	958	43	1,627
– corporate and commercial	2,926	478	895	466	129	4,894
– financial	184	1	64	2	—	251
At 31 Dec 2017	8,042	2,249	1,949	2,606	624	15,470
Impaired loans % of total gross loans and advances	2.0%	0.5%	5.4%	2.2%	2.6%	1.5%

Renegotiated loans and forbearance (2017)

Renegotiated loans and advances to customers by industry sector

	First lien residential mortgages	Other personal lending	Corporate and commercial	Non-bank financial institutions	Total
	$m	$m	$m	$m	$m
Neither past due nor impaired	476	268	2,082	257	3,083
Past due but not impaired	58	49	120	—	227
Impaired	1,329	298	4,894	251	6,772
At 31 Dec 2017	1,863	615	7,096	508	10,082
Impairment allowances on renegotiated loans	165	127	1,584	151	2,027

Renegotiated loans and advances to customers by geographical region

	Europe	Asia	MENA	North America	Latin America	Total
	$m	$m	$m	$m	$m	$m
At 31 Dec 2017	5,667	921	1,622	1,604	268	10,082

Impairment of loans and advances (2017)

Loan impairment charge to the income statement by industry sector

(Audited)	Europe	Asia	MENA	North America	Latin America	Total
	$m	$m	$m	$m	$m	$m
Personal	140	243	92	32	452	959
– first lien residential mortgages	6	(1)	5	—	(27)	(17)
– other personal	134	244	87	32	479	976
Corporate and commercial	619	298	83	(163)	90	927
– manufacturing and international trade and services	314	236	95	18	59	722
– commercial real estate and other property-related	200	21	(4)	9	—	226
– other commercial	105	41	(8)	(190)	31	(21)
Financial	66	17	22	1	—	106
At 31 Dec 2017	825	558	197	(130)	542	1,992

Charge for impairment losses as a percentage of average gross loans and advances to customers by geographical region

	Europe	Asia	MENA	North America	Latin America	Total
	%	%	%	%	%	%
New allowances net of allowance releases	0.33	0.17	0.79	(0.05)	3.20	0.29
Recoveries	(0.09)	(0.03)	(0.14)	(0.07)	(0.41)	(0.07)
At 31 Dec 2017	0.24	0.14	0.65	(0.12)	2.79	0.22
Amount written off net of recoveries	0.23	0.13	1.35	0.28	2.42	0.28

Movement in impairment allowances by industry sector and by geographical region

	Europe	Asia	MENA	North America	Latin America	Total
	$m	$m	$m	$m	$m	$m
At 1 Jan 2017	2,789	1,635	1,681	1,272	473	7,850
Amounts written off						
Personal	(438)	(366)	(329)	(100)	(487)	(1,720)
– first lien residential mortgages	(8)	(6)	(42)	(26)	(9)	(91)
– other personal	(430)	(360)	(287)	(74)	(478)	(1,629)
Corporate and commercial	(648)	(273)	(119)	(273)	(63)	(1,376)
– manufacturing and international trade and services	(318)	(250)	(74)	(44)	(18)	(704)
– commercial real estate and other property-related	(121)	(10)	(37)	(20)	(4)	(192)
– other commercial	(209)	(13)	(8)	(209)	(41)	(480)
Financial	(74)	(1)	—	(2)	—	(77)
Total amounts written off	(1,160)	(640)	(448)	(375)	(550)	(3,173)
Recoveries of amounts written off in previous years						
Personal	296	104	39	38	68	545
– first lien residential mortgages	9	4	—	17	25	55
– other personal	287	100	39	21	43	490
Corporate and commercial	35	10	2	37	13	97
– manufacturing and international trade and services	10	9	1	11	3	34
– commercial real estate and other property-related	8	—	1	1	—	10
– other commercial	17	1	—	25	10	53
Financial	2	—	—	—	—	2
Total recoveries of amounts written off in previous years	333	114	41	75	81	644
Charge to income statement	825	558	197	(130)	542	1,992
Exchange and other movements	274	5	(10)	(51)	(47)	171

At 31 Dec 2017	3,061	1,672	1,461	791	499	7,484
Impairment allowances against banks:						
– individually assessed	—	—	—	—	—	—
Impairment allowances against customers:						
– individually assessed	2,296	1,056	1,104	383	121	4,960
– collectively assessed	765	616	357	408	378	2,524
Impairment allowances at 31 Dec 2017	3,061	1,672	1,461	791	499	7,484

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Movement in impairment allowances on loans and advances to customers and banks
(Audited)

	Banks individually assessed	Customers Individually assessed	Collectively assessed	Total
	$m	$m	$m	$m
At 1 Jan 2017	—	4,932	2,918	7,850
Amounts written off	—	(1,468)	(1,705)	(3,173)
Recoveries of loans and advances previously written off	—	119	525	644
Charge to income statement	—	1,114	878	1,992
Exchange and other movements	—	263	(92)	171
At 31 Dec 2017	—	4,960	2,524	7,484
Impairment allowances % of loans and advances	—	0.5%	0.3%	0.8%

Wholesale lending (2017)

Total wholesale lending for loans and advances to banks and customers[24]

	Gross loans	Impairment allowance
	$m	$m
Corporate and commercial	522,248	(5,494)
– agriculture, forestry and fishing	6,302	(122)
– mining and quarrying	10,911	(450)
– manufacturing	115,531	(1,390)
– electricity, gas, steam and air-conditioning supply	17,397	(88)
– water supply, sewerage, waste management and remediation	2,806	(3)
– construction	15,443	(540)
– wholesale and retail trade, repair of motor vehicles and motorcycles	98,079	(1,361)
– transportation and storage	24,258	(131)
– accommodation and food	16,971	(138)
– publishing, audiovisual and broadcasting	18,405	(83)
– real estate	114,349	(638)
– professional, scientific and technical activities	18,094	(95)
– administrative and support services	19,960	(138)
– public administration and defence, compulsory social security	221	—
– education	1,490	(7)
– health and care	5,688	(34)
– arts, entertainment and recreation	3,003	(14)

– other services	20,354	(235)
– activities of households	—	—
– extra-territorial organisations and bodies activities	—	—
– government	11,728	(8)
– asset-backed securities	1,258	(19)
Non-bank financial institutions	71,719	(271)
Loans and advances to banks	90,393	—
At 31 Dec 2017	684,360	(5,765)
By geography		
Europe	228,775	(2,469)
– of which: UK	163,393	(1,589)
Asia	332,680	(1,402)
– of which: Hong Kong	197,232	(639)
MENA	29,142	(1,131)
North America	76,661	(579)
Latin America	17,102	(184)
At 31 Dec 2017	684,360	(5,765)

For footnotes, see page 192.

Wholesale lending: loan and other credit-related commitments[7]

	Europe	Asia	MENA	North America	Latin America	Total	UK	Hong Kong
	$m	$m	$m	$m	$m	$m	$m	$m
At 31 Dec 2017	186,912	195,396	17,935	123,267	11,666	535,176	85,362	88,859
– corporate and commercial	123,972	179,302	17,390	102,666	10,795	434,125	72,652	79,596
– financial	62,940	16,094	545	20,601	871	101,051	12,710	9,263

For footnotes, see page 192.

Commercial real estate (2017)

Commercial real estate lending

	Europe	Asia	MENA	North America	Latin America	Total	UK	Hong Kong
	$m	$m	$m	$m	$m	$m	$m	$m
Gross loans and advances								
Neither past due nor impaired	26,632	60,894	500	8,637	1,407	98,070	20,171	51,909
Past due but not impaired	56	57	5	197	34	349	2	50
Impaired loans	905	17	182	83	65	1,252	722	12
At 31 Dec 2017	27,593	60,968	687	8,917	1,506	99,671	20,895	51,971
– of which: renegotiated loans	1,112	—	190	97	79	1,478	1,010	—
Impairment allowances	297	15	142	75	—	529	237	12

Commercial real estate gross loans and advances maturity analysis

	Europe	Asia	MENA	North America	Latin America	Total	UK	Hong Kong
	$m	$m	$m	$m	$m	$m	$m	$m
On demand, overdrafts or revolving								
< 1 year	5,734	18,038	268	4,678	260	28,978	4,193	15,964
1–2 years	4,780	11,549	119	1,178	58	17,684	3,679	9,345
2–5 years	14,770	25,395	117	2,199	734	43,215	12,377	21,089
> 5 years	2,309	5,986	183	862	454	9,794	646	5,573
At 31 Dec 2017	27,593	60,968	687	8,917	1,506	99,671	20,895	51,971

Commercial real estate loans and advances including loan commitments by level of collateral

(Audited)		Of which:		
	Total	UK	Hong Kong	US
	$m	$m	$m	$m
Rated CRR/ EL1 to 7				
Not collateralised	44,551	5,187	31,100	—
Fully collateralised	75,633	20,711	31,768	4,742
Partially collateralised (A)	5,523	963	1,557	—
– Collateral value on A	3,621	564	752	—
Total	125,707	26,861	64,425	4,742
Rated CRR/ EL8				
Not collateralised	6	4	—	—
Fully collateralised	221	128	—	54
– LTV ratio: less than 50%	67	64	—	—
– 51% to 75%	40	31	—	—
– 76% to 90%	89	19	—	54
– 91% to 100%	25	14	—	—
Partially collateralised (B):	71	54	—	—
– Collateral value on B	43	40	—	—
Total	298	186	—	54
Rated CRR/ EL9 to 10				
Not collateralised	63	46	—	1
Fully collateralised	717	376	12	—
– LTV ratio: less than 50%	157	60	9	—
– 51% to 75%	173	149	1	—
– 76% to 90%	141	122	1	—
– 91% to 100%	246	45	1	—
Partially collateralised (C):	486	350	—	—

– Collateral value on C	295	189	—	—
Total	1,266	772	12	1
At 31 Dec 2017	127,271	27,819	64,437	4,797

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Other corporate, commercial and non-bank financial institutions loans and advances including loan commitments by level of collateral rated CRR/EL 8 to 10 only

(Audited)		Of which:		
	Total	UK	Hong Kong	US
	$m	$m	$m	$m
Rated CRR/ EL8				
Not collateralised	3,722	319	15	1,708
Fully collateralised	554	104	5	48
– LTV ratio: less than 50%	188	25	3	7
– 51% to 75%	157	66	2	34
– 76% to 90%	39	11	—	2
– 91% to 100%	170	2	—	5
Partially collateralised (A):	493	92	135	42
– Collateral value on A	206	59	10	21
Total	4,769	515	155	1,798
Rated CRR/ EL9 to 10				
Not collateralised	3,734	1,508	511	3
Fully collateralised	2,572	1,223	98	317
– less than 50%	804	516	60	—
– 51% to 75%	606	403	10	6
– 76% to 90%	398	235	21	—
– 91% to 100%	764	69	7	311
Partially collateralised (B):	1,750	398	167	425
– Collateral value on B	877	209	123	300
Total	8,056	3,129	776	745
At 31 Dec 2017	12,825	3,644	931	2,543

Personal lending (2017)

Total personal lending gross loans

	Europe	Asia	MENA	North America	Latin America	Total	UK	Hong Kong	Total as a % of total gross loans
	$m	$m	$m	$m	$m	$m	$m	$m	
First lien residential mortgages	126,685	109,502	2,375	37,330	2,281	278,173	119,770	70,279	26.2
– of which:									
interest only (including offset)	35,242	873	65	92	—	36,272	33,468	—	3.4
affordability (including US adjustable rate mortgages)	409	3,111	—	13,742	—	17,262	—	3	1.6
Other personal lending	43,329	40,880	4,496	5,227	4,376	98,308	19,790	27,868	9.3
– other	32,995	29,400	2,663	2,919	2,205	70,182	10,039	19,977	6.7
– credit cards	10,235	11,435	1,531	1,037	1,642	25,880	9,751	7,891	2.4
– second lien residential mortgages	99	21	2	1,233	—	1,355	—	—	0.1
– motor vehicle finance	—	24	300	38	529	891	—	—	0.1
At 31 Dec 2017	170,014	150,382	6,871	42,557	6,657	376,481	139,560	98,147	35.5

Loan and other credit-related commitments	50,384	120,312	3,975	14,443	5,196	194,310	48,413	89,994

Total personal lending impairment allowances

	Europe	Asia	MENA	North America	Latin America	Total	UK	Hong Kong
	$m	$m	$m	$m	$m	$m	$m	$m
First lien residential mortgages	262	30	68	148	16	524	145	—
Other personal lending	341	237	259	60	298	1,195	257	86
– other	230	109	132	17	151	639	147	36
– credit cards	111	128	122	30	140	531	110	50
– second lien residential mortgages	—	—	—	13	—	13	—	—
– motor vehicle finance	—	—	5	—	7	12	—	—
At 31 Dec 2017	603	267	327	208	314	1,719	402	86
Impairment allowances % of impaired loans	29.7%	44.5%	94.2%	12.8%	97.2%	34.9%	28.3%	62.3%

Residential mortgage loans including loan commitments by level of collateral
(Audited)

		Of which:		
	Total	UK	Hong Kong	US
	$m	$m	$m	$m
Non-impaired loans and advances				
Fully collateralised	287,088	124,736	72,073	16,240
– LTV ratio: less than 50%	164,110	69,679	55,237	7,868
– 51% to 60%	48,287	20,706	8,340	4,180
– 61% to 70%	37,054	15,422	3,282	2,832
– 71% to 80%	25,893	11,992	3,402	1,312
– 81% to 90%	9,445	5,824	1,376	42
– 91% to 100%	2,299	1,113	436	6
Partially collateralised:				
Greater than 100% (A)	660	174	—	—
– 101% to 110%	270	89	—	—
– 111% to 120%	121	16	—	—
– greater than 120%	269	69	—	—
Collateral on A	550	125	—	—
Non-impaired loans and advances	287,748	124,910	72,073	16,240
Impaired loans and advances				
Fully collateralised	3,004	1,008	46	1,138
– LTV ratio: less than 50%	1,238	538	42	414
– 51% to 60%	518	196	3	207
– 61% to 70%	416	130	—	178
– 71% to 80%	354	85	1	160
– 81% to 90%	323	40	—	115
– 91% to 100%	155	19	—	64
Partially collateralised:				
Greater than 100% (B)	342	38	—	36
– 101% to 110%	101	15	—	19
– 111% to 120%	61	5	—	11
– greater than 120%	180	18	—	6
Collateral on B	269	31	—	33
Impaired loans and advances	3,346	1,046	46	1,174
At 31 Dec 2017	291,094	125,956	72,119	17,414

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Supplementary information (2017)

Wholesale gross loans and advances to customers by country/territory

	Gross loans				Impairment allowances			
	Corporate and commercial	Of which: real estate[21]	Non-bank financial institutions	Total	Corporate and commercial	Of which: real estate[21]	Non-bank financial institutions	Total
	$m	$m	$m	$m	$m	$m	$m	$m
Europe	182,501	24,244	32,093	214,594	(2,286)	(371)	(183)	(2,469)
– UK	130,121	14,609	27,829	157,950	(1,390)	(299)	(180)	(1,570)
– France	32,647	5,597	2,048	34,695	(542)	(34)	—	(542)
– Germany	9,690	250	1,156	10,846	(51)	—	(2)	(53)
– Switzerland	1,244	1	531	1,775	—	—	—	—
– other	8,799	3,787	529	9,328	(303)	(38)	(1)	(304)
Asia	250,950	70,554	26,311	277,261	(1,375)	(43)	(27)	(1,402)
– Hong Kong	156,198	51,787	15,346	171,544	(613)	(30)	(26)	(639)
– Australia	11,311	1,987	2,355	13,666	(75)	(4)	—	(75)
– India	5,382	1,030	2,165	7,547	(95)	(3)	(1)	(96)
– Indonesia	4,157	18	114	4,271	(254)	—	—	(254)
– mainland China	26,052	8,953	4,824	30,876	(224)	(2)	—	(224)
– Malaysia	7,489	1,555	331	7,820	(34)	—	—	(34)
– Singapore	17,541	2,890	259	17,800	(41)	(2)	—	(41)
– Taiwan	5,176	11	185	5,361	(4)	—	—	(4)
– other	17,644	2,323	732	18,376	(35)	(2)	—	(35)
Middle East and North Africa (excluding Saudi Arabia)	21,533	1,647	1,107	22,640	(1,092)	(157)	(39)	(1,131)
– Egypt	1,343	17	38	1,381	(97)	—	(7)	(104)
– UAE	12,130	1,117	769	12,899	(824)	(157)	—	(824)
– other	8,060	513	300	8,360	(171)	—	(32)	(203)
North America	54,915	16,788	10,926	65,841	(557)	(66)	(22)	(579)
– US	35,678	10,888	10,204	45,882	(318)	(18)	(15)	(333)
– Canada	18,330	4,680	682	19,012	(200)	(34)	(4)	(204)
– other	907	1,220	40	947	(39)	(14)	(3)	(42)
Latin America	12,349	1,117	1,282	13,631	(184)	(1)	—	(184)
– Mexico	9,354	931	1,083	10,437	(158)	(1)	—	(158)
– other	2,995	186	199	3,194	(26)	—	—	(26)
At 31 Dec 2017	522,248	114,350	71,719	593,967	(5,494)	(638)	(271)	(5,765)

For footnotes, see page 192.

Personal gross loans and advances to customers by country/territory

	Gross loans				Impairment allowances			
	First lien residential mortgages	Other personal	Of which: credit cards	Total	First lien residential mortgages	Other personal	Of which: credit cards	Total
	$m	$m	$m	$m	$m	$m	$m	$m
Europe	126,685	43,329	10,235	170,014	(262)	(341)	(111)	(603)
– UK	119,770	19,790	9,751	139,560	(145)	(257)	(110)	(402)
– France	2,910	16,650	420	19,560	(33)	(66)	—	(99)
– Germany	1	234	—	235	—	—	—	—
– Switzerland	839	5,776	—	6,615	—	(12)	—	(12)
– other	3,165	879	64	4,044	(84)	(6)	(1)	(90)
Asia	109,502	40,880	11,435	150,382	(30)	(237)	(128)	(267)
– Hong Kong	70,279	27,868	7,891	98,147	—	(86)	(50)	(86)
– Australia	12,444	838	749	13,282	(2)	(20)	(18)	(22)
– India	1,185	441	193	1,626	(4)	(7)	(4)	(11)
– Indonesia	64	322	225	386	—	(15)	(11)	(15)
– mainland China	8,877	1,170	289	10,047	(2)	(11)	(5)	(13)
– Malaysia	3,003	3,385	837	6,388	(14)	(48)	(20)	(62)
– Singapore	5,760	4,952	419	10,712	—	(17)	(6)	(17)
– Taiwan	4,877	822	283	5,699	(1)	(17)	(2)	(18)
– other	3,013	1,082	549	4,095	(7)	(16)	(12)	(23)
Middle East and North Africa (excluding Saudi Arabia)	2,375	4,496	1,531	6,871	(68)	(259)	(122)	(327)
– Egypt	—	283	62	283	—	(5)	(1)	(5)
– UAE	1,880	1,682	612	3,562	(64)	(95)	(26)	(159)
– other	495	2,531	857	3,026	(4)	(159)	(95)	(163)
North America	37,330	5,227	1,037	42,557	(148)	(60)	(30)	(208)
– US	17,415	2,278	724	19,693	(36)	(38)	(25)	(74)
– Canada	18,639	2,731	266	21,370	(7)	(15)	(5)	(22)
– other	1,276	218	47	1,494	(105)	(7)	—	(112)
Latin America	2,281	4,376	1,642	6,657	(16)	(298)	(140)	(314)
– Mexico	2,129	3,044	1,077	5,173	(13)	(267)	(127)	(280)
– other	152	1,332	565	1,484	(3)	(31)	(13)	(34)
At 31 Dec 2017	278,173	98,308	25,880	376,481	(524)	(1,195)	(531)	(1,719)

Carrying amount of HSBC's consolidated holdings of ABSs

	Trading	Available for sale	Held to maturity	Designated at fair value through profit or loss	Loans and receivables	Total	Of which held through consolidated SEs
	$m	$m	$m	$m	$m	$m	$m
Mortgage-related assets	1,767	14,221	13,965	—	1,762	31,715	1,826
– sub-prime residential	22	918	—	—	32	972	484
– US Alt-A residential	—	1,102	3	—	—	1,105	1,041
– US Government agency and sponsored enterprises: MBSs	331	11,750	13,962	—	—	26,043	—
– other residential	814	181	—	—	1,595	2,590	75
– commercial property	600	270	—	—	135	1,005	226

Leveraged finance-related assets	128	373	—	—	45	546	283
Student loan-related assets	155	2,198	—	—	—	2,353	2,158
Other assets	1,266	731	—	2	3,553	5,552	428
At 31 Dec 2017	3,316	17,523	13,965	2	5,360	40,166	4,695

Risk elements in the loan portfolio

Unless otherwise stated, the disclosure of credit risk elements in this section reflects US accounting practice and classifications. The purpose of the disclosure is to present within the US disclosure framework those elements of the loan portfolios with a greater risk of loss. The three main classifications of credit risk elements presented are:

- impaired loans;
- unimpaired loans contractually more than 90 days past due as to interest or principal; and
- troubled debt restructurings not included in the above.

Interest forgone on impaired and restructured loans

	2018	2017
	$m	$m
Europe	152	154
Asia	90	169
Middle East and North Africa	107	153
North America	104	147
Latin America	27	33
Year ended 31 Dec	480	656

Interest recognised on impaired and restructured loans

	2018	2017
	$m	$m
Europe	145	52
Asia	41	53
Middle East and North Africa	29	20
North America	85	121
Latin America	26	39
Year ended 31 Dec	326	285

Impaired loans

A loan is impaired, and an impairment allowance is recognised, when there is objective evidence of a loss event that has an effect on the cash flows of the loan that can be reliably estimated. In accordance with IFRSs, we recognise interest income on assets after they have been written down as a result of an impairment loss.

The balance of impaired loans at 31 December 2018 was $2.1bn lower than at 31 December 2017. This reduction was largely due to a reduction in corporate and commercial impaired balances as a result of fewer significant current year impaired loans together with loan credit grade improvements, repayments and write-offs.

Unimpaired loans more than 90 days past due

Under IFRS 9, the Group determines that a financial instrument is credit impaired and in stage 3 by considering relevant objective evidence, primarily whether:

- contractual payments of either principal or interest are past due for more than 90 days;
- there are other indications that the borrower is unlikely to pay such as that a concession has been granted to the borrower for economic or legal reasons relating to the borrower's financial condition; and
- the loan is otherwise considered to be in default.

If such unlikeliness to pay is not identified at an earlier stage, it is deemed to occur when an exposure is 90 days past due, even where regulatory rules permit default to be defined based on 180 days past due. Therefore the definitions of credit impaired and default are aligned as far as possible so that stage 3 represents all loans that are considered defaulted or otherwise credit impaired. Interest income is recognised by applying the effective interest rate to the amortised cost amount, (i.e. gross carrying amount less ECL allowance).

As a financial instrument is considered impaired if contractual payments of either principal or interest are past due for more than 90 days, these amounts will be reported under impaired loans with no balance reported under unimpaired loans more than 90 days past due.

Previously under IAS 39, examples of unimpaired loans more than 90 days past due included individually assessed mortgages that are in arrears more than 90 days where there was no other indicators of impairment, but where the value of collateral was sufficient to repay both the principal debt and all potential interest for at least one year; and short-term trade facilities past due more than 90 days for technical reasons such as delays in documentation, but where there was no concern over the creditworthiness of the counterparty.

Troubled debt restructurings

Under US GAAP, a troubled debt restructuring (‘TDR’) is a loan, the terms of which have been modified for economic or legal reasons related to the borrower’s financial difficulties to grant a concession to the borrower that the lender would not otherwise consider. A modification that results in a delay in payment that is considered insignificant is not regarded as a concession for the purposes of this disclosure. The SEC requires separate disclosure of any loans that meet the definition of a TDR that are not included in the previous two loan categories. These are classified as TDRs in the table on page 173. Loans that have been identified as a TDR under the US guidance retain this designation until maturity or derecognition. This treatment differs from the Group’s impaired loans disclosure convention under IFRSs under which a loan may return to unimpaired status after demonstrating a significant reduction in the risk of non-payment of future cash flows. As a result, reported TDRs include those loans that have returned to unimpaired status under the Group’s disclosure convention for renegotiated loans.

The balance of TDRs not included as impaired loans at 31 December 2018 was $2.7bn, $154m lower than 2017 mainly due to a reduction in Europe and Asia. Under the Group’s IFRS 9 methodology financial instruments (except for renegotiated loans) are transferred out of stage 3 when they no longer exhibit any evidence of credit impairment. Wholesale renegotiated loans will continue to be in stage 3 until there is sufficient evidence to demonstrate a significant reduction in the risk of non-payment of future cash flows, observed over a minimum one-year period and there are no other indicators of impairment. For loans that are assessed for impairment on a portfolio basis, the evidence typically comprises a history of payment performance against the original or revised terms, as appropriate to the circumstances. For loans that are assessed for impairment on an individual basis, all available evidence is assessed on a case-by-case basis. Retail renegotiated loans are deemed to remain credit impaired until repayment or derecognition.

Potential problem loans

Potential problem loans are loans where information on possible credit problems among borrowers causes management to seriously doubt their ability to comply with the loan repayment terms. The following concentrations of credit risk have a higher risk of containing potential problem loans.

Under IFRS 9, an assessment of whether credit risk has increased significantly since initial recognition is performed at each reporting period by considering the change in the risk of default occurring over the remaining life of the financial instrument. Any financial instrument deemed to have suffered a significant increase in credit risk is transferred from stage 1 to stage 2.

The assessment explicitly or implicitly compares the risk of default occurring at the reporting date compared to that at initial recognition, taking into account reasonable and supportable information, including information about past events, current conditions and future economic conditions. The assessment is unbiased, probability weighted, and to the extent relevant, uses forward-looking information consistent with that used in the measurement of ECL.

The analysis of credit risk is multifactor. The determination of whether a specific factor is relevant and its weight compared with other factors depends on the type of product, the characteristics of the financial instrument and the borrower, and the geographical region. Therefore, it is not possible to provide a single set of criteria that will determine what is considered to be a significant increase in credit risk and these criteria will differ for different types of lending, particularly between retail and wholesale. However, unless identified at an earlier stage, all financial assets are deemed to have suffered a significant increase in credit risk when 30 days past due. Financial instruments classified as stage 2 and greater than 30 days past due are considered to have a higher risk of containing potential problem loans.

‘Renegotiated loans and forbearance’ on page 142 includes disclosure about the credit quality of loans whose contractual terms have been changed at some point in the life of the loan because of significant concerns about the borrower’s ability to make contractual payments when due. Renegotiated loans are classified as impaired when:

- there has been a change in contractual cash flow as a result of a concession that the lender would otherwise not consider; and
- it is probable that without the concession, the borrower would be unable to meet contractual payment obligations in full.

This presentation applies unless the concession is insignificant and there are no other indicators of impairment. The renegotiated loan will continue to be disclosed as impaired until there is sufficient evidence to demonstrate a significant reduction in the risk of non-repayment of future cash flows, and there are no other indicators of impairment.

Renegotiated loans that are not classified as impaired may have a higher risk of becoming delinquent in the future, and may therefore be potential problem loans. Further information regarding the credit quality classification of renegotiated loans can be found on page 119.

Analysis of risk elements in the loan portfolio by geographical region

The following table sets out the amount of risk elements in loan portfolios included within loans and advances to customers and banks in the consolidated balance sheet, trading loans classified as in default and assets obtained by taking possession of security. The table excludes the amount of risk elements in loan portfolios classified as ‘Assets held for sale’ in the consolidated balance sheet.

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Risk elements in the loan portfolio by geographical region

	2018	2017	2016	2015	2014
	$m	$m	$m	$m	$m
Impaired loans					
Europe	6,434	8,042	8,062	9,265	9,709
Asia	2,521	2,249	2,499	2,375	2,048
Middle East and North Africa	2,233	1,949	2,230	2,178	2,514
North America	1,500	2,606	4,842	8,930	11,694
Latin America	659	624	595	1,030	3,365
	13,347	15,470	18,228	23,778	29,330
Unimpaired loans contractually more than 90 days past due as to principal or interest					
Europe	—	—	—	7	6
Asia	—	—	—	2	1
Middle East and North Africa	—	24	15	96	59
North America	—	—	3	27	3
Latin America	—	—	—	—	3
	—	24	18	132	72
Troubled debt restructurings (not included in the classifications above)					
Europe	1,682	1,890	1,900	1,495	1,652
Asia	98	273	269	284	267
Middle East and North Africa	527	459	549	584	778
North America	229	174	518	3,698	3,932
Latin America	189	83	130	164	353
	2,725	2,879	3,366	6,225	6,982
Trading loans classified as in default					
North America	—	—	—	—	4
Europe	—	56	—	—	—
Middle East and North Africa	—	—	—	—	—
North America	—	—	—	—	—
Latin America	—	—	—	—	—
	—	56	—	—	4
Risk elements on loans					
Europe	8,116	9,988	9,962	10,767	11,367
Asia	2,619	2,522	2,768	2,661	2,316
Middle East and North Africa	2,760	2,432	2,794	2,858	3,351
North America	1,729	2,780	5,363	12,655	15,633
Latin America	848	707	725	1,194	3,721
	16,072	18,429	21,612	30,135	36,388
Assets held for sale					
Europe	16	14	16	23	28
Asia	39	51	46	19	14
Middle East and North Africa	—	—	1	1	1
North America	12	11	57	116	186
Latin America	9	18	22	20	16
	76	94	142	179	245
Total risk elements					
Europe	8,132	10,002	9,978	10,790	11,395

Asia	2,658	2,573	2,814	2,680	2,330
Middle East and North Africa	2,760	2,432	2,795	2,859	3,352
North America	1,741	2,791	5,420	12,771	15,819
Latin America	857	725	747	1,214	3,737
At 31 Dec	16,148	18,523	21,754	30,314	36,633
	%	%	%	%	%
Allowance for ECL/loan impairment allowances as a percentage of risk elements on loans	53.7	40.6	36.3	31.8	34.0

Supplementary information

Gross loans and advances by industry sector over five years

	In accordance with IFRS 9	In accordance with IAS 39			
	2018	2017	2016	2015	2014
	$m	$m	$m	$m	$m
Personal	394,337	376,481	339,798	374,082	393,554
– first lien residential mortgages	293,333	278,173	249,778	274,511	286,524
– other personal	101,004	98,308	90,020	99,571	107,030
Corporate and commercial	534,577	522,248	465,827	499,513	542,625
– agriculture, forestry and fishing	6,701	6,302	5,261	6,595	6,570
– mining and quarrying	14,172	10,911	15,781	22,236	16,772
– manufacturing	105,704	115,531	112,965	117,536	132,306
– electricity, gas, steam and air-conditioning supply	16,044	17,397	14,302	16,603	22,004
– water supply, sewerage, waste management and remediation	3,523	2,806	2,380	3,311	2,761
– construction	15,254	15,443	14,876	18,102	19,293
– wholesale and retail trade, repair of motor vehicles and motorcycles	97,665	98,079	82,848	90,719	109,118
– transportation and storage	25,541	24,258	23,081	26,399	26,439
– accommodation and food	21,547	16,971	12,823	14,135	13,002
– publishing, audiovisual and broadcasting	21,172	18,405	19,058	22,043	16,924
– real estate	123,233	114,349	96,639	95,768	95,079
– professional, scientific and technical activities	22,573	18,094	15,557	17,528	25,305
– administrative and support services	25,103	19,960	15,707	14,725	15,942
– public administration and defence, compulsory social security	1,463	221	137	167	633
– education	1,829	1,490	1,033	1,169	1,067
– health and care	4,308	5,688	4,971	4,896	4,640
– arts, entertainment and recreation	5,041	3,003	2,490	2,545	2,338
– other services	13,913	20,354	16,989	16,761	24,220
– activities of households	830	—	—	—	—
– extra-territorial organisations and bodies activities	59	—	—	—	—
– government	8,073	11,728	8,442	7,455	6,143
– asset-backed securities	829	1,258	487	820	2,069

Financial	133,587	162,112	151,855	150,833	163,016
– non-bank financial institutions	61,407	71,719	63,729	60,414	50,818
– banks	72,180	90,393	88,126	90,419	112,198
Total gross loans and advances	1,062,501	1,060,841	957,480	1,024,428	1,099,195
Impaired loans and advances to customers	13,347	15,470	18,228	23,758	29,283
Impairment allowances on loans and advances to customers and banks	8,638	7,484	7,850	9,555	12,337
Loans and advances change in ECL/Loan impairment charge	1,896	1,992	3,350	3,592	4,055
– new allowances net of allowance releases	2,304	2,636	3,977	4,400	5,010
– recoveries	(408)	(644)	(627)	(808)	(955)

Loans and advances change in ECL/loan impairment charges by industry sector over five years

	In accordance with IFRS 9	In accordance with IAS 39			
	2018	2017	2016	2015	2014
	$m	$m	$m	$m	$m
Change in ECL/loan impairment charge/(release)					
Personal	1,158	959	1,703	1,834	1,803
Corporate and commercial	786	927	1,608	1,769	2,256
Financial	(48)	106	39	(11)	(4)
Year ended 31 Dec	1,896	1,992	3,350	3,592	4,055

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Loans and advances change in ECL/impairment losses as a percentage of average gross loans and advances to customers

	In accordance with IFRS 9	In accordance with IAS 39			
	2018	2017	2016	2015	2014
	%	%	%	%	%
New allowances net of allowance releases	0.23	0.29	0.46	0.48	0.53
Recoveries	(0.04)	(0.07)	(0.07)	(0.09)	(0.10)
Total charge for ECL/impairment losses	0.19	0.22	0.39	0.39	0.43
Amount written off net of recoveries	0.22	0.28	0.32	0.37	0.58

Movement in loans and advances allowance for ECL/impairment allowances over five years

	In accordance with IFRS 9	In accordance with IAS 39			
	2018	2017	2016	2015	2014
	$m	$m	$m	$m	$m
Impairment allowances at 1 Jan	7,484	7,850	9,573	12,386	15,201
Opening adjustment upon adoption of IFRS 9	1,882	N/A	N/A	N/A	N/A
Amounts written off	(2,553)	(3,173)	(3,456)	(4,194)	(6,379)
– personal	(1,380)	(1,720)	(1,602)	(2,707)	(3,733)
– corporate and commercial	(1,050)	(1,376)	(1,830)	(1,473)	(2,425)
– financial	(123)	(77)	(24)	(14)	(221)
Recoveries of amounts written off in previous years	408	644	627	808	955
– personal	290	545	515	681	818
– corporate and commercial	108	97	109	124	128
– financial	10	2	3	3	9
Loans and advances change in ECL/loan impairment charge	1,896	1,992	3,350	3,592	4,055
Exchange and other movements	(479)	171	(2,244)	(3,019)	(1,446)
Allowance for ECL/Impairment allowances at 31 Dec	8,638	7,484	7,850	9,573	12,386
ECL/Impairment allowances[1]					
– stage 1	1,287	N/A	N/A	N/A	N/A
– stage 2	2,110	N/A	N/A	N/A	N/A
– stage 3	5,047	N/A	N/A	N/A	N/A
– POCI	194	N/A	N/A	N/A	N/A
– individually assessed	N/A	4,960	4,932	5,420	6,244
– collectively assessed	N/A	2,524	2,918	4,153	6,142
Allowance for ECL/Impairment allowances at 31 Dec	8,638	7,484	7,850	9,573	12,386

1. In IAS 39, impairment allowances were categorised as being either individually or collectively assessed whereas IFRS 9 categorises ECL by staging.

Movement in renegotiated loans and advances to customers

	2018				2017			
	Personal	Corporate and commercial	Financial	Total	Personal	Corporate and commercial	Financial	Total

	$m	$m	$m	$m	$m	$m	$m	$m
Renegotiated loans as at 1 Jan	2,478	7,096	508	10,082	4,758	7,565	517	12,840
Loans renegotiated in the year without derecognition	512	1,688	31	2,231	688	1,700	7	2,395
Loans renegotiated in the year resulting in recognition of a new loan (POCI in 2018)	—	69	—	69	—	36	—	36
Net repayments and other	(742)	(2,084)	(468)	(3,294)	(2,968)	(2,205)	(16)	(5,189)
– Repayments	(520)	(1,610)	(64)	(2,194)	(644)	(2,279)	(32)	(2,955)
– Amounts written off	(104)	(182)	(121)	(407)	(100)	(338)	(1)	(439)
– Other	(118)	(292)	(283)	(693)	(2,224)	412	17	(1,795)
Renegotiated loans as at 31 Dec	2,248	6,769	71	9,088	2,478	7,096	508	10,082

Country distribution of outstandings and cross-border exposures

We control the risk associated with cross-border lending through a centralised structure of internal country limits. Exposures to individual countries and cross-border exposure in the aggregate are kept under continual review. The following table summarises the aggregate of our in-country foreign currency and cross-border outstandings by type of borrower to countries that individually represent in

excess of 0.75% of our total assets. The classification is based on the country of residence of the borrower but also recognises the transfer of country risk in respect of third-party guarantees, eligible collateral held and residence of the head office when the borrower is a branch. In accordance with the Bank of England Country Exposure Report (Form CE) guidelines, outstandings comprise loans and advances (excluding settlement accounts), amounts receivable under finance leases, acceptances, commercial bills, certificates of deposit, and debt and equity securities (net of short positions), and exclude accrued interest and intra-HSBC exposures.

In-country foreign currency and cross-border amounts outstanding

	Footnotes	Banks $bn	Government and official institutions $bn	Other $bn	Total $bn
At 31 Dec 2018					
US		4.3	50.5	30.6	85.4
Mainland China		23.0	6.7	32.2	61.9
UK		28.0	9.5	39.8	77.3
Japan		18.6	33.0	7.7	59.3
Hong Kong		5.8	0.3	40.6	46.7
Germany		15.0	9.6	5.5	30.1
Canada		10.2	10.9	8.4	29.5
Singapore	1	4.1	8.9	12.1	25.1
France	1	4.6	5.9	8.8	19.3
At 31 Dec 2017					
US		5.8	29.5	37.6	72.9
Mainland China		25.5	10.3	30.3	66.1
UK		21.4	4.8	33.7	59.9
Japan		16.7	26.5	13.3	56.5
Hong Kong		4.3	0.3	39.3	43.9
Germany		10.8	8.8	10.7	30.3
Canada	1	7.3	6.8	5.8	19.9
Singapore	1	2.9	5.7	11.9	20.5
France		6.9	4.7	14.1	25.7
At 31 Dec 2016					
US		4.4	41.9	19.5	65.8
Mainland China		20.8	9.2	24.3	54.3
UK		21.0	9.3	24.0	54.3
Japan		10.5	22.6	9.9	43.0
Hong Kong		4.5	0.4	32.1	37.0
Germany		12.3	19.9	8.1	40.3
Canada	1	5.9	8.0	6.7	20.6
Singapore	1	4.2	3.0	9.6	16.8
France		6.4	8.1	12.1	26.6

1 These balances were between 0.75% and 1% of total assets. All other balances were above 1%. Singapore balances in 2016 were below 0.75% and have been included for comparative purposes.

Liquidity and funding risk profile

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Liquidity and funding risk in 2018

This section provides a summary of our current policies and practices regarding the management of liquidity and funding risk.

HSBC requires all operating entities to comply with its liquidity and funding risk management framework ('LFRF') on a stand-alone basis and to meet regulatory and internal minimum requirements at all times. The liquidity coverage ratio ('LCR') and net stable funding ratio ('NSFR') are key components of the LFRF.

The liquidity and funding position of the Group remained strong throughout 2018 as illustrated below. The methodology used to create a consolidated view of the Group's liquidity using the LCR is currently under review and any changes may have an impact on this disclosure in the future. The liquidity value is lower than the carrying value due to adjustments applied to comply with the European Commission ('EC') or other local regulators.

	At		
	31 Dec 2018	30 Jun 2018	31 Dec 2017
	$bn	$bn	$bn
High-quality liquid assets (liquidity value)	567	540	513
Net outflows	369	342	360
Liquidity coverage ratio	154%	158%	142%

Management of liquidity and funding risk

Liquidity coverage ratio

The LCR aims to ensure that a bank has sufficient unencumbered high-quality liquid assets ('HQLAs') to meet its liquidity needs in a 30-calendar-day liquidity stress scenario. HQLAs consist of cash or assets that can be converted into cash at little or no loss of value. The Group's LCR is calculated on an EC basis and at 31 December 2018 was 154% (31 December 2017: 142%).

At 31 December 2018, all the Group's principal operating entities were well above regulatory minimum levels and above the internally expected levels established by the Board. The following table displays the individual LCR levels for our principal operating entities on an EC LCR basis. This basis may vary from local LCR measures due to differences in the way non-EU regulators have implemented the Basel III recommendations.

Operating entities' LCRs

		At	
		31 Dec	31 Dec
		2018	2017
	Footnotes	%	%
HSBC Bank plc UK liquidity group (pre-ring-fencing)	25	—	139
HSBC UK Bank plc (ring-fenced bank)	26	143	—
HSBC Bank plc (non-ring-fenced bank)	27	147	—
The Hongkong and Shanghai Banking Corporation – Hong Kong Branch	28	161	151
The Hongkong and Shanghai Banking Corporation – Singapore Branch	28,29	149	144
HSBC Bank USA		121	132
HSBC France	30	128	149
Hang Seng Bank		202	204
HSBC Canada	30	115	123
HSBC Bank China		153	162
HSBC Middle East – UAE Branch		182	197
HSBC Mexico		153	215
HSBC Private Bank		273	220

For footnotes, see page 192.

Net stable funding ratio

We are required to maintain sufficient stable funding. The net stable funding ratio ('NSFR') measures stable funding relative to required stable funding, and reflects a bank's long-term funding profile (funding with a term of more than a year). It is designed to complement the LCR.

At 31 December 2018, the Group's principal operating entities were within the NSFR risk tolerance level established by the Board and applicable under the LFRF.

The table below displays the NSFR levels for the principal HSBC operating entities.

Operating entities' NSFRs

		At	
		31 Dec	31 Dec
		2018	2017
	Footnotes	%	%
HSBC Bank plc UK liquidity group (pre-ring-fencing)	25	—	108

HSBC UK Bank plc (ring-fenced bank)	26	144	—
HSBC Bank plc (non-ring-fenced bank)	27,31	113	—
The Hongkong and Shanghai Banking Corporation – Hong Kong Branch	28	132	144
The Hongkong and Shanghai Banking Corporation – Singapore Branch	28	123	117
HSBC Bank USA		131	129
HSBC France	30	113	116
Hang Seng Bank		152	155
HSBC Canada	30	126	136
HSBC Bank China		153	148
HSBC Middle East – UAE Branch		132	143
HSBC Mexico		123	123
HSBC Private Bank		203	185

For footnotes, see page 192.

Depositor concentration and term funding maturity concentration

The LCR and NSFR metrics assume a stressed outflow based on a portfolio of depositors within retail, corporate and financial deposit segments. The validity of these assumptions is challenged if the portfolio of depositors is not large enough to avoid depositor concentration.

Operating entities are exposed to term refinancing concentration risk if the current maturity profile results in future maturities being overly concentrated in any defined period.

At 31 December 2018, all principal operating entities were within the risk tolerance levels set for depositor concentration and term funding maturity concentration. These risk tolerances were established by the Board and are applicable under the LFRF.

Liquid assets of HSBC's principal operating entities

The following table shows the liquidity value of the unencumbered liquid assets of HSBC's principal operating entities at the period end as a six-monthly average. At 31 December 2018, 86% (June 2018: 85%) of the liquid assets eligible for inclusion in the Group consolidated LCR were classified as Level 1.

Liquid assets of HSBC's principal entities

	Footnotes	Recognised at 31 Dec 2018	2H18 Average	Recognised at 30 Jun 2018	1H18 Average	Recognised at 31 Dec 2017	2H17 Average
		$m	$m	$m	$m	$m	$m
HSBC Bank plc UK liquidity group (pre-ring-fencing)	25						
Level 1		—	—	166,913	160,088	161,036	156,623
Level 2a		—	—	7,763	6,364	2,914	4,795
Level 2b		—	—	16,582	17,296	18,777	19,919
HSBC UK Bank plc (ring-fenced bank)	26						
Level 1		57,862	59,474	—	—	—	—
Level 2a		1,561	1,383	—	—	—	—
Level 2b		—	—	—	—	—	—
HSBC Bank plc (non-ring-fenced bank)	27						
Level 1		107,488	106,929	—	—	—	—
Level 2a		5,417	8,484	—	—	—	—
Level 2b		9,913	16,875	—	—	—	—
The Hongkong and Shanghai Banking Corporation – Hong Kong Branch	28						
Level 1		99,634	84,595	75,436	78,496	77,217	77,295
Level 2a		28,495	28,277	28,656	24,991	26,848	25,841
Level 2b		1,578	1,317	1,153	1,988	5,528	6,056
Hang Seng Bank							
Level 1		33,009	30,519	32,551	30,531	31,091	31,485
Level 2a		5,458	3,995	2,739	3,151	3,287	3,077
Level 2b		141	141	142	146	197	199
HSBC Bank USA							
Level 1		53,659	49,481	57,413	53,383	65,131	60,090
Level 2a		19,062	17,971	15,612	14,869	13,690	13,226
Level 2b		—	1	—	13	39	32
Total of HSBC's other principal entities	32						
Level 1		90,023	89,410	80,566	84,508	88,281	86,372
Level 2a		7,044	7,397	8,003	8,447	7,899	7,810
Level 2b		383	458	407	691	1,003	886

For footnotes, see page 192.

Sources of funding

(Audited)

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 and to meet the Group's minimum requirement for own funds and eligible liabilities.

The following 'Funding sources and uses' table provides a consolidated view of how our balance sheet is funded, and should be read in light of the LFRF, which requires operating entities to manage liquidity and funding risk on a stand-alone basis.

The table analyses our consolidated balance sheet according to the assets that primarily arise from operating activities and the sources of funding primarily supporting these activities. Assets and liabilities that do not arise from operating activities are presented as a net balancing source or deployment of funds.
In 2018, the level of customer accounts continued to exceed the level of loans and advances to customers. The positive funding gap was predominantly deployed in liquid assets (cash and balances with central banks and financial investments) as required by the LFRF.
Loans and advances to banks continued to exceed deposits by banks, meaning the Group remained a net unsecured lender to the banking sector.

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Funding sources

	2018 $m	2017 $m
Customer accounts	1,362,643	1,364,462
Deposits by banks	56,331	69,922
Repurchase agreements – non-trading	165,884	130,002
Debt securities in issue	85,342	64,546
Cash collateral, margin and settlement accounts	54,066	N/A
Liabilities of disposal groups held for sale	313	1,286
Subordinated liabilities	22,437	19,826
Financial liabilities designated at fair value	148,505	94,429
Liabilities under insurance contracts	87,330	85,667
Trading liabilities	84,431	184,361
– repos	1,495	2,255
– stock lending	10,998	8,363
– settlement accounts	N/A	11,198
– other trading liabilities	71,938	162,545
Total equity	194,249	197,871
Other balance sheet liabilities	296,593	309,399
At 31 Dec	2,558,124	2,521,771

Funding uses

	Footnotes	2018 $m	2017 $m
Loans and advances to customers		981,696	962,964
Loans and advances to banks		72,167	90,393
Reverse repurchase agreements – non-trading		242,804	201,553
Prepayments, accrued income and other assets	5,6	47,159	N/A
Cash collateral, margin and settlement accounts		47,159	N/A
Assets held for sale		735	781
Trading assets		238,130	287,995
– reverse repos		9,893	10,224
– stock borrowing		8,387	6,895
– settlement accounts		N/A	15,258
– other trading assets		219,850	255,618
Financial investments		407,433	389,076
Cash and balances with central banks		162,843	180,624
Other balance sheet assets		405,157	408,385
At 31 Dec		2,558,124	2,521,771

For footnotes, see page 192.

Wholesale term debt maturity profile

The maturity profile of our wholesale term debt obligations is set out in the following table.

The balances in the table are not directly comparable with those in the consolidated balance sheet because the table presents gross cash flows relating to principal payments and not the balance sheet carrying value, which include debt

securities and subordinated liabilities measured at fair value.

Wholesale funding cash flows payable by HSBC under financial liabilities by remaining contractual maturities

	Due not more than 1 month	Due over 1 month but not more than 3 months	Due over 3 months but not more than 6 months	Due over 6 months but not more than 9 months	Due over 9 months but not more than 1 year	Due over 1 year but not more than 2 years	Due over 2 years but not more than 5 years	Due over 5 years	Total
	$m	$m	$m	$m	$m	$m	$m	$m	$m
Debt securities issued	8,091	13,362	15,808	10,241	5,447	21,811	70,462	63,914	209,136
– unsecured CDs and CP	4,378	7,640	10,696	6,546	818	529	764	1,031	32,402
– unsecured senior MTNs	467	1,233	3,107	2,263	2,172	11,252	55,307	54,256	130,057
– unsecured senior structured notes	817	821	1,452	1,029	2,394	3,005	7,021	4,473	21,012
– secured covered bonds	—	—	205	—	—	1,190	3,469	1,137	6,001
– secured asset-backed commercial paper	2,094	—	—	—	—	—	—	—	2,094
– secured ABS	—	—	—	—	—	—	—	327	327
– others	335	3,668	348	403	63	5,835	3,901	2,690	17,243
Subordinated liabilities	—	95	2,007	—	—	2,021	1,383	31,131	36,637
– subordinated debt securities	—	95	2,007	—	—	2,021	1,383	28,934	34,440
– preferred securities	—	—	—	—	—	—	—	2,197	2,197
At 31 Dec 2018	8,091	13,457	17,815	10,241	5,447	23,832	71,845	95,045	245,773
Debt securities issued	7,502	8,409	9,435	8,132	15,111	13,000	55,347	48,234	165,170
– unsecured CDs and CP	1,085	3,636	4,334	3,064	6,132	137	386	277	19,051
– unsecured senior MTNs	1,614	2,973	3,047	2,924	5,109	6,564	41,090	39,544	102,865
– unsecured senior structured notes	1,298	1,796	2,054	1,935	2,870	4,586	10,156	5,328	30,023
– secured covered bonds	—	—	—	209	—	212	2,494	1,655	4,570
– secured asset-backed commercial paper	3,479	—	—	—	—	—	—	—	3,479
– secured ABS	—	—	—	—	—	—	914	436	1,350
– others	26	4	—	—	1,000	1,501	307	994	3,832
Subordinated liabilities	3	1,918	74	—	170	2,371	4,077	32,000	40,612
– subordinated debt securities	3	1,918	74	—	170	2,371	3,618	30,162	38,315
– preferred securities	—	—	—	—	—	—	459	1,838	2,297
At 31 Dec 2017	7,505	10,327	9,509	8,132	15,281	15,371	59,424	80,234	205,782

Contractual maturity of financial liabilities

The following table shows, on an undiscounted basis, all cash flows relating to principal and future coupon payments (except for trading liabilities and derivatives not treated as hedging derivatives). For this reason, balances in the following table do not agree directly with those in our consolidated balance sheet. Undiscounted cash flows payable in relation to hedging derivative liabilities are classified according to their contractual maturities. Trading liabilities and derivatives not treated as hedging derivatives are included in the 'On demand' time bucket and not by contractual maturity.

A maturity analysis of repos and debt securities in issue included in trading liabilities is presented in Note 29 on the Financial Statements.

In addition, loans and other credit-related commitments and financial guarantees are generally not recognised on our balance sheet. The undiscounted cash flows potentially payable under loan and other credit-related commitments and financial guarantees are classified on the basis of the earliest date they can be called.

Cash flows payable by HSBC under financial liabilities by remaining contractual maturities

(Audited)

		On demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years
	Footnotes	$m	$m	$m	$m	$m
Deposits by banks		35,544	10,482	2,419	7,507	556
Customer accounts		1,082,007	211,811	62,963	7,617	130
Repurchase agreements – non-trading		5,929	156,752	2,487	950	—
Trading liabilities	33	84,431	—	—	—	—
Financial liabilities designated at fair value	33	217	8,737	15,591	75,578	89,261
Derivatives		204,062	360	927	2,065	1,323
Debt securities in issue		236	18,253	24,902	36,599	13,656
Subordinated liabilities		—	438	793	7,600	27,670
Other financial liabilities		100,268	19,056	4,694	2,367	1,260
		1,512,694	425,889	114,776	140,283	133,856
Loan and other credit-related commitments		685,650	92,186	1,109	944	377
Financial guarantees	8	22,942	113	289	160	14
At 31 Dec 2018		2,221,286	518,188	116,174	141,387	134,247
Proportion of cash flows payable in period		71%	17%	4%	5%	4%
Deposits by banks		48,247	10,596	1,877	7,814	1,508
Customer accounts		1,159,962	153,018	44,348	7,238	675
Repurchase agreements – non-trading		20,550	106,236	2,270	1,085	—
Trading liabilities		184,361	—	—	—	—
Financial liabilities designated at fair value		715	1,249	7,117	39,596	59,428
Derivatives		212,797	219	1,221	3,170	1,506
Debt securities in issue		11	12,624	21,066	25,654	11,092
Subordinated liabilities		3	2,227	841	7,011	21,775
Other financial liabilities		48,407	18,780	3,701	1,994	1,314
		1,675,053	304,949	82,441	93,562	97,298
Loan and other credit-related commitments	7	570,132	138,542	10,602	7,860	2,350
Financial guarantees	8,34	23,944	268	821	785	31
At 31 Dec 2017		2,269,129	443,759	93,864	102,207	99,679
Proportion of cash flows payable in period		75%	15%	3%	4%	3%

For footnotes, see page 192.

Liquidity risk in HSBC Holdings is overseen by Holdings ALCO. This risk arises because of HSBC Holdings' obligation to make payments to debt holders as they fall due and to pay its operating expenses. The liquidity risk related to these cash flows is managed by matching external debt obligations with internal loan cash flows and by maintaining an appropriate liquidity buffer that is monitored by Holdings ALCO.

The balances in the following table are not directly comparable with those on the balance sheet of HSBC Holdings as the table

incorporates, on an undiscounted basis, all cash flows relating to principal and future coupon payments (except for derivatives not treated as hedging derivatives). Undiscounted cash flows payable in relation to hedging derivative liabilities are classified according to their contractual maturities. Derivatives not treated as hedging derivatives are included in the 'On demand' time bucket.

In addition, loan commitments and financial guarantees and similar contracts are generally not recognised on our balance sheet. The undiscounted cash flows potentially payable under financial guarantees and similar contracts are classified on the basis of the earliest date on which they can be called.

Cash flows payable by HSBC Holdings under financial liabilities by remaining contractual maturities
(Audited)

	Footnotes	On demand $m	Due within 3 months $m	Due between 3 and 12 months $m	Due between 1 and 5 years $m	Due after 5 years $m
Amounts owed to HSBC undertakings		—	949	—	—	—
Financial liabilities designated at fair value		—	237	2,656	14,384	11,653
Derivatives		1,321	—	—	339	499
Debt securities in issue		—	379	1,159	29,178	30,801
Subordinated liabilities		—	248	757	4,019	25,311
Other financial liabilities		—	675	228	—	—
		1,321	2,488	4,800	47,920	68,264
Loan commitments		—	—	—	—	—
Financial guarantees	8	8,627	—	—	—	—
At 31 Dec 2018		9,948	2,488	4,800	47,920	68,264
Amounts owed to HSBC undertakings		—	2,525	46	—	—
Financial liabilities designated at fair value		—	286	875	16,554	19,465
Derivatives		2,008	—	—	293	781
Debt securities in issue		—	232	1,787	13,975	26,452
Subordinated liabilities		—	2,113	537	2,852	20,944
Other financial liabilities		—	849	200	—	—
		2,008	6,005	3,445	33,674	67,642
Loan commitments		—	—	—	—	—
Financial guarantees	8	7,778	—	—	—	—
At 31 Dec 2017		9,786	6,005	3,445	33,674	67,642

For footnotes, see page 192.

Market risk profile

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Market risk in 2018

Market risk is the risk that movements in market factors, such as foreign exchange rates, interest rates, credit spreads, equity prices and commodity prices, will reduce our income or the value of our portfolios. Exposure to market risk is separated into two portfolios:

- trading portfolios; and
- non-trading portfolios.

Market risk exposures arising from our insurance manufacturing operations are discussed on page 125.

A summary of our current policies and practices regarding the management of market risk is set out on page 120.

Global markets were characterised by robust economic sentiment at the start of the year. As the year progressed, economic activity diverged across the global economy against a backdrop of continuing trade and geopolitical tensions; concerns around slowing growth in China; and the continuing uncertainty around the shape of the UK's withdrawal from the EU.

Monetary tightening started across the developed world. The US Federal Reserve raised official interest rates multiple times during the year and signalled it will raise rates more slowly in 2019. Bond yields started to increase but remained low by historical standards. In the eurozone, the European Central Bank ended its bond-buying programme, although softening growth and inflation prospects add to the uncertainty of the timing of the next interest rate hike.
Trading value at risk ('VaR') ended the year lower when compared with the previous year. The trading VaR composition remained largely the same, with interest rate trading VaR being the largest individual contributor to overall trading VaR.
Non-trading interest rate VaR ended the year lower when compared with the previous year as exposures were managed down.

Trading portfolios

Value at risk of the trading portfolios

Trading VaR predominantly resides within Global Markets where trading VaR was lower at 31 December 2018 compared with 31 December 2017. The contributions of each asset class were largely range bound during the year. The decrease in trading VaR from the equity and credit spread trading VaR components was partially offset by an increase in the interest rate and foreign exchange trading VaR components.
The effects of portfolio diversification reduced the overall trading VaR.

The daily levels of total trading VaR over the last year are set out in the graph below.

Daily VaR (trading portfolios), 99% 1 day ($m)

The Group trading VaR for the year is shown in the table below.

Trading VaR, 99% 1 day[35]

(Audited)

	Foreign exchange and commodity	Interest rate	Equity	Credit spread	Portfolio diversification[36]	Total[37]
	$m	$m	$m	$m	$m	$m
Balance at 31 Dec 2018	12.6	33.9	22.6	25.9	(37.9)	57.1
Average	9.5	36.4	22.5	20.7	(34.3)	54.8
Maximum	21.8	49.9	33.8	35.2		71.2
Minimum	5.5	27.0	13.5	12.2		43.9
Balance at 31 Dec 2017	7.4	30.8	32.6	31.1	(38.2)	63.7
Average	10.4	38.2	16.7	15.4	(32.9)	47.8
Maximum	23.0	67.1	32.6	31.8		70.8
Minimum	4.9	27.2	9.1	5.1		36.6

For footnotes, see page 192.

Back-testing

In 2018, the Group experienced three back-testing exceptions against actual profit and loss: a profit exception in February, driven by gains on short positions on falling index and stock exposures; a profit exception in August, driven by volatility in Turkish lira spot; and a loss exception in December, driven by month-end adjustments that were not in scope of the market risk model.

The Group also experienced one back-testing profit exception against hypothetical profit and loss in August based on the same driver described above.

There was no evidence of model errors or control failures.

The back-testing result excludes exceptions due to changes in fair value adjustments.

Non-trading portfolios

Value at risk of the non-trading portfolios

Non-trading VaR of the Group includes contributions from all global businesses. There was no commodity risk in the non-trading portfolios. The non-trading VaR ended the year lower compared with the previous year, due to a reduction in the non-trading interest rate VaR component. This was caused by the reduction of the risk in our investment portfolio, specifically from reduced interest rate risk on US Treasuries and agency mortgage-backed securities.

Non-trading VaR includes the interest rate risk in the banking book transferred to and managed by Balance Sheet Management ('BSM') and the non-trading financial instruments held by BSM. The management of interest rate risk in the banking book and the role of BSM are described further in the following 'Net interest income sensitivity' section.

Non-trading VaR excludes the insurance operations, which are discussed further on page 188, and the interest rate risk in the banking book arising from HSBC Holdings.

The daily levels of total non-trading VaR over the last year are set out in the graph below.

Daily VaR (non-trading portfolios), 99% 1 day ($m)
The Group non-trading VaR for the year is shown in the table below.
Non-trading VaR, 99% 1 day
(Audited)

	Interest rate	Credit spread	Portfolio diversification[36]	Total[37]
	$m	$m	$m	$m
Balance at 31 Dec 2018	61.4	37.2	(30.6)	68.0
Average	96.8	48.3	(29.1)	116.0
Maximum	129.3	96.0		154.1
Minimum	59.9	27.6		68.0
Balance at 31 Dec 2017	88.5	46.7	(38.9)	96.3
Average	119.0	46.1	(36.9)	128.2
Maximum	164.1	71.9		183.8
Minimum	88.5	24.5		93.3

For footnotes, see page 192.
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. This section and the sections below describe the scope of HSBC's management of market risks in non-trading books.

Market risk balance sheet linkages

The following balance sheet lines in the Group's consolidated position are subject to market risk:

Trading assets and liabilities

The Group's trading assets and liabilities are in almost all cases originated by GB&M. These assets and liabilities are treated as traded risk for the purposes of market risk management, other than a limited number of exceptions, primarily in Global Banking where the short-term acquisition and disposal of the assets are linked to other non-trading-related activities such as loan origination.

Derivative assets and liabilities

We undertake derivative activity for three primary purposes: to create risk management solutions for clients, to manage the portfolio risks arising from client business, and to manage and hedge our own risks. Most of our derivative exposures arise from sales and trading activities within GB&M, and are treated as traded risk for market risk management purposes.

The assets and liabilities included in trading VaR give rise to a large proportion of the income included in net income from financial instruments held for trading or managed on a fair value basis. Adjustments to trading income such as valuation adjustments do not affect the trading VaR model.

For information on the accounting policies applied to financial instruments at fair value, see Note 1 on the Financial Statements.

Structural foreign exchange exposures

For our policies and procedures for managing structural foreign exchange exposures, see page 122 of the Risk management section.

Structural foreign exchange exposures represent net investments in subsidiaries, branches and associates, the functional currencies of which are currencies other than the US dollar. Exchange differences on structural exposures are recognised in 'Other comprehensive income'.

Net structural foreign exchange exposures

	Footnotes	2018 $m	2017 $m
Currency of structural exposure			
Hong Kong dollars		41,477	33,992
Pound sterling	36	36,642	37,039
Chinese renminbi		27,554	27,968
Euros		20,964	20,269
Indian rupees		3,837	4,286
Mexican pesos		4,363	4,270
Canadian dollars		3,815	4,241
Saudi riyals		3,913	3,971
Malaysian ringgit		2,572	2,461
Singapore dollars		2,246	2,433
UAE dirhams		2,185	2,054
Taiwanese dollars		1,904	1,877
Australian dollars		1,823	1,892
Indonesian rupiah		1,792	1,845
Korean won		1,285	1,423
Swiss francs		987	950
Thai baht		856	766
Brazilian real		707	745
Argentine pesos		568	753
Turkish lira		507	778
Others, each less than $700m		5,762	5,623
At 31 Dec		165,759	159,636

For footnotes, see page 192.

Shareholders' equity would decrease by $2,743m (2017: $2,659m) if euro and sterling foreign currency exchange rates weakened by 5% relative to the US dollar.

Net interest income sensitivity

The following tables set out the assessed impact to a hypothetical base case projection of our net interest income ('NII') (excluding insurance) under the following scenarios:

- an immediate shock of 25 basis points ('bps') to the current market-implied path of interest rates across all currencies on 1 January 2019 (effects over one year and five years); and
- an immediate shock of 100bps to the current market-implied path of interest rates across all currencies on 1 January 2019 (effects over one year and five years).

The sensitivities shown represent our assessment of the change to a hypothetical base case NII, assuming a static balance sheet and no management actions from BSM. They incorporate the effect of interest rate behaviouralisation, managed rate product pricing assumptions and customer behaviour, for example, prepayment of mortgages or customer migration from non-interest-bearing to interest-bearing deposit accounts under the specific interest rate scenarios. The scenarios represent interest rate shocks to the current market implied path of rates.

The NII sensitivities shown are indicative and based on simplified scenarios. Immediate interest rate rises of 25bps and 100bps would increase projected net interest income for the 12 months to 31 December 2019 by $828m and $2,778m, respectively. Conversely, falls of 25bps and 100bps would decrease projected net interest income for the 12 months to 31 December 2019 by $884m and $3,454m, respectively.

The sensitivity of NII for 12 months decreased by $521m and $747m comparing December 2018 with December 2017 in

the plus and minus 100bps parallel shocks, respectively. These decreases were driven by movements in the US dollar amounts primarily due to changes in balance sheet composition and the migration of non-interest-bearing liabilities to interest-bearing liabilities as interest rates increased. By contrast, sterling NII sensitivity increased because of higher liquidity linked to UK structural reform and preparations surrounding the UK's exit from the European Union.

The change in NII sensitivity for five years is also driven by the factors above.

The structural sensitivity arising from the four global businesses, excluding Global Markets, is positive in a rising rate environment and negative in a falling rate environment. Both BSM and Global Markets have NII sensitivity profiles that offset this to some degree. The tables do not include BSM management actions or changes in Global Markets' net trading income that may further limit the offset.

The limitations of this analysis are discussed within the 'Risk management' section on page 112.

NII sensitivity to an instantaneous change in yield curves (12 months)

	Currency					
	US dollar	HK dollar	Sterling	Euro	Other	Total
	$m	$m	$m	$m	$m	$m
Change in Jan 2019 to Dec 2019 (based on balance sheet at 31 December 2018)						
+25bps parallel	70	232	198	115	213	828
-25bps parallel	(160)	(301)	(244)	8	(187)	(884)
+100bps parallel	147	773	777	408	673	2,778
-100bps parallel	(523)	(1,046)	(1,122)	9	(772)	(3,454)
Change in Jan 2018 to Dec 2018 (based on balance sheet at 31 December 2017)						
+25bps parallel	227	179	147	50	203	806
-25bps parallel	(287)	(305)	(181)	8	(160)	(925)
+100bps parallel	845	711	600	412	731	3,299
-100bps parallel	(1,444)	(1,425)	(631)	31	(732)	(4,201)

The net interest income sensitivities arising from the scenarios presented in the tables above are not directly comparable. This is due to timing differences relating to interest rate changes and the repricing of assets and liabilities.

NII sensitivity to an instantaneous change in yield curves (5 years)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
	$m	$m	$m	$m	$m	$m
Change in Jan 2019 to Dec 2019 (based on balance sheet at 31 December 2018)						
+25bps parallel	828	1,155	1,416	1,529	1,428	6,356
-25bps parallel	(884)	(1,127)	(1,206)	(1,296)	(1,597)	(6,110)
+100bps parallel	2,778	3,863	4,542	4,968	5,096	21,247
-100bps parallel	(3,454)	(4,632)	(5,276)	(5,691)	(6,187)	(25,240)
Change in Jan 2018 to Dec 2018 (based on balance sheet at 31 December 2017)						
+25bps parallel	806	1,153	1,326	1,439	1,507	6,231
-25bps parallel	(925)	(872)	(1,154)	(1,271)	(1,381)	(5,603)
+100bps parallel	3,299	4,463	5,105	5,472	5,759	24,098
-100bps parallel	(4,201)	(4,538)	(5,102)	(5,498)	(5,813)	(25,152)

Sensitivity of capital and reserves

Financial assets at fair value through other comprehensive income reserves are included as part of CET1 capital. We measure the potential downside risk to the CET1 ratio due to interest rate and credit spread risk in this portfolio using the portfolio's stressed VaR, with a 99% confidence level and an assumed holding period of one quarter. At December 2018, the stressed VaR of the portfolio was $2.9bn (2017: $2.6bn).

We monitor the sensitivity of reported cash flow hedging reserves to interest rate movements on a six-monthly basis by assessing

the expected reduction in valuation of cash flow hedges due to parallel movements of plus or minus 100bps in all yield curves. These particular exposures form only a part of our overall interest rate exposure.

The following table describes the maximum and minimum sensitivity of our cash flow hedge reported reserves to the stipulated movements in yield curves during the year. The sensitivities are indicative and based on simplified scenarios.

Sensitivity of cash flow hedging reported reserves to interest rate movements

	Maximum impact	Minimum impact
	$m	$m
At 31 Dec 2018		
+100 basis point parallel move in all yield curves	(684)	(492)
As a percentage of total shareholders' equity	(0.37)%	(0.26)%
-100 basis point parallel move in all yield curves	720	550
As a percentage of total shareholders' equity	0.39%	0.30%
At 31 Dec 2017		
+100 basis point parallel move in all yield curves	(839)	(684)
As a percentage of total shareholders' equity	(0.44)%	(0.36)%
-100 basis point parallel move in all yield curves	860	720
As a percentage of total shareholders' equity	0.45%	0.38%

Third-party assets in Balance Sheet Management

For our BSM governance framework, see page 122 of 'Risk management'.

Third-party assets in BSM decreased by 5% during 2018. Cash and balances at central banks decreased by $17bn, predominantly in Europe as a result of cash funding requirements across businesses.

Interbank lending decreased by $11bn, largely driven by money market and term lending operations in Asia.
Reverse repo activity decreased by $16bn, reflecting in part the management of cash surplus in North America.
Financial investments increased by $17bn, driven by an increase in investments across Asia and Europe.

Third-party assets in Balance Sheet Management

	2018	2017
	$m	$m
Cash and balances at central banks	144,802	161,715
Trading assets	601	637
Loans and advances:		
– to banks	25,257	36,047
– to customers	964	3,202
Reverse repurchase agreements	22,899	38,842
Financial investments	333,622	309,908
Other	6,880	4,648
At 31 Dec	535,025	554,999

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.

For details of our defined benefit schemes, including asset allocation, see Note 6 on the Financial Statements, and for pension risk management see page 126.

Additional market risk measures applicable only to the parent company

HSBC Holdings uses VaR to monitor and manage foreign exchange risk. In order to manage interest rate risk, HSBC Holdings uses the projected sensitivity of its net interest income to future changes in yield curves and the interest rate gap repricing tables.

Report of the Directors | Risk

Foreign exchange risk

Total foreign exchange VaR arising within HSBC Holdings in 2018 was as follows.

HSBC Holdings – foreign exchange VaR

	2018	2017
	$m	$m
At 31 Dec	77.7	78.9
Average	79.5	86.1
Minimum	77.7	74.9
Maximum	93.7	101.2

The foreign exchange risk arises from loans to subsidiaries of a capital nature that are not denominated in the functional currency of either the provider or the recipient and that are accounted for as financial assets, and from structural foreign exchange hedges. Changes in the carrying amount of these loans due to foreign exchange rate differences, and changes in the fair value of foreign exchange hedges are taken directly to HSBC Holdings' income statement.

Sensitivity of net interest income

HSBC Holdings monitors NII sensitivity over a five-year time horizon, reflecting the longer-term perspective on interest rate risk management appropriate to a financial services holding company. These sensitivities assume that any issuance where HSBC Holdings has an option to reimburse at a future call date is called at this date. The table below sets out the effect on HSBC Holdings' future NII over a five-year time horizon of incremental 25bps parallel falls or rises in all yield curves at the beginning of each quarter during the 12 months from 1 January 2018.

The NII sensitivities shown are indicative and based on simplified scenarios. Immediate interest rate rises of 25bps and 100bps would decrease projected net interest income for the 12 months to 31 December 2019 by $7m and $29m, respectively. Conversely, falls of 25bps and 100bps would increase projected net interest income for the 12 months to 31 December 2019 by $10m and $43m, respectively.

NII sensitivity to an instantaneous change in yield curves (12 months)

	US dollar	HK dollar	Sterling	Euro	Other	Total
	$m	$m	$m	$m	$m	$m
Change in Jan 2019 to Dec 2019 (based on balance sheet at 31 Dec 2018)						
+25bps	(10)	—	8	(5)	—	(7)
-25bps	10	—	(8)	8	—	10
+100bps	(38)	—	31	(22)	—	(29)
-100bps	38	—	(28)	33	—	43
Change in Jan 2018 to Dec 2018 (based on balance sheet at 31 December 2018)						
+25bps	32	—	3	(2)	—	34
-25bps	(32)	—	(3)	10	—	(26)
+100bps	129	—	12	(6)	—	135
-100bps	(129)	—	(8)	40	—	(97)

NII sensitivity to an instantaneous change in yield curves (5 years)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
	$m	$m	$m	$m	$m	$m
Change in Jan 2019 to Dec 2019 (based on balance sheet at 31 December 2018)						
+25bps	(7)	(9)	(9)	(4)	(8)	(37)

-25bps	10	12	11	11	11	55
+100bps	(29)	(36)	(36)	(16)	(32)	(149)
-100bps	43	47	47	29	42	208
Change in Jan 2018 to Dec 2018 (based on balance sheet at 31 December 2018)					—	
+25bps	34	52	52	53	53	244
-25bps	(26)	(47)	(57)	(53)	(53)	(236)
+100bps	135	208	210	210	210	973
-100bps	(97)	(168)	(189)	(201)	(205)	(860)

The interest rate sensitivities in the preceding table are indicative and based on simplified scenarios. The figures represent hypothetical movements in NII based on our projected yield curve scenarios, HSBC Holdings' current interest rate risk profile and assumed changes to that profile during the next five years.
The sensitivities represent our assessment of the change to a hypothetical base case based on a static balance sheet assumption, and do not take into account the effect of actions that could be taken to mitigate this interest rate risk.

Interest rate repricing gap table
The interest rate risk on the fixed-rate securities issued by HSBC Holdings is not included within the Group VaR, but is managed on a repricing gap basis. The following interest rate repricing gap table analyses the full-term structure of interest rate mismatches within HSBC Holdings' balance sheet where debt issuances are reflected based on either the next reprice date if floating rate or the maturity/call date (whichever is first) if fixed rate.

Repricing gap analysis of HSBC Holdings

	Footnotes	Total	Up to 1 year	From over 1 to 5 years	From over 5 to 10 years	More than 10 years	Non-interest bearing
		$m	$m	$m	$m	$m	$m
Cash at bank and in hand:							
– balances with HSBC undertakings		3,509	3,509	—	—	—	—
Derivatives		707	—	—	—	—	707
Loans and advances to HSBC undertakings		79,657	39,316	16,717	18,382	2,000	3,242
Financial investments in HSBC undertakings		—	—	—	—	—	—
Investments in subsidiaries		160,231	4,703	2,136	379		153,013
Other assets		1,077	—	—	—	—	1,077
Total assets		245,181	47,528	18,853	18,761	2,000	158,039
Amounts owed to HSBC undertakings		(949)	—	—	—	—	(949)
Financial liabilities designated at fair values		(25,049)	(1,920)	(11,871)	(9,299)	(750)	(1,208)
Derivatives		(2,159)	—	—	—	—	(2,159)
Debt securities in issue		(50,800)	(14,879)	(16,753)	(18,156)	(2,900)	1,888
Other liabilities		(1,156)	—	—	—	—	(1,156)
Subordinated liabilities		(17,715)	(1,646)	—	(4,476)	(10,317)	(1,277)
Total equity		(147,353)	(1,450)	(9,861)	(10,777)	(1,372)	(123,893)
Total liabilities and equity		(245,181)	(19,895)	(38,485)	(42,708)	(15,339)	(128,754)
Off-balance sheet items attracting interest rate sensitivity			(30,713)	10,544	12,718	6,410	1,041
Net interest rate risk gap at 31 Dec 2018			(3,080)	(9,088)	(11,229)	(6,929)	30,326
Cumulative interest rate gap			(3,080)	(12,168)	(23,397)	(30,326)	
Cash at bank and in hand:							
– balances with HSBC undertakings		1,985	1,985	—	—	—	—
Derivatives		2,388	—	—	—	—	2,388
Loans and advances to HSBC undertakings		88,571	63,237	6,027	12,521	3,351	3,435
Financial investments in HSBC undertakings		4,264	2,375	—	—	—	1,596
Investments in subsidiaries		92,930	4,866	2,640	—	—	85,424
Other assets		1,596	—	—	—	—	1,596
Total assets		191,734	72,463	8,667	12,521	3,351	94,732
Amounts owed to HSBC undertakings		(2,157)	—				(2,571)
Financial liabilities designated at fair values		(30,890)	—	(12,895)	(10,175)	(4,453)	(3,367)
Derivatives		(3,082)	—	—	—	—	(3,082)
Debt securities in issue		(34,258)	(8,433)	(9,017)	(14,517)	(3,351)	1,060
Other liabilities		(1,269)	—	—	—	—	(1,269)
Subordinated liabilities		(15,877)	(1,918)	(1,798)	(2,000)	(9,713)	(448)
Total equity		(103,787)	(7,450)	(6,047)	(8,899)	(1,498)	(79,893)
Total liabilities and equity		(191,734)	(17,801)	(29,757)	(35,591)	(19,015)	(89,570)
Off-balance sheet items attracting interest rate sensitivity			(41,199)	17,812	14,171	7,705	1,511

Net interest rate risk gap at 31 Dec 2017	39	13,463	(3,278)	(8,899)	(7,959)	6,673
Cumulative interest rate gap		13,463	10,185	1,286	(6,673)	—

For footnotes, see page 192.

Operational risk profile

Operational risk is the risk to achieving our strategy or objectives as a result of inadequate or failed internal processes, people and systems or from external events.

Responsibility for minimising operational risk lies with HSBC's employees. They are required to manage the operational risks of the business and operational activities for which they are responsible.

A summary of our current policies and practices regarding the management of operational risk is set out on page 123.

Operational risk exposures in 2018

In 2018, we continued our ongoing work to strengthen those controls that manage our most material risks. Among other measures, we:

- further enhanced our controls to help ensure that we know our customers, ask the right questions, monitor transactions and escalate concerns to detect, prevent and deter financial crime risk;
- implemented a number of initiatives to raise our standards in relation to the conduct of our business as described on page 123 of the 'Regulatory compliance risk management' section;
- increased monitoring and enhanced detective controls to manage fraud risks, which arise from new technologies and new ways of banking;
- strengthened internal security controls to help prevent cyber-attacks;
- improved controls and security to protect customers when using digital channels; and
- enhanced our third-party risk management capability to help enable the consistent risk assessment of any third-party service.

Further information on the nature of these risks is provided in 'Top and emerging risks' on page 100 and in 'Risk management' from pages 112 to 127.

Operational risk losses in 2018

Operational risk losses in 2018 were higher than in 2017, reflecting an increase in losses incurred relating to large legacy conduct-related events. For further details see Note 35 on the Financial Statements and on conduct-related costs included in significant items on page 88.

Insurance manufacturing operations risk profile

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Insurance manufacturing operations risk in 2018

The majority of the risk in our insurance business derives from manufacturing activities and can be categorised as financial risk or insurance risk. Financial risks include market risk, credit risk and liquidity risk. Insurance risk is the risk, other than financial risk, of loss transferred from the holder of the insurance contract to the issuer (HSBC).

A summary of our current policies and practices regarding the management of insurance risk is set out on page 125.

HSBC's bancassurance model

We operate an integrated bancassurance model that provides insurance products principally for customers with whom we have a banking relationship.

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. For the products we manufacture, the majority of sales are of savings, universal life and credit and term life contracts.

By focusing largely on personal and small and medium enterprises ('SME') lines of business, we are able to optimise volumes and diversify individual insurance risks. We choose to manufacture these insurance products in HSBC subsidiaries based on an assessment of operational scale and risk appetite. Manufacturing insurance allows us to retain the risks and rewards associated with writing insurance contracts by keeping part of the underwriting profit and investment income within the Group.

We have life insurance manufacturing subsidiaries in nine countries and territories (Hong Kong, France, Singapore, UK, mainland China, Malta, Mexico, Argentina and Malaysia). We also have a life insurance manufacturing associate in India.

Where we do not have the risk appetite or operational scale to be an effective insurance manufacturer, we engage with a small number 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.

Insurance products are sold worldwide, predominantly by RBWM, CMB and GPB through our branches and direct channels.

Measurement

(Audited)

The risk profile of our insurance manufacturing businesses is measured using an economic capital approach. Assets and liabilities are measured on a market value basis, and a capital requirement is defined to ensure that there is a less than one-in-200 chance of insolvency over a one-year time horizon, given the risks to which the businesses are exposed. The methodology for the economic capital calculation is largely aligned to the pan-European Solvency II insurance capital regulations. The economic capital coverage ratio (economic net asset value divided by the economic capital requirement) is a key risk appetite measure.

The business has a current appetite to remain above 140% with a tolerance of 110%. In addition to economic capital, the regulatory solvency ratio is also a metric used to manage risk appetite on an entity basis.

The following tables show the composition of assets and liabilities by contract type and by geographical region.

Balance sheet of insurance manufacturing subsidiaries by type of contract
(Audited)

	Footnotes	With DPF	Unit-linked	Other contracts[40]	Shareholder assets and liabilities	Total
		$m	$m	$m	$m	$m
Financial assets		66,735	7,337	15,552	7,120	96,744
– trading assets		—	—	—	—	—
– financial assets designated and otherwise mandatorily measured at fair value through profit or loss		17,855	7,099	3,024	1,264	29,242
– derivatives		200	—	33	4	237
– financial investments at amortised cost		33,575	70	11,597	4,171	49,413
– financial investments at fair value through other comprehensive income		11,499	—	450	1,385	13,334
– other financial assets	41	3,606	168	448	296	4,518
Reinsurance assets		1,255	69	1,368	—	2,692
PVIF	42	—	—	—	7,149	7,149
Other assets and investment properties		2,670	2	235	453	3,360
Total assets		70,660	7,408	17,155	14,722	109,945
Liabilities under investment contracts designated at fair value		—	1,574	3,884	—	5,458
Liabilities under insurance contracts		69,269	5,789	12,272	—	87,330
Deferred tax	43	179	21	15	1,051	1,266
Other liabilities		—	—	—	3,659	3,659
Total liabilities		69,448	7,384	16,171	4,710	97,713
Total equity		—	—	—	12,232	12,232
Total liabilities and equity at 31 Dec 2018		69,448	7,384	16,171	16,942	109,945

For footnotes, see page 192.

Balance sheet of insurance manufacturing subsidiaries by type of contract (continued)
(Audited)

	Footnotes	With DPF $m	Unit-linked $m	Other contracts[40] $m	Shareholder assets and liabilities $m	Total $m
Financial assets		65,112	9,081	14,849	6,662	95,704
– trading assets		—	—	—	—	—
– financial assets designated at fair value		15,533	8,814	2,951	1,259	28,557
– derivatives		286	—	13	41	340
– financial investments – HTM	44	29,302	—	6,396	3,331	39,029
– financial investments – AFS	44	15,280	—	4,836	1,877	21,993
– other financial assets	41	4,711	267	653	154	5,785
Reinsurance assets		1,108	274	1,154	—	2,536
PVIF	42	—	—	—	6,610	6,610
Other assets and investment properties		1,975	2	164	1,126	3,267
Total assets		68,195	9,357	16,167	14,398	108,117
Liabilities under investment contracts designated at fair value		—	1,750	3,885	—	5,635
Liabilities under insurance contracts		67,137	7,548	10,982	—	85,667
Deferred tax	43	14	6	9	1,230	1,259
Other liabilities		—	—	—	3,325	3,325
Total liabilities		67,151	9,304	14,876	4,555	95,886
Total equity		—	—	—	12,231	12,231
Total liabilities and equity at 31 Dec 2017		67,151	9,304	14,876	16,786	108,117

For footnotes, see page 192.

Balance sheet of insurance manufacturing subsidiaries by geographical region[45]
(Audited)

	Footnotes	Europe $m	Asia $m	Latin America $m	Total $m
Financial assets		28,631	66,793	1,320	96,744
– trading assets		—	—	—	—
– financial assets designated and otherwise mandatorily measured at fair value through profit or loss		13,142	15,774	326	29,242
– derivatives		121	116	—	237
– financial investments – at amortised cost		296	48,595	522	49,413
– financial investments – at fair value through other comprehensive income		12,453	440	441	13,334
– other financial assets	41	2,619	1,868	31	4,518
Reinsurance assets		249	2,438	5	2,692
PVIF	42	832	6,195	122	7,149
Other assets and investment properties		1,053	2,280	27	3,360
Total assets		30,765	77,706	1,474	109,945
Liabilities under investment contracts designated at fair value		780	4,678	—	5,458
Liabilities under insurance contracts		26,375	59,829	1,126	87,330
Deferred tax	43	209	1,050	7	1,266
Other liabilities		1,690	1,911	58	3,659
Total liabilities		29,054	67,468	1,191	97,713
Total equity		1,711	10,238	283	12,232
Total liabilities and equity at 31 Dec 2018		30,765	77,706	1,474	109,945

Financial assets		30,231	63,973	1,500	95,704
– trading assets		—	—	—	—
– financial assets designated at fair value		12,430	15,633	494	28,557
– derivatives		169	171	—	340
– financial investments – HTM	44	—	38,506	523	39,029
– financial investments – AFS	44	15,144	6,393	456	21,993
– other financial assets	41	2,488	3,270	27	5,785
Reinsurance assets		469	2,063	4	2,536
PVIF	42	773	5,709	128	6,610
Other assets and investment properties		1,666	1,577	24	3,267
Total assets		33,139	73,322	1,656	108,117
Liabilities under investment contracts designated at fair value		739	4,896	—	5,635
Liabilities under insurance contracts		28,416	56,047	1,204	85,667
Deferred tax	43	217	1,033	9	1,259
Other liabilities		2,043	1,209	73	3,325
Total liabilities		31,415	63,185	1,286	95,886
Total equity		1,724	10,137	370	12,231
Total liabilities and equity at 31 Dec 2017		33,139	73,322	1,656	108,117

For footnotes, see page 192.

Key risk types

The key risks for the insurance operations are market risks (in particular interest rate and equity) and credit risks, followed by insurance underwriting risk and operational risks. Liquidity risk, while significant for the bank, is minor for our insurance operations.

Market risk

(Audited)

Description and exposure

Market risk is the risk of changes in market factors affecting HSBC's capital or profit. Market factors include interest rates, equity and growth assets and foreign exchange rates.

Our exposure varies depending on the type of contract issued. Our most significant life insurance products are contracts with discretionary participating features ('DPF') issued in France and Hong Kong. These products typically include some form of capital guarantee or guaranteed return on the sums invested by the policyholders, to which discretionary bonuses are added if allowed by the overall performance of the funds. These funds are primarily invested in bonds, with a proportion allocated to other asset classes to provide customers with the potential for enhanced returns.

DPF products expose HSBC to the risk of variation in asset returns, which will impact our participation in the investment performance.

In addition, in some scenarios the asset returns can become insufficient to cover the policyholders' financial guarantees, in which case the shortfall has to be met by HSBC. Reserves are held against the cost of such guarantees, calculated by stochastic modelling.

Where local rules require, these reserves are held as part of liabilities under insurance contracts. Any remainder is accounted for as a deduction from the present value of in-force ('PVIF') long-term insurance business on the relevant product. The following table shows the total reserve held for the cost of guarantees, the range of investment returns on assets supporting these products and the implied investment return that would enable the business to meet the guarantees.

The cost of guarantees decreased to $669m (2017: $696m) primarily due to sales of new products with lower guarantees in Hong Kong and updates to modelling assumptions.

For unit-linked contracts, market risk is substantially borne by the policyholder, but some market risk exposure typically remains, as fees earned are related to the market value of the linked assets.

Financial return guarantees

(Audited)

		2018			2017		
		Investment returns implied by guarantee	Long-term investment returns on relevant portfolios	Cost of guarantees	Investment returns implied by guarantee	Long-term investment returns on relevant portfolios	Cost of guarantees
	Footnotes	%	%	$m	%	%	$m
Capital		0.0	2.2–3.0	100	0.0	2.3–3.2	103
Nominal annual return		0.1–2.0	3.6–3.7	78	0.1–2.0	3.2–3.7	64
Nominal annual return	46	2.1–4.0	2.7–4.6	420	2.1–4.0	3.2–4.4	459
Nominal annual return		4.1–5.0	2.7–4.1	71	4.1–5.0	3.2–4.1	70

At 31 Dec	669	696

For footnotes, see page 192.

Sensitivities

Changes in financial market factors, from the economic assumptions in place at the start of the year, had a negative impact on reported profit before tax of $326m (2017: $296m positive). The following table illustrates the effects of selected interest rate, equity price and foreign exchange rate scenarios on our profit for the year and the total equity of our insurance manufacturing subsidiaries.

Where appropriate, the effects of the sensitivity tests on profit after tax and equity incorporate the impact of the stress on the PVIF. Due in part to the impact of the cost of guarantees and hedging strategies which may be in place, the relationship between the profit and total equity and the risk factors is non-linear. Therefore, the results disclosed should not be extrapolated

to measure sensitivities to different levels of stress. For the same reason, the impact of the stress is not necessarily symmetrical on the upside and downside. The sensitivities are stated before allowance for management actions which may mitigate the effect of changes in the market environment. The sensitivities presented allow for adverse changes in policyholder behaviour that may arise in response to changes in market rates.

Interest rate movements have historically had a greater impact on total equity as changes in the market value of available-for-sale ('AFS') bonds are recognised directly in equity. This impact has reduced in 2018 due to the reclassification of debt securities in Hong Kong and Singapore from AFS to amortised cost on the implementation of IFRS 9.

Sensitivity of HSBC's insurance manufacturing subsidiaries to market risk factors

(Audited)

	2018		2017	
	Effect on profit after tax	Effect on total equity	Effect on profit after tax	Effect on total equity
	$m	$m	$m	$m
+100 basis point parallel shift in yield curves	9	(61)	42	(583)
-100 basis point parallel shift in yield curves	(28)	46	(140)	617
10% increase in equity prices	213	213	223	237
10% decrease in equity prices	(202)	(202)	(225)	(239)
10% increase in US dollar exchange rate compared with all currencies	36	36	24	24
10% decrease in US dollar exchange rate compared with all currencies	(36)	(36)	(24)	(24)

Credit risk

(Audited)

Description and exposure

Credit risk is the risk of financial loss if a customer or counterparty fails to meet their obligation under a contract. It arises in two main areas for our insurance manufacturers:

- risk associated with credit spread volatility and default by debt security counterparties after investing premiums to generate a return for policyholders and shareholders; and
- risk of default by reinsurance counterparties and non-reimbursement for claims made after ceding insurance risk.

The amounts outstanding at the balance sheet date in respect of these items are shown in the table on page 189.

The credit quality of the reinsurers' share of liabilities under insurance contracts is assessed as 'satisfactory' or higher (as defined on page 118), with 100% of the exposure being neither past due nor impaired (2017: 100%).

Credit risk on assets supporting unit-linked liabilities is predominantly borne by the policyholder. Therefore, our exposure is primarily related to liabilities under non-linked insurance and investment contracts and shareholders' funds. The credit quality of insurance financial assets is included in the table on page 139. The

risk associated with credit spread volatility is to a large extent mitigated by holding debt securities to maturity, and sharing a degree of credit spread experience with policyholders.

Liquidity risk

(Audited)

Description and exposure

Liquidity risk is the risk that an insurance operation, though solvent, either does not have sufficient financial resources available to meet its obligations when they fall due, or can secure them only at excessive cost.

The following table shows the expected undiscounted cash flows for insurance liabilities at 31 December 2018. The liquidity risk exposure is wholly borne by the policyholder in the case of unit-linked business and is shared with the policyholder for non-linked insurance.

The profile of the expected maturity of insurance contracts at 31 December 2018 remained comparable with 2017.

The remaining contractual maturity of investment contract liabilities is included in Note 29 on page 319.

Expected maturity of insurance contract liabilities

(Audited)

	Expected cash flows (undiscounted)				
	Within 1 year	1-5 years	5-15 years	Over 15 years	Total
	$m	$m	$m	$m	$m
Unit-linked	1,119	2,932	2,684	1,962	8,697
With DPF and Other contracts	7,459	27,497	46,217	55,989	137,162
At 31 Dec 2018	8,578	30,429	48,901	57,951	145,859
Unit-linked	969	3,041	4,695	6,814	15,519
With DPF and Other contracts	6,916	26,453	43,784	45,334	122,487
At 31 Dec 2017	7,885	29,494	48,479	52,148	138,006

Insurance risk

Description and exposure

Insurance risk is the risk of loss through adverse experience, in either timing or amount, of insurance underwriting parameters (non-economic assumptions). These parameters include mortality, morbidity, longevity, lapses and unit costs.

The principal risk we face is that, over time, the cost of the contract, including claims and benefits, may exceed the total amount of premiums and investment income received.

The tables on pages 189 and 190 analyse our life insurance risk exposures by type of contract and by geographical region.

The insurance risk profile and related exposures remain largely consistent with those observed at 31 December 2017.

Sensitivities
(Audited)
The following table shows the sensitivity of profit and total equity to reasonably possible changes in non-economic assumptions across all our insurance manufacturing subsidiaries.
Mortality and morbidity risk is typically associated with life insurance contracts. The effect on profit of an increase in mortality or morbidity depends on the type of business being written. Our largest exposures to mortality and morbidity risk exist in Hong Kong and Singapore.
Sensitivity to lapse rates depends on the type of contracts being written. For a portfolio of term assurance, an increase in lapse rates typically has a negative effect on profit due to the loss of future income on the lapsed policies. However, some contract lapses have a positive effect on profit due to the existence of policy surrender charges. We are most sensitive to a change in lapse rates on unit-linked and universal life contracts in Hong Kong and Singapore, and DPF contracts in France.

Expense rate risk is the exposure to a change in the cost of administering insurance contracts. To the extent that increased expenses cannot be passed on to policyholders, an increase in expense rates will have a negative effect on our profits.
Sensitivity analysis
(Audited)

	2018	2017
	$m	$m
Effect on profit after tax and total equity at 31 Dec		
10% increase in mortality and/or morbidity rates	(77)	(77)
10% decrease in mortality and/or morbidity rates	82	82
10% increase in lapse rates	(95)	(93)
10% decrease in lapse rates	107	106
10% increase in expense rates	(92)	(92)
10% decrease in expense rates	93	91

Footnotes to Risk

1 Customer risk rating ('CRR').
2 12-month point-in-time ('PIT') probability-weighted probability of default ('PD').
3 The interest rate risk on the fixed-rate securities issued by HSBC Holdings is not included in the Group VaR. The management of this risk is described on page 176.
4 BSM, for external reporting purposes, forms part of Corporate Centre while daily operations and risk are managed within GB&M.
5 The total ECL is recognised in the loss allowance for the financial asset unless the total ECL exceeds the gross carrying amount of the financial asset, in which case the ECL is recognised as a provision.
6 Includes only those financial instruments that are subject to the impairment requirements of IFRS 9. 'Prepayments, accrued income and other assets' as presented within the consolidated balance sheet on page 255 includes both financial and non-financial assets.
7 31 December 2017 balances have been restated to include $44bn of loan commitments (unsettled reverse repurchase agreements) not previously identified for disclosure.
8 Excludes performance guarantee contracts to which the impairment requirements in IFRS 9 are not applied.
9 Represents the maximum amount at risk should the contracts be fully drawn upon and clients default.
10 Debt instruments measured at FVOCI continue to be measured at fair value with the allowance for ECL as a memorandum item. Change in ECL is recognised in 'Change in expected credit losses and other credit impairment charges' in the income statement.
11 Purchased or originated credit-impaired ('POCI').
12 Days past due ('DPD'). Up to date accounts in Stage 2 are not shown in amounts.
13 Excludes ECL and financial instruments relating to defaulted obligors because the measurement of ECL is relatively more sensitive to credit factors specific to the obligor than future economic scenarios.
14 Includes off-balance sheet financial instruments that are subject to significant measurement uncertainty.
15 Includes low credit-risk financial instruments such as Debt instruments at FVOCI, which have low ECL coverage ratios under all the above scenarios. Coverage ratios on loans and advances to customers including loan commitments and financial guarantees are typically higher. For example, in the UK the coverage ratio for reported ECL is 0.39%, UK AD1 0.43% and UK AD2–3 0.72–0.81%. For US, the coverage ratio for these instruments for reported ECL is 0.11% and for Hong Kong 0.06% for the reported ECL and 0.20% for the trade Downside scenario.
16 ECL sensitivities exclude portfolios utilising less complex modelling approaches.
17 ECL sensitivity includes only on-balance sheet financial instruments to which IFRS 9 impairment requirements are applied.
18 For the purposes of this disclosure gross carrying value is defined as the amortised cost of a financial asset, before adjusting for any loss allowance. As such the gross carrying value of debt instruments at FVOCI as presented above will not reconcile to the balance sheet as it excludes fair value gains and losses.
19 Revocable loan and other commitments of $188bn which are out-of-scope of IFRS 9 are presented within the strong credit quality classification.
20 12 month point in time (PiT) adjusted for multiple economic scenarios
21 Real estate lending within this disclosure corresponds solely to the industry of the borrower. Commercial real estate on page 147 includes borrowers in multiple industries investing in income producing assets and to a lesser extent, their construction and development.
22 US mortgage-backed securities.
23 31 December 2017 balances have been restated to include $3bn of performance and other guarantees not previously identified for disclosure.
24 The disclosure is a comparative for the 2018 'Total wholesale lending for loans and advances to banks and customers by stage distribution table' and was not presented in the Annual Report and Accounts 2017.
25

The HSBC UK Liquidity Group shown comprises four legal entities: HSBC Bank plc (including all overseas branches, and SPEs consolidated by HSBC Bank plc for Financial Statement purposes), Marks and Spencer Financial Services plc, HSBC Private Bank (UK) Ltd and HSBC Trust Company (UK) Limited, managed as a single operating entity, in line with the application of UK liquidity regulation as agreed with the UK PRA.

26 The HSBC UK Liquidity Group shown comprises four legal entities: HSBC UK Bank plc (including the Dublin branch), Marks and Spencer Financial Services plc, HSBC Private Bank (UK) Ltd and HSBC Trust Company (UK) Limited, managed as a single operating entity, in line with the application of UK liquidity regulation as agreed with the UK PRA.

27 HSBC Bank plc includes all overseas branches, and SPEs consolidated by HSBC Bank plc for Financial Statements purposes.

28 The Hongkong and Shanghai Banking Corporation – Hong Kong branch and The Hongkong and Shanghai Banking Corporation – Singapore branch represent the material activities of The Hongkong and Shanghai Banking Corporation. Each branch is monitored and controlled for liquidity and funding risk purposes as a stand-alone operating entity.

29 The comparative figures have been re-presented to reflect revised data.

30 HSBC France and HSBC Canada represent the consolidated banking operations of the Group in France and Canada, respectively. HSBC France and HSBC Canada are each managed as single distinct operating entities for liquidity purposes.

31 In adopting the NSFR (BCBS 295) as a key internal risk management metric, the HSBC Group has, until such time that the NSFR becomes a binding regulatory requirement on the Group or the operating entity locally, permitted entities to reduce the amount of required stable funding requirement (‘RSF’) for listed equities where the valuation risk has been hedged through an exchange traded daily cash margined derivative, due to management’s view as to the speed at which these assets could be monetised under stress and the mitigation of the valuation risk. At 31 December 2018, only HSBC Bank plc were applying a lower RSF to such equities. The NSFRs presented seek to reflect the internal management view of funding risk.

32 The total shown for other principal HSBC operating entities represents the combined position of all the other operating entities overseen directly by the Risk Management Meeting of the GMB.

33 Structured liabilities have moved from ’Trading liabilities’ to ‘Financial liabilities designated at fair value’. Comparatives have not been restated. See Note 37 for further detail.

34 The undiscounted cash flows potentially payable under financial guarantees are classified on the basis of the earliest date they can be called. Application of this policy throughout the Group was improved in 2018, and therefore comparative information has been represented.

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

36 Portfolio diversification is the market risk dispersion effect of holding a portfolio containing different risk types. It represents the reduction in unsystematic market risk that occurs when combining a number of different risk types; for example, interest rate, equity and foreign exchange, together in one portfolio. It is measured as the difference between the sum of the VaR by individual risk type and the combined total VaR. A negative number represents the benefit of portfolio diversification. As the maximum and minimum occurs on different days for different risk types, it is not meaningful to calculate a portfolio diversification benefit for these measures.

37 The total VaR is non-additive across risk types due to diversification effects.

38 At 31 December, we had forward foreign exchange contracts of $5bn (2017: $5bn) in order to manage our sterling structural foreign exchange exposure.

39 Investments in subsidiaries and equity have been allocated based on call dates for any callable bonds. The prior year figures have been amended to reflect this.

40 ‘Other Contracts’ includes term insurance, credit life insurance, universal life insurance and investment contracts not included in the ‘Unit-linked’ or ‘With DPF’ columns.

41 Comprise mainly loans and advances to banks, cash and inter-company balances with other non-insurance legal entities.

42 Present value of in-force long-term insurance business.

43 ‘Deferred tax’ includes the deferred tax liabilities arising on recognition of PVIF.
44 Financial investments held to maturity (‘HTM’) and available for sale (‘AFS’).
45 HSBC has no insurance manufacturing subsidiaries in Middle East and North Africa or North America.
46 A block of contracts in France with guaranteed nominal annual returns in the range 1.25%-3.72% is reported entirely in the 2.1%-4.0% category in line with the average guaranteed return of 2.6% offered to policyholders by these contracts.

Capital

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Capital overview

Capital ratios

	At		
	31 Dec 2018	1 Jan 2018	31 Dec[1] 2017
	%	%	%
CRD IV transitional			
Common equity tier 1 ratio	14.0	14.6	14.5
Tier 1 ratio	17.0	17.4	17.3
Total capital ratio	20.0	21.0	20.9
CRD IV end point			
Common equity tier 1 ratio	14.0	14.6	14.5
Tier 1 ratio	16.6	16.5	16.4
Total capital ratio	19.4	18.3	18.3

Total regulatory capital and risk-weighted assets

	At		
	31 Dec 2018	1 Jan 2018	31 Dec[1] 2017
	$m	$m	$m
CRD IV transitional			
Common equity tier 1 capital	121,022	127,310	126,144
Additional tier 1 capital	26,120	24,810	24,810
Tier 2 capital	26,096	31,014	31,429
Total regulatory capital	173,238	183,134	182,383
Risk-weighted assets	865,318	872,089	871,337
CRD IV end point			
Common equity tier 1 capital	121,022	127,310	126,144
Additional tier 1 capital	22,525	16,531	16,531
Tier 2 capital	24,511	15,997	16,413
Total regulatory capital	168,058	159,838	159,088
Risk-weighted assets	865,318	872,089	871,337

RWAs by risk types

	RWAs	Capital required[2]
	$bn	$bn
Credit risk	691.1	55.3
Counterparty credit risk	47.3	3.8
Market risk	35.8	2.8
Operational risk	91.1	7.3
At 31 Dec 2018	865.3	69.2

For footnotes, see page 196.

Capital management

(Audited)

Our objective in the management of Group capital is to maintain appropriate levels to support our business strategy, and meet our regulatory and stress testing related requirements.

Approach and policy

Our approach to capital management is driven by our strategic and organisational requirements, taking into account the regulatory, economic and commercial environment. We aim to maintain a strong capital base to support the risks inherent in our business and invest in accordance with our strategy, meeting both consolidated and local regulatory capital requirements at all times.

Our policy on capital management is underpinned by a capital management framework and our internal capital adequacy assessment process ('ICAAP'), which helps enable us to manage our capital in a consistent manner. The framework incorporates a number of different capital measures calculated on an economic capital and regulatory capital basis. The ICAAP is an assessment of the Group's capital position, outlining both regulatory and internal capital resources and requirements with HSBC's business model, strategy, performance and planning, risks to capital, and the implications of stress testing to capital.

Our assessment of capital adequacy is aligned to our assessment of risks. These risks include credit, market, operational, pensions, insurance, structural foreign exchange, residual risk and interest rate risk in the banking book.

Planning and performance

Capital and risk-weighted asset ('RWA') plans form part of the annual operating plan that is approved by the Board. Revised RWA forecasts are submitted to the GMB on a monthly basis, and reported RWAs are monitored against the plan.

The responsibility for global capital allocation principles rests with the Group Chief Financial Officer. Through our internal governance processes, we seek to maintain discipline over our investment and capital allocation decisions, and seek to ensure that returns on investment meet the Group's management objectives. Our strategy is to allocate capital to businesses and entities to support growth objectives where returns above internal hurdle levels have been identified and in order to meet their regulatory and economic capital needs.

We manage business returns by using a return on tangible equity ('RoTE') measure and a return on average risk-weighted assets ('RoRWA') measure.

Risks to capital

Outside the stress testing framework, other risks may be identified that have the potential to affect our RWAs and/or capital position. The Downside or Upside scenarios are assessed against our capital management objectives and mitigating actions are assigned as necessary.

HSBC closely monitors and considers future regulatory change.

In December 2017, the Basel Committee on Banking Supervision ('Basel') published revisions to the Basel III framework, which introduces considerable change across the regulatory framework. Following a recalibration, Basel also published the final changes to the market risk RWA regime, the Fundamental Review of the Trading Book ('FRTB'), in January 2019.

Basel has announced that the package will be implemented on
1 January 2022, with a five-year transitional provision for the output floor, commencing at a rate of 50%. The final standards will need to be transposed into the relevant local law before coming into effect.

HSBC continues to evaluate the final package. Given that the package contains a significant number of national discretions, the possible impact is uncertain.

Stress testing

In addition to annual internal stress tests, the Group is subject to supervisory stress testing in many jurisdictions. Supervisory stress testing requirements are increasing in frequency and in the granularity with which the results are required. These exercises include the programmes of the Prudential Regulation Authority ('PRA'), the Federal Reserve Board, the European Banking Authority, the European Central Bank and the Hong Kong Monetary Authority, as well as stress tests undertaken in other jurisdictions. We take into account the results of regulatory stress testing and our internal stress tests when assessing our internal capital requirements. The outcome of stress testing exercises carried out by the PRA also feeds into a PRA buffer under Pillar 2 requirements, where required.

Capital generation

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

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

Capital

Own funds disclosure

(Audited)

Ref*		At 31 Dec 2018 $m	31 Dec[1] 2017 $m
	Common equity tier 1 ('CET1') capital: instruments and reserves		
1	Capital instruments and the related share premium accounts	22,384	18,932
	– ordinary shares	22,384	18,932
2	Retained earnings	121,180	124,679
3	Accumulated other comprehensive income (and other reserves)	3,368	9,433
5	Minority interests (amount allowed in consolidated CET1)	4,854	4,905
5a	Independently reviewed interim net profits net of any foreseeable charge or dividend	3,697	608
6	Common equity tier 1 capital before regulatory adjustments	155,483	158,557
	Common equity tier 1 capital: regulatory adjustments		
7	Additional value adjustments	(1,180)	(1,146)
8	Intangible assets (net of related deferred tax liability)	(17,323)	(16,872)
10	Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability)	(1,042)	(1,181)
11	Fair value reserves related to gains or losses on cash flow hedges	135	208
12	Negative amounts resulting from the calculation of expected loss amounts	(1,750)	(2,820)
14	Gains or losses on liabilities at fair value resulting from changes in own credit standing	298	3,731
15	Defined-benefit pension fund assets	(6,070)	(6,740)
16	Direct and indirect holdings of own CET1 instruments	(40)	(40)
19	Direct, indirect and synthetic holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above 10% threshold and net of eligible short positions)	(7,489)	(7,553)
28	Total regulatory adjustments to common equity tier 1	(34,461)	(32,413)
29	Common equity tier 1 capital	121,022	126,144
	Additional tier 1 ('AT1') capital: instruments		
30	Capital instruments and the related share premium accounts	22,367	16,399
31	– classified as equity under IFRSs	22,367	16,399
33	Amount of qualifying items and the related share premium accounts subject to phase out from AT1	2,297	6,622
34	Qualifying tier 1 capital included in consolidated AT1 capital (including minority interests not included in CET1) issued by subsidiaries and held by third parties	1,516	1,901
35	– of which: instruments issued by subsidiaries subject to phase out	1,298	1,374
36	Additional tier 1 capital before regulatory adjustments	26,180	24,922
	Additional tier 1 capital: regulatory adjustments		
37	Direct and indirect holdings of own AT1 instruments	(60)	(60)
41b	Residual amounts deducted from AT1 capital with regard to deduction from tier 2 ('T2') capital during the transitional period	N/A	(52)
		N/A	(52)

	– 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		
43	Total regulatory adjustments to additional tier 1 capital	(60)	(112)
44	Additional tier 1 capital	26,120	24,810
45	Tier 1 capital	147,142	150,954
	Tier 2 capital: instruments and provisions		
46	Capital instruments and the related share premium accounts	25,056	16,880
47	Amount of qualifying items and the related share premium accounts subject to phase out from T2	N/A	4,746
48	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	1,673	10,306
49	– of which: instruments issued by subsidiaries subject to phase out	1,585	10,236
51	Tier 2 capital before regulatory adjustments	26,729	31,932
	Tier 2 capital: regulatory adjustments		
52	Direct and indirect holdings of own T2 instruments	(40)	(40)
55	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)	(593)	(463)
57	Total regulatory adjustments to tier 2 capital	(633)	(503)
58	Tier 2 capital	26,096	31,429
59	Total capital	173,238	182,383

* The references identify the lines prescribed in the European Banking Authority (‘EBA’) template, which are applicable and where there is a value.

For footnotes, see page 196.

Throughout 2018, we complied with the PRA's regulatory capital adequacy requirements, including those relating to stress testing.

At 31 December 2018, our Common equity tier 1 ('CET1') ratio decreased to 14.0% from 14.5% at 31 December 2017.

CET1 capital decreased during the year by $5.1bn, mainly as a result of:

- unfavourable foreign currency translation differences of $5.5bn;
- the $2.0bn share buy-back;
- a $1.2bn increase in threshold deductions as a result of an increase in the value of our material holdings; and
- an increase in the deduction for intangible assets of $1.1bn.

These decreases were partly offset by:

- capital generation through profits, net of dividends and scrip of $3.1bn; and
- a $1.2bn day one impact from transition to IFRS 9, mainly due to classification and measurement changes.

Our Pillar 2A requirement at 31 December 2018, as per the PRA's Individual Capital Guidance based on a point-in-time assessment, was 2.9% of RWAs, of which 1.6% was met by CET1. On 1 January 2019, our Pillar 2A requirement increased to 3.0% of RWAs, of which 1.7% must be met by CET1.

On 4 May 2018, HSBC changed the way in which some of its capital securities are recognised in regulatory capital. The securities were previously recognised as grandfathered tier 2 capital and are now treated as fully eligible tier 2 instruments.

Risk-weighted assets

RWAs

RWAs fell by $6.0bn in the year, which included a drop of $23.4bn due to foreign currency translation differences. Excluding foreign currency translation differences, the $17.4bn increase comprised growth of $27.6bn from asset size and of $2.9bn from changes in asset quality, less a $9.2bn fall due to changes in methodology and policy and a $3.9bn decrease due to model updates.

The following comments describe RWA movements in 2018, excluding foreign currency translation differences.

Asset size

Asset size movements of $41.5bn were principally driven by lending growth in CMB, RBWM and GB&M. In CMB and GB&M, corporate lending made the largest contribution, primarily in Hong Kong, reflecting our strategic focus on loan business in the region and customer demand. RBWM's $6.5bn increase in book size mainly stemmed from mortgage business in Asia and Europe, which was boosted by expanding broker relationships in the UK.

In Corporate Centre, there was a fall of $11.3bn. This included reductions in legacy portfolios of $9.1bn and a decline in money market placements and balances with correspondent banks, which was primarily in Hong Kong. Market risk exposures reduced by $2.8bn, mostly due to lower exposures and rate volatility in France.

Asset quality

Mainly as a result of changes in portfolio mix, RWAs increased by $4.0bn across CMB, GB&M, GPB and RBWM, significantly in Europe and North America. These rises were mitigated by the impact of improved risk parameters in Corporate Centre, predominantly in Asia.

Model updates

Extending our counterparty credit risk exposure models to exposures in Asia and North America reduced RWAs by $4.3bn and $2.4bn respectively.

This was partly offset by increases of $1.6bn, due to updates to UK retail and corporate models, $1.1bn due to a new receivables finance model in Germany, and $0.4bn due to a redeveloped residential mortgage model in Hong Kong.

Methodology and policy

The $10.0bn decrease reported in internal updates derived from management initiatives, including refinements to risk parameters and improved collateral recognition. This was partly offset by a $0.8bn increase in external updates from IFRS 9 implementation effects on credit risk and deferred tax in Corporate Centre.

RWAs by global business

	CMB	GB&M	GPB	Corporate Centre	Total

	RBWM					
	$bn	$bn	$bn	$bn	$bn	$bn
Credit risk	99.6	296.9	172.0	13.8	108.8	691.1
Counterparty credit risk	—	—	45.1	0.2	2.0	47.3
Market risk	—	—	32.4	—	3.4	35.8
Operational risk	27.3	24.3	31.5	2.8	5.2	91.1
At 31 Dec 2018	126.9	321.2	281.0	16.8	119.4	865.3
Credit risk	94.2	277.3	180.2	13.0	120.5	685.2
Counterparty credit risk	—	—	52.4	0.2	1.9	54.5
Market risk	—	—	35.9	—	3.0	38.9
Operational risk	27.3	23.7	30.8	2.8	8.1	92.7
At 31 Dec 2017	121.5	301.0	299.3	16.0	133.5	871.3

RWAs by geographical region

		Europe	Asia	MENA	North America	Latin America	Total
	Footnotes	$bn	$bn	$bn	$bn	$bn	$bn
Credit risk		219.5	291.9	47.0	103.1	29.6	691.1
Counterparty credit risk		27.3	9.2	1.0	8.3	1.5	47.3
Market risk	3	24.0	23.3	1.9	8.5	1.4	35.8
Operational risk		27.3	39.5	6.8	11.7	5.8	91.1
At 31 Dec 2018		298.1	363.9	56.7	131.6	38.3	865.3
Credit risk		225.9	284.2	47.7	101.2	26.2	685.2
Counterparty credit risk		27.8	13.0	1.1	10.9	1.7	54.5
Market risk	3	29.0	23.5	3.3	7.1	1.0	38.9
Operational risk		28.9	37.1	7.1	12.1	7.5	92.7
At 31 Dec 2017		311.6	357.8	59.2	131.3	36.4	871.3

For footnotes, see page 196.

RWA movement by global business by key driver

	Credit risk, counterparty credit risk and operational risk						
	RBWM	CMB	GB&M	GPB	Corporate Centre	Market risk	Total RWAs
	$bn	$bn	$bn	$bn	$bn	$bn	$bn
RWAs at 31 Dec 2017	121.5	301.0	263.4	16.0	130.5	38.9	871.3
Asset size	6.5	30.8	4.2	0.2	(11.3)	(2.8)	27.6
Asset quality	0.4	2.0	0.9	0.7	(1.1)	—	2.9
Model updates	1.3	1.7	(6.9)	—	—	—	(3.9)
– portfolios moving onto internal ratings based ('IRB') approach	0.6	0.8	(0.3)	—	—	—	1.1
– new/updated models	0.7	0.9	(6.6)	—	—	—	(5.0)
Methodology and policy	0.7	(2.4)	(7.3)	0.1	—	(0.3)	(9.2)
– internal updates	0.9	(2.6)	(7.3)	0.1	(0.8)	(0.3)	(10.0)
– external updates – regulatory	(0.2)	0.2	—	—	0.8	—	0.8
Foreign exchange movements	(3.5)	(11.9)	(5.7)	(0.2)	(2.1)	—	(23.4)
Total RWA movement	5.4	20.2	(14.8)	0.8	(14.5)	(3.1)	(6.0)
RWAs at 31 Dec 2018	126.9	321.2	248.6	16.8	116.0	35.8	865.3

RWA movement by geographical region by key driver

	Credit risk, counterparty credit risk and operational risk						
	Europe	Asia	MENA	North America	Latin America	Market risk	Total RWAs
	$bn	$bn	$bn	$bn	$bn	$bn	$bn
RWAs at 31 Dec 2017	282.6	334.3	55.9	124.2	35.4	38.9	871.3
Asset size	(0.4)	23.2	0.4	2.6	4.6	(2.8)	27.6
Asset quality	2.3	(0.9)	0.1	1.3	0.1	—	2.9
Model updates	2.9	(4.5)	—	(2.3)	—	—	(3.9)
– portfolios moving onto IRB approach	1.4	(0.2)	—	(0.1)	—	—	1.1
– new/updated models	1.5	(4.3)	—	(2.2)	—	—	(5.0)
Methodology and policy	(2.4)	(5.4)	(0.2)	(0.7)	(0.2)	(0.3)	(9.2)
– internal updates	(2.4)	(5.8)	(0.6)	(0.9)	—	(0.3)	