
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K**

(Mark One)

☒ 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

For the transition period from _____ to _____
Commission file number 001-07436

HSBC USA Inc.
(Exact name of registrant as specified in its charter)

Maryland
(State of incorporation)
452 Fifth Avenue, New York, New York
(Address of principal executive offices)

13-2764867
(I.R.S. Employer Identification No.)
10018
(Zip Code)

Registrant's telephone number, including area code (212) 525-5000

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
\$100,000,000 Zero Coupon Callable Accreting Notes due January 15, 2043	New York Stock Exchange
\$50,000,000 Zero Coupon Callable Accreting Notes due January 29, 2043	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ 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. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

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

Large accelerated filer ☐ Accelerated filer ☐ Non-accelerated filer ☒ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of February 15, 2019, there were 714 shares of the registrant's common stock outstanding, all of which are owned by HSBC North America Holdings Inc.

The registrant meets the conditions set forth in General Instruction I(1)(a) and (b) of Form 10-K and has therefore omitted certain items from this report in accordance with the reduced disclosure format under General Instruction I.

DOCUMENTS INCORPORATED BY REFERENCE

None.

TABLE OF CONTENTS

Part/Item No.			
Part I			Page
Item 1.	Business:		
	Organization History		4
	HSBC North America Operations		4
	HSBC USA Operations		4
	Funding.....		6
	Employees and Customers		7
	Regulation and Competition		7
	Corporate Governance and Controls		14
Item 1A.	Risk Factors		15
Item 1B.	Unresolved Staff Comments		28
Item 2.	Properties		29
Item 3.	Legal Proceedings		29
Item 4.	Mine Safety Disclosures		29
Part II			
Item 5.	Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.....		29
Item 6.	Selected Financial Data.....		30
Item 7.	Management's Discussion and Analysis of Financial Condition and Results of Operations:		
	Forward-Looking Statements		32
	Executive Overview		34
	Basis of Reporting		36
	Critical Accounting Policies and Estimates.....		37
	Balance Sheet Review		42
	Results of Operations		47
	Segment Results - Group Reporting Basis		54
	Credit Quality		61
	Liquidity and Capital Resources		76
	Off-Balance Sheet Arrangements, Credit Derivatives and Other Contractual Obligations		80
	Fair Value.....		81
	Risk Management.....		83
	Glossary of Terms.....		101
	Consolidated Average Balances and Interest Rates.....		103
Item 7A.	Quantitative and Qualitative Disclosures about Market Risk.....		105
Item 8.	Financial Statements and Supplementary Data.....		105
	Selected Quarterly Financial Data (Unaudited).....		210
Item 9.	Changes in and Disagreements with Accountants on Accounting and Financial Disclosure		210
Item 9A.	Controls and Procedures		210
Item 9B.	Other Information		211

Part/Item No.**Part III****Page**

Item 10.	Directors, Executive Officers and Corporate Governance.....	213
Item 11.	Executive Compensation	213
Item 12.	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters .	213
Item 13.	Certain Relationships and Related Transactions, and Director Independence	213
Item 14.	Principal Accounting Fees and Services	213

Part IV

Item 15.	Exhibits and Financial Statement Schedules	214
Item 16.	Form 10-K Summary	215
Signatures		216

PART I

Item 1. Business

Organization History

HSBC USA Inc. ("HSBC USA"), incorporated under the laws of the State of Maryland in 1973 as Republic New York Corporation, was acquired through a series of transactions by HSBC Holdings plc ("HSBC" and, together with its subsidiaries, "HSBC Group") and later changed its name to "HSBC USA Inc.". HSBC USA is a wholly-owned subsidiary of HSBC North America Holdings Inc. ("HSBC North America"), which is an indirect wholly-owned subsidiary of HSBC. HSBC USA's principal business is to act as a holding company for its subsidiaries. In this Form 10-K, HSBC USA and its subsidiaries are referred to as "HUSI," "we," "us" and "our."

HSBC North America Operations

HSBC North America is the holding company for HSBC Group's operations in the United States. The principal subsidiaries of HSBC North America at December 31, 2018 were HSBC USA, HSBC Markets (USA) Inc. ("HMUS"), a holding company for certain subsidiaries primarily associated with global banking and markets businesses, and HSBC Technology & Services (USA) Inc. ("HTSU"), a provider of information technology and centralized operational and support services including human resources, tax, finance, compliance, legal, corporate affairs and other services shared among the subsidiaries of HSBC North America and the HSBC Group. HSBC USA's principal U.S. banking subsidiary is HSBC Bank USA, National Association (together with its subsidiaries, "HSBC Bank USA"). Under the oversight of HSBC North America, HUSI works with its affiliates to maximize opportunities and efficiencies in HSBC Group's operations in the United States. These affiliates do so by providing each other with, among other things, alternative sources of liquidity to fund operations and expertise in specialized corporate functions and services through the pooling of resources within HTSU to provide shared, allocated support functions to all of HSBC North America's subsidiaries. In addition, clients of HSBC Bank USA and other affiliates are investors in debt issued by HSBC USA and/or HSBC Bank USA, providing significant sources of liquidity and capital to both entities. HSBC Securities (USA) Inc. ("HSI"), a registered broker dealer and a subsidiary of HMUS, generally leads or participates as underwriter of all HUSI domestic issuances of term debt. While neither HSBC USA nor HSBC Bank USA has received advantaged pricing, the underwriting fees and commissions paid to HSI historically have benefited the HSBC Group.

HSBC USA Operations

HSBC's strategy is to be the world's leading international bank, maintaining an international network to connect faster-growing and developed markets. HSBC is a leading provider of transactional banking products which support global economic flows and its network covers more than 90 percent of global gross domestic product, trade and capital flows, providing clients and investors access to what we believe are the most attractive global growth opportunities. In support of HSBC's strategy, our operations are focused on the core activities of our four global businesses and a Corporate Center, as discussed below, and the positioning of our activities towards international connectivity strategies, including what we believe are our unique capabilities to serve clients in the North American trade corridor.

- Our Retail Banking and Wealth Management ("RBWM") business provides a range of banking and wealth products and services to individuals and certain small businesses, focusing on internationally minded customers in large metropolitan centers on the West and East coasts.
- Our Commercial Banking ("CMB") business serves corporate and business banking clients, focused on selected large cities, primarily along the West and East Coasts, with strong international trade ties.
- Our Global Banking and Markets ("GB&M") business serves top-tier multinational clients across the Americas and globally. Global Banking's sector-focused advisory and relationship management teams, as well as product-focused teams, collectively provide U.S. dollar funding along with other investment banking products and services, and Global Markets offers a wide range of products across fixed income, foreign exchange and equities.
- Our Private Bank ("PB") business serves high net worth and ultra-high net worth individuals and their families with a focus on multi-generational families, business executives and entrepreneurs who require sophisticated solutions to help meet their most complex needs domestically and abroad.

- Our Corporate Center ("CC") is comprised of certain centralized activities and functions such as Balance Sheet Management ("BSM") and our legacy structured credit products in order to better reflect the way we manage our businesses.

HSBC Bank USA, HSBC USA's principal U.S. banking subsidiary, is a national banking association. Through HSBC Bank USA, we offer our customers a full range of commercial and consumer banking products and related financial services. HSBC Bank USA is also an international dealer in derivative instruments denominated in U.S. dollars and other currencies, focusing on structuring transactions to meet clients' needs.

In 2005, HSBC USA incorporated a nationally chartered limited purpose bank subsidiary, HSBC Trust Company (Delaware), National Association ("HTCD"), the primary activities of which are providing personal trust services. The impact of HTCD's operations on HSBC USA's consolidated balance sheets and results of operations for the years ended December 31, 2018, 2017 and 2016 was not material.

We report financial information to our ultimate parent, HSBC, in accordance with HSBC Group accounting and reporting policies, which apply International Financial Reporting Standards ("IFRSs") as issued by the International Accounting Standards Board ("IASB") and endorsed by the European Union ("EU"). As a result, our segment results are prepared and presented using financial information prepared on the basis of HSBC Group's accounting and reporting policies ("Group Reporting Basis"). We continue, however, to monitor capital adequacy and report to regulatory agencies in accordance with accounting principles generally accepted in the United States ("U.S. GAAP"). For additional financial information relating to our business and operating segments as well as a summary of the significant differences between U.S. GAAP and the Group Reporting Basis as they impact our results, see Note 23, "Business Segments," in the accompanying consolidated financial statements.

Retail Banking and Wealth Management Segment Our RBWM segment provides a range of banking and wealth products and services through our branches and on-line channels to individuals and certain small businesses. These services include asset-driven services such as credit and lending, liability-driven services such as deposit taking and account services and fee or commission driven services such as advisory and brokerage. RBWM is focused on growing its wealth and banking business in key urban centers with strong international connectivity across the U.S. including New York City, Los Angeles, San Francisco, Miami and Washington DC. In addition to focusing on certain small businesses through its Retail Business Banking segment, RBWM focuses on two customer propositions: HSBC Premier and HSBC Advance. HSBC Premier, is a comprehensive banking and wealth management proposition for the internationally minded mass affluent client. HSBC Premier clients have access to a full suite of banking and wealth management solutions and also have access to priority services such as 24-hour telephone service and more favorable pricing based on the banking relationship. HSBC Premier clients also receive personalized support through dedicated relationship managers and are serviced through other alternative channels such as on-line banking and a dedicated contact center. HSBC Advance, RBWM's other main customer proposition, is a banking relationship designed to offer holistic financial services and banking products for emerging affluent clients in the initial stage of wealth accumulation or clients who look for more convenience and self-control with respect to their personal finances. In addition to everyday banking solutions, HSBC Advance customers have access to a range of lending and wealth products through HSBC's multi-channel platform, yet primarily through direct channels, including the contact center, secure internet banking and mobile.

With our affiliates, HSI and HSBC Insurance Agency (USA) Inc., HSBC Premier and HSBC Advance provides access to a range of wealth management solutions. RBWM also offers a broad range of financial products and services to all of its retail banking customers, including residential mortgages, home equity lines of credit, credit cards, deposits and branch services.

Commercial Banking Segment CMB's goal is to be the banking partner of choice for international businesses building on our rich heritage, international capabilities and customer relationships to enable global connectivity. CMB strives to execute this vision and strategy by focusing on key markets with high concentrations of international connectivity. Our CMB segment serves the markets through three client groups, notably Large Corporate, Middle Market and Business Banking. Supporting our three client groups is our International Subsidiary Banking team which provides solutions to international subsidiaries operating in the US. We also have a specialized Commercial Real Estate group which focuses on selective business opportunities in markets where we have strong portfolio expertise. This structure allows us to align our resources in order to efficiently deliver suitable products and services based on our clients' needs and abilities. Global Liquidity and Cash Management, Global Trade and Receivables Finance, Lending and Transaction Management, Investment Banking and Global Markets are key product groups that CMB partners with to deliver the global connections and related products and services required by customers. Whether it is through commercial centers, the retail branch network, or via HSBCnet, our online banking channel, CMB provides customers with the products and services needed to grow their businesses internationally and delivers those products and services through its relationship managers who operate within a robust, customer focused compliance and risk culture, and collaborate across HSBC to capture a larger percentage of a relationship.

Global Banking and Markets Segment Our GB&M business segment supports HSBC's global strategy by leveraging the HSBC Group's advantages and scale, strength in developed and emerging markets and product expertise in order to focus on delivering international products to U.S. clients and local products to international clients, with New York as the hub for the Americas business, including Canada and Latin America. GB&M provides tailored financial solutions to major government, corporate and institutional clients as well as private investors worldwide. GB&M clients are served by sector-focused teams that bring together relationship

managers and product specialists to develop financial solutions that meet individual client needs. With a focus on providing client connectivity between the emerging markets and developed markets, GB&M aims to develop a comprehensive understanding of each client's financial requirements with a long-term relationship management approach. In addition to GB&M clients, GB&M also provides financial solutions to RBWM, CMB and PB clients where those clients have needs that require the product set that GB&M has available.

Within client-focused business lines, GB&M offers a full range of capabilities, including:

- Banking and financing advice and solutions for sovereign, corporate and institutional clients, including loans, working capital, trade services, liquidity and cash management, leveraged and acquisition finance, project and infrastructure finance, asset finance, mergers and acquisitions advisory, as well as capital raising in the debt and equity capital markets; and
- A markets business with 24-hour coverage and knowledge of world-wide local markets which provides services in credit and rates, foreign exchange, precious metals trading, equities and securities services.

Private Banking Segment PB provides a broad range of banking and investment products and services to high net worth and ultra-high net worth individuals and families with a focus on multi-generational families, business executives and entrepreneurs who require sophisticated solutions to help meet their most complex needs domestically and abroad, with many clients sourced in collaboration with our other business lines. PB works with its clients to offer tailored, coordinated and innovative ways to manage and preserve wealth while optimizing returns. PB offers a wide range of products and services, including banking, liquidity management, investment services, custody, tailored lending, trust and fiduciary services, insurance, family wealth and philanthropy advisory services. PB also works to ensure that its clients have access to other products and services available throughout the HSBC Group, such as credit cards and investment banking, to deliver total solutions for their financial and wealth needs. Strategically, PB continues to reposition its focus, which includes the exiting of higher-risk markets and ongoing client segmentation. PB's close collaboration with RBWM has resulted in its ability to enhance service to its target clients while ensuring that the financial needs of clients that no longer meet minimum PB requirements continue to be serviced through offerings by RBWM. In support of its focus on the U.S. domestic market and key overseas countries in Latin America, PB continues to onboard new talent and expand its investment product and wealth planning offerings, leveraging both Global Markets and Global Asset Management platforms, allowing it to provide a broad array of domestic and global investment options.

Corporate Center Segment CC includes BSM, our legacy structured credit products, certain corporate function costs, certain debt issued for which fair value option accounting was elected and related derivatives, certain affiliate transactions, tax credit investments and adjustments to the fair value of HSBC shares held for stock plans. Prior to 2018, CC also included costs to achieve (representing costs incurred to deliver the cost reduction and productivity outcomes previously outlined by HSBC) as well as our legacy residential mortgage activities, including a portfolio of residential mortgage loans that we previously purchased from HSBC Finance Corporation ("HSBC Finance") and certain residential mortgage servicing activities performed on behalf of HSBC Finance.

BSM is included in CC and is responsible for managing liquidity and funding under the supervision of our Asset and Liability Management Committee. BSM also manages our structural interest rate position within a limit structure. The majority of the liquidity is invested in interest bearing deposits with Federal Reserve banks and U.S. Government and other high quality securities. BSM is permitted to use derivatives as part of its mandate to manage interest rate risk. Derivative activity is predominantly comprised of the use of traditional interest rate swaps which are part of cash flow hedging relationships. Credit risk in BSM is predominantly limited to short-term exposure created by exposure to banks as well as high quality sovereigns or agencies which constitute the majority of BSM's liquidity portfolio. BSM manages interest rate risk and liquidity risk.

Funding

We fund our operations using a diversified deposit base, supplemented by issuing short-term and long-term unsecured debt, secured financing repurchase agreements utilizing High Quality Liquid Assets ("HQLA"), accessing the Federal Home Loan Bank of New York, issuing preferred equity, and, as necessary, receiving capital contributions from our parent, HSBC North America. Emphasis is placed on maintaining stable deposit balances. In 2018, our primary source of funds continued to be deposits, augmented by issuances of commercial paper and term debt.

Numerous factors, both internal and external, may impact our access to, and the costs associated with, both retail and wholesale sources of funding. These factors may include our debt ratings, overall economic conditions, overall capital markets volatility, the counterparty credit limits of investors to the HSBC Group, and our management of the credit risks inherent in our business and customer base.

As previously reported, as a result of the adoption of the final rules by the U.S. banking regulators implementing the Basel III regulatory capital and liquidity reforms from the Basel Committee on Banking Supervision (the "Basel Committee"), together with the impact of similar implementation by United Kingdom ("U.K.") banking regulators, we continue to review the composition

of our capital structure. A detailed description of our sources and availability of funding are set forth in the "Liquidity and Capital Resources" and "Off-Balance Sheet Arrangements, Credit Derivatives and Other Contractual Obligations" sections of Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A").

The cash generated by these funding sources is primarily used to service our debt obligations, originate new loans, purchase investment securities, pay preferred dividends and, as available and appropriate, common dividends to our parent.

Employees and Customers

At December 31, 2018, we had approximately 4,933 employees, which does not take into account employees of affiliates that provide services to us.

At December 31, 2018, we had approximately 1.6 million customers, some of which are customers of more than one of our businesses. Customers residing in the state of New York and California accounted for 32 percent and 34 percent, respectively, of our total outstanding commercial real estate loans and residential mortgage loans.

Regulation and Competition

Regulation We are subject to, among other things, an extensive statutory and regulatory framework applicable to bank holding companies, financial holding companies and banks. U.S. regulation of banks, bank holding companies and financial holding companies is intended primarily for safety and soundness of banks, and the protection of the interests of depositors, the Federal Deposit Insurance Fund and the banking system as a whole rather than the protection of security holders and creditors. Events since early 2008 affecting the financial services industry and, more generally, the financial markets and the economy have led to a significant number of initiatives regarding reform of the financial services industry and the regulation governing the industry.

Bank Holding Company Supervision As a bank holding company, we are subject to regulation under the Bank Holding Company Act of 1956, as amended ("BHC Act"), and to inspection, examination and supervision by our primary regulator, the Federal Reserve Board ("FRB"). We are also subject to the disclosure and regulatory requirements of the Securities Act of 1933, as amended, and the Securities Exchange Act of 1934, as amended (the "Exchange Act"), as administered by the Securities and Exchange Commission (the "SEC").

Financial Holding Company Regulation HSBC USA and its parent bank holding companies qualified as financial holding companies pursuant to the amendments to the BHC Act effected by the Gramm-Leach-Bliley Act of 1999 ("GLB Act"). Financial holding companies may engage in a broader range of activities than bank holding companies. Under regulations implemented by the FRB, if any financial holding company, or any depository 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 depository institutions or its affiliates engaged in broader financial activities in reliance on the GLB Act if the deficiencies persist. The regulations also provide that if any depository institution controlled by a financial holding company fails to maintain a satisfactory rating under the Community Reinvestment Act of 1977, as amended, 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.

In November 2018, the FRB finalized revisions to its supervisory rating system for intermediate holding companies and large bank holding companies with \$100 billion or more in total consolidated assets, including HSBC North America and HSBC USA. Under the revised ratings system, covered bank holding companies would receive separate ratings from the FRB for (i) capital planning and positions, (ii) liquidity risk management and positions, and (iii) governance and controls. A covered bank holding company that receives a deficient rating for any of the three components will not be considered "well managed."

We are generally prohibited under the BHC Act from acquiring, directly or indirectly, ownership or control of more than five percent of any class of voting shares of, or substantially all the assets of, or exercising control over, any U.S. bank, bank holding company or many other types of depository institutions and/or their holding companies without the prior approval of the FRB and, potentially, other U.S. banking regulatory agencies.

The GLB Act and the regulations issued thereunder contain a number of other provisions that affect our operations and those of our subsidiary banks, including regulations and restrictions on the activities we may conduct and the types of businesses and entities we may acquire. Furthermore, other provisions contain detailed requirements relating to the financial privacy of consumers. In addition, the so-called 'push-out' provisions of the GLB Act removed the blanket exemption from registration for securities and brokerage activities conducted in banks (including HSBC Bank USA) under the Exchange Act. Applicable regulations allow banks

to continue to avoid registration as a broker or dealer only if they conduct securities activities that fall within a set of defined exceptions.

Consumer Regulation Our consumer lending businesses operate in a highly regulated environment. In addition to the establishment of the Consumer Financial Protection Bureau (the "CFPB") and the other consumer-related provisions of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the "Dodd-Frank Act" or "Dodd-Frank") described below, these businesses are subject to laws relating to consumer protection including, without limitation, fair lending, fair debt collection practices, mortgage loan origination and servicing obligations, bankruptcy, military service member protections, use of credit reports, privacy matters, and disclosure of credit terms and correction of billing errors. Local, state and national regulatory and enforcement agencies continue efforts to address perceived problems within the mortgage lending and credit card industries through broad or targeted legislative or regulatory initiatives aimed at lenders' operations in consumer lending markets. There continues to be a significant amount of legislative and regulatory activity, nationally, locally and at the state level, designed to limit certain lending practices while mandating certain servicing procedures. Federal bankruptcy and state debtor relief and collection laws, as well as the Servicemembers Civil Relief Act affect the ability of banks, including HSBC Bank USA, to collect outstanding balances.

Supervision of Bank Subsidiaries Our subsidiary national banks, HSBC Bank USA and HTCD, are subject to regulation and examination primarily by the Office of the Comptroller of the Currency ("OCC"). These subsidiary banks are subject to additional regulation and supervision by the Federal Deposit Insurance Corporation ("FDIC"), the FRB and the CFPB. HSBC Bank USA and HTCD are subject to banking laws and regulations that place various restrictions and requirements on their activities, investments, 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, transactions with affiliates, overall compliance and risk management and numerous other matters.

Federal law imposes limitations on the payment of dividends by national banks. Dividends payable by HSBC Bank USA and HTCD are limited to the lesser of the amounts calculated under a "recent earnings" test and an "undivided profits" test. Under the recent earnings test, a dividend may not be paid if the total of all dividends declared by a bank in any calendar year is in excess of the current year's net income combined with the retained net income of the two preceding years, unless the national bank obtains the approval of the OCC. Under the undivided profits test, a dividend may not be paid in excess of a bank's undivided profits account. HSBC Bank USA is also required to maintain reserves in the form of vault cash and deposits with the Federal Reserve Bank, as well as maintain appropriate amounts of capital against its assets as discussed further in this Annual Report on Form 10-K.

The types of activities in which the non-U.S. branches of HSBC Bank USA may engage are subject to various restrictions imposed by the FRB in addition to those generally applicable to HSBC Bank USA under OCC rules. These branches are also subject to the laws and regulatory authorities of the countries in which they operate.

Under longstanding FRB policy, which Dodd-Frank codified as a statutory requirement, HSBC USA is expected to act as a source of strength to its subsidiary banks and, under appropriate circumstances, to commit resources to support each such subsidiary bank in circumstances where it might not do so absent such policy.

Affiliate Transaction Restrictions HSBC Bank USA and HTCD are subject to significant restrictions imposed by federal law on extensions of credit to, and certain other "covered transactions" with HSBC USA or other affiliates. Covered transactions include loans and other extensions of credit, investments and asset purchases, derivatives and certain other transactions involving the transfer of value from, or taking the credit risk by, a subsidiary bank to an affiliate or for the benefit of an affiliate. Dodd-Frank expanded these affiliate transaction restrictions to include as a covered transaction the credit exposure of a bank to an affiliate arising from a derivative, securities lending/borrowing or repurchase transaction with an affiliate. The FRB has yet to propose rules to implement these revisions. A bank's transactions with its non-bank affiliates are also generally required to be on arm's length terms. Certain Edge Act subsidiaries of HSBC Bank USA are limited in the amount of funds they can provide to other affiliates including their parent. Amounts above their level of invested capital generally must be secured with U.S. government securities.

Unless an exemption applies, or a specific waiver is granted by the FRB, covered transactions by a bank with a single affiliate are limited to 10 percent of the bank's capital and surplus, and all covered transactions with affiliates in the aggregate are limited to 20 percent of a bank's capital and surplus. Loans and extensions of credit to affiliates by a bank generally are to be secured in specified amounts with specific types of collateral.

Regulatory Capital and Liquidity Requirements As a financial services holding company, we are subject to regulatory capital rules issued by U.S. banking regulators including Basel III (the "Basel III rule"). A bank or bank holding company's failure to meet minimum capital requirements can result in certain mandatory actions and possibly additional discretionary actions by its regulators. Generally, bank holding company regulatory capital compliance is performed at a consolidated level within the United States at HSBC North America, our parent, and also separately for HSBC Bank USA. However, we do present HSBC USA's capital ratios below in "Liquidity and Capital Resources" in our MD&A, as well as, together with HSBC Bank USA's, in Note 24, "Retained

Earnings and Regulatory Capital Requirements," of the accompanying consolidated financial statements. Our ultimate parent, HSBC, is also subject to regulatory capital requirements under U.K. law.

Basel III Overview The Basel III rule updated the compositions of capital and established a common equity Tier 1 capital ratio. The Basel III rule also revised minimum capital ratios and buffer requirements and added a supplementary leverage ratio ("SLR"). Under the Basel III rule, there are two methods available to calculate risk-weighted assets, the generally-applicable Standardized Approach and the Advanced Approaches, which are required in addition to the Standardized Approach for large banking organizations that meet certain thresholds (the "Advanced Approaches thresholds"). The Standardized Approach relies primarily on supervisory risk weights based on exposure type, and the Advanced Approaches determine risk weights based on internal models.

The FRB requires certain large non-U.S. banks with significant operations in the United States, such as HSBC, to establish a single intermediate holding company ("IHC") to hold all of their U.S. bank and non-bank subsidiaries. The HSBC Group operates in the United States through such an IHC structure (i.e., HSBC North America). In accordance with FRB rules, HSBC North America and HSBC Bank USA received regulatory approval to opt out of the Advanced Approaches and are calculating their risk-based and leverage capital requirements solely under the Standardized Approach. HSBC Bank USA submits an annual statement to the OCC to maintain this opt out. HSBC North America and HSBC Bank USA, however, remain subject to the other capital requirements applicable to Advanced Approaches banking organizations such as the SLR, the countercyclical capital buffer, stress testing requirements, enhanced risk management standards, enhanced governance and stress testing requirements for liquidity management, and other applicable prudential standards.

To be categorized as "well capitalized" under the Basel III rule, a banking institution must have the ratios reflected in the table included in Note 24, "Retained Earnings and Regulatory Capital Requirements," of the accompanying consolidated financial statements and must not be subject to a directive, order or written agreement to meet and maintain specific capital levels. The federal bank regulatory agencies may, however, set higher capital requirements for an individual bank or bank holding company when particular circumstances warrant. Under the Basel III rule, all banking organizations continue to be subject to the U.S. regulators' existing minimum Tier 1 leverage ratio of 4 percent. Additionally, banking organizations that meet the Advanced Approaches thresholds, such as HSBC North America and HSBC Bank USA, are subject to an SLR of 3 percent (calculated as the ratio of Tier 1 capital to total leverage exposure, which includes balance sheet exposures plus certain off-balance sheet items).

In May 2018, the Economic Growth, Regulatory Relief and Consumer Protection Act (the "Relief Act") was signed into law. The Relief Act revised the Dodd-Frank Act to eliminate the "adverse scenario" as a required stress test scenario and to provide that company-run stress tests must be conducted "periodically" rather than "semi-annually". In September 2018, the federal banking agencies jointly requested public comment on a proposal that would implement certain changes to the Basel III rule to implement a provision of the Relief Act by reducing the risk weighting applicable to high-volatility commercial real estate exposures. The federal banking agencies also issued a proposal in October 2018 that would require certain banking organizations to use a standardized approach to measuring counterparty credit risk to calculate total risk-weighted asset amounts for derivative and securities financing transactions in place of the current exposure methodology. We continue to evaluate the potential effects of these proposals on our operations.

HSBC North America and HSBC Bank USA are required to maintain minimum capital ratios (exclusive of any countercyclical capital buffer, as explained below) as follows:

	Common Equity Tier 1 Ratio	Tier 1 Capital Ratio	Total Capital Ratio	Tier 1 Leverage Ratio	Supplementary Leverage Ratio
Regulatory minimum ratio	4.5%	6.0%	8.0%	4.0%	3.0%
Plus: Capital conservation buffer requirement...	2.5%	2.5%	2.5%	—	—
Regulatory minimum ratio plus capital conservation buffer	7.0%	8.5%	10.5%	4.0%	3.0%

Currently, HSBC North America and HSBC Bank USA hold capital in excess of these regulatory minimums.

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 percent. Per 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 stress testing results. We are reviewing these possible changes to the capital conservation buffer in anticipation of the formal rulemaking and their potential impact on our capital planning processes specifically and our operations and results generally. We currently target internal capital levels using an approach analogous to the stress capital buffer and, therefore, we do not expect the proposal to have a significant impact on our U.S. operations or change our capital planning processes.

In addition, and subject to discretion by the respective regulatory authorities, a countercyclical capital buffer of up to 2.5 percent, consisting of common equity Tier 1 capital, could also be required to be built up by banking organizations in periods of excess

credit growth in the economy, which would be more pronounced under the new guidance on expected credit losses from the Financial Accounting Standards Board ("FASB"). The FRB, in consultation with the OCC and FDIC, has affirmed the current countercyclical capital buffer level of 0 percent and noted that any future modifications to the buffer would generally be subject to a 12-month phase-in period.

The Basel Committee has also revised several key methodologies for measuring risk-weighted assets, including a revised standardized approach for credit risk, a revised standardized approach for operational risk, and constraints on the use of internal models as well as a capital floor based on the revised standardized approaches. The U.S. federal banking agencies may update the Basel III rule to incorporate the Basel Committee revisions. We continue to review the composition of our capital structure and capital buffers in light of these developments.

Capital Planning and Stress Testing The FRB requires IHCs and large bank holding companies ("BHCs"), including HSBC North America, to comply with the FRB's capital plan rule and Comprehensive Capital Analysis and Review ("CCAR") program, as well as the annual supervisory stress tests conducted by the FRB, and periodic company-run stress tests as required under the Dodd-Frank Act (collectively, "DFAST"), as amended by the Relief Act. HSBC Bank USA is subject to the OCC's DFAST requirements, which require certain banks to conduct annual company-run stress tests. 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 and periodic exercises, on the financial condition and capital adequacy of a bank holding company or bank over a nine quarter planning horizon.

As part of the CCAR process, the FRB undertakes a supervisory assessment of the capital adequacy of bank holding companies, including HSBC North America, 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 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 supervisory baseline scenario and 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 (with the exception of those that may have already received a non-objection in the previous year) without specific FRB approval.

From a qualitative perspective, the FRB's evaluation focuses on whether a bank holding company's capital planning and stress testing processes are supported by a strong risk management framework to identify, measure and assess material risks and to provide a strong foundation to capital planning.

From a quantitative perspective, the FRB considers whether under different hypothetical macroeconomic scenarios, including a severely adverse scenario, the company would be able to maintain throughout the nine quarter planning horizon, regulatory risk-based and leverage capital ratios that exceed the minimum requirements after taking into account the company's planned capital distributions, such as dividends and stock repurchases. Failure to meet a minimum regulatory risk-based or leverage capital requirement on a projected stress basis is grounds for objection to a capital plan. As discussed above, the FRB has indicated that it expects to remove the quantitative objection component of CCAR in connection with its adoption of a "stress capital buffer" requirement.

HSBC North America submitted its latest CCAR capital plan and annual company-run DFAST results in April 2018, and its latest mid-cycle DFAST results in October 2018. HSBC Bank USA submitted its latest annual DFAST results in April 2018. In July 2018, HSBC North America and HSBC Bank USA publicly disclosed their most recent annual DFAST results and the FRB also publicly disclosed its own DFAST and CCAR results. In October 2018, HSBC North America publicly disclosed the results of its mid-cycle DFAST results.

In June 2018, the FRB publicly disclosed its own DFAST and CCAR results and informed HSBC North America that it did not object to HSBC North America's capital plan or the planned capital distributions included in its 2018 CCAR submission.

In October 2018, the FRB proposed a "tailoring" rule which places U.S. domestic BHCs into specific categories based on their individual size and risk profile, with less stringent, or "tailored" capital and liquidity requirements for those firms with lower total assets and cross-jurisdictional activity. IHCs were not included in the October proposal, but it is expected that a separate proposal specific to IHCs is forthcoming. We continue to monitor the developments of the tailoring rules and assess its potential impact on our capital and liquidity requirements.

In December 2017, the FRB finalized changes to the CCAR program that require certain IHCs of foreign banking organizations, including HSBC North America, to provide information about the effect of a hypothetical global market shock on trading and counterparty exposures. For the 2018 CCAR cycle, HSBC North America was subject to an interim, simplified global market shock designed to assess its potential losses and capital impact associated with market and counterparty credit risk. Beginning with the 2019 CCAR cycle, HSBC North America is subject to the full global market shock as part of the supervisory severely adverse stress test scenarios, potentially causing additional projected stress losses under such tests. Additionally, also beginning with the CCAR 2019 cycle, HSBC North America is subject to the counterparty default scenario component which is intended to assess the potential losses and capital impact associated with the instantaneous and unexpected default of HSBC North America's largest counterparty, which could also lead to additional projected stress losses under such tests.

Liquidity Risk Management The Basel Committee has adopted two required liquidity metrics: the liquidity coverage ratio ("LCR"), designed to be a short-term measure to ensure banks have sufficient HQLA to cover net stressed cash outflows over the next 30 days, and the net stable funding ratio ("NSFR"), which is a longer term measure with a 12-month time horizon to ensure a sustainable maturity structure of assets and liabilities.

Under the U.S. rule implementing the LCR, U.S. institutions, including HSBC North America and HSBC Bank USA, are required to maintain a minimum LCR of 100 percent and report their LCRs to U.S. regulators on a daily basis. In April 2016, U.S. regulators issued for public comment a proposal to implement the NSFR in the United States, applicable to certain large banking organizations, including HSBC North America and HSBC Bank USA.

Large BHCs and IHCs, such as HSBC North America, are also subject to additional liquidity requirements under the FRB's enhanced prudential standards issued pursuant to Section 165 of the Dodd-Frank Act. Under these enhanced prudential standards, IHCs are required to comply with various liquidity risk management standards and to maintain a liquidity buffer of unencumbered highly liquid assets based on the results of internal liquidity stress testing.

HSBC North America and HSBC Bank USA have adjusted their liquidity profiles to support compliance with these rules. HSBC North America and HSBC Bank USA may need to make further changes to their liquidity profiles to support compliance with any future final rules.

TLAC In 2015, the Financial Stability Board ("FSB") issued its final standards for total loss-absorbing capacity ("TLAC") requirements for global systemically important banks ("G-SIBs"). In 2016, the FRB adopted final rules implementing the FSB's TLAC standard in the United States. The rules require, among other things, the U.S. IHCs of non U.S. G-SIBs, including HSBC North America, to maintain minimum amounts of TLAC which would include minimum levels of Tier 1 capital and long-term debt satisfying certain eligibility criteria, and a related TLAC buffer commencing January 1, 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 that HSBC North America could engage in. 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 becoming effective, HSBC North America has issued additional long-term debt and modified the terms of existing debt in order to be TLAC compliant. HSBC North America will continue to assess the amount of additional long-term debt that is needed to be compliant in future periods.

In April 2018, the FRB issued a proposal to align the calculation of TLAC for U.S. IHCs of non U.S. G-SIBs with the calculation methodology used by G-SIBs beginning on January 1, 2019. The proposal seeks to modify the leverage requirements related to TLAC and could also translate to a marginal benefit in the way total TLAC (inclusive of buffers) is calculated for HSBC North America. The comment period for the proposal closed on June 25, 2018.

U.S. Resolution Planning Large international banks, such as HSBC (generally with regard to its U.S. operations), and large insured depository institutions, such as HSBC Bank USA, are required to file resolution plans identifying, among other things, material subsidiaries and core business lines and describing what 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.

Non-U.S. Regulatory Capital and Liquidity Requirements HSBC North America and HSBC USA also continue to support HSBC's implementation of the Basel III framework, as adopted by the U.K. Prudential Regulation Authority. We supply data regarding credit risk, operational risk and market risk to support HSBC's regulatory capital and risk-weighted asset calculations and information relevant to HSBC's compliance with applicable liquidity requirements.

General Our capital resources are summarized under "Liquidity and Capital Resources" in MD&A. Capital amounts and ratios for HSBC USA and HSBC Bank USA are summarized in Note 24, "Retained Earnings and Regulatory Capital Requirements" of the consolidated financial statements. From time to time, bank regulators propose amendments to or issue interpretations of risk-based or leverage capital guidelines. Such proposals or interpretations could, upon implementation, affect reported capital ratios and net risk-weighted assets.

Deposit Insurance Deposits placed at HSBC Bank USA and HTCD are insured by the FDIC, subject to the limitations and conditions of applicable law and the FDIC's regulations. The standard deposit insurance amount is \$250,000 per depositor for each account category. HSBC Bank USA and HTCD are subject to risk based assessments from the FDIC. Such assessments determine the deposit insurance costs paid by HSBC Bank USA and HTCD to the FDIC. While the assessments are generally payable quarterly, the FDIC also has the authority to impose special assessments to prevent the Deposit Insurance Fund from declining to an unacceptable level.

FDIC Assessment The minimum reserve ratio for the Deposit Insurance Fund was increased under the Dodd-Frank Act from 1.15 percent to 1.35 percent, with the target of 1.35 percent to be reached by 2020 and with the incremental cost charged to banks with

more than \$10 billion in assets. In order to achieve the 1.35 percent goal, the FDIC imposed on banks with at least \$10 billion in assets, including HSBC Bank USA, a temporary assessment surcharge, which took effect in July 2016, of 4.5 cents per \$100 of their assessment base, after making certain adjustments. The FDIC terminated this temporary surcharge in December 2018.

Bank Secrecy Act/Anti-Money Laundering The USA Patriot Act (the "Patriot Act") of 2001, contains significant record keeping and customer identity requirements, expands the government's powers to freeze or confiscate assets and increases the available penalties that may be assessed against financial institutions for violation of the requirements of the Patriot Act intended to detect and deter money laundering. The U.S. Treasury Secretary developed and implemented final regulations with regard to the anti-money laundering ("AML") compliance obligations of financial institutions (a term which includes insured U.S. depository institutions, U.S. branches and agencies of foreign banks, U.S. broker-dealers and numerous other entities). The U.S. Treasury Secretary delegated certain authority to a bureau of the U.S. Treasury Department known as the Financial Crimes Enforcement Network ("FinCEN").

Many of the AML compliance requirements of the Patriot Act, as implemented by FinCEN, are generally consistent with the anti-money laundering compliance obligations that applied to HSBC Bank USA under the Bank Secrecy Act ("BSA") and applicable FRB regulations before the Patriot Act was adopted. These include requirements to adopt and implement an AML program, report suspicious transactions and implement due diligence procedures for certain correspondent and private banking accounts. Certain other specific requirements under the Patriot Act involve compliance obligations. The Patriot Act and other recent events have also resulted in heightened scrutiny of the BSA and AML compliance programs by bank regulators.

Cybersecurity Regulatory Proposals In October 2016, the FRB, FDIC, and OCC issued a joint advance notice of proposed rulemaking that would impose enhanced cyber risk management standards on banking organizations with \$50 billion or more in total consolidated assets and certain of their service providers. The standards address five categories: (i) cyber risk governance; (ii) cyber risk management; (iii) internal dependency management; (iv) external dependency management; and (v) incident response, cyber resilience, and situational awareness. The agencies are also considering proposing more stringent "Sector Critical Standards" that would apply to systems "deemed critical to the financial sector." The advanced notice of proposed rulemaking leaves open the precise form the enhanced standards would take, and instead lays out possibilities ranging from policy guidance on best practices to specific regulations. We are monitoring future developments in this area and their potential impact on our operations.

State regulators have also been increasingly active in implementing privacy and cybersecurity standards and regulations. Recently, several states have adopted regulations requiring certain financial institutions to implement cybersecurity programs and providing detailed requirements with respect to these programs, including data encryption requirements. Many states have also recently implemented or modified their data breach notification and data privacy requirements. We expect this trend of state-level activity to continue, and are continually monitoring developments in the states.

Single-Counterparty Credit Limits In June 2018, the FRB finalized a rule, consistent with the Dodd-Frank Act, to limit credit exposures to single counterparties for large BHCs and IHCs, including HSBC North America. As a result of the rule, HSBC North America, together with its subsidiaries, will be prohibited from having net credit exposure to a single unaffiliated counterparty in excess of 25 percent of HSBC North America's Tier 1 capital beginning July 1, 2020. In addition, HSBC North America, together with its subsidiaries, could become subject to a separate limit on its exposures to certain unaffiliated systemically important counterparties if its parent, HSBC, cannot certify its compliance with a large exposure regime in the U.K. 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.

Derivatives Regulation Title VII of the Dodd-Frank Act imposes comprehensive regulation on the over-the-counter ("OTC") derivatives markets, including credit default, equity, foreign exchange and interest rate swaps. Implementation of Title VII is the responsibility of the Commodity Futures Trading Commission ("CFTC") (for swaps based on non-securities underliers or broad-based security indices), the SEC (for swaps based on individual securities and narrow-based security indices, known as "security-based swaps") and, to a lesser extent, U.S. banking regulators (for certain rules applicable to banks). The CFTC has adopted final rules implementing the most significant provisions of Title VII applicable to swaps. In particular, certain swap dealers, including HSBC Bank USA, have provisionally registered with the CFTC and become members of the National Futures Association, subjecting them to an extensive array of corporate governance requirements, business conduct standards, reporting requirements, mandatory clearing and trading of certain swaps and other regulatory standards affecting their derivatives businesses. These requirements have and continue to significantly increase the costs associated with HSBC Bank USA's derivatives businesses.

In addition to these CFTC rules, as a provisionally registered swap dealer that is a national bank, HSBC Bank USA is subject to the final rules establishing margin requirements for non-cleared swaps and security-based swaps adopted in November 2015 by the OCC jointly with other U.S. banking regulators. Subject to certain exceptions, the final margin rules require HSBC Bank USA to collect and post initial and variation margin for non-cleared swaps and security-based swaps entered into with other swap dealers and certain 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 and impose requirements on internal models used to calculate initial margin requirements. 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 margin rules from the CFTC, the SEC, and certain non-U.S. regulators will increase the costs and liquidity burden associated with trading non-cleared swaps and security-based swaps 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.

Also, HSBC Bank USA engages in equity and credit derivatives businesses that are subject to the SEC's jurisdiction to regulate security-based swaps under Title VII of the Dodd-Frank Act. In 2015 and 2016, the SEC finalized rules regarding registration, reporting, business conduct standards and trade acknowledgment and verification requirements applicable to security-based swap dealers and major security-based swap participants. The registration requirements and other rules applicable to security-based swap dealers and major security-based swap participants will generally not come into effect until the SEC completes further security-based swap rulemakings. Certain HSBC affiliates, including HSBC Bank USA, may be required to register and become subject to these rules when the registration requirement becomes effective. Because HSBC Bank USA's 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.

The "Volcker Rule" The Volcker Rule prohibits insured depository institutions and companies affiliated with insured depository institutions (collectively, banking entities) from engaging in short-term proprietary trading of certain securities, derivatives, commodity futures and options for their own account. The Volcker Rule also imposes limits on banking entities' investments in, and other relationships with, hedge funds and private equity funds. The Volcker Rule provides exemptions for certain activities, including market-making, underwriting, hedging, trading in government obligations and organizing and offering hedge funds and private equity funds, subject to certain conditions. A banking entity with material trading operations, such as HSBC North America, is required to maintain a detailed compliance program to comply with the restrictions of the Volcker Rule.

In May 2018, the five federal agencies responsible for administration of the Volcker Rule (FRB, SEC, FDIC, OCC, and CFTC) jointly issued a proposal to simplify and tailor compliance requirements related to the Volcker Rule. Given that HSBC North America has more than \$10 billion in trading assets and liabilities, it would still be subject to the highest expectations under the Volcker Rule. While the proposed modifications are intended to streamline the existing requirements and result in a more workable revised final rule, any changes to the existing Volcker Rule may result in increased compliance and operational costs.

Consumer Regulation The Dodd-Frank Act created the CFPB, which has a broad range of powers to administer and enforce a federal regulatory framework of consumer financial regulation, including the authority to regulate credit, savings, payment and other consumer financial products and services and providers of those products and services. The CFPB has the authority to issue regulations to prevent unfair, deceptive or abusive practices in connection with consumer financial products or services and to ensure features of any consumer financial products or services are fully, accurately and effectively disclosed to consumers. The CFPB also has authority to examine large banks, including HSBC Bank USA, and their affiliates for compliance with those regulations.

Competition The GLB Act eliminated many of the regulatory restrictions on providing financial services in the United States. The GLB Act allows for financial institutions and other providers of financial products to enter into combinations that permit a single organization to offer a complete line of financial products and services. In addition, the Volcker Rule places restrictions on bank-affiliated financial companies' trading activities and private equity and hedge fund investments, which may provide a competitive advantage to financial companies that do not have U.S. banking operations and may impact liquidity in the products and activities in which we engage. We face intense competition in all of the markets we serve, competing with banks and other financial institutions such as insurance companies, commercial finance providers, brokerage firms and investment companies. The financial services industry has experienced consolidation in recent years as financial institutions involved in a broad range of products and services have merged, been acquired or dispersed. This trend is expected to continue and has resulted in, among other things, greater concentrations of deposits and other resources. Competition is expected to continue to be intense given the multiple banks and other financial services companies which offer products and services in our markets, noting that we compete with different banks and financial services companies in different markets, given our strategy.

Corporate Governance and Controls

We maintain a website at www.us.hsbc.com on which we make available, as soon as reasonably practicable after filing with or furnishing to the SEC, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to these reports. We have included our website address only as an inactive textual reference and do not intend it to be an active link to our website. Our website also contains our Corporate Governance Standards and Charters of standing Board of Directors Committees, including the Audit Committee, the Compliance and Conduct Committee, the Risk Committee and the Chairman's Committee. We have a Statement of Business Principles and Code of Ethics that expresses the principles upon which we operate our businesses. Integrity is the foundation of all our business endeavors and is the result of continued dedication and commitment to high ethical standards in our relationships with each other, with other organizations and with those individuals who are our customers. Our Statement of Business Principles and Code of Ethics can be found on our corporate website. Printed copies of this information can be requested at no charge. Requests should be made to HSBC USA Inc., 452 Fifth Avenue, New York, NY 10018, Attention: Corporate Secretary.

Certifications In addition to certifications from our Chief Executive Officer and Chief Financial Officer pursuant to Sections 302 and 906 of the Sarbanes-Oxley Act of 2002 (attached to this report on Form 10-K as Exhibits 31 and 32), we also file a written affirmation of an authorized officer with the New York Stock Exchange (the "NYSE") certifying that such officer is not aware of any violation by HSBC USA of the applicable NYSE corporate governance listing standards in effect as of February 19, 2019.

Item 1A. Risk Factors

The following discussion provides a description of the most significant risk factors that could affect our businesses, results of operations and financial condition and could cause our results to differ materially from those expressed in public statements or documents. Some of these risk factors are inherent in the financial services industry and others are more specific to our own businesses. There are also other factors besides those discussed below or elsewhere in this Annual Report on Form 10-K that could affect our businesses, results of operations and financial condition and, therefore, the risk factors below should not be considered a complete list of all potential risks that we may face.

Macroeconomic Risk

Market and economic conditions will continue to affect our businesses, results of operations and financial condition. Our business and earnings are affected by general business, economic and market conditions in the United States and abroad. There can be no assurance that the global economy as a whole will continue to improve. Given our concentration of business activities in the United States, we are particularly exposed to downturns in the economy, including housing, high unemployment, the availability of credit and liquidity and reduced economic growth. While the U.S. economy continued to grow during 2018, uncertainty concerning the future economic environment increased significantly during the fourth quarter. General business, economic and market conditions that could continue to affect us include:

- level of economic growth, including the pace and magnitude of such growth;
- pressure on and changes in consumer confidence, spending and behavior;
- fiscal policy;
- volatility in energy prices, including oil and gas prices;
- volatility in credit markets;
- unemployment levels;
- trends in corporate earnings;
- wage income levels and declines in wealth;
- market value of residential and commercial real estate throughout the United States;
- inflation;
- monetary supply and monetary policy;
- fluctuations in both debt and equity capital markets in which we fund our operations;
- consequences of unexpected geopolitical events, natural disasters, pandemics or acts of war or terrorism;
- trade policy;
- fluctuations in the value of the U.S. dollar;
- movements in short-term and long-term interest rates or a change in the shape of the yield curve;
- increases in interest rates, which may lead to increased delinquencies and loan impairment charges;
- availability of liquidity;
- availability of credit; and
- new laws, regulations or regulatory and law enforcement initiatives.

Although the U.S. economy in general continued to grow in 2018, if businesses were again to become cautious to hire, lay-off employees or reduce hours for employees, losses could be significant in all types of our consumer loans due to decreased consumer income. In addition, on-going domestic and global policy issues, such as trade disputes and the decision by the U.K. to exit the EU and the implications of those events could potentially impact the capital markets and trade as well as corporate earnings which would significantly impact our commercial loan performance. The sustainability of economic growth will be determined by numerous variables including consumer sentiment, energy prices, credit market volatility, employment levels and housing market conditions which will impact corporate earnings and the capital markets. In the event economic conditions begin to decline and lead to a recession, there would be a significant negative impact on delinquencies, charge-offs and losses in all loan portfolios with a corresponding impact on our results of operations.

A deterioration in business and economic conditions, which may erode consumer and investor confidence levels or increased volatility of financial markets, also could adversely affect financial results for our fee-based businesses, including our financial planning products and services.

Macro-prudential, regulatory and legal risks to our business model

Federal, state, local and other similar international measures to regulate the financial industry may significantly impact our operations. We operate in a highly regulated environment. Changes in federal, state and local laws and regulations affecting banking, derivatives, capital, liquidity, consumer credit, bankruptcy, privacy, consumer protection or other matters, could materially impact our operations and performance.

Attempts by local, state and federal regulatory agencies to address perceived problems with the mortgage lending and credit card industries could affect us in substantial and unpredictable ways, including limiting the types of products we can offer, how these products may be originated, the fees and charges that may be applied to accounts and how accounts may be collected or security interests enforced. Any one or more of these effects could negatively impact our results. There is also significant focus on loss mitigation and foreclosure activity for real estate loans. We cannot fully anticipate the response by national regulatory agencies, state Attorneys General, or certain legislators, nor can we anticipate whether significant changes to our operations and practices will be required as a result.

The Dodd-Frank Act established the CFPB which has broad authority to regulate providers of credit, payment and other consumer financial products and services. In addition, provisions of the Dodd-Frank Act may also narrow the scope of federal preemption of state consumer laws and expand the authority of state Attorneys General to bring actions to enforce federal consumer protection legislation. As a result of the Dodd-Frank Act's potential expansion of the authority of state Attorneys General to bring actions to enforce federal consumer protection legislation, we could potentially be subject to additional state lawsuits and enforcement actions, thereby further increasing our legal and compliance costs.

Under the Dodd-Frank Act, certain of our affiliates and subsidiaries, including HSBC Bank USA, have registered as swap dealers and are now subject to extensive oversight by the CFTC. Regulation of swap dealers by the CFTC imposes numerous corporate governance, business conduct, capital, margin, reporting, clearing, execution and other regulatory requirements on HSBC Bank USA. Additionally, certain of our affiliates and subsidiaries, including HSBC Bank USA, may in the future be required to register as security-based swap dealers and become subject to extensive oversight by the SEC, including the imposition of parallel corporate governance, business conduct, reporting and other regulatory requirements for security-based swaps. Imposition of these requirements may adversely affect our derivatives business and make us less competitive or make certain derivative products less profitable to undertake. Although many significant regulations applicable to swap dealers are already in effect and have imposed significant costs on our derivatives business, we continue to assess current regulation, proposed or expected changes to existing requirements, and the potential impact of future security-based swap requirements.

The Volcker Rule limits the ability of banking entities such as HUSI to sponsor or invest in certain private equity or hedge funds or engage in certain types of proprietary trading. See Part I, "Regulation and Competition - The "Volcker Rule"," in this Form 10-K.

In May 2018, U.S. regulatory agencies issued a proposal to modify numerous aspects of the Volcker Rule. Given that HSBC North America has more than \$10 billion in trading assets and liabilities, it would still be subject to the highest expectations under the Volcker Rule. While the proposed modifications are intended to streamline the existing requirements and result in a more workable revised final rule, any changes to the existing Volcker Rule may result in increased compliance and operational costs, especially in connection with any modifications to the quantitative metrics reporting requirements. We continue to assess the potential impact of these proposed changes if they are adopted.

The FRB has also adopted rules to implement certain enhanced supervisory and prudential requirements and has issued proposals to implement the early remediation requirements established under the Dodd-Frank Act. The FRB adopted enhanced standards relating to risk-based capital and leverage requirements, liquidity standards, requirements for overall risk management and stress test requirements. The FRB has also issued final rules requiring covered entities to undergo annual stress tests conducted by the FRB and conduct their own "company-run" stress tests in conjunction with the CCAR program.

Our parent, HSBC North America, is subject to assessment by the FRB as part of the CCAR program, which includes annual supervisory stress tests conducted by the FRB and both HSBC North America and HSBC Bank USA must periodically conduct company-run stress tests as required under the DFAST. CCAR is an annual exercise by the FRB to ensure that institutions have forward-looking capital planning processes that account for their risks and sufficient capital to continue operations throughout times of economic and financial stress. We cannot be certain that the FRB will have no objections to our 2019 or future capital plans submitted through the CCAR program, which is assessed by the FRB on both a quantitative and qualitative basis. If the FRB objects to our capital plan because we fail to meet either the quantitative or qualitative requirements, this could adversely affect our ability to make distributions, including dividends on our preferred stock, or to enter into acquisitions. We may fail to meet the requirements of regulatory stress tests. If our stress testing projections differ significantly from our peers or the FRB objects to HSBC North America's capital plan, this could have a material adverse effect on our reputation since CCAR and DFAST results are made public. See Part I, "Regulation and Competition - Capital Planning and Stress Testing," in this Form 10-K. See also "Our reputation has a direct impact on our financial results and ongoing operations" below.

The total impact of the Dodd-Frank Act cannot be fully assessed without taking into consideration how non-U.S. policymakers and regulators will implement the Dodd-Frank Act through the promulgation of new regulations and revisions to existing regulations and how the cumulative effects of both U.S. and non-U.S. laws and regulations will affect our businesses and operations. Additional legislative or regulatory actions in the United States, the EU and in other countries could result in a significant loss of revenue, limit our ability to pursue business opportunities in which we might otherwise consider engaging, affect the value of assets that we hold, require us to increase our prices and therefore reduce demand for our products, impose additional costs on us, or otherwise adversely affect our businesses. Accordingly, any such new or additional legislation or regulations could have an adverse effect on our businesses, results of operations or financial condition. Regulators in the EU and in the United Kingdom are in the midst of negotiating and implementing far-reaching programs of financial regulatory reform. Key areas in which reforms are in progress or under consideration include enhanced capital, leverage, and liquidity requirements, changes in compensation practices (including tax levies), separation of retail and wholesale banking, the recovery and resolution of EU financial institutions, and measures to address systemic risk. Furthermore, certain large G-SIBs, including HSBC, have in recent years become subject to capital surcharges and other enhanced prudential requirements. In November 2018, the FSB identified HSBC as one of three G-SIBs that will remain subject to a 2 percent surcharge. The FRB's rules implementing the G-SIB surcharge in the United States would not impose additional capital requirements on us because the U.S. G-SIB surcharge will only apply to the eight largest U.S. banking organizations.

Our ultimate parent HSBC is subject to the FSB's TLAC requirements for G-SIBs in the United Kingdom. The new standard also permits authorities in host jurisdictions to require "internal" TLAC to be prepositioned (i.e., issued by local entities to either parent entities or third parties). The purpose of this new standard is to ensure that G-SIBs have sufficient loss-absorbing and recapitalization capacity available to implement an orderly resolution with continuity of critical functions and minimal impact on financial stability, and to ensure cooperation between home and host authorities during resolution. The new standard calls for all G-SIBs to be subject to TLAC requirements starting January 1, 2019, and to be fully phased in by January 1, 2022. The FRB adopted final rules implementing the FSB's TLAC standard in the United States in December 2016. The rules require, among other things, the U.S. IHCs of non-U.S. G-SIBs, including HSBC North America, to maintain minimum amounts of TLAC which would include minimum levels of Tier 1 capital and long-term debt satisfying certain eligibility criteria, and a related TLAC buffer commencing January 1, 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 that HSBC North America could engage in. The FSB's TLAC standard and the FRB's TLAC rules represent a significant expansion of the current regulatory capital framework. To support compliance when the TLAC rules become effective, HSBC North America has issued long-term debt and will be required to issue additional long-term debt in future periods. See Part I, "Regulation and Competition - Capital Planning and Stress Testing," in this Form 10-K.

The implementation of regulations and rules promulgated by these bodies could result in additional costs or limit or restrict the way HSBC conducts its businesses in the EU and in the U.K. Furthermore, the potentially far-reaching effects of future changes in laws, rules or regulations, or in their interpretation or enforcement as a result of EU or U.K. legislation and regulation are difficult to predict and could adversely affect our operations.

The delivery of our regulatory priorities is subject to execution risk. The financial services industry is currently facing an unprecedented period of scrutiny. Regulatory requests, legal matters and business initiatives all require a significant amount of time and resources to implement. The magnitude and complexity of projects required to meet these demands has resulted in heightened execution risk. Organizational change and external factors, including the challenging macroeconomic environment and the extent and pace of regulatory change also contribute to execution risk. These factors could adversely affect the successful delivery of our regulatory priorities.

Uncertainty surrounding the potential legal, regulatory and policy changes by the current Administration in the U.S. (the "Administration") that may directly impact financial institutions and the global economy. The current Administration has indicated that it would like to see further changes made to certain financial reform regulations, which has resulted in increased regulatory uncertainty. We continue to assess the potential impact this may have on financial and economic markets and on our business. Changes in federal policy and regulatory agencies are expected to occur over time through policy and personnel changes, which could lead to changes involving the level of oversight and focus on the financial services industry. The nature, timing and economic and political effects of potential future changes to the current legal and regulatory framework affecting financial institutions remain highly uncertain. In addition, the Administration has indicated that it would like to amend U.S. immigration policies. If immigration policies were to restrict or otherwise make it more difficult for qualified employees to work in, or transfer among, jurisdictions in which we or other members of the HSBC Group have operations or conduct business, we could be adversely affected. While regulatory changes to date have not had a significant impact to our business, it is unclear what additional laws, regulations and policies may change and whether future changes or uncertainty surrounding future changes will adversely affect our operating environment and therefore our results of operations and financial condition.

Lawsuits and regulatory investigations and proceedings may continue and increase in the current economic and regulatory environment. In the ordinary course of business, HSBC USA and its affiliates are routinely named as defendants in, or as parties to, various legal actions and proceedings relating to our current and/or former operations and are subject to governmental and regulatory examinations, information-gathering requests, investigations and formal and informal proceedings, as described in Note

28, "Litigation and Regulatory Matters" in the accompanying consolidated financial statements, certain of which may result in adverse judgments, settlements, fines, penalties, remediation payments, injunctions and other relief. There is no certainty that the litigation will decrease in the near future, especially in the event of a resurgent recession or additional regulatory and law enforcement investigations and proceedings by federal and state governmental agencies.

Financial service providers are at risk of regulatory sanctions or fines related to conduct of business and financial crime. The incidence of regulatory proceedings and other adversarial proceedings against financial service firms is increasing, with a corresponding increase also in civil litigation arising from or relating to issues which are subject to regulatory investigations, sanctions or fines. In the current environment of heightened regulatory scrutiny, particularly in the financial services industry, there may be additional regulatory investigations and reviews conducted by banking and other regulators, including the CFPB, CFTC, state Attorneys General or state regulatory and law enforcement agencies that, if determined adversely, may result in judgments, settlements, substantial fines, penalties, remediation payments or other results, including additional compliance requirements, which could materially adversely affect our businesses, financial condition or results of operations, or cause serious reputational harm. In addition, HSBC's extensive global operations also increase our compliance and regulatory risks and costs. For example, operations in emerging markets, including facilitating cross-border transactions on behalf of its clients, subjects it to higher compliance risks under U.S. regulations primarily focused on various aspects of global corporate activities, including AML laws and regulations, the Foreign Corrupt Practices Act ("FCPA") and economic sanctions programs administered by the Office of Foreign Assets Control ("OFAC"). These risks can be more acute in less developed markets and thus require substantial investment in compliance infrastructure or could result in a reduction in certain of our affiliates' business activities. Criminal prosecutions of financial institutions for, among other alleged conduct, breaches of AML laws and regulations, the FCPA, economic sanctions programs, 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 prosecution or investigation of, or legal proceeding or regulatory action brought against, HSBC or one or more of its subsidiaries could result in substantial fines, penalties and/or forfeitures and could have a material adverse effect on our results, business and prospects, including the potential loss of key licenses, requirement to exit certain businesses and withdrawal of funding from depositors and other stakeholders.

We establish reserves for legal claims when payments associated with the claims become probable and the costs can be reasonably estimated. Notwithstanding, we may incur legal costs for a matter even if we have not established a reserve. In addition, the actual cost of resolving a legal claim may be substantially higher than any amounts reserved for that matter. 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 matters are brought on behalf of various classes of claimants, those which seek unspecified damages or those which involve novel legal claims. The ultimate resolution of a pending legal proceeding, depending on the remedy sought and granted, could materially adversely affect our results of operations and financial condition.

Third parties may use us as a conduit for illegal activities without our knowledge, which could have a material adverse effect on us. We are required to comply with applicable AML laws and regulations, the FCPA and economic sanctions programs administered by OFAC, and we have adopted various policies and procedures, including 'Know Your Customer' procedures and other internal controls, that are reasonably designed to achieve compliance with applicable AML, anti-bribery/anti-corruption and economic sanctions requirements and aimed at preventing the use of our products and services for the purpose of committing or concealing financial crime. In relevant situations, and where permitted by regulation, we may rely upon certain counterparties, including our affiliates, to maintain and properly apply their own appropriate policies and procedures relating to financial crime compliance (including AML, anti-bribery/anti-corruption and economic sanctions). A major focus of U.S. government policy relating to financial institutions in recent years has been combating financial crime activity, including money laundering, bribery and corruption and enforcing compliance with economic sanctions.

A program consisting of policies and procedures that are reasonably designed to achieve compliance with financial crime laws may not always prevent 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), or committing acts of bribery or violations of economic sanctions through us. As discussed above, becoming a party to violations of financial crime laws or regulations, or accusations of being associated with such activity, could damage our reputation and/or lead to fines, sanctions and/or legal enforcement. Any one of these outcomes could have a material adverse effect on our business, prospects, financial condition and results of operations.

Regulatory requirements in the U.S. and in non-U.S. jurisdictions to facilitate the future orderly resolution of large financial institutions could negatively impact our business structures, activities and practices. The Dodd-Frank Act requires HSBC as a foreign bank holding company and our ultimate parent to prepare and submit an annual resolution plan ("SIFI Plan"). The Dodd-Frank Act focuses on reducing risks to the U.S. financial system, requiring a plan to demonstrate how the relevant entities can be resolved in a "rapid and orderly" fashion in a manner that avoids systemic risks. Similarly, HSBC Bank USA must prepare and submit an annual resolution plan ("IDI Plan"). HSBC Bank USA is required to regularly provide a plan to the FDIC that is executable for resolving the bank in the event of its failure that protects depositors, maximizes the net present value return on assets and minimizes the amount of any losses to creditors, including the FDIC's Deposit Insurance Fund. These plans must include

information on resolution strategy, agreements with major counterparties and "interdependencies," among other things. Resolution planning requires substantial effort, time and cost across all of our businesses and geographies. The HSBC SIFI Plan is subject to review by both the FRB and the FDIC and the HSBC Bank USA IDI Plan is subject to review by the FDIC. In 2018, HSBC and HSBC Bank USA submitted their latest annual plans.

If the FRB and the FDIC both determine that a SIFI Plan is not "credible" (which, although not defined, is generally believed to mean the regulators do not believe the plans are feasible or would otherwise allow resolution of a financial institution's U.S. businesses in a way that protects systemically important functions without severe systemic disruption and without exposing taxpayers to loss), and the deficiencies are not remedied within the required time period, an institution, including HSBC, could be required to restructure or reorganize businesses, legal entities, or operational systems and intra-company transactions in ways that could negatively impact operations, or be subject to restrictions on growth. HSBC could also eventually be subjected to more stringent capital, leverage or liquidity requirements, or be required to divest certain assets or operations.

U.S. federal banking agencies may require us to increase our regulatory capital, total loss absorbing capacity, long-term debt or liquidity requirements which could result in the need to issue additional qualifying securities or to take other actions, such as liquidate assets. HSBC North America is required to meet consolidated regulatory capital and liquidity requirements, including new or modified regulations and related regulatory guidance, in accordance with current regulatory timelines.

In the current regulatory environment, capital and liquidity requirements are frequently introduced and amended. Our regulators may increase regulatory minimum or buffer requirements, change how regulatory capital is calculated or increase liquidity requirements. A significant component of regulatory capital ratios is calculating our risk-weighted assets, including operational risk, and our leverage exposure which may increase. The Basel Committee has also revised several key methodologies for measuring risk-weighted assets, including a standardized approach for credit risk, standardized approach for operational risk, and constraints on the use of internal models as well as a capital floor based on the revised standardized approaches in addition to a new final standard on the minimum capital requirements for market risk. The federal banking agencies may update the U.S. Basel III rule to incorporate the Basel Committee revisions.

Additionally, in April 2016, the U.S. banking regulators proposed NSFR requirements which target longer-term liquidity risk and would apply to HSBC North America and HSBC USA Bank. These and other future regulatory or legislative proposals could significantly impact the regulatory capital standards and requirements applicable to financial institutions such as HSBC North America, as well as our ability to meet these requirements.

Increases in regulatory capital may also be required in response to other U.S. supervisory requirements. Participation by HSBC North America in the FRB's CCAR stress test process also requires that HSBC North America maintain sufficient capital to meet minimum regulatory ratios in a forward-looking stress scenario across a nine-quarter planning horizon. The FRB has also indicated that it is considering a new measure to replace the capital conservation buffer with a "stress capital buffer," which would equal a bank holding company's projected decline in its common equity Tier 1 capital ratio under the supervisory severely adverse stress testing scenarios plus one year of planned common stock dividends. The "stress capital buffer" would be reset annually based on the bank holding company's DFAST results under the supervisory stress tests. The stress capital buffer would be subject to a floor of 2.5 percent of risk-weighted assets in line with the current capital conservation buffer rules. We are reviewing these possible changes to the capital conservation buffer in anticipation of the formal rulemaking and their potential impact on our capital planning processes specifically and our operations and results generally. We may be prohibited from taking capital actions such as paying or increasing dividends, or repurchasing securities if the FRB objects to our CCAR capital plan. We currently target internal capital levels using an approach analogous to the stress capital buffer and, therefore, we do not expect the proposal to have a significant impact on our U.S. operations or change our capital planning processes. The exact amount, however, will depend upon our prevailing risk profile and those of our North America affiliates under various stress scenarios.

HSBC Bank USA is also required to participate in the OCC's DFAST. These stress testing requirements will influence our regulatory capital and liquidity planning process, and may impose additional operational and compliance costs on us.

Preparation for the U.S. implementation of the Basel Committee's revisions to Basel III has influenced and is likely to continue to influence our regulatory capital and liquidity planning process, and is expected to impose additional operational and compliance costs on us. We are unable at this time to determine the extent of changes we will need to make to our liquidity or capital position, if any, and what effect, if any, such changes will have on our results of operations or financial condition. New regulatory capital and liquidity requirements may limit or otherwise restrict how we utilize our capital and may require us to increase our capital or liquidity. Any requirement that we increase our regulatory capital, regulatory capital ratios or liquidity could require us to liquidate assets or otherwise change our business and/or investment plans, which may negatively affect our financial results. Changes to and compliance with the regulatory capital and liquidity requirements may impact our operations by requiring us to liquidate assets, increase borrowings, issue additional equity or other securities, cease or alter certain operations, sell company assets, or hold highly liquid assets, which may adversely affect our results of operations.

Our interpretation or application of the tax laws to which we are subject could differ from those of the relevant governmental authorities, which could result in the payment of additional taxes and penalties. The Tax Cuts and Jobs Act ("Tax

Legislation"), which was enacted in December 2017, is subject to clarification and interpretation through currently proposed and future additional regulatory and administrative guidance. Additionally, it is not clear how the Tax Legislation will impact our clients. We are subject to the various tax laws of the U.S. and its states and municipalities in which we operate. These tax laws are inherently complex and we must make judgments and interpretations about the application of these laws to the HSBC North America entities, operations and businesses. Our interpretations and application of the tax laws could differ from that of the relevant governmental taxing authority, which could result in the potential for the payment of additional taxes, penalties or interest, which could be material. For example, the Tax Legislation contains certain complex provisions such as the Base Erosion and Anti-Abuse Tax which may have a material impact in current and future periods on income tax expense for the HSBC North America consolidated tax group of which we are a member, depending upon, among other things, the interpretation and finalization of recently proposed regulations, other interpretive guidance which may be issued, actions HSBC North America or its affiliates may take as a result of the Tax Legislation and related guidance, and the future earnings of HUSI and other subsidiaries of HSBC North America. It is also not yet clear how the Tax Legislation will impact our clients and there is a risk that the Tax Legislation could have a material impact on our commercial relationship with those clients.

We may incur additional costs and expenses as a result of foreign exchange-related investigations. Regulatory and law enforcement agencies globally are currently investigating HSBC Group in connection with alleged misconduct relating to manipulation of foreign exchange rates. The extent of our financial exposure to these matters could be material, and our reputation may suffer material harm as a result.

Risks related to our business, business operations, governance and internal control systems

Our reputation may have a direct impact on our financial results and ongoing operations. Our ability to attract and retain customers and employees, and conduct business transactions with our counterparties could be adversely affected to the extent our reputation, or the reputation of affiliates operating under the HSBC brand, is damaged. Reputational risk relates to stakeholders' perceptions, whether fact-based or otherwise. Stakeholders' expectations change constantly and so reputational risk is dynamic and varies between geographical regions, groups and individuals. Any material lapse in standards of integrity, compliance, customer service or operating efficiency may represent a potential reputational risk.

Our failure to address, or to appear to fail to address, various issues that could give rise to reputational risk could cause harm to us and our business prospects. Reputational issues include, but are not limited to:

- negative news about us, HSBC, our affiliates or the financial services industry generally;
- ethical issues, including potential conflicts of interest and the acceptance or receipt of gifts and entertainment, as well as potential violations under the FCPA;
- legal and regulatory requirements;
- alleged deceptive or unfair lending or pricing practices;
- AML and economic sanctions programs;
- fraud and misappropriation of assets;
- privacy and data security intrusions related to our customers or employees;
- cybersecurity issues and cyber incidents, whether actual, threatened, or perceived;
- recordkeeping;
- sales and trading practices;
- customer service;
- actions of a vendor or other third party, including a subcontractor, we do business with;
- the proper identification of the legal, credit, liquidity, operational and market risks inherent in our businesses;
- alleged irregularities in servicing, foreclosure, consumer collections, mortgage lending practices and loan modifications;
- a downgrade of or negative watch warning on any of our credit ratings; and
- general company performance.

The proliferation of social media websites as well as the personal use of social media by our employees and others, including personal blogs and social network profiles, facilitates communication with large audiences in short time frames. These social media websites, also may increase the risk that negative, inappropriate or unauthorized information may be posted or released publicly that could harm our reputation or have other negative consequences, including as a result of our employees interacting with our customers in an unauthorized manner in various social media outlets.

The failure to address, or the perception that we have failed to address any of these issues appropriately could make our customers unwilling to do business with us or give rise to increased regulatory action, which could have a material adverse effect on our business, prospects, financial condition and results of operations.

Our risk management measures may not be successful. The management of risk is an integral part of all our activities. Managing risk effectively is fundamental to the delivery of our strategic priorities. While we are subject to a number of legal and regulatory actions and investigations, our risk management framework has been designed to provide robust controls and ongoing monitoring of our principal risks. Risks have the potential to affect the results of our operations or financial condition. 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, interest rate risk, operational risk including legal, financial crime compliance, regulatory compliance, accounting, tax, fiduciary, information security, security fraud, people, systems, political contingency, projects, and operations risks, liquidity and funding risk, reputational risk, strategic risk, model risk, sustainability risk, and pension obligation risk. To manage risk, we employ a risk management framework at all levels and across all risk types. The framework fosters the continuous monitoring of the risk environment and an integrated evaluation of risks and their interactions. It also strives to ensure that we have a robust and consistent approach to risk management across all of our activities. While our risk management framework employs a broad and diversified set of risk monitoring and risk mitigation techniques, such techniques and the judgments that accompany their application cannot anticipate every unfavorable event or the specifics and timing of every outcome. Failure to manage risks appropriately could have a material adverse effect on our business, prospects, financial condition and results of operations.

Our risk management measures may face particularly significant challenges in the following three broad areas:

- (a) Macroeconomic and geo-political risks: Unfavorable economic and market conditions may adversely affect our results.
- (b) Risks related to our businesses, business operations, governance, and internal systems: The delivery of our strategic priorities is subject to execution risk and we may not achieve all the expected benefits of our strategic initiatives. Our operations are subject to the threat of fraudulent activity and disruption from the external environment. We are highly dependent on our information technology systems. We could incur losses or be required to hold additional capital as a result of model limitations or failure. Issues with the quality of data or effectiveness of our data aggregation and validation procedures could result in ineffective risk management practices or inaccurate risk reporting.
- (c) Regulatory and legal risks to our businesses: We are subject to a number of legal and regulatory actions and investigations, the outcomes of which are inherently difficult to predict, but unfavorable outcomes could have a material adverse effect on our operating results and brand. Unfavorable legislative or regulatory developments, or changes in the policy of regulators or governments, could have a material adverse effect on our operations, financial condition and prospects.

Failure to implement our business strategies may adversely affect our financial performance. Our strategies for business growth includes focusing our sales efforts on international connectivity strategies with high quality internationally minded clients as well as augmenting our returns through increased cross-selling and cost optimization. The development and implementation of our strategy requires difficult, subjective and complex judgments, 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, and our ability to execute our strategy may also be limited by our operational capacity and the increasing complexity of the regulatory environment in which we operate. Further, we may fail to attract internationally mobile clients or cross-sell our services to them. See "—Our "cross-selling" efforts to increase the number of products our customers buy from us and offer them all of the financial products that fulfill their needs is a key part of our growth strategy, and our failure to execute this strategy effectively could have a material adverse effect on our revenue growth and financial results." The work required to execute on our growth strategies is substantial. Alongside the strategic actions, we continue to implement a number of externally driven regulatory remediation programs. The magnitude and complexity of the projects required to meet these demands has resulted in heightened execution risk. Additionally, we may be unable to fully realize the cost optimization efforts and the other anticipated benefits from those efforts and we may not be able to realize them in the currently anticipated timeframes.

The cumulative impact of the collective change initiatives underway is significant and has direct implications on resourcing and our people. Our ability to execute our strategy may also be limited by our operational capacity and the increasing complexity of the regulatory environment in which we operate. In addition, factors beyond our control, including but not limited to, the economic and market conditions and other challenges discussed in detail above, could limit our ability to achieve all of the expected benefits of these initiatives. Failure to successfully implement our business strategies may have a material adverse effect on our businesses, prospects, financial condition and results of operations.

Our "cross-selling" efforts to increase the number of products our customers buy from us and offer them all of the financial products that fulfill their needs is a key part of our growth strategy, and our failure to execute this strategy effectively could have a material adverse effect on our revenue growth and financial results. Selling more products to our customers - "cross-selling" - is very important to our business model and key to our ability to grow revenue and earnings. Key among these cross-sell opportunities is the collaboration between CMB and GB&M as well as referrals to PB from the other business lines, which is an area where many of our competitors also focus. In the retail banking sector, many of our competitors also focus on cross-selling, especially in retail banking and mortgage lending. In both instances, this competition within the industry can limit our ability to sell more products to our customers or influence us to sell our products at lower prices, reducing our net interest income and revenue from our fee-based products. It could also affect our ability to keep existing customers. New technologies could require

us to spend more to modify or adapt our products to attract and retain customers. Our cross-sell strategy also is dependent on earning more business from our customers, and increasing our cross-sell ratio - or the average number of products sold to existing customers - which may become more challenging.

Operational risks are inherent in our businesses and may adversely impact our businesses and reputation. We are exposed to many types of operational risks 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. For example, fraudsters may target any of our products, services and delivery channels including lending, internet banking, payments, bank accounts and cards. These risks apply equally when we rely on outside suppliers, outsourcing vendors and our affiliates to provide services to us and our customers. These operational risks may result in financial loss to us, an adverse customer experience, reputational damage and potential regulatory action depending on the circumstances of the event, which could have a material adverse effect on our businesses, prospects, financial condition and results of operation. Further, there is a risk that our operating system controls as well as business continuity and data security systems could prove to be inadequate. Any such failure could affect our operations and could have a material adverse effect on our results of operations by requiring us to expend significant resources to correct the defect, as well as exposing us to litigation or losses not covered by insurance.

Our operations are subject to disruption from the external environment. We may be subject to disruptions of our operating systems infrastructure arising from events that are wholly or partially beyond our control, which may include:

- computer viruses, electrical, telecommunications, or other essential utility outages;
- natural disasters, such as hurricanes or other severe weather conditions and earthquakes;
- events arising from local, regional or international politics, including terrorist acts or acts of war; or
- absence of operating systems personnel due to global pandemics or otherwise, which could have a significant effect on our business operations as well as on HSBC affiliates world-wide.

Such disruptions may give rise to losses in service or disruption to customers, an inability to collect our receivables in affected areas, physical damage or loss of life and other loss or liability to us, which could have a material adverse effect on our businesses, prospects, financial condition and results of operation.

A failure in or a breach of our operational or security systems or infrastructure, or those of our third party vendors and other service providers, including as a result of cyberattacks, could disrupt our businesses, result in the disclosure or misuse of confidential or proprietary information, and may adversely impact our businesses and reputation. Data quality and integrity are critical for decision making, enterprise risk management and operational processes, as well as for complying with applicable regulation. Our businesses are dependent on our ability to process a large number of complex transactions, most of which involve, in some fashion, networked computing devices. If any of our financial, accounting, data processing or other recordkeeping systems and management controls fail, or are subject to cyberattack that could compromise integrity, availability or confidentiality of our systems or data, we could be materially adversely affected.

Cyber vulnerability continues to be leveraged by cyber criminals to perpetrate crimes at an increasing rate, often exceeding traditional offense, and poses a significant threat to economic, social and geopolitical stability for private firms and countries. HSBC faces sophisticated cyber threats from state-sponsored attackers, hackers for hire, organized cyber syndicates, and other threat actors seeking our critical corporate and customer information.

In recent years, distributed denial of service attacks, spearphishing campaigns, advanced malware, ransomware attacks, social engineering and insider threats have grown in volume and level of sophistication each with the intent to obtain personal customer financial information or proprietary corporate information, disrupt availability of services and to commit fraud. Such acts can affect our business by:

- compromising the confidentiality or integrity of our customers' data, potentially impacting our customers' ability to repay loan balances and negatively impacting their credit ratings;
- compromising the security of and confidence in our payment channels;
- putting our customers at risk for identity theft, account takeover and credit abuse;
- causing us to incur remediation and other costs related to liability for customer or third parties for losses, repairs to remedy systems flaws, or incentives to customers and business partners to maintain and rebuild business relationships after the attack;
- increasing our costs to respond to such threats and to enhance our processes and systems to ensure security of data;
- damaging our reputation as a result of public disclosure of a breach of our systems or a loss of data event;
- resulting in unauthorized disclosure or alteration of our corporate confidential information and confidential information of employees, customers and counterparties;
- disrupting our customers' or third parties' business operations; and
- resulting in violations of applicable privacy laws and other laws or regulatory fines, penalties or intervention.

The threat from cyberattacks, on us and on third party vendors on which we rely, is a concern for our organization and failure to protect our operations from internet crime or cyberattacks may result in financial loss and loss of customer data or other sensitive information which could undermine our reputation and our ability to attract and keep customers. We face various cyber risks in line with other multinational financial organizations. We and other multinational financial organizations have been, and will continue to be subject to an increasing risk of cyber incidents from these activities due to the proliferation of new technologies and the increasing use of the Internet and customers' use of personal smartphones, PCs and other computing devices, tablet PCs and other mobile devices to access products and services to conduct financial transactions and the increased sophistication and activities of organized crime for seeking financial gain, hacktivists (geopolitical designated groups), cyber terrorists (attacks against critical infrastructure) and state sponsored advanced persistent threats, sometimes referred to as APTs, for corporate espionage. Our risk and exposure to these matters remains heightened because of, among other things, HSBC Group's prominent size and scale, geographical span and role in the financial services industry, and our offering of Internet banking and mobile banking platforms that seek to serve our customers when and how they want to be served. In addition, the consolidation of clearing agents, exchanges and clearing houses and increased interconnectivity of financial institutions with such central agents, exchanges and clearing houses increases the exposure of cyberattacks on critical parties that may affect us. Evaluating and monitoring the cyber threat landscape in comparison to our existing capabilities, and adjusting our programs in order to respond to these threats, may require additional capital expenses for human resources and technology.

In October 2018, malicious actors used credentials sourced from a breach of a third party unrelated to HSBC Bank USA to attempt to access accounts of its customers. Because some of the customers had used the same credentials for access to the breached third party services and their accounts at HSBC Bank USA, the malicious actors were able to gain access to a small number of customer accounts at HSBC Bank USA including the name of the account holder, account types, account balances and transactions of the affected accounts. This incident did not result in material financial loss.

Our businesses are increasingly subject to laws and regulations relating to surveillance, encryption and data on-shoring in the jurisdictions in which we operate. Compliance with these laws and regulations may require us to change our policies, procedures and technology for information security (including cybersecurity) from time to time.

Concentrations of credit and market risk could increase the potential for significant losses. We have exposure to increased levels of risk when customers are engaged in similar business activities or activities in the same geographic region, or when they have similar economic features that would cause their ability to meet contractual obligations to be similarly affected by changes in economic conditions. While we regularly monitor various segments of our portfolio exposures to assess potential concentration risks, our efforts to diversify or hedge our credit portfolio against concentration risks may not be successful. As an international bank, we have exposure to commercial customers domiciled outside of the United States. As a result, we are subject to various other non-domestic risks including geopolitical risk, international trade flow disruptions, and deterioration/volatility in global economies and markets. Disruptions in the liquidity or transparency of any of the industries, products, financial markets or economies we operate in may result in our inability to sell, syndicate or realize the value of our positions, thereby leading to increased concentrations.

Our inability to meet funding requirements due to deposit attrition or access to the capital markets. HSBC USA is a holding company without operations of its own and therefore relies on dividends and other distributions for a portion of its funding and liquidity. Federal and state laws limit the amount of dividends and distributions that our subsidiaries may pay. Our primary source of funding is deposits, augmented by issuance of commercial paper and term debt. Adequate liquidity is critical to our ability to operate our businesses.

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 market presence. We issued a total of \$11,923 million of long-term debt at various points in 2018. An inability to obtain financing in the unsecured long-term or short-term debt capital markets because of market factors or factors in our businesses could have a substantial adverse effect on our liquidity. Unfavorable macroeconomic developments, market disruptions or regulatory developments may increase our funding costs or challenge our ability to raise funds to support our businesses, materially adversely affecting our businesses, prospects, financial condition and/or results of operations.

Despite the apparent improvements in overall market liquidity and our liquidity position, future conditions that could negatively affect our liquidity include:

- an inability to maintain stable deposit balances because customers may invest in other financial instruments as an alternative;
- diminished access to capital markets because of market factors or factors in our businesses;
- an increased interest rate environment for our commercial paper, deposits or term debt;
- unforeseen cash or capital requirements;
- an inability to sell assets; and
- an inability to obtain expected funding from HSBC Group subsidiaries and through deposits.

These conditions could be caused by a number of factors, including internal and external factors, such as, among others:

- financial and credit market disruption;
- volatility or lack of market or customer confidence in financial markets;
- lack of market or customer confidence in HSBC or negative news about HSBC or the financial services industry generally; and
- other conditions and factors over which we have little or no control including economic conditions in the U.S. and abroad and concerns over potential government defaults and related policy initiatives.

Our approach is to meet our capital needs locally through activities which reduce risk. To the extent, however, that local alternatives are insufficient, as a wholly-owned subsidiary of HSBC, we would seek their support. HSBC has provided us with capital support in the past. Notwithstanding, if we are unable to maintain stable deposit balances and/or raise funds 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, 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 depressed prices, which in either case could materially adversely affect our businesses, prospects, results of operations and/or financial condition.

Adverse changes in our credit ratings could have a material adverse effect on our liquidity and cost of funding. Our credit ratings are an important part of maintaining our liquidity. We depend on access to the securities market for a portion of our funding. We issued a total of \$11,923 million of long-term debt in 2018. Our credit ratings are subject to ongoing review by the rating agencies, which consider a number of factors including their assessment of our relative financial strength and results of operations, including our strategy and our management's capability, as well as factors affecting the financial services industry generally, including legal and regulatory frameworks affecting our business activities and the rights of our creditors. There can be no assurance that downgrades will not occur. Any downgrade in our credit ratings could potentially increase our borrowing costs, impact our ability to issue commercial paper and, depending on the severity of the downgrade, substantially limit our access to capital markets, require us to make cash payments or post collateral and permit termination by counterparties of certain significant contracts. Downgrades in our credit ratings also may trigger additional collateral or funding obligations which could negatively affect our liquidity, including as a result of credit-related contingent features in certain of our derivative contracts.

Rating agencies continue to evaluate economic and geopolitical trends, regulatory developments, future profitability, risk management practices and litigation matters, all of which may lead to adverse ratings actions. Although we closely monitor and strive to manage factors influencing our credit ratings, there is no assurance that our credit ratings will not change in the future. At December 31, 2018, there were no pending actions in terms of changes to ratings on the debt of HSBC USA or HSBC Bank USA from any of the rating agencies.

We may suffer losses due to employee negligence, fraud or misconduct. Non-compliance with policies, employee misconduct, negligence and fraud could result in regulatory sanctions and serious reputational or financial harm. We are dependent on our employees and could be materially adversely affected if an employee or employees, acting alone or in concert with non-affiliated third parties, causes a significant operational break-down or failure, either as a result of human error or where an individual purposefully sabotages or fraudulently manipulates our operations or systems. 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, prospects, financial condition and results of operations.

We may suffer losses due to negligence, fraud or misconduct by third parties. We depend on third party suppliers, outsourcing vendors and our affiliates for a variety of services. Third parties with which we do business with could be sources of operational risk to us, including risks relating to break-downs or failures of such parties' own systems or employees. The OCC and FRB require financial institutions to maintain third party and service provider risk management programs, which include due diligence requirements for third parties and service providers as well as for our affiliates who may perform services for us. Under FRB guidance "service providers" is broadly defined to include all entities that have entered into a contractual relationship with a financial institution to provide business functions or activities. If our third party risk and service provider management and due diligence program is not sufficiently robust, this could lead to regulatory intervention. Any of these occurrences could diminish our ability to operate one or more of our businesses, and may result in potential liability to clients, reputational damage or regulatory intervention, all of which could materially adversely affect us.

Failure to successfully change our operational practices may have a material impact on our businesses. Changes to operational practices from time to time could materially impact our performance and results. Such changes may include:

- our determining to sell residential mortgage loans and other loans;
- changes to our customer account management and risk management/collection policies and practices;
- our investment choices in technology, business infrastructure and specialized personnel;

- changes to our AML and sanctions policies and the related operations practices;
- our outsourcing of various operations, including our mortgage servicing business; or
- the decision to insource certain products, services or operations.

Further, in order to react quickly to or meet newly-implemented regulatory requirements, we may need to change or enhance systems within very tight time frames, which would increase operational risk. Failure to implement appropriate changes to our operational practices successfully and efficiently may diminish our ability to operate one or more of our businesses and could result in reputational damage and regulatory intervention, all of which could materially adversely affect us.

Federal Reserve Board policies can significantly affect business and economic conditions and, as a result, our financial results and condition. The FRB regulates the supply of money and credit in the United States. Its policies determine in large part our cost of funds for lending and investing and the return we earn on those loans and investments, both of which affect our net interest margin. They also can materially affect the value of financial instruments we hold, such as debt securities and derivative instruments. The FRB's policies also can affect our borrowers, potentially increasing the risk that such borrowers may fail to repay their loans. Changes in FRB policies are beyond our control and can be hard to predict.

Our data management and policies and processes may not be sufficiently robust. Critical business processes across the HSBC Group rely on large volumes of data from a number of different systems and sources. If data governance, data quality and data architecture policies and procedures are 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 to service customers more effectively and/or improve our product offering. This could have a material adverse effect on our business, prospects and results of operations.

Moreover, financial institutions that fail to comply with regulatory reporting requirements established by their regulators or with the principles for effective risk data aggregation and risk reporting as set out by the Basel Committee may face supervisory measures. Any of these failures could have a material adverse effect on our business, prospects, financial condition and results of operations.

We face significant and increasing competition in the rapidly evolving financial services industry. We compete with other financial institutions in a highly competitive industry that continues to undergo significant change as a result of financial regulatory reform and increased public scrutiny stemming from the financial crisis and the challenging economic conditions that followed. We target internationally mobile clients who need sophisticated global solutions and we 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 or increased competition in any one or all of these areas may negatively affect our market share and results of operations and/or cause us to increase our capital investment in our businesses in order to remain competitive. Additionally, if our products and services are not accepted by our targeted clients, this may have a material adverse effect on our businesses, financial condition and results of operations.

Given the current economic, regulatory, and political environment for large financial institutions such as us, and possible public backlash to bank fees, 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 and could materially adversely affect our results of operations. Further, new technologies could require us to spend more to modify or adapt our products to attract and retain customers. Continued technological advances and the growth of e-commerce have made it possible for non-depository institutions to offer products and services that traditionally were banking products, and for financial institutions and other companies to provide electronic and Internet-based financial solutions, including electronic payment solutions. We may not respond effectively to these competitive threats from existing and new competitors and may be forced to increase our investment in our businesses 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 may have a material adverse effect on our businesses, prospects, financial condition and results of operations.

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 over the counter derivatives, including under the Dodd-Frank Act, brings with it risk. As a clearing member, we have financial exposure for losses incurred at a Central Counterparty ("CCP") by the default of other clearing members. Hence increased moves toward 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 risk controls are largely managed by the CCPs themselves and it is unclear at present how, at a time of stress, regulators and resolution authorities would intervene.

In situations in which we strive to mitigate counterparty risk by taking collateral, our credit risk may remain high if the collateral we hold cannot be realized or must be liquidated at prices insufficient to recover the full amount of our exposure to the respective counterparty. There is a risk that collateral cannot be realized, including situations where this arises by change of law that may influence our ability to foreclose on collateral or otherwise enforce contractual rights.

We also have credit exposure arising from risk defeasance products 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 may have a material adverse effect on our financial condition and results of operations.

The financial condition of our clients and counterparties, including other financial institutions, could adversely affect us.

A significant deterioration in the credit quality of one of our counterparties could lead to concerns in the market about the credit quality of other counterparties in the same industry, thereby exacerbating our credit risk exposure, and increasing the losses (including mark-to-market losses) that we could incur in our market-making and clearing businesses.

Financial services institutions are interrelated as a result of market-making, 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. HSBC routinely executes transactions with counterparties in the financial services industry, including brokers and dealers, 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 a default by the counterparty or client. When such a counterparty or client becomes bankrupt or insolvent, we may become involved in significant disputes or litigation with the counterparty's or client's bankruptcy estate and other creditors, or involved in regulatory investigations, each of which could increase our operational and litigation costs.

Significant or prolonged periods of market stress or illiquidity could further decrease our ability to realize the fair value of collateral held by us or make it more likely that we would liquidate collateral at prices insufficient to recover the full amount of our exposure to the respective counterparty or client. Further, disputes with counterparties as to the valuation of collateral significantly increase in times of market stress and illiquidity.

Increased credit risk, including as a result of a deterioration in economic conditions, could require us to increase our provision for credit losses and allowance for credit losses and could have a material adverse effect on our results of operations and financial condition. When we loan money or commit to loan money we incur credit risk, or the risk of losses if our borrowers do not repay their loans. The credit performance of our loan portfolios significantly affects our financial results and condition. If the current economic environment were to deteriorate, more of our customers may have difficulty in repaying their loans or other obligations which could result in a higher level of credit losses and provision for credit losses. We reserve for credit losses by establishing an allowance through a charge to earnings. The amount of this allowance is based on our assessment of credit losses inherent in our loan portfolio (including unfunded credit commitments). The process for determining the amount of the allowance is critical to our financial results and condition. It requires difficult, subjective and complex judgments about the future, including forecasts of economic or market conditions that might impair the ability of our borrowers to repay their loans. We might increase the allowance because of changing economic conditions, including falling home prices and higher unemployment, or other factors. For example, changes in borrower behavior or the regulatory environment also could influence recognition of credit losses in the portfolio and our allowance for credit losses.

While we believe that our allowance for credit losses was appropriate at December 31, 2018, there is no assurance that it will be sufficient to cover future credit losses. In the event of a deterioration in economic conditions, we may be required to build reserves in future periods, which would reduce our earnings.

Financial difficulties or credit downgrades of mortgage and bond insurers may negatively affect our servicing and investment portfolios. Our servicing portfolio includes certain mortgage loans that carry some level of insurance from one or more mortgage insurance companies. To the extent that any of these companies experience financial difficulties or credit downgrades, we may be required, as servicer of the insured loan on behalf of the investor, to obtain replacement coverage with another provider, possibly at a higher cost than the coverage we would replace. We may be responsible for some or all of the incremental cost of the new coverage for certain loans depending on the terms of our servicing agreement with the investor and other circumstances, although we do not have an additional risk of repurchase loss associated with claim amounts for loans sold to third-party investors. Similarly, some of the mortgage loans we hold for investment or for sale carry mortgage insurance. If a

mortgage insurer is unable to meet its credit obligations with respect to an insured loan, we might incur higher credit losses if replacement coverage is not obtained. We also have investments in municipal bonds that are guaranteed against loss by bond insurers. The value of these bonds and the payment of principal and interest on them may be negatively affected by financial difficulties or credit downgrades experienced by the bond insurers.

The manner in which we hold, service and enforce residential mortgage loans in our portfolio may be challenged. We are subject to certain legal and contractual requirements for how we hold, transfer, use or enforce promissory notes, security instruments and other documents for residential mortgage loans that we service. In recent years, challenges have been raised to whether we have adhered to these requirements, and whether, as a result in some instances, the loans can be enforced as local law otherwise would permit. Additionally, we currently use the Mortgage Electronic Registration Systems, Inc. (MERS) system for approximately half of the residential mortgage loans that remain in our servicing portfolio. Individual borrowers and certain local governments have contended that the use of MERS is improper or otherwise adversely affects the security interest. If documentation requirements were not met, or if the use of MERS or the MERS system is found not valid or effective, we could be obligated to, or choose to, take remedial actions and may be subject to additional costs or losses.

Failure to meet regulatory requirements and expectations in the U.S. regarding sales practices and incentive compensation programs could negatively impact our customers, our business and reputation. Our remuneration practices and performance management framework are designed to prevent and deter conflicts of interest and inappropriate sales incentives. Additionally, our other sales controls, including our framework for handling customer and employee complaints regarding sales practices, are designed to ensure customers receive products that they have authorized and meet their needs. Failure to execute our sales controls could result in the sale of, or upgrade to, products and services that fail to meet the needs of, or are unsuitable for, customers and clients, and can lead to financial harm to our customers, regulatory sanctions, financial loss and reputational damage.

We may not manage risks associated with the replacement of benchmark rates effectively. The expected replacement of benchmarks, including the key London Interbank Offered Rate ("LIBOR") with alternative benchmark rates introduces a number of risks for us, our clients, and the financial services industry more widely. This includes, but is 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 benchmark rates;
- Pricing risks, as changes to benchmark indices could impact pricing mechanisms on some instruments;
- Operational risks, due to the potential requirement to adapt IT systems, trade reporting infrastructure, operational processes and controls; and
- Conduct risks, through potential material, adverse, impact on customers or financial markets, and engagement during the transition period.

The benchmark specifications together with the timetable and mechanisms for implementation 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 us. However, the implementation of alternative benchmark rates may have a material adverse effect on our financial condition, customers and operations.

We could incur losses or be required to hold additional capital as a result of model limitations or failure. We use models for a range of purposes in managing our businesses, including regulatory capital calculations, stress testing, credit approvals, financial crime and fraud risk management and financial reporting. We could face adverse consequences as a result of decisions, which may lead to actions by management, based on models that are poorly developed, implemented or used, or as a result of the modeled outcome being misunderstood or the use of such information for purposes for which it was not designed. We hold capital for known risks and limitations of our models as appropriate. If additional weakness in a model is discovered or if a model is shown to have failed, we may be required to hold more capital. Risks arising from use of models could have a material adverse effect on our businesses, financial condition and/or results of operations, minimum capital requirements and reputation.

Regulatory scrutiny and supervisory concerns over the use by banks of models is considerable, particularly the internal models and assumptions used by banks in the application of the stress testing exercise and in the calculation of regulatory capital.

Management projections, estimates and judgments based on historical performance may not be indicative of our future performance. Our management is required to use certain estimates in preparing our financial statements, including accounting estimates to determine loan loss reserves, reserves related to litigation, deferred tax assets and the fair market value of certain assets and liabilities, including goodwill and intangibles, among other items. In particular, loan loss reserve estimates and certain asset and liability valuations are subject to management's judgment and actual results are influenced by factors outside our control. To the extent historical averages of the progression of loans into stages of delinquency or the amount of loss realized upon charge-off are not predictive of future losses and management is unable to accurately evaluate the portfolio risk factors not fully reflected in historical models, unexpected additional losses could result. Similarly, to the extent assumptions employed in measuring fair value of assets and liabilities not supported by market prices or other observable parameters do not sufficiently capture their inherent risk, unexpected additional losses could result.

We are required to establish a valuation allowance for deferred tax assets and record a charge to income or equity if we determine, based on available evidence at the time the determination is made, that it is more likely than not that some portion or all of our deferred tax assets will not be realized. In evaluating the need for a valuation allowance, we estimate future taxable income based on management approved business plans, future capital requirements and ongoing tax planning strategies. This evaluation process involves significant management judgment about assumptions that are subject to change from period to period. The recognition of deferred tax assets requires management to make significant judgments about future earnings, the periods in which items will impact taxable income, future corporate tax rates and the application of inherently complex tax laws. The use of different estimates can result in changes in the amounts of deferred tax items recognized, which can result in equity and earnings volatility because such changes are reported in current period earnings. See Note 16, "Income Taxes," in the accompanying consolidated financial statements for additional discussion of our deferred tax assets.

Our financial statements depend on our internal controls over financial reporting. The Sarbanes-Oxley Act of 2002 requires our management to evaluate our disclosure controls and procedures and internal control over financial reporting. We are required to disclose, in our annual report on Form 10-K, the existence of any "material weaknesses" in our internal control over financial reporting. In a company as large and complex as ours, lapses or deficiencies, including significant deficiencies, in internal control over financial reporting may occur from time to time and we cannot assure you that we will not find one or more material weaknesses as of the end of any given year.

Changes in accounting standards are beyond our control and may have a material impact on how we report our financial results and condition. Our accounting policies and methods are fundamental to how we record and report our financial condition and results of operations. From time to time, the FASB, the IASB, the SEC and our bank regulators, including the OCC and the FRB, change the financial accounting and reporting standards, or the interpretation thereof, and guidance that govern the preparation and disclosure of external financial statements. These changes are beyond our control, can be hard to predict and could materially impact how we report and disclose our financial results and condition, including our segment results. For example, the FASB's new guidance on expected credit losses will likely, among other things, significantly change how we measure credit impairment on our loan portfolios, which will also affect the level of deferred tax assets that we recognize. We could be required to apply a new or revised standard retroactively, resulting in our restating prior period financial statements in material amounts. We may, in certain instances, change a business practice in order to comply with new or revised standards. For further discussion see Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," in the accompanying consolidated financial statements.

Key employees may be difficult to attract or retain due to talent available in the market and the improved economic environment. Our employees are our most important resource and, in many areas of the financial services industry, competition for qualified personnel is intense. Employee fatigue, relocations, and external competition targeting top talent could have impacts on attrition. If we were unable to continue to attract, develop and retain qualified key employees to support the various functions of our businesses, our performance, including our competitive position, could be impacted. Any future limitations on executive compensation imposed by legislation or regulation could adversely affect our ability to attract and maintain qualified employees. In the improved economic environment, we may face increased difficulty in retaining top performers and critical skilled employees. If key personnel were to leave us and equally knowledgeable or skilled personnel are unavailable within the HSBC Group or could not be sourced in the market, our ability to manage our businesses, in particular through any future difficult economic environment may be compromised.

Significant reductions in pension assets may require additional financial contributions from us. Certain employees are eligible to participate in the HSBC North America qualified defined benefit pension plan, which has been frozen. At December 31, 2018, plan assets were lower than projected plan liabilities resulting in an under-funded status. The accumulated benefit obligation exceeded the fair value of the plan assets by approximately \$302 million. As these obligations relate to the HSBC North America pension plan, only a portion of this deficit could be considered our responsibility. We and other HSBC North America affiliates with employees participating in this plan will be required to make up this shortfall over a number of years as specified under the Pension Protection Act. This can be accomplished through direct contributions, appreciation in plan assets and/or increases in interest rates resulting in lower liability valuations. See Note 20, "Pension and Other Postretirement Benefits," in the accompanying consolidated financial statements for further information concerning the HSBC North America defined benefit plan.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

The principal executive offices of HSBC USA and HSBC Bank USA are located at 452 Fifth Avenue, New York, New York 10018. The main office of HSBC Bank USA is located at 1800 Tysons Blvd., Suite 50, Tysons, Virginia 22102. HSBC Bank USA has 145 branches in New York, 35 branches in California, 17 branches in Florida, 9 branches in New Jersey, 7 branches in Virginia, 4 branches in Washington, 3 branches in Connecticut, 3 branches in Maryland, 2 branches in the District of Columbia and 2 branches in Pennsylvania at December 31, 2018. We also have 5 representative offices in New York, 4 in California, 2 each in Florida, Texas, New Jersey and Massachusetts, and 1 in each of Colorado, the District of Columbia, Delaware, Georgia, Illinois, North Carolina, Oregon, Pennsylvania and Washington.

Item 3. Legal Proceedings

See Note 28, "Litigation and Regulatory Matters," in the accompanying consolidated financial statements for our legal proceedings disclosure, which is incorporated herein by reference.

Item 4. Mine Safety Disclosures

Not applicable.

PART II**Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities**

HSBC USA's common stock is not publicly traded. As of the date of this filing, HSBC North America was the sole holder of HSBC USA's common stock. No dividends were paid on the common stock outstanding during either 2018 or 2017.

Item 6. Selected Financial Data

Year Ended December 31,	2018	2017	2016	2015	2014
(dollars are in millions)					
Statement of Income (Loss) Data:					
Net interest income	\$ 2,252	\$ 2,273	\$ 2,484	\$ 2,470	\$ 2,304
Provision for credit losses	(73)	(165)	372	361	188
Total other revenues	1,899	2,002	1,404	1,735	1,657
Operating expenses	3,638	3,391	3,298	3,284	3,475
Income before income tax	586	1,049	218	560	298
Income tax expense (benefit)	266	1,228	89	230	(56)
Net income (loss)	\$ 320	\$ (179)	\$ 129	\$ 330	\$ 354
Balance Sheet Data at December 31:					
Loans:					
Real estate, including construction	\$ 11,344	\$ 10,533	\$ 10,890	\$ 10,000	\$ 10,300
Business and corporate banking	13,066	12,504	14,080	14,365	13,878
Global banking	20,167	20,088	23,481	29,905	25,507
Other commercial	4,765	9,910	5,765	8,183	8,402
Total commercial	49,342	53,035	54,216	62,453	58,087
Residential mortgages	17,383	17,273	17,181	17,758	16,661
Home equity mortgages	982	1,191	1,408	1,600	1,784
Credit card	1,019	721	688	699	720
Other consumer	252	343	382	407	489
Total consumer	19,636	19,528	19,659	20,464	19,654
Total loans	68,978	72,563	73,875	82,917	77,741
Loans held for sale	512	715	1,809	2,185	612
Total assets	172,448	187,235	201,301	188,278	185,539
Total deposits	110,955	118,702	129,248	118,579	116,118
Long-term debt	30,628	34,966	37,739	33,509	27,524
Preferred stock	1,265	1,265	1,265	1,265	1,565
Common equity	19,241	18,829	19,090	19,260	15,402
Total equity	20,506	20,094	20,355	20,525	16,967
Tangible equity ⁽¹⁾	17,613	17,194	17,444	17,607	13,743

Year Ended December 31,	2018	2017	2016	2015	2014
Selected Financial Ratios:					
Rate of return on average:					
Total assets.....	.2%	(.1)%	.1%	.2%	.2%
Risk-weighted assets	.3	(.1)	.1	.2	.3
Common equity	1.3	(1.3)	.3	1.4	1.8
Tangible common equity	1.4	(1.4)	.3	1.6	2.1
Total equity	1.6	(.9)	.6	1.7	2.1
Net interest margin.....	1.42	1.28	1.28	1.35	1.43
Loans to deposits ratio ⁽²⁾	75.02	73.70	75.67	93.07	91.94
Efficiency ratio.....	87.6	79.3	84.8	78.1	87.7
Allowance as a percent of loans ⁽³⁾	.78	.94	1.38	1.10	.87
Commercial allowance as a percent of loans ⁽³⁾	.93	1.15	1.72	1.25	.85
Commercial net charge-off ratio ⁽³⁾	.09	.30	.34	.10	.06
Consumer allowance as a percent of loans ⁽³⁾	.42	.37	.44	.65	.96
Consumer two-months-and-over contractual delinquency	2.05	2.48	4.05	4.56	5.59
Consumer net charge-off ratio ⁽³⁾	.13	.11	.33	.32	.43
Common equity Tier 1 capital to risk-weighted assets	13.6	14.2	13.7	12.0	10.3
Tier 1 capital to risk-weighted assets	14.6	15.3	14.5	12.6	11.4
Total capital to risk-weighted assets	17.2	18.4	18.3	16.5	15.8
Tier 1 leverage ratio	11.0	9.9	9.2	9.5	8.5
Supplementary leverage ratio ⁽⁴⁾	7.6	7.3	6.5	N/A	N/A
Total equity to total assets	11.9	10.7	10.1	10.9	9.1

⁽¹⁾ The following table provides a reconciliation of common equity to tangible common equity:

Year Ended December 31,	2018	2017	2016	2015	2014
(dollars are in millions)					
Common equity.....	\$ 19,241	\$ 18,829	\$ 19,090	\$ 19,260	\$ 15,402
Less: Goodwill	1,607	1,607	1,612	1,612	1,612
Less: Intangible assets - purchased credit card relationships.....	21	28	34	41	47
Tangible common equity.....	<u>\$ 17,613</u>	<u>\$ 17,194</u>	<u>\$ 17,444</u>	<u>\$ 17,607</u>	<u>\$ 13,743</u>

⁽²⁾ Represents period end loans, net of allowance for loan losses, as a percentage of core deposits as calculated in accordance with Federal Financial Institutions Examination Council guidelines which generally include all domestic demand, money market and other savings accounts, as well as time deposits with balances not exceeding \$250,000.

⁽³⁾ Excludes loans held for sale.

⁽⁴⁾ In 2016, we began publicly disclosing our supplementary leverage ratio.

N/A Not Applicable

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Forward-Looking Statements

Certain matters discussed throughout this Form 10-K are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. In addition, we may make or approve certain statements in future filings with the United States Securities and Exchange Commission ("SEC"), in press releases, or oral or written presentations by representatives of HSBC USA Inc. ("HSBC USA" and, together with its subsidiaries, "HUSI") that are not statements of historical fact and may also constitute forward-looking statements. Words such as "may," "will," "should," "would," "could," "appears," "believe," "intends," "expects," "estimates," "targeted," "plans," "anticipates," "goal," and similar expressions are intended to identify forward-looking statements but should not be considered as the only means through which these statements may be made. These matters or statements will relate to our future financial condition, economic forecast, results of operations, plans, objectives, performance or business developments and will involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from that which was expressed or implied by such forward-looking statements.

All forward-looking statements are, by their nature, subject to risks and uncertainties, many of which are beyond our control. Our actual future results may differ materially from those set forth in our forward-looking statements. While there is no assurance that any list of risks and uncertainties or risk factors is complete, below are certain factors which could cause actual results to differ materially from those in the forward-looking statements:

- uncertainty concerning the future market and economic conditions in the United States and abroad, including but not limited to, changes in interest rates, energy prices and unemployment levels, a decline in housing prices, the availability of credit and liquidity, changes in consumer confidence and consumer spending and behavior, consumer perception as to the continuing availability of credit and price competition in the market segments we serve and the consequences of unexpected geopolitical events, such as trade disputes and the decision by the United Kingdom ("U.K.") to exit the European Union ("EU");
- changes in laws and regulatory requirements;
- the potential impact of any legal, regulatory or policy changes affecting financial institutions and the global economy as a result of the current Administration in the U.S.;
- the ability to deliver on our regulatory priorities;
- capital and liquidity requirements under Basel guidance, the Federal Reserve Board's ("FRB") Comprehensive Capital Analysis and Review ("CCAR") program, and the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank Act" or "Dodd-Frank") stress testing ("DEFAST"), including the U.S. FRB requirements for U.S. global systemically important banks ("G-SIBs") and U.S. intermediate holding companies ("IHCs") owned by non-U.S. G-SIBs to issue total loss-absorbing capacity ("TLAC") instruments;
- regulatory requirements in the U.S. and in non-U.S. jurisdictions to facilitate the future orderly resolution of large financial institutions;
- changes in central banks' policies with respect to the provision or removal of liquidity support to financial markets;
- the ability of HSBC Holdings plc ("HSBC" and, together with its subsidiaries, "HSBC Group") and HSBC Bank USA, National Association (together with its subsidiaries, "HSBC Bank USA") to fulfill the requirements imposed by applicable consent orders or guidance from regulators generally;
- the use of us as a conduit for illegal activities without our knowledge by third parties;
- the ability to successfully manage our risks;
- the possibility of the inadequacy of our data management and policies and processes;
- the financial condition of our clients and counterparties and our ability to manage counterparty risk;
- concentrations of credit and market risk;
- increases in our allowance for credit losses and changes in our assessment of our loan portfolios;
- the ability to implement our business strategies;
- the ability to successfully implement changes to our operational practices as needed and/or required from time to time;
- damage to our reputation;
- the ability to attract and retain customers and to attract and retain key employees;

- the effects of competition in the markets where we operate including increased competition from non-bank financial services companies, including securities firms;
- the effects of operational risks that are inherent in banking operations, including fraudulent and other criminal activities, breakdowns in processes or procedures and systems failure or non-availability;
- disruption in our operations from the external environment arising from events such as natural disasters, global pandemics, acts of war, terrorist attacks, or essential utility outages;
- a failure in or a breach of our operation or security systems or infrastructure, or those of third party servicers or vendors, including as a result of cyberattacks;
- the ability of third party suppliers, outsourcing vendors, off-shored functions and our affiliates to provide adequate services;
- losses suffered due to the negligence, fraud or misconduct of our employees or the negligence, fraud or misconduct on the part of third parties;
- a failure in our internal controls;
- our ability to meet our funding requirements;
- adverse changes to our credit ratings;
- financial difficulties or credit downgrades of mortgage bond insurers;
- our ability to cross-sell our products to existing customers;
- changes in Financial Accounting Standards Board ("FASB") and International Accounting Standards Board ("IASB") accounting standards and their interpretation;
- heightened regulatory and government enforcement scrutiny of financial institutions, including in connection with product governance and sales practices, account opening and closing procedures, customer and employee complaints and sales compensation structures related to such practices;
- continued heightened regulatory scrutiny with respect to existing and future residential mortgage servicing and foreclosure practices, with particular focus on loss mitigation, foreclosure prevention and outsourcing;
- possible negative impact of regulatory investigations and legal proceedings related to alleged foreign exchange manipulation;
- changes in the methodology for determining benchmark rates;
- heightened regulatory and government enforcement scrutiny of financial markets, with a particular focus on traded asset classes, including foreign exchange;
- the possibility of incorrect assumptions or estimates in our financial statements, including reserves related to litigation, deferred tax assets and the fair value of certain assets and liabilities;
- model limitations or failure;
- the possibility of incorrect interpretations, application of or changes in tax laws to which we and our clients are subject;
- additional financial contribution requirements to the HSBC North America Holdings Inc. ("HSBC North America") pension plan;
- unexpected and/or increased expenses relating to, among other things, litigation and regulatory matters, remediation efforts, penalties and fines; and
- the other risk factors and uncertainties described under Item 1A, "Risk Factors," in this Annual Report on Form 10-K.

Forward-looking statements are based on our current views and assumptions and speak only as of the date they are made. We undertake no obligation to update any forward-looking statement to reflect subsequent circumstances or events. For more information about factors that could cause actual results to differ materially from those in the forward-looking statements, see Item 1A, "Risk Factors," in this Annual Report on Form 10-K.

Executive Overview

HSBC USA is a wholly-owned subsidiary of HSBC North America, which is an indirect wholly-owned subsidiary of HSBC. HUSI may also be referred to in Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") as "we," "us" or "our."

2018 Economic Environment The U.S. economy continued to grow during 2018. U.S. Gross Domestic Product ("GDP") for 2018 has not yet been reported, but is expected to show a higher annual growth rate than 2017's GDP annual growth rate, while inflation in 2018 averaged near the FRB's target inflation rate. During 2018, the FRB continued reducing its holdings of U.S. Treasury bonds and mortgage-backed securities and, in December 2018, the FRB increased short-term interest rates by 25 basis points, the fourth such rate increase of the year. However, the FRB has indicated that any further increases in short-term interest rates will depend on future economic conditions. The U.S. economy added over 2.6 million jobs during 2018 and the total unemployment rate fell to 3.9 percent at December 2018 as compared with 4.1 percent at December 2017.

Although the U.S. economy continued to grow, uncertainty concerning the future economic environment, including anticipated slower growth, increased significantly during the fourth quarter. The sustainability of economic growth will be determined by numerous other variables including consumer sentiment, energy prices, credit market volatility, employment levels and housing market conditions which will impact corporate earnings and the capital markets. Concerns over higher interest rates, inflation, domestic and global policy issues, U.S. trade policy and geopolitical events as well as the implications of those events on the markets in general further add to global uncertainty. Higher interest rates, in combination with global economic conditions, fiscal and monetary policy and the level of regulatory and government scrutiny of financial institutions will continue to impact our results in 2019 and beyond.

2018 Events

- In June 2018, the Office of the Comptroller of the Currency ("OCC") terminated the 2010 consent cease and desist order and the 2012 enterprise-wide compliance consent order. In August 2018, the FRB terminated the 2010 consent cease and desist order entered into by our parent, HSBC North America. In September 2018, the OCC terminated the second OCC consent order entered into in 2012 by HSBC Bank USA which, among other things, required the bank to correct the circumstances noted in the OCC's report and imposed certain restrictions on HSBC Bank USA.
- In October 2018, HSBC North America and certain subsidiaries reached an agreement with the U.S. Department of Justice ("DOJ") to resolve the DOJ's investigation of their legacy securitization, issuance and underwriting of residential mortgage-backed securities issued between 2005 and 2007. Under the terms of the agreement, HSBC North America, without admitting liability or wrongdoing under the Financial Industry Reform, Recovery and Enforcement Act, paid a \$765 million civil monetary penalty, of which \$492 million was paid by HUSI and was recorded as a charge to other expenses during 2018. For additional discussion, see Note 28, "Litigation and Regulatory Matters," in the accompanying consolidated financial statements.

Performance, Developments and Trends Net income (loss) was income of \$320 million during 2018 compared with a loss of \$179 million and income of \$129 million during 2017 and 2016, respectively. Our net loss in 2017 reflects the impact of the Tax Cuts and Jobs Act ("Tax Legislation") enacted in December 2017 which lowered the Federal corporate income tax rate to 21 percent effective January 1, 2018 and resulted in an increase to our income tax provision of approximately \$865 million due to a lower carrying value of our net deferred tax asset.

Income before income tax was \$586 million during 2018 compared with \$1,049 million and \$218 million during 2017 and 2016, respectively. The decrease in income before income tax in 2018 compared with 2017 was due to higher operating expenses driven by expense recorded in 2018 related to the settlement of a mortgage securitization legal matter as discussed above, lower other revenues which reflect the non-recurrence of a gain recorded in 2017 on the sale of Visa Inc. ("Visa") Class B common shares ("Class B Shares"), lower releases in the provision for credit losses and lower net interest income. The increase in income before income tax in 2017 compared with 2016 reflects higher other revenues driven by higher gains on sales of Visa Class B Shares and a lower provision for credit losses, partially offset by lower net interest income and higher operating expenses.

Our reported results in all periods were impacted by certain items management believes to be significant, which distort comparability between periods. Significant items are excluded to arrive at adjusted performance because management would ordinarily identify and consider them separately to better understand underlying business trends. The following table summarizes the impact of these significant items for all periods presented:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Income before income tax, as reported.....	\$ 586	\$ 1,049	\$ 218
Expense related to the settlement of certain mortgage loan legal matters	516	—	—
Costs to achieve ⁽¹⁾	—	222	113
Gains on sales of Visa Inc. Class B common shares to a third party, net ⁽²⁾	7	(308)	(71)
Loss on partial settlement of HSBC North America pension obligation.....	—	35	—
Adjusted performance ⁽³⁾	<u>\$ 1,109</u>	<u>\$ 998</u>	<u>\$ 260</u>

⁽¹⁾ Reflects transformation costs incurred through 2017 to deliver the cost reduction and productivity outcomes outlined in the HSBC Investor Update in June 2015. See "Results of Operations" for a more detailed discussion of these costs.

⁽²⁾ In 2018, includes a loss of \$7 million related to a change in the Visa Class B Share conversion rate announced by Visa as a result of the outstanding litigation for which we retained the associated risk. See Note 26, "Guarantee Arrangements, Pledged Assets and Repurchase Agreements," in the accompanying consolidated financial statements for additional information. In 2017, the amount also includes expense of \$4 million related to subsequent fair value movements on the swap agreements to retain litigation risk prior to completion of the final VISA Class B common share sale.

⁽³⁾ Represents a non-U.S. GAAP financial measure.

Excluding the collective impact of the items in the table above, our adjusted performance during 2018 increased \$111 million compared with 2017 due primarily to higher other revenues driven by higher trading revenue, partially offset by lower releases in the provision for credit losses and lower net interest income. Excluding the collective impact of the items in the table above, our adjusted performance during 2017 increased \$738 million compared with 2016 due to a lower provision for credit losses, higher other revenues driven by higher trading revenue, higher fair value option revenue and higher other income, as well as lower operating expenses, partially offset by lower net interest income.

See "Results of Operations" for a more detailed discussion of our operating trends. In addition, see "Balance Sheet Review" for further discussion on our asset and liability trends, "Liquidity and Capital Resources" for further discussion on funding and capital and "Credit Quality" for additional discussion on our credit trends.

Future Prospects Our operations are dependent upon our ability to grow revenues, maintain stable deposit balances and, to a lesser extent, access the global capital markets. Numerous factors, both internal and external, may impact our access to, and the costs associated with, both retail and wholesale sources of funding. These factors may include our debt ratings, overall economic conditions, overall market volatility, the counterparty credit limits of investors to the HSBC Group as a whole and the effectiveness of our management of credit risks inherent in our customer base.

Our results are also impacted by general global and domestic economic conditions, including employment levels, housing market conditions, property valuations, interest rates and legislative and regulatory changes, all of which are beyond our control. Changes in interest rates generally affect both the rates we charge to our customers and the rates we pay on our borrowings. Achieving our profitability goals in 2019 is largely dependent upon macroeconomic conditions which include the interest rate environment, housing market conditions, unemployment levels, market volatility, energy prices and our ability to attract and retain loans and deposits from customers, all of which could impact trading and other revenue, net interest income, loan volume, loss provision and ultimately our results of operations.

Basis of Reporting

Our consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States ("U.S. GAAP").

Group Reporting Basis We report financial information to HSBC in accordance with HSBC Group accounting and reporting policies, which apply International Financial Reporting Standards ("IFRSs") as issued by the IASB and endorsed by the EU and, as a result, our segment results are prepared and presented using financial information prepared on the basis of HSBC Group's accounting and reporting policies ("Group Reporting Basis"). Because operating results on the Group Reporting Basis are used in managing our businesses and rewarding performance of employees, our management also separately monitors profit before tax under this basis of reporting. The following table reconciles our U.S. GAAP versus Group Reporting Basis profit before tax:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Profit before tax – U.S. GAAP basis	\$ 586	\$ 1,049	\$ 218
Adjustments:			
Expected credit losses / loan impairment	124	(29)	(7)
Loan origination	18	5	2
Deposit incentives	11	—	—
Pension and other postretirement benefit costs	8	94	19
Property	(8)	(11)	(19)
Loans held for sale	(18)	(150)	60
Structured notes and deposits	—	(85)	—
Other	8	27	21
Profit before tax – Group Reporting Basis	<u>\$ 729</u>	<u>\$ 900</u>	<u>\$ 294</u>

The significant differences between U.S. GAAP and the Group Reporting Basis as they impact our results are summarized in Note 23, "Business Segments," in the accompanying consolidated financial statements. Differences in reported profit before tax in the table above that were individually significant for the years presented are explained below.

During 2018, reserve releases were recorded under both the Group Reporting Basis and U.S. GAAP, though the releases were higher under the Group Reporting Basis. The higher reserve releases under the Group Reporting Basis were primarily due to releases associated with a single client relationship driven by improvements in credit conditions which resulted in reclassification from 'stage 2' (which requires a lifetime ECL estimate) to 'stage 1' (which requires a 12-month ECL estimate) and other modeling factors as well as a reduction of ECL associated with oil and gas clients. In addition, reserve releases driven by paydowns, sales and maturities were partially offset by the impact of downgrades, which was more pronounced under U.S. GAAP, as well as a provision under U.S. GAAP for risk factors associated with geopolitical risks and market volatility inherent in certain segments of the portfolio.

In 2017, pension expense was higher under U.S. GAAP due primarily to the impact of HSBC North America completing a limited-time lump sum offer to former vested HSBC North America Pension Plan employees. Under the Group Reporting Basis, completion of the offer resulted in a benefit from reducing HSBC North America's net under-funded status, while under U.S. GAAP, this benefit was more than offset by expense from an acceleration of a portion of the Plan's actuarial losses which had been reflected in HSBC North America's accumulated other comprehensive income. Under the Group Reporting Basis, these actuarial losses are recorded directly to retained earnings.

In 2017, losses on loans held for sale were higher under the Group Reporting Basis primarily due to the lower of cost or market adjustments recorded on residential mortgage loans in previous periods under U.S. GAAP.

Beginning January 1, 2018, HSBC concluded that a change in accounting policy and presentation from trading liabilities to liabilities designated under the fair value option for structured notes and deposits under the Group Reporting Basis would be appropriate since it would better align with the presentation of similar financial instruments by peers under IFRSs and therefore provide more relevant information about the effect of these financial liabilities on reported financial position and performance. As a result, the fair value movement on structured notes and deposits attributable to our own credit spread is now being recorded in other comprehensive income (loss) under the Group Reporting Basis, consistent with U.S. GAAP. In 2017, fair value movement on structured notes and deposits attributable to our own credit spread was recorded in trading income under the Group Reporting Basis.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with accounting standards generally accepted in the United States. We believe our policies are appropriate and fairly present the financial position and results of operations of HSBC USA.

The significant accounting policies used in the preparation of our consolidated financial statements are more fully described in Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," in the accompanying consolidated financial statements. Certain critical accounting policies affecting the reported amounts of assets, liabilities, revenues and expenses, are complex and involve significant judgments by our management, including the use of estimates and assumptions. As a result, changes in estimates, assumptions or operational policies could significantly affect our financial position and our results of operations. We base our accounting estimates on historical experience, observable market data, inputs derived from or corroborated by observable market data by correlation or other means and on various other assumptions that we believe to be appropriate, including assumptions based on unobservable inputs. To the extent we use models to assist us in measuring the fair value of particular assets or liabilities, we strive to use models that are consistent with those used by other market participants. Actual results may differ from these estimates due to the levels of subjectivity and judgment necessary to account for highly uncertain matters or the susceptibility of such matters to change. The impact of estimates and assumptions on our financial condition or operating performance may be material.

Of the significant accounting policies used in the preparation of our consolidated financial statements, the items discussed below involve what we have identified as critical accounting estimates based on the associated degree of judgment and complexity. Our management has reviewed these critical accounting policies as well as the associated estimates, assumptions and accompanying disclosure with the Audit Committee of our Board of Directors.

Allowance for Credit Losses Because we lend money to others, we are exposed to the risk that borrowers may not repay amounts owed to us when contractually due. Consequently, we maintain an allowance for credit losses that reflects our estimate of probable incurred losses in the existing loan portfolio. Allowance for credit loss estimates are reviewed periodically and adjustments are reflected through the provision for credit losses in the period they become known. Our risk and finance departments share responsibility for establishing appropriate levels of allowances for credit losses inherent in our various loan portfolios and they assess and independently approve our allowance for credit losses. We believe the accounting estimate relating to the allowance for credit losses is a "critical accounting estimate" for the following reasons:

- Changes in the provision can materially affect our financial results;
- Estimates related to the allowance for credit losses require us to project future borrower performance, including cash flows, delinquencies and charge-offs, along with, when applicable, collateral values, which are highly uncertain; and
- The allowance for credit losses is influenced by factors outside of our control such as borrower performance, economic conditions such as industry and business trends and trends in housing markets and interest rates, energy prices, unemployment, bankruptcy trends, geopolitical events and the effects of laws and regulations.

Because our estimates of the allowance for credit losses involve judgment and are influenced by factors outside of our control, there is uncertainty inherent in these estimates. Our estimate of probable incurred credit losses is inherently uncertain because it is highly sensitive to changes in economic conditions which influence growth, industry and business performance, bankruptcy trends, trends in housing markets and interest rates, delinquency rates and the flow of loans through various stages of delinquency, the realizability of any collateral and actual loss experience. Changes in such estimates could significantly impact our allowance and provision for credit losses.

As an illustration of the effect of changes in estimates related to the allowance for credit losses, a 10 percent change in our projection of probable net credit losses on our loans would have resulted in a change of approximately \$54 million in our allowance for credit losses at December 31, 2018.

Our allowance for credit losses is based on estimates and is intended to be adequate but not excessive. The allowance for credit losses is regularly assessed for adequacy. The allowance for credit losses, which is carried as a reduction to loans on the balance sheet includes reserves for inherent probable credit losses associated with all loans outstanding. A reserve is also maintained for off-balance sheet risk, which is recorded in other liabilities and includes probable and reasonably estimable credit losses arising from off-balance sheet arrangements such as letters of credit and undrawn commitments to lend.

The allowances include amounts calculated for specific individual loan balances and for collective loan portfolios depending on the nature of the exposure and the manner in which risks inherent in that exposure are managed.

- All commercial loans in a nonaccrual status that exceed \$500,000 and all consumer and commercial troubled debt restructurings ("TDR Loans") are evaluated individually for impairment. Reserves against impaired loans are determined primarily based on the present value of expected future cash flows, discounted at the loan's original effective interest rate, or as a practical expedient, the fair value of the collateral if the loan is collateral dependent or, for commercial loans, the observable market price if the loan is traded in the market.

- Loans that are not individually evaluated for impairment are pooled into homogeneous categories of loans and collectively evaluated to determine if it is deemed probable, based on historical data and other environmental factors, that a loss has been incurred even though it has not yet manifested itself in a specific loan.

We estimate probable losses for pools of homogeneous consumer loans and certain small business loans which do not qualify as TDR Loans using a roll rate migration analysis that estimates the likelihood that a loan will progress through the various stages of delinquency and ultimately charge-off based upon recent performance experience of other loans in our portfolio. This migration analysis incorporates estimates of the period of time between a loss occurring and the confirming event of its charge-off. This analysis also considers delinquency status, loss experience and severity and takes into account whether borrowers have filed for bankruptcy or have been subject to account management actions, such as the re-age or modification of accounts. We also take into consideration the loss severity expected based on the underlying collateral, if any, for the loan in the event of default based on historical and recent trends which are updated monthly based on a rolling average of several months' data using the most recently available information and is typically in the range of 20-40 percent for residential mortgages and 70-100 percent for home equity mortgages. At both December 31, 2018 and 2017, less than 1 percent of our second lien home equity mortgages for which the first lien residential mortgage is held or serviced by us and has a delinquency status of 90 days or more delinquent were less than 90 days delinquent and not considered to be a TDR Loan or already recorded at fair value less cost to sell.

An advanced credit risk analysis methodology is utilized to support the estimation of incurred losses inherent in pools of homogeneous commercial loans and off-balance sheet risk. This methodology uses the probability of default from the customer risk rating assigned to each counterparty together with the estimated loss emergence period (estimate of the period of time between a loss occurring and the confirming event of its charge-off) of the separate portfolios. The "Loss Given Default" rating assigned to each transaction or facility is based on the collateral securing the transaction and the measure of exposure based on the transaction. A suite of models, tools and templates is maintained using quantitative and statistical techniques, which are combined with management's judgment to support the assessment of each transaction. These were developed using internal data and supplemented with data from external sources which was judged to be consistent with our internal credit standards. These advanced measures are applied to the homogeneous credit pools to estimate the required allowance for credit losses.

In addition, loss reserves on consumer and commercial loans are maintained to reflect our judgment of portfolio risk factors which may not be fully reflected in the statistical calculations or when historical trends are not reflective of current inherent losses in the portfolio. Portfolio risk factors considered in establishing the allowance for credit losses on loans include, as appropriate, growth, including new lending markets and customer concentrations, product mix and risk selection, unemployment rates, bankruptcy trends, geographic concentrations, loan product features such as adjustable rate loans, economic conditions such as trends in housing markets, interest rates and industry and business performance, portfolio seasoning, account management policies and practices, model imprecision, changes in underwriting practices, current levels of charge-offs and delinquencies, changes in laws and regulations, geopolitical risks and market volatility, customer concentration and other factors which can affect payment patterns on outstanding loans such as natural disasters. We also consider key ratios such as allowance as a percentage of loans in developing our allowance estimates.

The results from the consumer roll rate analysis, commercial analysis and the specific impairment reserving process are reviewed each quarter by the Wholesale and Retail Allowance for Loan Losses Committees. These committees also consider other observable factors, both internal and external to us in the general economy, to ensure that the estimates provided by the various models adequately include all known information at each reporting period.

Goodwill Impairment Goodwill is not subject to amortization but is tested for possible impairment at least annually or more frequently if events or changes in circumstances indicate that it is more likely than not that the asset might be impaired. Impairment testing requires that the fair value of each reporting unit be compared with its carrying amount, which is determined on the basis of capital invested in the unit including attributable goodwill. We determine the invested capital of a reporting unit by applying to the reporting unit's risk-weighted assets a capital charge that is consistent with the targets assigned and monitored through our capital management monitoring framework, and additionally, allocating to each reporting unit the remaining carrying amount of HUSI's net assets. Accordingly, the entire carrying amount of HUSI's net assets is allocated to our reporting units. Significant and long-term changes in the applicable reporting unit's industry and related economic conditions are considered to be primary indicators of potential impairment due to their impact on expected future cash flows. In addition, shorter-term changes may impact the discount rate applied to such cash flows based on changes in investor requirements or market uncertainties. In evaluating possible impairment, specific factors we consider are: (a) the observance of material changes to business plan information (e.g., financial forecasts); (b) significant increases in observed peer group discount rates; (c) significant announced or planned business divestitures; (d) the margin by which the fair value of each reporting unit exceeded the carrying amount at the previous testing date; (e) deterioration in macroeconomic, industry or market conditions that have not yet been reflected in the latest business plan information, if any, and; (f) other relevant events specific to the reporting unit (e.g., changes in management, strategy or customers, capital allocation or litigation).

The determination of fair value as part of the impairment testing of our goodwill is a "critical accounting estimate" due to the significant judgment required in the use of the fair value approaches. We utilize the market approach and the discounted cash flow

method to determine fair value. The market approach focuses on valuation multiples for reasonably similar publicly traded companies and also considers recent market transactions. The discounted cash flow method includes such variables as revenue growth rates, expense trends, interest rates and terminal values. Based on an evaluation of key data and market factors, management's judgment is required to select the specific variables to be incorporated into the models. Additionally, the estimated fair value can be significantly impacted by the risk adjusted cost of capital percentage used to discount future cash flows. The risk adjusted cost of capital percentage is derived from an appropriate capital asset pricing model, which itself depends on a number of financial and economic variables which are established on the basis of those believed to be used by market participants. Because our fair value estimate involves judgment and is influenced by factors outside our control, it is reasonably possible our judgment could change. When management's judgment is that the anticipated cash flows have decreased and/or the cost of capital percentage has increased, the effect will be a lower estimate of fair value. If the fair value of the reporting unit is determined to be lower than the carrying amount, an impairment charge may be recorded and net income (loss) would be negatively impacted.

Impairment testing of goodwill requires that the fair value of each reporting unit be compared with its carrying amount, including goodwill. Reporting units were identified based upon an analysis of each of our individual operating segments. A reporting unit is defined as an operating segment or any distinct, separately identifiable component one level below an operating segment for which complete, discrete financial information is available that management regularly reviews. Goodwill was allocated to the carrying amount of each reporting unit based on its relative fair value. Movements of businesses across reporting units may result in a reallocation of goodwill.

We have established July 1 of each year as the date for conducting our annual goodwill impairment assessment. We continue to utilize a two-step approach to test our goodwill for impairment. The first step, used to identify potential impairment, involves comparing each reporting unit's fair value to its carrying amount, including goodwill. If the fair value of a reporting unit exceeds its carrying amount, including allocated goodwill, there is no indication of impairment and no further procedures are required. If the carrying amount including allocated goodwill of the reporting unit exceeds the unit's fair value, a second step is performed to quantify the impairment amount, if any. If the implied fair value of goodwill as determined using the same methodology as used in a business combination is less than the carrying amount of goodwill, an impairment charge is recorded for the excess. Any impairment charge recognized cannot exceed the amount of goodwill assigned to a reporting unit. Subsequent reversals of goodwill impairments are not permitted. During the third quarter of 2018, we completed our annual impairment test of goodwill and determined that the fair value of all of our reporting units exceeded their carrying amounts, with the fair value of each reporting unit being 159 percent or more of book value, including allocated goodwill.

Our goodwill impairment testing is highly sensitive to certain assumptions and estimates used as discussed above. We continue to perform periodic analyses of the risks and strategies of our business and product offerings. If a significant deterioration in economic and credit conditions, a change in the strategy or performance of our business or product offerings, or an increase in the capital requirements of our business occurs, interim impairment tests for reporting units could be required which may indicate that goodwill at one or more of our reporting units is impaired, in which case we would be required to recognize an impairment charge.

Valuation of Financial Instruments A significant portion of our financial assets and liabilities are carried at fair value. These include trading assets and liabilities, derivatives held for trading or used for hedging, securities available-for-sale and equity securities. Furthermore, we have elected to measure specific assets and liabilities at fair value under the fair value option, including certain commercial loans held for sale, certain securities purchased and sold under resale and repurchase agreements, structured deposits, structured notes, and certain of our own debt issuances. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Where available, we use quoted prices to determine fair value. If quoted prices are not available, we base fair value on models using inputs that are either directly observable or are derived from and corroborated by market data.

Valuation of Major Classes of Assets and Liabilities - Fair value measurement accounting principles establish a fair value hierarchy structure that prioritizes the inputs to determine the fair value of an asset or liability (the "Fair Value Framework"). The Fair Value Framework establishes a three-tiered fair value hierarchy as discussed further in Note 27, "Fair Value Measurements," in the accompanying consolidated financial statements. Classification within the fair value hierarchy is based on the lowest hierarchical level input that is significant to the fair value measurement. As such, the classification of a financial asset or liability within the fair value hierarchy is dynamic in that the asset or liability could be transferred to other hierarchy levels in each reporting period as a result of price discovery. We review and update our fair value hierarchy classifications quarterly. Changes from one quarter to the next related to the observability of the inputs into a fair value measurement may result in a reclassification between hierarchy levels. Level 3 assets as a percentage of total assets measured at fair value were approximately 2.9 percent at December 31, 2018.

Imprecision in estimating unobservable market inputs can impact the amount of revenue, expense or other comprehensive income (loss) recorded for a particular financial instrument. While we believe our valuation methods are appropriate, the use of different methodologies or assumptions to determine the fair value of certain financial assets and liabilities could result in a different estimate of fair value at the reporting date. For additional discussion of the determination of fair value for individual financial assets and liabilities carried at fair value see Note 27, "Fair Value Measurements," in the accompanying consolidated financial statements.

The following is a description of the methodologies used in the valuation of significant financial assets and liabilities for which quoted market prices and observable market parameters are not available.

- *Derivatives* - We manage groups of derivative instruments with offsetting market and credit risks. Accordingly, we measure the fair value of each group of derivative instruments based on the exit price of the group's net risk position. The fair value of a net risk position is determined using internal models that utilize multiple market inputs. The majority of the market inputs can be validated through market consensus data. For complex or long-dated derivative products where market data is not available, fair value is sensitive to the limitation of the valuation model (model risk), the liquidity of the product (liquidity risk) and the assumptions about inputs not obtainable through price discovery process (data uncertainty risk). Accordingly, we make valuation adjustments to capture the risks and uncertainties. Because of the interrelated nature, we do not separately make an explicit adjustment to the fair value for each of these risks. Instead, we apply a range of assumptions to the valuation input that we believe implicitly incorporates adjustments for liquidity, model and data uncertainty risks.

We also include a credit valuation adjustment to reflect the credit risk associated with the net derivative positions. In estimating the credit valuation adjustment, we net the derivative positions by counterparties. The fair value for a net long credit risk position is adjusted for the counterparty's credit risk referred to as credit valuation adjustment whereas the fair value for a net short credit risk position is adjusted for HUSI's own credit risk referred to as debit valuation adjustment. We calculate the credit valuation adjustment by applying the probability of default of the counterparty to the expected exposure, and multiplying the result by the expected loss given default. We estimate the implied probability of default based on the credit spread of the specific counterparty observed in the credit default swap market. Where credit default spread of the counterparty is not available, we use the credit default spread of a specific proxy (e.g. the credit default swap spread of the counterparty's parent) or a proxy based on credit default swaps referencing to credit names of similar credit standing.

- *Valuation of Securities* - For the majority of our trading and available-for-sale securities, we obtain fair value for each security instrument from multiple independent pricing vendors ("IPV") and brokers, if available. We have established adequate controls in pricing vendor selection and fair value validation. The validation methods include but are not limited to comparisons among IPV prices for the same instrument, review and challenge of IPV valuation methodologies, inputs and assumptions, and the elapsed time between the date to which market data relates and the measurement date. For securities that are difficult to value, we use internal pricing models which estimate the fair value based on our assumptions in funding risk, default risk and loss upon default. We exercise significant judgment in estimating these assumptions and inputs to the valuation model. We believe these model inputs reflect market participants' assumptions about risks and the risk premium required to compensate for undertaking risks. For certain non-recourse instruments, we use the fair value of the collateral as a proxy to the measurement.
- *Structured Notes and Deposits* - Structured notes and deposits are hybrid instruments containing embedded derivatives. The valuation of the hybrid instruments is predominantly driven by the derivative features embedded within the instruments and our own credit risk. Depending on the complexity of the embedded derivative, the same risk elements of valuation adjustments described in the derivative section above would also apply to hybrid instruments. In addition, cash flows for the funded notes and deposits are discounted at the relevant interest rates for the duration of the instrument adjusted for our own credit spreads. The credit spreads so applied are determined with reference to our own debt issuance rates observed in primary and secondary markets, internal funding rates and the structured note rates in recent executions.

Except for structured notes and deposits with embedded credit derivative features, the associated risks embedded in the hybrid instruments issued to customers are economically hedged with our affiliates through a freestanding derivative. As a result, HUSI is market risk neutral in substantially all of the structured notes and deposits.

Because the fair value of certain financial assets and liabilities are significantly impacted by the use of estimates, the use of different assumptions can result in changes in the estimated fair value of those assets and liabilities, which can result in equity and earnings volatility.

Derivatives Held for Hedging Derivatives designated as qualified hedges are tested for hedge effectiveness. For these transactions, assessments are made at the inception of the hedge and on a recurring basis, whether the derivative used in the hedging transaction has been and is expected to continue to be highly effective in offsetting changes in fair values or cash flows of the hedged item. This assessment is conducted using statistical regression analysis.

If we determine as a result of this assessment that a derivative is no longer a highly effective hedge, hedge accounting is discontinued as of the quarter in which such determination was made. The assessment of the effectiveness of the derivatives used in hedging transactions is considered to be a "critical accounting estimate" due to the use of statistical regression analysis in making this determination. Inputs to statistical regression analysis require the use of estimates regarding the amount and timing of future cash flows which are susceptible to significant changes in future periods based on changes in market rates as well as the selection of a convention for the treatment of credit spreads in the analysis. Statistical regression analysis also involves the use of additional assumptions including the determination of the period over which the analysis should occur.

The outcome of the statistical regression analysis serves as the foundation for determining whether or not a derivative is highly effective as a hedging instrument. This can result in earnings volatility as the mark-to-market on derivatives which do not qualify as effective hedges and the ineffectiveness associated with qualifying hedges are recorded in current period earnings. For example, a 10 percent adverse change in the value of our derivatives that do not qualify as effective hedges would have reduced revenue by approximately \$120 million for the year ended December 31, 2018.

To develop and implement a replacement for the benchmark U.S. dollar London Interbank Offered Rate ("LIBOR"), the Federal Reserve set up the Alternative Reference Rates Committee ("ARRC") which brought together representatives from the private sector and regulators. After a series of round table discussions, the ARRC recommended the Secured Overnight Financing Rate ("SOFR") as an alternative to U.S. dollar LIBOR and, in April 2018, the Federal Reserve Bank of New York commenced publication of SOFR.

Regulators have been actively monitoring the efforts made by the ARRC and others to help transition from LIBOR to an acceptable alternative, and are aware of the potential accounting implications of the transition. The FASB has also been making progress, adding the Overnight Index Swap rate based on the SOFR as a benchmark interest rate and has added a project to its agenda to consider changes to U.S. GAAP that may be needed by the transition away from LIBOR.

As a result of these developments, significant accounting judgment is involved in determining whether certain hedge accounting relationships that hedge the variability of cash flows and interest rate risk due to changes in LIBOR continue to qualify for hedge accounting as of December 31, 2018. Management's judgment is that those existing hedge accounting relationships continue to be supported at year-end. Even though there are plans to replace LIBOR with an economically similar rate over the next few years, there is widespread continued reliance on LIBOR in market pricing structures for long-term products with maturities over hedging horizons that extend beyond the timescales for replacing LIBOR. In addition, there is a current absence of term structures based on an alternative rate. This judgment will be kept under review in the future as markets for an alternative rate develop and any specific accounting guidance is developed to deal with these unusual circumstances.

Deferred Tax Asset Valuation Allowance We recognize deferred tax assets and liabilities for the future tax consequences related to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and for tax credits and State net operating losses. Our net deferred tax assets, including deferred tax liabilities, totaled \$1.4 billion and \$1.5 billion at December 31, 2018 and 2017, respectively. We evaluate our deferred tax assets for recoverability considering negative and positive evidence, including our historical financial performance, projections of future taxable income, future reversals of existing taxable temporary differences, tax planning strategies and any carryback availability. We are required to establish a valuation allowance for deferred tax assets and record a charge to earnings or equity if we determine, based on available evidence at the time the determination is made, that it is more likely than not that some portion or all of the deferred tax assets will not be realized. In evaluating the need for a valuation allowance, we estimate future taxable income based on management approved business plans. This process involves significant management judgment about assumptions that are subject to change from period to period. Because the recognition of deferred tax assets requires management to make significant judgments about future earnings, the periods in which items will impact taxable income and the application of inherently complex tax laws, we have identified the assessment of deferred tax assets and the need for any related valuation allowance as a critical accounting estimate.

We are included in HSBC North America's consolidated U.S. Federal income tax return and in various combined State tax returns. We have entered into a tax allocation agreement with HSBC North America and its subsidiary entities which governs the current amount of taxes to be paid or received by the various entities and, therefore, we look at HSBC North America and its affiliates in reaching conclusions on recoverability. Based on our forecasts of future taxable income, we currently anticipate that our continuing operations will generate sufficient taxable income to allow us to realize our deferred tax assets.

The use of different assumptions of future earnings, the periods in which items will impact taxable income and the application of inherently complex tax laws can result in changes in the amounts of deferred tax items recognized, which can result in equity and earnings volatility because such changes are reported in current period earnings. Furthermore, if future events differ from our current forecasts, valuation allowances may need to be established or adjusted, which could have a material adverse effect on our results of operations, financial condition and capital position. We will continue to update our assumptions and forecasts of future taxable income and assess the need and adequacy of any valuation allowance.

Our interpretations of tax laws are subject to examination by the Internal Revenue Service and State taxing authorities. Resolution of disputes over interpretations of tax laws may result in us being assessed additional income taxes. We regularly review whether we may be assessed such additional income taxes and recognize liabilities for such potential future tax obligations as appropriate.

Additional detail on our assumptions with respect to the judgments made in evaluating the realizability of our deferred tax assets and on the components of our deferred tax assets and deferred tax liabilities at December 31, 2018 and 2017 can be found in Note 16, "Income Taxes," in the accompanying consolidated financial statements.

Contingent Liabilities Both we and certain of our subsidiaries are parties to various legal proceedings resulting from ordinary business activities relating to our current and/or former operations. These actions include assertions concerning violations of laws and/or unfair treatment of consumers. We have also been subject to various governmental and regulatory proceedings.

We estimate and provide for potential losses that may arise out of litigation and regulatory proceedings to the extent that such losses are probable and can be reasonably estimated. Significant judgment is required in making these estimates and our final liabilities may ultimately be materially different from those estimates. Our total estimated liability in respect of litigation and regulatory proceedings is determined on a case-by-case basis and represents an estimate of probable losses after considering, among other factors, the progress of each case or proceeding, our experience and the experience of others in similar cases or proceedings and the opinions and views of legal counsel.

Litigation and regulatory exposure is a critical accounting estimate because it represents a key area of judgment and is subject to uncertainty and certain factors outside of our control. Due to the inherent uncertainties and other factors involved in such matters, we cannot be certain that we will ultimately prevail in each instance. Such uncertainties impact our ability to determine whether it is probable that a liability exists and whether the amount can be reasonably estimated. Also, as the ultimate resolution of these proceedings is influenced by factors that are outside of our control, it is reasonably possible our estimated liability under these proceedings may change. We will continue to update our accruals for these legal, governmental and regulatory proceedings as facts and circumstances change. For further details, see Note 28, "Litigation and Regulatory Matters," in the accompanying consolidated financial statements.

Balance Sheet Review

The following table provides balance sheet totals at December 31, 2018 and increases (decreases) since December 31, 2017:

		Increase (Decrease) From	
		December 31, 2017	
	December 31, 2018	Amount	%
		(dollars are in millions)	
Period end assets:			
Short-term investments	\$ 27,382	\$ (17,508)	(39.0)%
Loans, net	68,437	(3,445)	(4.8)
Loans held for sale	512	(203)	(28.4)
Trading assets	21,978	5,828	36.1
Securities	46,049	1,372	3.1
All other assets	8,090	(831)	(9.3)
	<u>\$ 172,448</u>	<u>\$ (14,787)</u>	<u>(7.9)%</u>
Period end liabilities and equity:			
Total deposits	\$ 110,955	\$ (7,747)	(6.5)%
Trading liabilities	3,643	(1,236)	(25.3)
Short-term borrowings	4,180	(470)	(10.1)
Long-term debt.....	30,628	(4,338)	(12.4)
Interest, taxes and other liabilities.....	2,536	(1,408)	(35.7)
Total equity.....	20,506	412	2.1
	<u>\$ 172,448</u>	<u>\$ (14,787)</u>	<u>(7.9)%</u>

Short-Term Investments Short-term investments include cash and due from banks, interest bearing deposits with banks and federal funds sold and securities purchased under agreements to resell. Balances may fluctuate from period to period depending upon our liquidity position at the time and our strategy for deploying liquidity. Short-term investments decreased compared with December 31, 2017 due primarily to a redeployment of liquidity to trading security positions held as economic hedges of derivative products issued to clients, a managed reduction in excess liquidity driven by the repayment of long-term debt that matured during 2018 as well as a decline in client deposits reflecting the proactive management of our balance sheet usage and the impact of competitive pressures as discussed further below. These decreases were partially offset by the impact of a \$5.0 billion overnight loan to an affiliate that was outstanding at December 31, 2017, as the wire process from the affiliate to settle daily activity failed. This loan was repaid in early January 2018.

Loans, Net The following table summarizes our loan balances at December 31, 2018 and increases (decreases) since December 31, 2017:

		Increase (Decrease) From	
		December 31, 2017	
	December 31, 2018	Amount	%
(dollars are in millions)			
Commercial loans:			
Real estate, including construction	\$ 11,344	\$ 811	7.7 %
Business and corporate banking	13,066	562	4.5
Global banking ⁽¹⁾	20,167	79	.4
Other commercial ⁽²⁾	4,765	(5,145)	(51.9)
Total commercial	49,342	(3,693)	(7.0)
Consumer loans:			
Residential mortgages	17,383	110	.6
Home equity mortgages	982	(209)	(17.5)
Credit cards	1,019	298	41.3
Other consumer	252	(91)	(26.5)
Total consumer	19,636	108	.6
Total loans	68,978	(3,585)	(4.9)
Allowance for credit losses	541	(140)	(20.6)
Loans, net	\$ 68,437	\$ (3,445)	(4.8)%

⁽¹⁾ Represents large multinational firms including globally focused U.S. corporate and financial institutions, U.S. dollar lending to multinational banking clients managed by HSBC on a global basis and complex large business clients supported by GB&M relationship managers.

⁽²⁾ Includes loans to HSBC affiliates which totaled \$2,274 million and \$6,750 million at December 31, 2018 and 2017, respectively.

Commercial loans decreased as compared with December 31, 2017 largely reflecting the impact of a \$5.0 billion overnight loan to an affiliate that was outstanding at December 31, 2017 and was repaid in early January as discussed above. This decrease was partially offset by loan growth due to new business activity exceeding paydowns, sales and maturities as we continued to apply a disciplined lending approach to grow the business. The growth in commercial non-affiliate loans primarily reflects increases in the semiconductor, retailing, real estate and telecommunication industries, partially offset by decreases in the energy and pharmaceutical industries.

Consumer loans were relatively flat compared with December 31, 2017 as an increase in credit card receivables reflecting growth in customer activity driven by new product promotions which are targeted beyond our current customer base and higher residential mortgage loans which we continue to target towards our Premier and Advance customer relationships were largely offset by a continued decline in home equity mortgages due to net paydowns as our focus continues to shift towards residential mortgage loans.

The following table presents loan-to-value ("LTV") ratios for our residential mortgage loan portfolio, excluding mortgage loans held for sale:

	LTV Ratios ⁽¹⁾⁽²⁾			
	December 31, 2018		December 31, 2017	
	First Lien	Second Lien	First Lien	Second Lien
LTV < 80%	98.4%	94.1%	97.6%	89.8%
80% ≤ LTV < 90%	1.1	4.4	1.6	6.6
90% ≤ LTV < 100%	.3	1.2	.5	2.6
LTV ≥ 100%	.2	.3	.3	1.0
Average LTV for portfolio	49.1	48.7	51.0	52.4

⁽¹⁾ LTVs for first liens are calculated using the loan balance as of the reporting date. LTVs for second liens are calculated using the loan balance as of the reporting date plus the senior lien amount at origination. Current estimated property values are derived from the property's appraised value at the time of loan origination updated by the change in the Federal Housing Finance Agency's house pricing index ("HPI") at either a Core Based Statistical Area or state

level. The estimated value of the homes could differ from actual fair values due to changes in condition of the underlying property, variations in housing price changes within metropolitan statistical areas and other factors. As a result, actual property values associated with loans that end in foreclosure may be significantly lower than the estimates used for purposes of this disclosure.

- (2) Current estimated property values are calculated using the most current HPIs available and applied on an individual loan basis, which results in an approximate three month delay in the production of reportable statistics. Therefore, the information in the table above reflects current estimated property values using HPIs at September 30, 2018 and 2017, respectively.

Loans Held for Sale The following table summarizes loans held for sale at December 31, 2018 and increases (decreases) since December 31, 2017:

		Increase (Decrease) From	
		December 31, 2017	
	December 31, 2018	Amount	%
		(dollars are in millions)	
Commercial loans:			
Real estate, including construction	\$ 27	\$ (88)	(76.5)%
Global banking	367	(166)	(31.1)
Total commercial.....	394	(254)	(39.2)
Consumer loans:			
Residential mortgages	65	59	*
Other consumer	53	(8)	(13.1)
Total consumer	118	51	76.1
Total loans held for sale.....	\$ 512	\$ (203)	(28.4)%

* Percentage change is greater than 100 percent.

Commercial loans held for sale decreased compared with December 31, 2017. Commercial loans held for sale primarily consists of certain loans that we have elected to designate under the fair value option which include loans that we originate in connection with our participation in a number of syndicated credit facilities with the intent of selling them to unaffiliated third parties as well as loans that we purchase from the secondary market and hold as hedges against our exposure to certain total return swaps. The fair value of these loans totaled \$109 million and \$471 million at December 31, 2018 and 2017, respectively. Balances will fluctuate from period to period depending on the volume and level of activity. In addition, at December 31, 2017, commercial loans held for sale included \$115 million of syndicated real estate loans that were sold during 2018.

Commercial loans held for sale also includes certain loans that we no longer intend to hold for investment and transferred to held for sale which totaled \$285 million and \$62 million at December 31, 2018 and 2017, respectively.

Consumer loans held for sale increased compared with December 31, 2017. Prior to 2018 applications, we sold agency-eligible residential mortgage loan originations on a servicing released basis directly to PHH Mortgage Corporation ("PHH Mortgage"). Beginning with 2018 applications, PHH Mortgage is no longer obligated to purchase these loans from us directly upon origination and instead we currently market these loans for sale to other third parties on a servicing retained basis. Gains and losses from the sale of these residential mortgage loans are reflected as a component of other income (loss) in the accompanying consolidated statement of income (loss).

Other consumer loans held for sale reflects student loans which we no longer originate.

Excluding the commercial loans designated under fair value option discussed above, loans held for sale are recorded at the lower of amortized cost or fair value, with adjustments to fair value being recorded as a valuation allowance through other revenues. The valuation allowance on consumer loans held for sale was \$4 million and \$5 million at December 31, 2018 and 2017, respectively. The valuation allowance on commercial loans held for sale was \$3 million and \$10 million at December 31, 2018 and 2017, respectively.

Trading Assets and Liabilities The following table summarizes trading assets and liabilities at December 31, 2018 and increases (decreases) since December 31, 2017:

		Increase (Decrease) From	
	December 31,	December 31, 2017	
	2018	Amount	%
(dollars are in millions)			
Trading assets:			
Securities ⁽¹⁾	\$ 17,041	\$ 6,890	67.9 %
Precious metals	1,889	(385)	(16.9)
Derivatives, net ⁽²⁾	3,048	(677)	(18.2)
	<u>\$ 21,978</u>	<u>\$ 5,828</u>	<u>36.1 %</u>
Trading liabilities:			
Securities sold, not yet purchased	\$ 738	\$ (984)	(57.1)%
Payables for precious metals	215	(309)	(59.0)
Derivatives, net ⁽³⁾	2,690	57	2.2
	<u>\$ 3,643</u>	<u>\$ (1,236)</u>	<u>(25.3)%</u>

⁽¹⁾ See Note 3, "Trading Assets and Liabilities," in the accompanying consolidated financial statements for a breakout of trading securities by category.

⁽²⁾ At December 31, 2018 and 2017, the fair value of derivatives included in trading assets has been reduced by \$2,013 million and \$3,423 million, respectively, relating to amounts recognized for the obligation to return cash collateral received under master netting agreements with derivative counterparties.

⁽³⁾ At December 31, 2018 and 2017, the fair value of derivatives included in trading liabilities has been reduced by \$3,458 million and \$3,680 million, respectively, relating to amounts recognized for the right to reclaim cash collateral paid under master netting agreements with derivative counterparties.

Trading securities balances increased compared with December 31, 2017 due to increases in foreign sovereign, U.S. Treasury and equity positions. Trading security positions are held as economic hedges of interest rate, credit and, beginning in 2018, equity derivative products issued to clients of domestic and emerging markets. Balances of securities sold, not yet purchased were lower compared with December 31, 2017 driven by a decrease in short U.S. Treasury positions related to economic hedges of derivatives in the interest rate trading portfolio.

Precious metals trading assets decreased compared with December 31, 2017 due to decreases in our own palladium and gold inventory positions held as hedges for client activity as well as lower spot prices for most metals. Payables for precious metals were lower reflecting a decline in borrowing of gold inventory to support client activity levels. Precious metal positions may not represent our net underlying exposure as we may use derivatives contracts to reduce our risk associated with these positions, the fair value of which would appear in derivatives in the table above.

Derivative asset balances decreased compared with December 31, 2017 mainly from market movements while derivative liability balances increased slightly as market movements were more than offset by the impact of lower netting of outstanding positions. Market movements resulted in lower valuations of interest rate and equity derivatives, partially offset by higher valuations of foreign exchange, credit and commodity derivatives.

Securities Securities include securities available-for-sale and securities held-to-maturity. Securities balances were higher compared with December 31, 2017 driven by net purchases of foreign sovereign and U.S. Government sponsored mortgage-backed securities, partially offset by net sales of U.S. Treasury and other asset-backed securities as part of a continuing strategy to maximize returns while balancing the securities portfolio for risk management purposes based on the current interest rate environment and liquidity needs. In addition, as discussed more fully in Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," the adoption of new accounting guidance resulted in a reclassification of certain equity investments to other assets as of January 1, 2018.

See Note 4, "Securities," in the accompanying consolidated financial statements for information regarding our securities portfolios at December 31, 2018 and 2017. At December 31, 2016, our securities available-for-sale portfolio, which totaled \$36,910 million, consisted of \$36,069 million of U.S. Treasury, U.S. Government agency and U.S. Government sponsored obligations and \$841 million of other available-for-sale securities and our securities held-to-maturity portfolio, which totaled \$12,809 million, consisted of \$12,789 million of U.S. Government agency and U.S. Government sponsored obligations, \$15 million of U.S. state and political subdivision obligations and \$5 million of other held-to-maturity securities.

All Other Assets All other assets includes, among other items, properties and equipment, net and goodwill. All other assets decreased compared with December 31, 2017 due primarily to lower derivative balances associated with economic hedging

activities and lower tax assets. These decreases were partially offset by the impact of the adoption of new accounting guidance related to equity investments as discussed above.

Deposits The following table summarizes deposit balances by major depositor categories at December 31, 2018 and increases (decreases) since December 31, 2017:

		Increase (Decrease) From	
		December 31, 2017	
	December 31, 2018	Amount	%
(dollars are in millions)			
Individuals, partnerships and corporations.....	\$ 95,513	\$ (8,656)	(8.3)%
Domestic and foreign banks	12,126	1,255	11.5
U.S. government and states and political subdivisions	432	(191)	(30.7)
Foreign governments and official institutions	2,874	508	21.5
Deposits held for sale ⁽¹⁾	10	(663)	(98.5)
Total deposits.....	<u>\$ 110,955</u>	<u>\$ (7,747)</u>	<u>(6.5)%</u>
Total core deposits ⁽²⁾	<u>\$ 91,909</u>	<u>\$ (6,591)</u>	<u>(6.7)%</u>

⁽¹⁾ Represents deposits associated with the sale of a portion of our Private Banking business. No lower of cost or fair value adjustment was required as a result of the transfer to held for sale.

⁽²⁾ Core deposits, as calculated in accordance with Federal Financial Institutions Examination Council ("FFIEC") guidelines, generally include all domestic demand, money market and other savings accounts, as well as time deposits with balances not exceeding \$250,000.

Total deposits decreased compared with December 31, 2017 as we proactively managed our balance sheet usage and monitored non-stable year end balances which, in combination with volatility reflecting the impact of competitive pressures in a rising interest rate environment, resulted in lower commercial demand and savings deposits and lower wholesale deposits. Also contributing to the decrease in total deposits were lower retail savings deposits driven primarily by the attrition of balances associated with previous promotional rate campaigns and lower Private Banking deposits reflecting the impact of the client referral agreement with UBS Wealth Management Americas ("UBS"). These decreases were partially offset by higher deposits from affiliates. We continue to actively manage our balance sheet to increase profitability while maintaining adequate liquidity.

Short-Term Borrowings Short-term borrowings were lower compared with December 31, 2017 as a decrease in securities sold under repurchase agreements, including the impact of higher netting of outstanding positions, was partially offset by an increase in commercial paper outstanding.

Long-Term Debt Long-term debt decreased compared with December 31, 2017 as the impact of debt issuances, including \$7,000 million of senior debt issued to HSBC North America during the fourth quarter of 2018, were more than offset by debt retirements and lower borrowings from the Federal Home Loan Bank of New York ("FHLB"). Debt issuances during 2018 totaled \$11,923 million, of which \$6,352 million was issued by HSBC Bank USA.

Incremental issuances from our shelf registration statement with the SEC totaled \$3,571 million of senior structured notes during 2018. Total long-term debt outstanding under this shelf was \$16,249 million and \$21,387 million at December 31, 2018 and 2017, respectively.

Incremental issuances from the HSBC Bank USA Global Bank Note Program totaled \$1,352 million during 2018. Total debt outstanding under this program was \$4,493 million and \$4,117 million at December 31, 2018 and 2017, respectively.

Borrowings from the FHLB totaled \$2,100 million and \$3,100 million at December 31, 2018 and 2017, respectively.

Interest, Taxes and Other Liabilities Interest, taxes and other liabilities decreased compared with December 31, 2017 due primarily to a decline in derivative balances associated with hedging activities, lower outstanding settlement balances related to security purchases, lower tax liabilities and a decline in accrued interest payable.

Results of Operations

Net Interest Income Net interest income is the total interest income on earning assets less the total interest expense on deposits and borrowed funds. In the discussion that follows, interest income and rates are presented and analyzed on a taxable equivalent basis to permit comparisons of yields on tax-exempt and taxable assets. An analysis of consolidated average balances and interest rates is presented in this MD&A under the caption "Consolidated Average Balances and Interest Rates."

The significant components of net interest margin are summarized in the following table:

Year Ended December 31,	2018	2018 Compared with 2017 Increase (Decrease)		2017	2017 Compared with 2016 Increase (Decrease)		2016
		Volume	Rate		Volume	Rate	
(dollars are in millions)							
Interest income:							
Short-term investments	\$ 645	\$ (320)	\$ 296	\$ 669	\$ 10	\$ 294	\$ 365
Trading securities	213	48	(44)	209	(20)	(33)	262
Securities	1,131	(43)	222	952	(96)	91	957
Commercial loans.....	1,840	(83)	412	1,511	(299)	273	1,537
Consumer loans	749	(4)	23	730	(31)	14	747
Other	77	15	10	52	11	(2)	43
Total interest income	4,655	(387)	919	4,123	(425)	637	3,911
Interest expense:							
Deposits	1,072	(51)	420	703	(21)	256	468
Short-term borrowings	172	(52)	100	124	(6)	51	79
Long-term debt	1,123	(170)	295	998	23	111	864
Tax liabilities and other	36	1	10	25	9	1	15
Total interest expense.....	2,403	(272)	825	1,850	5	419	1,426
Net interest income	\$2,252	\$ (115)	\$ 94	\$2,273	\$ (430)	\$ 218	2,485
Less: tax equivalent adjustment	—			—			1
Net interest income – non taxable equivalent basis	\$2,252			\$2,273			\$2,484
Yield on total interest earning assets.....	2.94%			2.32%			2.02%
Cost of total interest bearing liabilities	1.91			1.31			.99
Interest rate spread	1.03			1.01			1.03
Benefit from net non-interest paying funds ⁽¹⁾	.39			.27			.25
Net interest margin on average earning assets	1.42%			1.28%			1.28%

⁽¹⁾ Represents the benefit associated with interest earning assets in excess of interest bearing liabilities. Increased percentages reflect growth in this excess or a higher cost of interest bearing liabilities, while decreased percentages reflect a reduction in this excess or a lower cost of interest bearing liabilities.

Net interest income decreased during 2018 and 2017. Higher market rates in both 2018 and 2017 resulted in higher interest income from short-term investments, securities and loans which was partially offset by higher interest expense from deposits, short-term borrowings and long-term debt. In 2018, the favorable net impact of higher market rates as well as lower interest expense from lower average deposit, short-term borrowing and long-term debt balances was more than offset by lower interest income from lower average short-term investment, security and loan balances. In 2017, the favorable net impact of higher market rates was more than offset by lower interest income from lower average security and loan balances as well as lower interest income from trading securities.

Short-term investments Interest income decreased during 2018 due to lower average balances, partially offset by higher yields earned on these investments. In 2017, interest income was higher due primarily to higher yields earned on these investments.

Trading securities Interest income increased slightly during 2018 as an increase in lower yielding foreign sovereign positions and a decrease in higher yielding corporate bond positions resulted in higher average balances, largely offset by lower yields. In 2017, interest income was lower due to decreases in higher yielding corporate bond and municipal bond positions. Securities in the

trading portfolio are managed as economic hedges against the derivative activity of our clients. As a result, interest income associated with trading securities was partially offset within trading revenue by the performance of the associated derivatives as discussed further below.

Securities Interest income increased during 2018 due to higher yields, partially offset by lower average balances. In 2017, interest income decreased slightly as higher yields were more than offset by lower average balances. Lower average balances in both 2018 and 2017 were driven primarily by net sales of U.S. Treasury and U.S. Government sponsored mortgage-backed securities, partially offset by net purchases of foreign sovereign securities and, in 2017, net purchases of U.S. Government agency mortgage-backed securities.

Commercial loans Interest income was higher during 2018 due to higher yields driven by rate increases on variable rate products, partially offset by lower average balances. In 2017, interest income was lower as the impact of higher yields driven by rate increases on variable rate products was more than offset by lower average balances. Lower average balances in both 2018 and 2017 were driven by paydowns, sales and maturities as we continued to focus efforts on improving returns.

Consumer loans Interest income increased during 2018 due primarily to higher yields on residential mortgages, partially offset by lower average balances driven by the impact of residential mortgage loan sales in 2017. In 2017, interest income decreased as higher yields were more than offset by lower average balances driven by residential mortgage loan sales and net paydowns.

Other Higher interest income during 2018 reflects higher average balances as well as higher yields on cash collateral posted. In 2017, interest income was higher largely reflecting higher average balances in cash collateral posted.

Deposits Interest expense increased during 2018 and 2017 due primarily to higher rates paid reflecting the impact of rate increases on wholesale deposits and promotional rates offered to our retail customers on savings accounts and certificates of deposits, partially offset by lower average interest-bearing deposit balances. Lower average interest-bearing deposit balances in both 2018 and 2017 were driven primarily by lower deposits from affiliates, lower deposits in Private Banking reflecting the impact of the client referral agreement with UBS and lower wholesale time deposits. While retail savings deposits were higher in 2017 driven by promotional rate campaigns, they were lower in 2018 due primarily to the attrition of balances associated with such campaigns.

Short-term borrowings Higher interest expense during 2018 and 2017 was due to higher rates paid on these borrowings, partially offset by lower average borrowings.

Long-term debt Interest expense was higher during 2018 and 2017 due primarily to higher rates paid reflecting the impact of rate increases on variable rate borrowings and new issuances. This increase was partially offset in 2018 by lower average borrowings.

Tax liabilities and other Interest expense increased during 2018 driven by higher rates paid on securities sold, not yet repurchased. In 2017, interest expense increased driven by higher average borrowings in securities sold, not yet repurchased.

Provision for Credit Losses The following table summarizes the provision for credit losses associated with our various loan portfolios:

Year Ended December 31,	2018	2017	2016
	(dollars are in millions)		
Commercial:			
Real estate, including construction	\$ 34	\$ (3)	\$ —
Business and corporate banking	(31)	(59)	10
Global banking	(109)	(116)	348
Other commercial	(3)	6	(6)
Total commercial	(109)	(172)	352
Consumer:			
Residential mortgages	(18)	(7)	(9)
Home equity mortgages	(3)	(8)	(1)
Credit cards	55	22	26
Other consumer	2	—	4
Total consumer	36	7	20
Total provision for credit losses	\$ (73)	\$ (165)	\$ 372
Provision as a percentage of average loans	(.1)%	(.2)%	.5%

Our provision for credit losses increased \$92 million during 2018 due to lower releases in the provision for credit losses in our commercial loan portfolio and an increased provision for credit losses in our consumer loan portfolio. In 2017, our provision for

credit losses decreased \$537 million driven by a lower provision for credit losses in our commercial loan portfolio and, to a lesser extent, a lower provision for credit losses in our consumer loan portfolio. During 2018 and 2017, we decreased our allowance for credit losses as the provision for credit losses was lower than net charge-offs by \$140 million and \$336 million, respectively. In 2016, we increased our allowance for credit losses as the provision for credit losses was higher than net charge-offs by \$105 million.

Releases in the commercial provision for credit losses were lower by \$63 million during 2018. While both 2018 and 2017 reflected continued improvements in the credit quality of our portfolio driven by paydowns, sales and maturities as we continued to focus efforts on improving returns as well as improvements in credit conditions associated with certain client relationships, the releases in 2018 were partially offset by a higher provision for risk factors associated with geopolitical risks and market volatility inherent in certain segments of the portfolio as well as higher provisions for downgrades reflecting weakness in the financial condition of certain clients. In 2017, the provision for credit losses in our commercial loan portfolio decreased \$524 million reflecting releases of credit loss reserves as discussed above compared with loss provisions in 2016. The loss provisions in 2016 were driven primarily by the deterioration of a single mining client relationship as well as other downgrades reflecting weakness in the financial condition of certain clients at that time, including oil and gas, mining and other industry loan exposures.

Releases in the provision for credit losses on residential mortgages and home equity mortgages were higher by \$6 million during 2018 driven by continued improvements in economic and credit conditions, including lower dollars of delinquency. In 2017, releases in the provision for credit losses on residential mortgages and home equity mortgages were higher by \$5 million. During 2016, we transferred certain mortgages to held for sale and, as a result, recorded a lower of cost or fair value adjustment of \$11 million related to credit factors as a component of the provision for credit losses. Also in 2016, we recorded a reserve release related to residential mortgages serviced by others as a result of updated information regarding the underlying loan characteristics reported by the servicers. Excluding these items, releases in the provision for credit losses on residential mortgages and home equity mortgages were flat in 2017 reflecting the continued positive impacts of improvements in economic and credit conditions and the origination of higher quality Premier mortgages.

The provision for credit losses associated with credit cards and other consumer loans increased \$35 million during 2018 due to a higher provision for credit losses in credit cards reflecting growth in customer activity driven by new product promotions along with an associated increase in dollars of delinquency. In 2017, the provision for credit losses associated with credit cards and other consumer loans decreased \$8 million due to improvements in economic and credit conditions.

Our methodology and accounting policies related to the allowance for credit losses are presented under the caption "Critical Accounting Policies and Estimates" in this MD&A and in Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," in the accompanying consolidated financial statements. See "Credit Quality" in this MD&A for additional discussion on the allowance for credit losses associated with our various loan portfolios.

Other Revenues The following table summarizes the components of other revenues:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Credit card fees, net.....	\$ 50	\$ 46	\$ 52
Trust and investment management fees.....	135	156	153
Other fees and commissions.....	684	669	721
Trading revenue.....	625	354	227
Other securities gains, net.....	24	52	70
Servicing and other fees from HSBC affiliates.....	356	348	289
Gain (loss) on instruments designated at fair value and related derivatives.....	19	43	(71)
Other income (loss):			
Valuation of loans held for sale.....	5	18	(83)
Residential mortgage banking revenue (expense).....	(6)	(6)	16
Insurance.....	11	14	20
Gains on sales of Visa Class B Shares to a third party.....	—	312	71
Miscellaneous income (loss).....	(4)	(4)	(61)
Total other income (loss).....	6	334	(37)
Total other revenues.....	\$ 1,899	\$ 2,002	\$ 1,404

Credit card fees, net Credit card fees, net were higher during 2018 reflecting higher interchange fees, partially offset by higher cost estimates associated with our credit card rewards program. In 2017, credit card fees, net were lower as higher interchange fees were more than offset by higher cost estimates associated with our credit card rewards program.

Trust and investment management fees Trust and investment management fees decreased during 2018 due to lower average assets under management in retail fixed income funds driven in part by negative market performance as well as a decrease in assets under management in Private Banking reflecting the impact of the client referral agreement with UBS. In 2017, trust and investment management fees increased slightly due to favorable market performance in retail fixed income funds.

Other fees and commissions Other fees and commissions increased during 2018 due to higher credit facilities fees driven by increased commercial lending activity compared with 2017, partially offset by declines in account service fees, custody fees and other fee based income. In 2017, other fees and commissions decreased due primarily to lower credit facilities fees driven by lower commercial lending activity compared with 2016 as well as declines in custody fees and other fee based income. See Note 21, "Fee Income from Contracts with Customers," in the accompanying consolidated financial statements for additional information including a summary of the components of other fees and commissions.

Trading revenue Trading revenue is generated by participation in the foreign exchange, rates, credit, equities and precious metals markets. The following table presents trading revenue by business activity. Not included in the table below is the impact of net interest income related to trading securities which is an integral part of trading activities' overall performance. Net interest income related to trading activities is recorded in net interest income in the consolidated statement of income (loss). Trading revenues related to the mortgage banking business are included as a component of other income (loss).

Year Ended December 31,	2018	2017	2016
	(in millions)		
Business Activities:			
Derivatives ⁽¹⁾⁽²⁾	\$ 107	\$ (72)	\$ (35)
Foreign Exchange	185	190	210
Metals	315	212	90
Balance Sheet Management	24	24	(27)
Global Banking	(2)	(4)	(11)
Other trading	(4)	4	—
Total trading revenue	<u>\$ 625</u>	<u>\$ 354</u>	<u>\$ 227</u>

⁽¹⁾ Includes derivative contracts related to the Credit, Rates and Equities business activities within Global Markets as well as our legacy structured credit products. Derivative contracts related to the Foreign Exchange and Metals business activities within Global Markets as well as derivative products related to Balance Sheet Management, Global Banking and other trading are reported separately within those respective business activities.

⁽²⁾ Derivatives trading revenue in all periods does not reflect associated net interest income as certain derivatives, such as total return swaps, were economically hedged by holding the underlying interest bearing referenced assets.

Trading revenue increased during 2018 driven by higher revenue from Derivatives and Metals. Derivatives revenue was higher due primarily to higher revenue from emerging markets rate products as well as favorable debit valuation adjustments associated with movements in our own credit spreads, partially offset by unfavorable valuation adjustments on legacy structured credit products and the non-recurrence of a gain of approximately \$11 million recorded in 2017 related to the unwind of one of our unconsolidated variable interest entities ("VIEs"). The increase in Metals revenue was due to increased client trading activity and a redeployment of surplus liquidity in the short term to Metals. In 2017, trading revenue increased largely driven by higher revenue in Metals due to increased client trading activity reflecting improved investor demand for this asset class and the impact of a redeployment of surplus liquidity in the short term to Metals in 2017 as well as higher revenue in Balance Sheet Management due to the improved performance of economic hedge positions used to manage interest rate risk. These increases in 2017 were partially offset by lower revenue from Derivatives and Foreign Exchange. Derivatives revenue was lower due to lower new deal activity on interest rate swaps, unfavorable debit valuation adjustments associated with movements in our own credit spreads and unfavorable valuation adjustments on our legacy structured credit products, partially offset by higher revenue from emerging markets rate products and the gain recorded in 2017 related to the unwind of one of our unconsolidated VIEs as discussed above. The decrease in Foreign Exchange revenue was driven by reduced client trading activity.

Other securities gains, net We maintain securities portfolios as part of our balance sheet diversification and risk management strategies. During 2018, 2017 and 2016, we sold \$5,169 million, \$14,196 million and \$19,462 million, respectively, of primarily U.S. Treasury, U.S. Government agency mortgage-backed and U.S. Government sponsored mortgage-backed securities as part of a continuing strategy to maximize returns while balancing the securities portfolio for risk management purposes based on the current interest rate environment and liquidity needs. Other securities gains, net decreased during 2018 and 2017 reflecting the impact of lower sales activity associated with balancing the securities portfolio for risk management purposes as compared with the respective prior year periods. The decrease in 2017 also reflects the non-recurrence of gains from the sale of certain longer-term state municipal bonds as we reduced these positions in 2016. The gross realized gains and losses from sales of securities,

which is included as a component of other securities gains, net above, are summarized in Note 4, "Securities," in the accompanying consolidated financial statements.

Servicing and other fees from HSBC affiliates Servicing and other fees from HSBC affiliates increased during 2018 driven by higher cost reimbursements associated with wealth management activities performed on behalf of HSBC Markets (USA) Inc. ("HMUS"), higher cost reimbursements associated with trading activities performed on behalf of HSBC Bank plc and approximately \$10 million of cost reimbursements recorded in 2018 reflecting the impact of entering into an agreement with HSBC in December 2017 under which they reimburse us for costs associated with enhancing the HSBC Group's digital banking platform. These increases in 2018 were partially offset by lower fees due to the transfer of certain operational support staff from HSBC Bank USA to HSBC Technology & Services (USA) ("HTSU") support services as discussed below as well as the non-recurrence of fees received from HSBC Finance Corporation ("HSBC Finance") in 2017, including \$28 million of loan prepayment fees and fees associated with residential mortgage servicing activities performed prior to the completion of its receivable sales program. In 2017, servicing and other fees from HSBC affiliates increased driven by higher billings associated with shared services performed on behalf of other HSBC affiliates, including higher cost reimbursements associated with certain RBWM wealth managers who were transferred to HSBC Bank USA from HMUS support services as discussed below, as well as higher loan prepayment fees received from HSBC Finance. These increases in 2017 were partially offset by lower fees associated with residential mortgage servicing activities performed on behalf of HSBC Finance.

Gain (loss) on instruments designated at fair value and related derivatives We have elected to apply fair value option accounting to certain commercial loans held for sale, certain securities purchased and sold under resale and repurchase agreements, certain of our own fixed-rate debt issuances and all of our hybrid instruments issued, including structured notes and deposits. We also use derivatives to economically hedge the interest rate and other risks associated with certain financial liabilities for which fair value option accounting has been elected. Gain (loss) on instruments designated at fair value and related derivatives was lower during 2018 attributable primarily to unfavorable movements related to the economic hedging of interest rate and other risks within our structured notes and deposits, partially offset by favorable movements related to the economic hedging of interest rate risk within our own debt. Beginning January 1, 2017, the fair value movement on fair value option liabilities attributable to our own credit spread is recorded in other comprehensive income (loss). Excluding this item, which resulted in a loss of \$36 million in 2016, gain (loss) on instruments designated at fair value and related derivatives remained higher in 2017 attributable primarily to favorable movements related to the economic hedging of interest rate and other risks within our structured notes and deposits, partially offset by unfavorable fair value adjustments on loans. See Note 15, "Fair Value Option," in the accompanying consolidated financial statements for additional information including a breakout of these amounts by individual component.

Other income (loss) Beginning in 2016 and into 2017, we sold substantially all of our remaining Visa Class B Shares to a third party resulting in net pre-tax gains of approximately \$312 million and \$71 million during 2017 and 2016, respectively. Excluding this item, other income (loss) remained lower during 2018 and remained higher during 2017. The decrease in 2018 was largely due to the non-recurrence of a gain of \$48 million recorded from the sale of certain residential mortgages in 2017 and lower valuation gains on loans held for sale which were partially offset by lower losses associated with credit default swap protection which largely reflects the hedging of a single client relationship and higher income associated with fair value hedge ineffectiveness. In 2017, the increase was largely due to improved valuations on loans held for sale, the gain recorded from the sale of certain residential mortgages in 2017 as discussed above, lower losses associated with credit default swap protection which largely reflects the hedging of a single client relationship and lower losses associated with fair value hedge ineffectiveness. These increases in 2017 were partially offset by lower residential mortgage banking revenue due primarily to the impact of the sale of our remaining Mortgage Servicing Rights ("MSRs") portfolio in 2016.

Operating Expenses The following table summarizes the components of operating expenses:

Year Ended December 31,	2018	2017	2016
	(dollars are in millions)		
Salaries and employee benefits	\$ 830	\$ 1,077	\$ 981
Support services from HSBC affiliates:			
Fees paid to HTSU	1,198	1,165	1,027
Fees paid to HMUS	105	121	214
Fees paid to other HSBC affiliates	300	263	254
Total support services from HSBC affiliates	1,603	1,549	1,495
Occupancy expense, net	185	202	171
Other expenses:			
Equipment and software	60	53	58
Marketing	108	84	57
Outside services	59	95	120
Professional fees	90	100	98
Off-balance sheet credit reserves	(11)	(26)	44
FDIC assessment fees	135	138	168
Expense related to legal matters	522	29	48
Miscellaneous	57	90	58
Total other expenses	1,020	563	651
Total operating expenses	\$ 3,638	\$ 3,391	\$ 3,298
Personnel - average number	4,770	5,811	5,734
Efficiency ratio	87.6%	79.3%	84.8%

Prior to 2018, costs to achieve, which reflected transformation costs to deliver the cost reduction and productivity outcomes outlined in the HSBC Investor Update in June 2015, were a significant component of total operating expenses. Costs to achieve primarily consisted of project cost support service charges from HTSU, lease termination and associated expenses, professional fees and severance costs. Excluding costs to achieve, total operating expenses increased \$455 million during 2018 and decreased \$16 million during 2017. The following table presents costs to achieve by financial statement line item:

Year Ended December 31,	2017	2016
	(in millions)	
Salaries and employee benefits	\$ 23	\$ 8
Support services from HSBC affiliates	130	73
Occupancy expense, net	36	10
Other expenses	33	22
Total operating expenses	\$ 222	\$ 113

Salaries and employee benefits Salaries and employee benefits expense decreased during 2018 due primarily to lower expense reflecting the impact of transferring certain operational support staff from HSBC Bank USA to HTSU support services in 2018 in order to comply with certain banking reforms as well as lower pension expense driven primarily by the impact of a limited-time settlement offer to former vested HSBC North America Pension Plan employees which resulted in a loss of approximately \$35 million in 2017 as discussed further in Note 20, "Pension and Other Postretirement Benefits," in the accompanying consolidated financial statements. Also contributing to the decrease in 2018 were the non-recurrence of costs to achieve recorded in 2017 as discussed above and the non-recurrence of expense recorded in 2017 related to staff performing residential mortgage serving activities on behalf of HSBC Finance. These decreases in 2018 were partially offset by the addition of personnel associated with growth initiatives in certain businesses. In 2017, salaries and employee benefits increased driven by the impact of transferring certain RBWM wealth managers to HSBC Bank USA from HMUS support services during the third quarter of 2016, higher pension expense driven by the loss recorded in 2017 associated with the limited-time settlement offer to former vested HSBC North America Pension Plan employees as discussed above, higher costs to achieve as discussed above and higher incentive compensation expense due to improved business performance. In addition, while salaries expense in 2017 reflected the favorable impact of cost management efforts, including targeted staff reductions to optimize staffing and improve efficiency as well as reductions in staff

performing residential mortgage servicing activities on behalf of HSBC Finance, these reductions were more than offset by the factors described above as well as the addition of personnel associated with growth initiatives in certain businesses.

Support services from HSBC affiliates Support services from HSBC affiliates increased during 2018 due primarily to higher expense associated with certain operational support staff which were transferred from HSBC Bank USA to HTSU support services as discussed above as well as increased costs associated with our investment to improve and modernize our legacy business systems. These increases in 2018 were partially offset by the non-recurrence of costs to achieve recorded in 2017 as discussed above and the favorable impact of cost management efforts in our technology and support service functions. In 2017, support services from HSBC affiliates increased due primarily to higher costs to achieve as discussed above and increased costs associated with our investment to improve and modernize our legacy business systems. These increases in 2017 were partially offset by lower expense due to the transfer of certain RBWM wealth managers to HSBC Bank USA from HMUS support services as discussed above as well as the favorable impact of cost management efforts including staff optimization in our technology and support service functions. The trend in the components of support services from HSBC affiliates presented in the table above also reflects the impact of a transfer of support service personnel from HMUS to HTSU in 2017 which increased HTSU support services expense and decreased HMUS support services expense by approximately \$94 million during 2017. A summary of the activities charged to us from various HSBC affiliates is included in Note 22, "Related Party Transactions," in the accompanying consolidated financial statements.

Occupancy expense, net Occupancy expense decreased in 2018 due to the non-recurrence of costs to achieve recorded in 2017 as discussed above, partially offset by higher rent expense, increased maintenance costs and the impact of extending the lease of our 452 Fifth Avenue property, including the 1 W. 39th Street building, in 2017. The sale and leaseback of our 452 Fifth Avenue property in 2010 resulted in a gain which is deferred and was being recognized over the lease term (which was ten years) due to our continuing involvement. During 2017, we extended the lease for an additional five years as well as the amortization of the deferred gain to reflect the new lease term. In 2017, occupancy expense increased due primarily to higher costs to achieve as discussed above, the impact of extending the lease of our 452 Fifth Avenue property as discussed above and lower rental income, partially offset by lower depreciation expense.

Other expenses Other expenses were higher during 2018 driven by higher expense related to legal matters, including expense recorded in 2018 related to the settlement of a mortgage securitization matter, as well as higher marketing expense, higher losses associated with card fraud and lower releases of off-balance sheet credit reserves. These increases in 2018 were partially offset by the non-recurrence of costs to achieve recorded in 2017 as discussed above, higher levels of expense capitalization related to internally developed software, lower outside services expense and the reversal in 2018 of an accrual previously taken in connection with a bankruptcy preference claim. For additional discussion of the mortgage securitization legal matter, see Note 28, "Litigation and Regulatory Matters," in the accompanying consolidated financial statements. In 2017, other expenses were lower largely due to releases of off-balance sheet credit reserves compared with provisions in 2016 as well as higher levels of expense capitalization related to internally developed software, lower deposit insurance assessment fees, lower outside services expense due in part to the non-recurrence of expense recorded for activities related to the sale of our MSRs in 2016 and lower expense related to legal matters as 2016 reflects \$27.5 million of expense related to a civil money penalty that was assessed in conjunction with the termination of a consent cease and desist order by the OCC. These decreases in 2017 were partially offset by higher marketing expense, higher operational losses associated with certain credit card accounts and higher costs to achieve as discussed above.

Efficiency ratio Our efficiency ratio was 87.6 percent during 2018, compared with 79.3 percent during 2017 and 84.8 percent during 2016. Our efficiency ratio was higher in 2018 due to higher operating expenses, lower other revenues and lower net interest income as discussed in detail above. In 2017, our efficiency ratio improved due to higher other revenues, partially offset by lower net interest income and higher operating expenses as discussed in detail above.

Income taxes Our effective tax rate was 45.4 percent in 2018 compared with 117.1 percent in 2017 and 40.8 percent in 2016. For a complete analysis of the differences between effective tax rates based on the total income tax provision attributable to pretax income and the statutory U.S. Federal income tax rate, see Note 16, "Income Taxes," in the accompanying consolidated financial statements.

In December 2017, Tax Legislation was enacted which reduced the Federal corporate income tax rate from 35 percent to 21 percent effective January 1, 2018, resulting in an increase of \$865 million to our income tax provision in 2017 due to a lower carrying value of our net deferred tax asset. The Tax Legislation also contained other complex provisions, such as the Base Erosion and Anti-Abuse Tax ("BEAT"), which may have a material impact in future periods on income tax expense and taxes payable for the HSBC North America consolidated tax group, of which we are a member. In December 2018, the Internal Revenue Service and the Treasury Department issued proposed regulations (the "Proposed Regulations") related to the BEAT, which provide guidance and clarify some of the key aspects of this tax which were not addressed in the Tax Legislation. Based on our current interpretation of the Tax Legislation and the Proposed Regulations, the HSBC North America consolidated tax group is not expected to be subject to the BEAT in 2018. We continue to evaluate the BEAT provisions, including the Proposed Regulations and their potential impact, which remains uncertain and will depend upon the issuance of final treasury regulations, actions HSBC North America or its affiliates may take as a result of the Tax Legislation and the future earnings of HUSI and other subsidiaries of HSBC North America.

Although our analysis is ongoing and could change depending upon the factors discussed above, we currently do not anticipate a material impact on HUSI's financial position or results of operations from the BEAT.

Segment Results – Group Reporting Basis

We have five distinct business segments that we utilize for management reporting and analysis purposes, which are aligned with HSBC's global business strategy: Retail Banking and Wealth Management ("RBWM"), Commercial Banking ("CMB"), Global Banking and Markets ("GB&M"), Private Banking ("PB") and a Corporate Center ("CC"). See Item 1, "Business," in this Form 10-K for a description of our segments, which are based upon our global businesses, including a discussion of the main business activities of the segments and a summary of their products and services. There have been no changes in the basis of our segmentation as compared with the presentation in our Annual Report on Form 10-K for the year ended December 31, 2017 ("2017 Form 10-K").

Net interest income of each segment represents the difference between actual interest earned on assets and interest incurred on liabilities of the segment, adjusted for a funding charge or credit that includes both interest rate and liquidity components. Segments are charged a cost to fund assets (e.g. customer loans) and receive a funding credit for funds provided (e.g. customer deposits) based on equivalent market rates that incorporate both repricing (interest rate risk) and tenor (liquidity) characteristics. The objective of these charges/credits is to transfer interest rate risk from the segments to one centralized unit in Balance Sheet Management, recognize term funding costs/benefits and more appropriately reflect the profitability of the segments.

Certain other revenue and operating expense amounts are also apportioned among the business segments based upon the benefits derived from this activity or the relationship of this activity to other segment activity. These inter-segment transactions are accounted for as if they were with third parties.

We report financial information to our parent, HSBC, in accordance with HSBC Group accounting and reporting policies, which apply IFRS issued by the IASB and endorsed by the EU, and, as a result, our segment results are prepared and presented using financial information prepared on the Group Reporting Basis as operating results are monitored and reviewed, trends are evaluated and decisions about allocating resources, such as employees, are primarily made on this basis. We continue, however, to monitor capital adequacy and report to regulatory agencies on a U.S. GAAP basis.

As discussed more fully in Note 23, "Business Segments," in the accompanying consolidated financial statements, during 2018, we adopted new accounting guidance under the Group Reporting Basis for the requirements of IFRS 9 and we also implemented a change in accounting policy under the Group Reporting Basis to classify structured notes and deposits as liabilities designated under the fair value option. There have been no additional changes in the measurement of segment profit as compared with the presentation in our 2017 Form 10-K.

The significant differences between U.S. GAAP and the Group Reporting Basis as they impact our results are summarized in Note 23, "Business Segments," in the accompanying consolidated financial statements.

Retail Banking and Wealth Management The following table summarizes the Group Reporting Basis results for our RBWM segment:

Year Ended December 31,	2018	2017	2016
	(dollars are in millions)		
Net interest income.....	\$ 889	\$ 886	\$ 818
Other operating income	297	526	363
Total operating income ⁽¹⁾	1,186	1,412	1,181
Expected credit losses / loan impairment charges	38	25	70
Net operating income	1,148	1,387	1,111
Operating expenses	1,286	1,185	1,131
Profit (loss) before tax	\$ (138)	\$ 202	\$ (20)

(1) The following table summarizes the impact of key activities on the total operating income of our RBWM segment:

Year Ended December 31,	2018	2017	2016
	(dollars are in millions)		
Current accounts, savings and deposits.....	\$ 696	\$ 635	\$ 539
Mortgages, credit cards and other personal lending.....	227	275	373
Wealth and asset management products ⁽²⁾	108	173	131
Retail business banking and other ⁽²⁾⁽³⁾	155	329	138
Total operating income.....	<u>\$ 1,186</u>	<u>\$ 1,412</u>	<u>\$ 1,181</u>

(2) In 2018, we began reporting cost reimbursements associated with activities performed on behalf of other HSBC affiliates in Retail business banking and other. As a result, we reported \$88 million of cost reimbursements in Retail business banking and other during 2018 that previously would have been reported in Wealth and asset management products.

(3) During 2017, Retail business banking and other reflects a gain on sale of Visa Class B Shares of approximately \$312 million and a loss on the sale of certain partially charged-off residential mortgages as discussed below. During 2016, Retail business banking and other reflects a gain on sale of Visa Class B Shares of approximately \$71 million.

2018 profit before tax compared with 2017 Our RBWM segment reported a loss before tax during 2018 compared with a profit before tax during 2017 due primarily to lower other operating income driven by the non-recurrence of a net pre-tax gain of approximately \$312 million recorded from the sale of Visa Class B Shares in 2017 as well as higher operating expenses.

Net interest income increased slightly during 2018 as higher net interest income from deposits driven by improved spreads was largely offset by lower net interest income from lending reflecting the impact of loan sales in 2017 and a continued decline in home equity mortgages.

Excluding the gain on sale of Visa Class B Shares as discussed above, other operating income increased during 2018 due to the non-recurrence of a loss of \$73 million recorded in 2017 on the sale of certain partially charged-off residential mortgages, higher cost reimbursements associated with wealth management activities performed on behalf of HMUS and approximately \$10 million of cost reimbursements recorded in 2018 reflecting the impact of entering into an agreement with HSBC in December 2017 under which they reimburse us for costs associated with enhancing the HSBC Group's digital banking platform. These increases were partially offset by lower asset management fees due to lower average assets under management in fixed income funds driven in part by negative market performance as well as a loss of \$7 million recorded in 2018 related to a change in the Visa Class B Share conversion rate announced by Visa as a result of the outstanding litigation for which we retained the associated risk.

Expected credit losses increased during 2018 driven by higher loss estimates in credit cards reflecting growth in customer activity driven by new product promotions along with an associated increase in dollars of delinquency, partially offset by lower loss estimates in residential mortgages driven by continued improvements in economic and credit conditions. In addition, beginning in 2018, changes in expected credit losses are measured under IFRS 9.

Operating expenses increased during 2018 due to higher marketing expense largely driven by new product promotions in credit cards, higher expense related to the addition of personnel associated with growth initiatives, higher losses associated with card fraud, higher support service cost allocations from affiliates, higher legal costs and higher pension expense reflecting the non-recurrence of a \$26 million benefit recorded in 2017 associated with the limited-time offer to former vested HSBC North America Pension Plan employees.

2017 profit before tax compared with 2016 Our RBWM segment reported a profit before tax during 2017 compared with a loss before tax during 2016 due primarily to higher other operating income driven by the sale of substantially all of our remaining Visa Class B Shares which resulted in a net pre-tax gain of approximately \$312 million in 2017 compared with a net pre-tax gain of approximately \$71 million in 2016. The improvement in 2017 also reflects higher net interest income, lower loan impairment charges and the benefit recorded in 2017 associated with the limited-time settlement offer to former vested HSBC North America Pension Plan employees as discussed above. These improvements were partially offset by higher operating expenses.

Net interest income increased during 2017 largely driven by higher net interest income from deposits due to higher average balances and improved spreads, partially offset by lower net interest income from lending. Net interest income from lending declined due to lower average balances driven by loan sales and a declining home equity mortgage portfolio as well as lower spreads.

Excluding the gains on sales of Visa Class B Shares as discussed above, other operating income decreased during 2017 primarily due to the loss on the sale of certain partially charged-off residential mortgages in 2017 as discussed above and lower servicing fees reflecting the impact of the sale of our remaining MSRs portfolio in 2016. These decreases were partially offset by higher affiliate income associated with certain RBWM wealth managers who were transferred to HSBC Bank USA from HMUS support services as discussed below.

Loan impairment charges were lower during 2017 driven by improvements in economic and credit conditions, the origination of higher quality Premier mortgages and lower loan impairment charges on home equity mortgages reflecting lower outstanding balances. These decreases were partially offset by the non-recurrence of a reserve release recorded in 2016 related to residential

mortgages serviced by others as a result of updated information regarding the underlying loan characteristics reported by the servicers.

Excluding the benefit to pension expense as discussed above, operating expenses remained higher during 2017 due primarily to higher expense associated with transferring certain RBWM wealth managers to HSBC Bank USA from HMUS support services during the third quarter of 2016, the addition of personnel associated with growth initiatives, higher marketing expense largely driven by new product promotions in credit cards and higher operational losses largely associated with certain credit card accounts. These increases were partially offset by the non-recurrence of \$27.5 million of expense recorded in 2016 related to a civil money penalty that was assessed in conjunction with the termination of a consent cease and desist order by the OCC.

Commercial Banking The following table summarizes the Group Reporting Basis results for our CMB segment:

Year Ended December 31,	2018	2017	2016
(dollars are in millions)			
Net interest income	\$ 797	\$ 739	\$ 749
Other operating income	226	216	229
Total operating income ⁽¹⁾	1,023	955	978
Expected credit losses / loan impairment charges	(43)	(52)	50
Net operating income	1,066	1,007	928
Operating expenses	589	558	591
Profit before tax	\$ 477	\$ 449	\$ 337

⁽¹⁾ The following table summarizes the impact of key activities on the total operating income of our CMB segment:

Year Ended December 31,	2018	2017	2016
(dollars are in millions)			
Lending and Transaction Management	\$ 443	\$ 441	\$ 501
Global Liquidity and Cash Management, current accounts and savings deposits	462	414	375
Global Trade and Receivables Finance	48	52	50
Investment banking products and other	70	48	52
Total operating income	\$ 1,023	\$ 955	\$ 978

2018 profit before tax compared with 2017 Our CMB segment reported higher profit before tax during 2018 due to higher net interest income and higher other operating income, partially offset by higher operating expenses and lower releases in credit loss estimates.

Net interest income increased during 2018 due to the favorable impact of higher loan and deposit balances as we continued to focus efforts on improving returns while applying a disciplined lending approach to grow the business as well as improved spreads from rate increases.

Other operating income increased during 2018 due to higher credit facility fees and higher GB&M collaboration revenue.

Expected credit losses reflected lower releases during 2018. While both years reflected releases in credit loss reserves driven by paydowns, sales and maturities as well as improvements in credit conditions associated with certain client relationships, the releases in 2018 were partially offset by higher provisions for downgrades reflecting weakness in the financial condition of certain clients. In addition, beginning in 2018, changes in expected credit losses are measured under IFRS 9.

Operating expenses increased during 2018 due primarily to higher support service cost allocations from affiliates, higher deposit insurance assessment fees and higher pension expense reflecting the non-recurrence of a \$9 million benefit recorded in 2017 associated with the limited-time offer to former vested HSBC North America Pension Plan employees as discussed above. These increases were partially offset by lower staff costs.

2017 profit before tax compared with 2016 Our CMB segment reported a higher profit before tax during 2017 due to improved loan impairment charges and lower operating expenses, partially offset by lower net interest income and lower other operating income.

Net interest income was lower during 2017 due to lower loan balances largely reflecting the sale of certain commercial real estate loans in 2016 as well as paydowns and maturities exceeding new loan originations as we focused efforts on improving returns, partially offset by improved spreads on deposits.

Other operating income was lower in 2017 driven by lower credit facilities fees reflecting the impact of lower commercial lending activity compared with 2016 and the non-recurrence of gains recorded in 2016 from asset sales in commercial real estate.

Loan impairment charges improved during 2017 due primarily to releases in credit loss reserves in 2017 reflecting improvements in credit conditions associated with certain client relationships, including oil and gas industry clients, as well as releases of reserves due to paydowns and maturities exceeding new loan originations, compared with loan impairment charges in 2016 associated with downgrades reflecting weaknesses in the financial condition of certain client relationships at that time.

Operating expenses declined during 2017 driven by lower deposit insurance assessment fees, the impact of targeted staff reductions during 2016 and lower pension expense driven by the benefit recorded in 2017 associated with the limited-time offer to former vested HSBC North America Pension Plan employees as discussed above.

Global Banking and Markets The following table summarizes the Group Reporting Basis results for our GB&M segment:

Year Ended December 31,	2018	2017	2016
(dollars are in millions)			
Net interest income	\$ 610	\$ 585	\$ 567
Other operating income	751	617	785
Total operating income ⁽¹⁾	1,361	1,202	1,352
Expected credit losses / loan impairment charges	(194)	(94)	383
Net operating income	1,555	1,296	969
Operating expenses	834	881	986
Profit (loss) before tax	\$ 721	\$ 415	\$ (17)

⁽¹⁾ The following table summarizes the impact of key activities on the total operating income of our GB&M segment. For purposes of the discussion below the table, total operating income is referred to as revenue.

Year Ended December 31,	2018	2017	2016
(dollars are in millions)			
Credit	\$ 43	\$ 16	\$ 66
Rates	46	82	101
Foreign Exchange and Metals	298	254	291
Equities	38	39	42
Total Global Markets	425	391	500
Global Banking	420	322	430
Global Liquidity and Cash Management	504	501	448
Securities Services	56	55	41
Global Trade and Receivables Finance	59	53	68
Credit and funding valuation adjustments ⁽²⁾	(43)	(99)	(91)
Other ⁽³⁾	(60)	(21)	(44)
Total operating income	\$ 1,361	\$ 1,202	\$ 1,352

⁽²⁾ During 2017 and 2016, credit and funding valuation adjustments included losses of \$85 million and \$33 million, respectively, from the fair value movement on structured notes and deposits attributable to our own credit spread.

⁽³⁾ Other includes cost reimbursements associated with activities performed on behalf of other HSBC affiliates and certain corporate funding charges not assigned to products. Beginning in 2018, interest earned on capital which was historically reported in Other, has been allocated to the product lines in the table above and, as a result, we have reclassified prior year amounts in order to conform to the current year presentation. Reported total operating income for all periods was unaffected.

2018 profit before tax compared with 2017 Our GB&M segment reported higher profit before tax during 2018 due to higher other operating income, higher releases in credit loss estimates, lower operating expenses and higher net interest income.

Credit revenue increased during 2018 due to higher revenue from collateralized financing related activity.

Rates revenue decreased during 2018 due to lower revenue from interest rate swaps and structured rate products.

Foreign Exchange and Metals revenue increased during 2018 due to higher revenue in Metals driven by increased client trading activity, partially offset by lower revenue in Foreign Exchange as increased client trading activity was more than offset by the impact of market conditions.

Equities revenue was relatively flat during 2018.

Global Banking revenue increased during 2018 due to lower losses associated with credit default swap protection which largely reflects the hedging of a single client exposure, higher credit facilities fees and lower losses from loan sales. These increases were

partially offset by lower net interest income driven by lower loan balances due to paydowns, sales and maturities exceeding loan growth as we continued to focus efforts on improving returns while applying a disciplined lending approach to grow the business.

Global Liquidity and Cash Management revenue was relatively flat during 2018 as higher net interest income due to an increase in high quality deposit balances and the favorable impact of higher short-term market rates were largely offset by lower clearing fees and compliance fees and the reporting change for cost reimbursements associated with activities performed on behalf of other HSBC affiliates as discussed below.

Securities Services revenue was relatively flat during 2018 as higher revenue from new direct custody and clearing client activity as well as higher net interest income due to the favorable impact of higher short-term market rates was largely offset by the reporting change for cost reimbursements associated with activities performed on behalf of other HSBC affiliates as discussed below.

Global Trade and Receivables Finance revenue increased during 2018 due to higher fees on standby letters of credit.

As previously discussed, beginning January 1, 2018, the fair value movement on structured notes and deposits attributable to our own credit spread is now being recorded in other comprehensive income (loss). During 2017 and 2016, credit and funding valuation adjustments included losses of \$85 million and \$33 million, respectively, from the fair value movement on structured notes and deposits attributable to our own credit spread. Excluding this item, credit and funding valuation adjustments resulted in higher losses during 2018 attributable primarily to movements in our own credit spreads within our derivative liability balances and funding spreads.

Other revenue decreased during 2018 reflecting higher corporate funding and excess liquidity charges. In addition, in 2018 we began reporting cost reimbursements associated with activities performed on behalf of other HSBC affiliates in Other. As a result, we reported \$31 million of cost reimbursements in Other during 2018 that previously would have been reported in Global Liquidity and Cash Management and Securities Services above.

Expected credit losses reflected higher releases during 2018 due to continued improvements in the credit quality of our portfolio driven by paydowns, sales and maturities as we continued to focus efforts on improving returns as well as improvements in credit conditions associated with certain client relationships, including the upgrade of a large oil and gas client relationship during 2018. In addition, beginning in 2018, changes in expected credit losses are measured under IFRS 9.

Operating expenses were lower during 2018 due primarily to lower staff costs, lower corporate function cost allocations from affiliates and the reversal in 2018 of an accrual previously taken in connection with a bankruptcy preference claim. These decreases were partially offset by higher deposit insurance assessment fees,

2017 profit before tax compared with 2016 Our GB&M segment reported a profit before tax during 2017 compared with a loss before tax during 2016 due to improved loan impairment charges, lower operating expenses and higher net interest income, partially offset by lower other operating income.

Credit revenue declined during 2017 due to lower revenue from collateralized financing related activity, lower client activity and volumes from low market volatility, and higher primary issuances in 2016.

Rates revenue decreased during 2017 due to lower new deal activity on interest rate swaps, partially offset by favorable movements related to the economic hedging of interest rate and other risks within our structured notes and deposits.

Foreign Exchange and Metals revenue decreased during 2017 as higher revenue from Metals client related trading activity was offset by lower revenue from client trading activity in Foreign Exchange.

The decrease in Equities revenue during 2017 was due primarily to unfavorable movements related to the economic hedging of interest rate and other risks within our structured notes and deposits.

Global Banking revenue decreased during 2017 due to lower net interest income driven by lower loan balances as paydowns and maturities exceeding new loan originations as we focused efforts on improving returns, higher funding costs and lower event financing fees which were partially offset by lower losses associated with credit default swap protection which largely reflects the hedging of a single client exposure.

Global Liquidity and Cash Management revenue increased during 2017 driven by higher net interest income due to the favorable impact of higher short-term market rates as well as an increase in high quality deposit balances.

Securities Services revenue increased during 2017 driven by higher revenue from new direct custody and clearing client activity as well as higher net interest income due to the favorable impact of higher short-term market rates.

Global Trade and Receivables Finance revenue was lower during 2017 reflecting a decline in receivables financing products, partially offset by higher supply chain solutions revenue.

Excluding the fair value movement on structured notes and deposits attributable to our own credit spread as discussed above, credit and funding valuation adjustments were favorable in 2017 due in part to movements in the credit spreads of our derivative counterparties and our derivative balances.

Other revenue improved during 2017 reflecting higher cost reimbursements associated with activities performed on behalf of other HSBC affiliates.

Loan impairment charges improved during 2017 reflecting releases in credit loss reserves in 2017 compared with loan impairment charges in 2016. The releases of loss reserves in 2017 reflect improvements in the credit quality of our portfolio driven by paydowns, sales and maturities exceeding new loan originations as well as improvements in credit conditions associated with certain client relationships, including a single mining client relationship. The loan impairment charges in 2016 were driven primarily by the deterioration of the single mining client relationship as well as other downgrades reflecting weakness in the financial condition of certain clients at that time, including oil and gas, mining and other industry loan exposures. Loan impairment charges associated with oil and gas industry loan exposures in 2016 were largely due to the downgrade of a large client relationship and the establishment of specific reserves related to two large loans which became impaired.

Operating expenses were lower during 2017 due primarily to lower corporate function cost allocations from affiliates, lower litigation expense and lower deposit insurance assessment fees.

Private Banking The following table summarizes the Group Reporting Basis results for our PB segment:

Year Ended December 31,	2018	2017	2016
	(dollars are in millions)		
Net interest income	\$ 172	\$ 217	\$ 207
Other operating income	73	94	89
Total operating income	245	311	296
Expected credit losses / loan impairment charges	(4)	2	—
Net operating income	249	309	296
Operating expenses	236	244	232
Profit before tax	\$ 13	\$ 65	\$ 64

In August 2017, our PB business entered into an agreement to refer parts of its Latin America portfolio, consisting primarily of clients based in areas where we do not have a corporate presence, including Central America and the Andean Pact, to UBS. Under the terms of the agreement, we facilitate the referral of these client relationships to UBS for a fee, including the transfer of client assets, consisting of client investments and deposits, as well as the transfer of the relationship managers and client service employees that support these clients. Loans associated with these client relationships were not included in the agreement. Total operating income associated with these client relationships was approximately \$14 million, \$51 million and \$50 million during 2018, 2017 and 2016, respectively.

The following table provides information regarding PB client assets during 2018 and 2017:

Year Ended December 31,	2018	2017
	(in millions)	
Client assets at beginning of period	\$ 39,089	\$ 40,462
Net new money (outflows)	(500)	(2,333)
Client transfers to UBS	(1,494)	(853)
Value change	(1,078)	1,813
Client assets at end of period	\$ 36,017	\$ 39,089

2018 profit before tax compared with 2017 Our PB segment reported lower profit before tax during 2018 due to lower net interest income and lower other operating income, partially offset by lower operating expenses and improved credit loss estimates.

Net interest income decreased during 2018 reflecting the impact of lower deposit balances due primarily to the impact of the client referral agreement with UBS.

During 2017, we recorded a net pre-tax gain of \$9 million associated with the sale of a portion of our Private Banking business as discussed above. During 2018, we recorded a \$3 million loss as a result of a decline in the estimated fair value of the contingent consideration receivable associated with the sale. Excluding these items, other operating income remained lower during 2018 due to lower fees and commissions reflecting a decline in assets under management.

Expected credit losses improved during 2018 driven by a recovery in 2018 reflecting lower loss estimates in the mortgage portfolio. In addition, beginning in 2018, expected credit losses are measured under IFRS 9.

Operating expenses decreased during 2018 reflecting lower staff costs.

2017 profit before tax compared with 2016 Our PB segment profit before tax was relatively flat during 2017 as higher net interest income and higher other operating income was largely offset by higher operating expenses.

Net interest income was higher during 2017 due to improved spreads reflecting the impact of favorable market rates.

Excluding the gain associated with the sale of a portion of our Private Banking business as discussed above, other operating income decreased in 2017 due to lower fees and commissions driven by a decline in managed and investment product balances.

Loan impairment charges were relatively flat in 2017.

Operating expenses increased during 2017 reflecting higher litigation expense, higher staff costs and higher corporate function cost allocations from affiliates.

Corporate Center The following table summarizes the Group Reporting Basis results for our CC segment:

Year Ended December 31,	2018	2017	2016
(dollars are in millions)			
Net interest income (expense).....	\$ 91	\$ (40)	\$ 132
Other operating income.....	257	274	127
Total operating income ⁽¹⁾	348	234	259
Expected credit losses / loan impairment charges.....	4	—	(9)
Net operating income	344	234	268
Operating expenses	688	465	338
Loss before tax	\$ (344)	\$ (231)	\$ (70)

⁽¹⁾ The following table summarizes the impact of key activities on the total operating income of our CC segment:

Year Ended December 31,	2018	2017	2016
(dollars are in millions)			
Balance Sheet Management ⁽²⁾	\$ 266	\$ 245	\$ 169
Legacy structured credit products.....	14	40	53
Legacy residential mortgage activities ⁽³⁾	—	(15)	20
Other	68	(36)	17
Total operating income	\$ 348	\$ 234	\$ 259

⁽²⁾ Balance Sheet Management includes gains on the sale of securities of \$24 million in 2018 compared with \$48 million and \$65 million in 2017 and 2016, respectively.

⁽³⁾ Reflected fees associated with residential mortgage servicing activities performed on behalf of HSBC Finance prior to the completion of its receivable sales program and revenue associated with certain residential mortgage loans that we previously purchased from HSBC Finance and sold during 2017.

2018 loss before tax compared with 2017 Our CC segment reported higher loss before tax during 2018 due to higher operating expenses driven by expense recorded in 2018 related to the settlement of a mortgage securitization legal matter as well as lower other operating income, partially offset by higher net interest income.

Net interest income was higher during 2018 due primarily to the impact of the liquidity framework we adopted in preparation for the planned implementation of the Net Stable Funding Ratio ("NSFR") which provides a temporary cap on the net liquidity charge to GB&M until the NSFR becomes effective. The framework, in combination with lower liquidity charges in GB&M, resulted in lower excess liquidity charges being retained in the CC compared with 2017. See "Risk Management" in this MD&A for additional discussion of the NSFR. The increase in net interest income also reflects higher corporate funding charges to the businesses as the charges in 2017 were reduced due to the loan prepayment fees received from HSBC Finance as discussed below.

Other operating income decreased during 2018 driven largely by the non-recurrence of revenue received from HSBC Finance in 2017, including \$28 million of loan prepayment fees and fees associated with residential mortgage servicing activities performed prior to the completion of its receivable sales program, as well as lower gains from asset sales in Balance Sheet Management and the non-recurrence of a gain of approximately \$11 million recorded in 2017 related to the unwind of one of our unconsolidated VIEs. These decreases were partially offset by favorable movements related to the economic hedging of interest rate risk within our own debt and higher income associated with fair value hedge ineffectiveness.

Expected credit losses were higher during 2018 reflecting the impact of recording expected credit losses on certain financial assets in accordance with IFRS 9.

Operating expenses were higher during 2018 due to higher expense related to legal matters reflecting the settlement of a mortgage securitization matter. This increase was partially offset by the non-recurrence of costs to achieve of approximately \$172 million

in 2017, which primarily consisted of project cost support service charges from HTSU, lease termination and associated expenses, professional fees and severance costs, as well as higher levels of expense capitalization related to internally developed software and the non-recurrence of expense recorded in 2017 related to staff performing residential mortgage servicing activities on behalf of HSBC Finance.

2017 loss before tax compared with 2016 Our CC segment reported higher loss before tax during 2017 due primarily to lower net interest income and higher operating expenses due in part to higher costs to achieve of approximately \$85 million, partially offset by higher other operating income.

Net interest income was lower during 2017 driven largely by the impact of the liquidity framework we adopted in preparation for the NSFR as discussed above. The decrease also reflects lower corporate funding charges to the businesses due in part to higher loan prepayment fees received from HSBC Finance as well as lower net interest income from legacy residential mortgages which were sold during 2017.

Other operating income increased during 2017 reflecting the improved performance of economic hedge positions used to manage interest rate risk, higher loan prepayment fees received from HSBC Finance, lower losses associated with fair value hedge ineffectiveness and the gain recorded in 2017 related to the unwind of one of our unconsolidated VIEs as discussed above. These increases were partially offset by lower fees associated with residential mortgage servicing activities performed on behalf of HSBC Finance, lower gains from asset sales in Balance Sheet Management and unfavorable valuation adjustments on our legacy structured credit products.

Loan impairment recoveries were lower during 2017 as 2016 reflects releases of reserves due to improvements in economic and credit conditions associated with legacy residential mortgages which were sold during 2017.

Operating expenses increased during 2017 reflecting higher costs to achieve as discussed above, higher corporate function cost allocations and higher litigation expense, partially offset by the favorable impact of cost management efforts, including staff optimization in our technology and support service functions as well as reductions in staff performing residential mortgage servicing activities on behalf of HSBC Finance, and higher levels of expense capitalization related to internally developed software.

Reconciliation of Segment Results As previously discussed, segment results are reported on a Group Reporting Basis. For segment reporting purposes, inter-segment transactions have not been eliminated, and we generally account for transactions between segments as if they were with third parties. See Note 23, "Business Segments," in the accompanying consolidated financial statements for a reconciliation of our Group Reporting Basis segment results to U.S. GAAP consolidated totals.

Credit Quality

In the normal course of business, we enter into a variety of transactions that involve both on and off-balance sheet credit risk. Principal among these activities is lending to various commercial, institutional, governmental and individual customers. We participate in lending activity throughout the U.S. and, on a limited basis, internationally.

Our reported results under U.S. GAAP reflect the following methodologies for establishing the allowance for credit losses.

Allowance for Credit Losses Commercial loans are monitored on a continuous basis with a formal assessment completed, at a minimum, annually. As part of this process, a credit grade and loss given default are assigned and an allowance is established for these loans based on a probability of default estimate associated with each credit grade under the allowance for credit losses methodology. Credit Review, a function independent of the business, provides an ongoing assessment of lending activities that includes independently assessing credit grades and loss given default estimates for sampled credits across various portfolios. When it is deemed probable based upon known facts and circumstances that full interest and principal on an individual loan will not be collected in accordance with its contractual terms, the loan is considered impaired. An impairment reserve is then established primarily based on the present value of expected future cash flows, discounted at the loan's original effective interest rate, or as a practical expedient, the fair value of the collateral if the loan is collateral dependent or the loan's observable market price if the loan is traded in the market. Updated appraisals for collateral dependent loans are generally obtained only when such loans are considered troubled and the frequency of such updates are generally based on management judgment under the specific circumstances on a case-by-case basis. In addition, loss reserves on commercial loans are maintained to reflect our judgment of portfolio risk factors which may not be fully reflected in the reserve calculations.

Our probability of default estimates for commercial loans are mapped to our credit grade master scale. These probability of default estimates are validated on an annual basis using back-testing of actual default rates and benchmarking of the internal ratings with external rating agency data like Standard and Poor's ("S&P") ratings and default rates. Substantially all appraisals in connection with commercial real estate loans are ordered by the independent real estate appraisal review unit at HSBC. The appraisal must be reviewed and accepted by this unit. For loans greater than \$250,000, an appraisal is generally ordered when the loan is classified as Substandard as defined by the OCC. On average, it takes approximately four weeks from the time the appraisal is ordered until

it is completed and the values accepted by HSBC's independent appraisal review unit. Subsequent provisions or charge-offs are completed shortly thereafter, generally within the quarter in which the appraisal is received.

In situations where an external appraisal is not used to determine the fair value of the underlying collateral of impaired loans, current information such as rent rolls and operating statements of the subject property are reviewed and presented in a standardized format. Operating results such as net operating income and cash flows before and after debt service are established and reported with relevant ratios. Third-party market data is gathered and reviewed for relevance to the subject collateral. Data is also collected from similar properties within the portfolio. Actual sales levels of properties, operating income and expense figures and rental data on a square foot basis are derived from existing loans and, when appropriate, used as comparables for the subject property. Property specific data, augmented by market data research, is used to project a stabilized year of income and expense to create a 10-year cash flow model to be discounted at appropriate rates to present value. These valuations are then used to determine if any impairment on the underlying loans exists and an appropriate allowance is recorded when warranted.

For loans identified as TDR Loans, an allowance for credit losses is maintained primarily based on the present value of expected future cash flows, discounted at the loan's original effective interest rate, or as a practical expedient, the fair value of the collateral if the loan is collateral dependent or, for commercial loans, the observable market price if the loan is traded in the market. The circumstances in which we perform a loan modification involving a TDR Loan at a then current market interest rate for a borrower with similar credit risk would include other changes to the terms of the original loan made as part of the restructuring (e.g. principal reductions, collateral changes, etc.) in order for the loan to be classified as a TDR Loan.

For pools of homogeneous consumer loans and certain small business loans which do not qualify as TDR Loans, we estimate probable losses using a roll rate migration analysis that estimates the likelihood that a loan will progress through the various stages of delinquency and ultimately charge-off based upon recent historical performance experience of other loans in our portfolio. This migration analysis incorporates estimates of the period of time between a loss occurring and the confirming event of its charge-off. This analysis considers delinquency status, loss experience and severity and takes into account whether borrowers have filed for bankruptcy or have been subject to account management actions, such as the re-age or modification of accounts. We also take into consideration the loss severity expected based on the underlying collateral, if any, for the loan in the event of default based on historical and recent trends which are updated monthly based on a rolling average of several months' data using the most recently available information.

The roll rate methodology is a migration analysis based on contractual delinquency and rolling average historical loss experience which captures the increased likelihood of an account migrating to charge-off as the past due status of such account increases. The roll rate models used were developed by tracking the movement of delinquencies by age of delinquency over a specified time period. Each stage of delinquency represents a period of delinquency in 30-day increments. The roll from the last delinquency stage results in charge-off. Contractual delinquency is a method for determining aging of past due accounts based on the status of payments under the loan. Average roll rates are developed to avoid temporary aberrations caused by seasonal trends in delinquency experienced by some product types. We have determined that a 12-month average roll rate balances the desire to avoid temporary aberrations, while at the same time analyzing recent historical data. The roll rate calculations are performed monthly and are done consistently from period to period. We regularly monitor our portfolio to evaluate the period of time utilized in our roll rate migration analysis and perform a formal review on an annual basis. In addition, loss reserves on consumer loans are maintained to reflect our judgment of portfolio risk factors which may not be fully reflected in the statistical roll rate calculation.

Our allowance for credit losses methodology and our accounting policies related to the allowance for credit losses are presented in further detail under the caption "Critical Accounting Policies and Estimates" in this MD&A and in Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," in the accompanying consolidated financial statements. Our approach toward credit risk management is summarized under the caption "Risk Management" in this MD&A.

The following table sets forth the allowance for credit losses for the periods indicated:

At December 31,	2018	2017	2016	2015	2014
	(dollars are in millions)				
Allowance for credit losses	\$ 541	\$ 681	\$ 1,017	\$ 912	\$ 680
Ratio of Allowance for credit losses to:					
Loans: ⁽¹⁾					
Commercial:					
Non-affiliates	.97%	1.31%	1.83%	1.35%	.92%
Affiliates	—	—	—	—	—
Total commercial	.93	1.15	1.72	1.25	.85
Consumer:					
Residential mortgages	.07	.14	.15	.38	.64
Home equity mortgages	.71	.92	1.42	1.50	1.79
Credit cards	5.69	4.44	4.94	4.58	5.42
Other consumer	1.98	1.46	1.83	2.21	2.04
Total consumer	.42	.37	.44	.65	.96
Total	.78%	.94%	1.38%	1.10%	.87%
Net charge-offs: ⁽²⁾					
Commercial ⁽³⁾	1,117%	405%	463%	1,217%	1,538%
Consumer	319	348	132	205	229
Total	807%	398%	381%	707%	596%
Nonperforming loans: ⁽¹⁾⁽⁴⁾					
Commercial	318%	99%	118%	293%	351%
Consumer	20	15	17	15	20
Total	97%	61%	77%	78%	63%

⁽¹⁾ Ratios exclude loans held for sale as these loans are carried at the lower of amortized cost or fair value.

⁽²⁾ Ratios reflect full year net charge-offs.

⁽³⁾ Our commercial net charge-off coverage ratio for 2018, 2017, 2016, 2015 and 2014 was 134 months, 49 months, 56 months, 146 months and 185 months, respectively. The net charge-off coverage ratio represents the commercial allowance for credit losses at year end divided by average monthly commercial net charge-offs during the year.

⁽⁴⁾ Represents our commercial and consumer allowance for credit losses, as appropriate, divided by the corresponding outstanding balance of total nonperforming loans held for investment. Nonperforming loans include accruing loans contractually past due 90 days or more.

The following table summarizes the changes in the allowance for credit losses by product and the related loan balance by product during the years ended December 31, 2018, 2017, 2016, 2015 and 2014:

	Commercial				Consumer				
	Construction and Other Real Estate	Business and Corporate Banking	Global Banking	Other Comm'l	Residential Mortgages	Home Equity Mortgages	Credit Cards	Other Consumer	Total
	(in millions)								
Year Ended December 31, 2018:									
Allowance for credit losses – beginning of period.....	\$ 82	\$ 244	\$ 264	\$ 18	\$ 25	\$ 11	\$ 32	\$ 5	\$ 681
Provision charged (credited) to income	34	(31)	(109)	(3)	(18)	(3)	55	2	(73)
Charge-offs	—	(41)	(48)	—	(7)	(7)	(35)	(4)	(142)
Recoveries	—	47	1	—	13	6	6	2	75
Net (charge-offs) recoveries	—	6	(47)	—	6	(1)	(29)	(2)	(67)
Allowance for credit losses – end of period	<u>\$ 116</u>	<u>\$ 219</u>	<u>\$ 108</u>	<u>\$ 15</u>	<u>\$ 13</u>	<u>\$ 7</u>	<u>\$ 58</u>	<u>\$ 5</u>	<u>\$ 541</u>

Year Ended December 31, 2017:

Allowance for credit losses – beginning of period.....	\$	92	\$	317	\$	508	\$	13	\$	26	\$	20	\$	34	\$	7	\$	1,017
Provision charged (credited) to income		(3)		(59)		(116)		6		(7)		(8)		22		—		(165)
Charge-offs.....		(7)		(37)		(141)		(1)		(4)		(6)		(30)		(4)		(230)
Recoveries.....		—		23		13		—		10		5		6		2		59
Net (charge-offs) recoveries.....		(7)		(14)		(128)		(1)		6		(1)		(24)		(2)		(171)
Allowance for credit losses – end of period	\$	82	\$	244	\$	264	\$	18	\$	25	\$	11	\$	32	\$	5	\$	681

Year Ended December 31, 2016:

Allowance for credit losses – beginning of period.....	\$	86	\$	407	\$	267	\$	19	\$	68	\$	24	\$	32	\$	9	\$	912
Provision charged (credited) to income ⁽¹⁾		—		10		348		(6)		(9)		(1)		26		4		372
Charge-offs ⁽¹⁾⁽²⁾		(1)		(110)		(107)		—		(45)		(8)		(30)		(8)		(309)
Recoveries.....		7		10		—		—		12		5		6		2		42
Net (charge-offs) recoveries.....		6		(100)		(107)		—		(33)		(3)		(24)		(6)		(267)
Allowance for credit losses – end of period	\$	92	\$	317	\$	508	\$	13	\$	26	\$	20	\$	34	\$	7	\$	1,017

Year Ended December 31, 2015:

Allowance for credit losses – beginning of period.....	\$	89	\$	251	\$	131	\$	21	\$	107	\$	32	\$	39	\$	10	\$	680
Provision charged (credited) to income		2		215		136		(2)		(15)		(4)		20		9		361
Charge-offs.....		(10)		(69)		—		(1)		(35)		(8)		(32)		(12)		(167)
Recoveries.....		5		10		—		1		11		4		5		2		38
Net (charge-offs) recoveries.....		(5)		(59)		—		—		(24)		(4)		(27)		(10)		(129)
Allowance for credit losses – end of period	\$	86	\$	407	\$	267	\$	19	\$	68	\$	24	\$	32	\$	9	\$	912

Year Ended December 31, 2014:

Allowance for credit losses – beginning of period.....	\$	108	\$	105	\$	75	\$	20	\$	186	\$	49	\$	50	\$	13	\$	606
Provision charged (credited) to income		2		157		64		(7)		(40)		(14)		23		3		188
Charge-offs.....		(24)		(19)		(8)		(1)		(55)		(13)		(41)		(8)		(169)
Recoveries.....		3		8		—		9		16		10		7		2		55
Net (charge-offs) recoveries.....		(21)		(11)		(8)		8		(39)		(3)		(34)		(6)		(114)
Allowance for credit losses – end of period	\$	89	\$	251	\$	131	\$	21	\$	107	\$	32	\$	39	\$	10	\$	680

⁽¹⁾ The provision for credit losses and charge-offs for residential mortgage loans during 2016 includes \$11 million related to the lower of amortized cost or fair value adjustment attributable to credit factors for loans transferred to held for sale. See Note 7, "Loans Held for Sale," in the accompanying consolidated financial statements for additional information.

⁽²⁾ For collateral dependent loans that are transferred to held for sale, the existing allowance for credit losses at the time of transfer are recognized as a charge-off. We transferred to held for sale certain residential mortgage loans during 2016 and, accordingly, we recognized the existing allowance for credit losses on these loans as additional charge-offs totaling \$22 million during 2016.

The allowance for credit losses at December 31, 2018 decreased \$140 million or 21 percent as compared with December 31, 2017 due to lower loss estimates in our commercial loan portfolio, partially offset by higher loss estimates in our consumer loan portfolio. Our commercial allowance for credit losses decreased \$150 million or 25 percent as compared with December 31, 2017 reflecting continued improvements in the credit quality of our portfolio driven by paydowns, sales and maturities as we continued to focus efforts on improving returns as well as improvements in credit conditions associated with certain client relationships. These decreases were partially offset by a higher provision for risk factors associated with geopolitical risks and market volatility inherent in certain segments of the portfolio and higher provisions for downgrades reflecting weakness in the financial condition of certain clients. Our consumer allowance for credit losses increased \$10 million or 14 percent as compared with December 31, 2017 due to a higher allowance for credit losses in credit cards reflecting growth in customer activity driven by new product promotions along with an associated increase in dollars of delinquency, partially offset by a lower allowance for credit losses in residential mortgages and home equity mortgages due to continued improvements in economic and credit conditions, including lower dollars of delinquency.

The allowance for credit losses at December 31, 2017 decreased \$336 million or 33 percent as compared with December 31, 2016 due primarily to lower loss estimates in our commercial loan portfolio and, to a lesser extent, lower loss estimates in our consumer loan portfolio. Our commercial allowance for credit losses decreased \$322 million or 35 percent as compared with December 31, 2016 largely due to improvements in the credit quality of our portfolio driven by managed reductions in certain exposures, releases of reserves due to paydowns and maturities exceeding new loan originations as we continued to focus efforts on improving returns,

improvements in credit conditions associated with certain client relationships and the partial charge-off of a single mining client relationship. Our consumer allowance for credit losses decreased \$14 million or 16 percent as compared with December 31, 2016 due to improvements in economic and credit conditions, the origination of higher quality Premier mortgages and lower loss estimates in our home equity mortgage portfolio reflecting lower outstanding balances. These decreases were partially offset by the impact of a slight increase in delinquency levels.

The allowance for credit losses at December 31, 2016 increased \$105 million or 12 percent as compared with December 31, 2015 due to higher loss estimates in our commercial loan portfolio, partially offset by lower loss estimates in our consumer loan portfolio. Our commercial allowance for credit losses increased \$151 million or 19 percent as compared with December 31, 2015 primarily due to higher loss estimates associated with the deterioration of the single mining customer relationship and, to a lesser extent, other downgrades reflecting weaknesses in the financial condition of certain customer relationships, including mining and other industry loan exposures. These increases were partially offset by charge-offs associated with oil and gas industry loan exposures, including a large impaired oil and gas industry loan that was sold. Our consumer allowance for credit losses decreased \$46 million or 35 percent as compared with December 31, 2015 primarily due to charge-offs associated with the transfers of mortgages to held for sale as well as releases of reserves related to certain residential mortgages serviced by others as a result of updated information regarding the underlying loan characteristics being reported by the servicers and improved loss estimates associated with certain home equity mortgages. The decrease also reflects lower loss estimates driven by improvements in economic and credit conditions and the origination of higher quality Premier mortgages.

The allowance for credit losses at December 31, 2015 increased \$232 million or 34 percent as compared with December 31, 2014 due to higher loss estimates in our commercial loan portfolio, partially offset by lower loss estimates in our consumer loan portfolio. Our commercial allowance for credit losses increased \$287 million or 58 percent as compared with December 31, 2014 reflecting higher loss estimates associated with oil and gas industry loan exposures and, to a lesser extent, downgrades in other industry loan exposures reflecting weaknesses in the financial circumstances of certain customer relationships as well as higher allowances associated with loan growth. These increases were partially offset by releases of reserves associated with maturities of lower quality loans and managed reductions in certain exposures. Our consumer allowance for credit losses decreased \$55 million or 29 percent as compared with December 31, 2014 reflecting lower loss estimates in our residential mortgage and home equity mortgage loan portfolios driven by lower severity estimates, improvements in economic and credit conditions including lower delinquency levels and the origination of higher quality Premier mortgages as well as lower loss estimates associated with the remediation of certain mortgage servicing activities and a lower allowance for credit losses in our credit card portfolio reflecting lower receivable levels and improved delinquency roll rates.

Our residential mortgage loan allowance for credit losses in all periods reflects consideration of risk factors relating to trends such as recent portfolio performance as compared with average roll rates as well as housing market trends and second lien exposure.

The allowance for credit losses as a percentage of total loans held for investment at December 31, 2018, 2017, 2016 and 2015 increased or decreased compared with their respective prior year periods for the reasons discussed above.

The allowance for credit losses as a percentage of net charge-offs at December 31, 2018 increased as compared with December 31, 2017 as a decrease in dollars of net charge-offs driven by lower charge-offs in our commercial loan portfolio associated with a single mining client relationship and loan sales outpaced the decrease in our overall allowance for credit losses for the reasons discussed above. In 2017, the allowance for credit losses as a percentage of net charge-offs was relatively flat as lower dollars of net charge-offs in both our commercial and consumer loan portfolios was largely offset by a decrease in our overall allowance for credit losses for the reasons discussed above. In 2016, the allowance for credit losses as a percentage of net charge-offs decreased as the increase in dollars of net charge-offs largely driven by higher charge-offs associated with oil and gas industry loan exposures in our commercial loan portfolio, including a large impaired oil and gas industry loan that was sold, outpaced the increase in our overall allowance for credit losses for the reasons discussed above. In 2015, the allowance for credit losses as a percentage of net charge-offs increased as the increase in our overall allowance for credit losses for the reasons discussed above outpaced the increase in dollars of net charge-offs due to higher charge-offs in our commercial loan portfolio.

The allowance for credit losses as a percentage of nonperforming loans held for investment at December 31, 2018 increased as compared with December 31, 2017 driven by a decrease in nonperforming loans due primarily to managed reductions in certain exposures in our commercial loan portfolio which was partially offset by a decrease in our overall allowance for credit losses for the reasons discussed above. In 2017, the allowance for credit losses as a percentage of nonperforming loans held for investment decreased as the decrease in our overall allowance for credit losses for the reasons discussed above outpaced the decreases in nonperforming loans driven by our commercial loan portfolio. In 2016, the allowance for credit losses as a percentage of nonperforming loans held for investment was relatively flat as the increase in nonperforming loans driven by higher nonperforming loans in our commercial loan portfolio was largely offset by the increase in our overall allowance for credit losses for the reasons discussed above. In 2015, the allowance for credit losses as a percentage of nonperforming loans held for investment increased as the increase in our overall allowance for credit losses for the reasons discussed above outpaced the increase in nonperforming loans driven by higher nonperforming loans in our commercial loan portfolio.

The following table presents the allowance for credit losses by major loan categories, excluding loans held for sale:

	Amount	% of Loans to Total Loans	Amount	% of Loans to Total Loans	Amount	% of Loans to Total Loans	Amount	% of Loans to Total Loans	Amount	% of Loans to Total Loans
At December 31,	2018		2017		2016		2015		2014	
	(dollars are in millions)									
Commercial ⁽¹⁾	\$ 458	71.5%	\$ 608	73.1%	\$ 930	73.4%	\$ 779	75.3%	\$ 492	74.7%
Consumer:										
Residential mortgages .	13	25.2	25	23.8	26	23.3	68	21.5	107	21.4
Home equity mortgages.....	7	1.4	11	1.6	20	1.9	24	1.9	32	2.3
Credit cards.....	58	1.5	32	1.0	34	.9	32	.8	39	.9
Other consumer	5	.4	5	.5	7	.5	9	.5	10	.7
Total consumer	83	28.5	73	26.9	87	26.6	133	24.7	188	25.3
Total.....	\$ 541	100.0%	\$ 681	100.0%	\$ 1,017	100.0%	\$ 912	100.0%	\$ 680	100.0%

⁽¹⁾ See Note 6, "Allowance for Credit Losses," in the accompanying consolidated financial statements for components of the commercial allowance for credit losses.

Reserves for Off-Balance Sheet Credit Risk We also maintain a separate reserve for credit risk associated with certain commercial off-balance sheet exposures, including letters of credit, unused commitments to extend credit and financial guarantees. The following table summarizes this reserve, which is included in other liabilities on the consolidated balance sheet. The related provision is recorded as a component of other expense within operating expenses.

At December 31,	2018	2017	2016	2015	2014
	(in millions)				
Off-balance sheet credit risk reserve	\$ 96	\$ 106	\$ 134	\$ 99	\$ 68

Off-balance sheet reserves decreased in 2018 and 2017 reflecting managed reductions in certain exposures and improvements in credit conditions associated with certain client relationships. In 2016, off-balance sheet reserves increased reflecting the impact of downgrades in oil and gas industry and other industry loan exposures. In 2015, off-balance sheet reserves increased reflecting higher loss estimates associated with oil and gas industry exposures. Off-balance sheet exposures are summarized under the caption "Off-Balance Sheet Arrangements, Credit Derivatives and Other Contractual Obligations" in this MD&A.

Delinquency The following table summarizes dollars of two-months-and-over contractual delinquency and two-months-and-over contractual delinquency as a percent of total loans and loans held for sale ("delinquency ratio"):

	2018				2017			
	Dec. 31	Sept. 30	June 30	Mar. 31	Dec. 31	Sept. 30	June 30	Mar. 31
(dollars are in millions)								
Delinquent loans:								
Commercial.....	\$ 60	\$ 99	\$ 16	\$ 19	\$ 45	\$ 82	\$ 68	\$ 79
Consumer:								
Residential mortgages ⁽¹⁾⁽²⁾	347	329	356	381	425	406	442	434
Home equity mortgages ⁽¹⁾⁽²⁾	30	31	32	37	39	36	38	40
Credit cards	20	18	15	13	12	11	11	12
Other consumer	8	7	8	9	10	10	8	10
Total consumer	405	385	411	440	486	463	499	496
Total	\$ 465	\$ 484	\$ 427	\$ 459	\$ 531	\$ 545	\$ 567	\$ 575
Delinquency ratio:								
Commercial.....	.12%	.21%	.03%	.04%	.08%	.17%	.14%	.16%
Consumer:								
Residential mortgages ⁽¹⁾⁽²⁾	1.99	1.89	2.05	2.20	2.46	2.36	2.57	2.51
Home equity mortgages ⁽¹⁾⁽²⁾	3.05	3.02	2.95	3.25	3.27	2.92	2.96	2.98
Credit cards	1.96	1.98	1.78	1.69	1.66	1.68	1.70	1.86
Other consumer	2.62	2.20	2.23	2.13	2.48	2.26	1.63	2.20
Total consumer	2.05	1.96	2.09	2.24	2.48	2.37	2.54	2.51
Total	.67%	.72%	.64%	.68%	.72%	.80%	.82%	.82%

⁽¹⁾ At December 31, 2018 and 2017, consumer mortgage loan delinquency includes \$254 million and \$342 million, respectively, of loans that are carried at the lower of amortized cost or fair value of the collateral less costs to sell, including \$1 million and \$1 million, respectively, relating to loans held for sale.

⁽²⁾ The following table reflects dollars of contractual delinquency and delinquency ratios for interest-only loans and adjustable rate mortgage loans:

	2018				2017			
	Dec. 31	Sept. 30	June 30	Mar. 31	Dec. 31	Sept. 30	June 30	Mar. 31
(dollars are in millions)								
Dollars of delinquent loans:								
Interest-only loans	\$ 9	\$ 9	\$ 12	\$ 11	\$ 10	\$ 30	\$ 41	\$ 25
ARM loans	114	112	133	145	142	137	147	121
Delinquency ratio:								
Interest-only loans	.28%	.28%	.37%	.33%	.29%	.86%	1.18%	.70%
ARM loans	.94	.94	1.11	1.20	1.19	1.15	1.24	1.01

Our two-months-and-over contractual delinquency ratio decreased 5 basis points compared with September 30, 2018 due to lower dollars of delinquency in our commercial loan portfolio, partially offset by higher dollars of delinquency in our consumer loan portfolio. Compared with December 31, 2017, our two-months-and-over contractual delinquency ratio also decreased 5 basis points as higher dollars of delinquency in our commercial loan portfolio was more than offset by lower dollars of delinquency in our consumer loan portfolio.

Our commercial loan two-months-and-over contractual delinquency ratio decreased 9 basis points compared with September 30, 2018 due primarily to collections on two corporate banking loans which became delinquent in the third quarter. Compared with December 31, 2017, our commercial loan two-months-and-over contractual delinquency ratio increased 4 basis points due to higher dollars of delinquency driven by several corporate banking clients which became 60 days delinquent in the second half of the year as well as a commercial real estate client which became 60 days delinquent in the fourth quarter. These increases were partially offset by the collection of a large global banking loan in the first quarter as well as lower outstanding loan balances.

Our consumer loan two-month-and-over contractual delinquency ratio increased 9 basis points compared with September 30, 2018 due primarily to higher levels of reported residential mortgage delinquency associated with temporary customer payment interruptions due to the transfer of servicing in December. Compared with December 31, 2017, our consumer loan two-month-

and-over contractual delinquency ratio decreased 43 basis points due primarily to lower dollars of residential mortgage delinquency driven by continued improvements in economic and credit conditions.

Net Charge-offs of Loans The following table summarizes net charge-off (recovery) dollars as well as the net charge-off (recovery) of loans for the quarter, annualized, as a percentage of average loans, excluding loans held for sale, ("net charge-off ratio"):

	2018					2017					2016 Full Year
	Quarter Ended					Quarter Ended					
	Full Year	Dec. 31	Sept. 30	June 30	Mar. 31	Full Year	Dec. 31	Sept. 30	June 30	Mar. 31	
(dollars are in millions)											
Net Charge-off Dollars:											
Commercial:											
Real estate, including construction	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 7	\$ —	\$ 4	\$ 2	\$ 1	\$ (6)
Business and corporate banking	(6)	6	1	(16)	3	14	—	5	—	9	100
Global banking.....	47	—	11	32	4	128	70	14	45	(1)	107
Other commercial.....	—	—	—	—	—	1	—	—	1	—	—
Total commercial	41	6	12	16	7	150	70	23	48	9	201
Consumer:											
Residential mortgages	(6)	1	(3)	(1)	(3)	(6)	(2)	(2)	(4)	2	33
Home equity mortgages	1	—	—	1	—	1	(1)	—	1	1	3
Credit cards	29	9	8	6	6	24	5	6	7	6	24
Other consumer.....	2	1	(1)	1	1	2	1	—	—	1	6
Total consumer.....	26	11	4	7	4	21	3	4	4	10	66
Total	\$ 67	\$ 17	\$ 16	\$ 23	\$ 11	\$ 171	\$ 73	\$ 27	\$ 52	\$ 19	\$ 267
Net Charge-off Ratio:											
Commercial:											
Real estate, including construction	—%	—%	—%	—%	—%	.07%	—%	.15%	.08%	.04%	(.06)%
Business and corporate banking	(.05)	.18	.03	(.51)	.10	.11	—	.15	—	.28	.55
Global banking.....	.24	—	.24	.65	.08	.59	1.36	.28	.81	(.02)	.45
Other commercial.....	—	—	—	—	—	.02	—	—	.10	—	—
Total commercial	.09	.05	.10	.13	.06	.30	.58	.19	.39	.07	.34
Consumer:											
Residential mortgages	(.03)	.02	(.07)	(.02)	(.07)	(.03)	(.05)	(.04)	(.09)	.04	.19
Home equity mortgages	.09	—	—	.36	—	.08	(.33)	—	.30	.29	.20
Credit cards	3.43	3.76	3.66	2.97	3.26	3.65	2.95	3.68	4.34	3.65	3.59
Other consumer.....	.65	1.63	(1.35)	1.18	1.13	.52	1.09	—	—	1.03	1.53
Total consumer.....	.13	.22	.08	.14	.08	.11	.06	.08	.08	.20	.33
Total	.10%	.10%	.10%	.14%	.07%	.25%	.43%	.16%	.30%	.10%	.33 %

Our net charge-off ratio as a percentage of average loans decreased 15 basis points for the full year of 2018 compared with the full year of 2017 due to lower levels of net charge-offs in our commercial loan portfolio associated with a single mining client relationship and loan sales. This decrease was partially offset by slightly higher levels of net charge-offs in our consumer loan portfolio.

Our net charge-off ratio as a percentage of average loans decreased 8 basis points for the full year of 2017 compared with the full year of 2016 due to lower levels of net charge-offs in both our commercial and consumer loan portfolios. The decrease in net charge-offs in our commercial loan portfolio reflects lower charge-offs associated with oil and gas industry loan exposures which were partially offset by the partial charge-off of a single mining client relationship in 2017. The decrease in net charge-offs in our consumer loan portfolio was largely due to the non-recurrence of charge-offs recorded in 2016 related to the transfers of mortgages to held for sale and, to a lesser extent, improvements in economic and credit conditions and the origination of higher quality Premier mortgages.

Nonperforming Assets Nonperforming assets consisted of the following:

At December 31,	2018	2017	2016
	(in millions)		
Nonaccrual loans:			
Commercial:			
Real estate, including construction	\$ 7	\$ 12	\$ 56
Business and corporate banking	70	215	187
Global banking	65	385	546
Other commercial	1	1	1
Commercial nonaccrual loans held for sale	—	—	11
Total commercial	143	613	801
Consumer:			
Residential mortgages ⁽¹⁾⁽²⁾⁽³⁾	341	414	435
Home equity mortgages ⁽¹⁾⁽²⁾	55	67	75
Consumer nonaccrual loans held for sale	1	1	369
Total consumer	397	482	879
Total nonaccruing loans	540	1,095	1,680
Accruing loans contractually past due 90 days or more:			
Commercial:			
Business and corporate banking	1	1	1
Total commercial	1	1	1
Consumer:			
Credit cards	14	9	10
Other consumer	6	8	7
Total consumer	20	17	17
Total accruing loans contractually past due 90 days or more	21	18	18
Total nonperforming loans	561	1,113	1,698
Other real estate owned ⁽⁴⁾	12	11	27
Total nonperforming assets	\$ 573	\$ 1,124	\$ 1,725

⁽¹⁾ At December 31, 2018, 2017 and 2016, nonaccrual consumer mortgage loans held for investment include \$289 million, \$360 million and \$382 million respectively, of loans that are carried at the lower of amortized cost or fair value of the collateral less cost to sell.

⁽²⁾ Nonaccrual consumer mortgage loans held for investment include all loans which are 90 or more days contractually delinquent as well as loans discharged under Chapter 7 bankruptcy and not re-affirmed and second lien loans where the first lien loan that we own or service is 90 or more days contractually delinquent.

⁽³⁾ Nonaccrual consumer mortgage loans for all periods does not include guaranteed loans purchased from the Government National Mortgage Association. Repayment of these loans is predominantly insured by the Federal Housing Administration and as such, these loans have different risk characteristics from the rest of our customer loan portfolio.

⁽⁴⁾ Includes \$1 million or less of commercial other real estate owned at December 31, 2018, 2017 and 2016, respectively.

Nonaccrual loans at December 31, 2018 decreased as compared with December 31, 2017 due primarily to lower levels of nonaccrual loans in our commercial loan portfolio driven by managed reductions in certain exposures, including the sale of a single mining client relationship. Nonaccrual loans in our consumer loan portfolio were also lower primarily reflecting continued improvements in economic and credit conditions. Accruing loans past due 90 days or more increased as compared with December 31, 2017 driven by higher accruing loans past due 90 days or more in credit cards reflecting growth in customer activity driven by new product promotions.

Nonaccrual loans at December 31, 2017 decreased as compared with December 31, 2016 due to lower levels of nonaccrual loans in both our commercial and consumer loan portfolios. The decrease in commercial nonaccrual loans was driven primarily by managed reductions in certain exposures and the partial charge-off of a single mining client relationship. The decrease in consumer nonaccrual loans was primarily due to the sales of certain residential mortgages and, to a lesser extent, improvements in economic and credit conditions and the origination of higher quality Premier mortgages. Accruing loans past due 90 days or more remained flat compared with December 31, 2016.

Accrued but unpaid interest on loans placed on nonaccrual status generally is reversed and reduces current income at the time loans are so categorized. Interest income on these loans may be recognized to the extent of cash payments received. Our policies

and practices for problem loan management and placing loans on nonaccrual status are summarized in Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," in the accompanying consolidated financial statements.

Impaired Commercial Loans A commercial loan is considered to be impaired when it is deemed probable that not all principal and interest amounts due according to the contractual terms of the loan agreement will be collected. Probable losses from impaired loans are quantified and recorded as a component of the overall allowance for credit losses. Generally, impaired commercial loans include loans in nonaccrual status, loans that have been assigned a specific allowance for credit losses, loans that have been partially charged off and TDR Loans. The following table summarizes impaired commercial loan statistics:

At December 31,	2018	2017	2016
	(in millions)		
Impaired commercial loans:			
Balance at end of period.....	\$ 235	\$ 698	\$ 1,053
Amount with impairment reserve	61	383	596
Impairment reserve	19	127	308

Commercial impaired loans decreased in 2018 largely due to lower nonaccrual loans, including TDR Loans, for the reasons discussed above. In 2017, commercial impaired loans decreased due to lower nonaccrual loans for the reasons discussed above as well as lower TDR Loans driven by managed reductions in certain exposures and paydowns.

Criticized Loans Criticized loan classifications presented in the table below are determined by the assignment of various criticized facility grades based on the risk rating standards of our regulator. The following facility grades are deemed to be criticized:

- *Special Mention* – generally includes loans that are protected by collateral and/or the credit worthiness of the customer, but are potentially weak based upon economic or market circumstances which, if not checked or corrected, could weaken our credit position at some future date.
- *Substandard* – includes loans that are inadequately protected by the underlying collateral and/or general credit worthiness of the customer. These loans present a distinct possibility that we will sustain some loss if the deficiencies are not corrected.
- *Doubtful* – includes loans that have all the weaknesses exhibited by substandard loans, with the added characteristic that the weaknesses make collection or liquidation in full of the recorded loan highly improbable. However, although the possibility of loss is extremely high, certain factors exist which may strengthen the credit at some future date, and therefore the decision to charge-off the loan is deferred. Loans graded as doubtful are required to be placed in nonaccruing status.

The following table summarizes criticized commercial loans:

At December 31,	2018	2017	2016
	(in millions)		
Special mention.....	\$ 907	\$ 1,407	\$ 1,941
Substandard	685	2,248	3,439
Doubtful	19	127	358
Total.....	<u>\$ 1,611</u>	<u>\$ 3,782</u>	<u>\$ 5,738</u>

Criticized loans decreased in 2018 due to the upgrade of a large oil and gas client relationship as well as managed reductions in certain exposures, paydowns and improvements in credit conditions associated with certain client relationships. In 2017, criticized loans decreased due to managed reductions in certain exposures, paydowns and improvements in credit conditions associated with certain client relationships.

Concentration of Credit Risk A concentration of credit risk is defined as a significant credit exposure with an individual or group engaged in similar activities or affected similarly by economic conditions. We enter into a variety of transactions in the normal course of business that involve both on and off-balance sheet credit risk. Principal among these activities is lending to various commercial, institutional, governmental and individual customers throughout the United States and internationally. We manage the varying degrees of credit risk associated with on and off-balance sheet transactions through specific credit policies and procedures which provide for a strict approval, monitoring and reporting process. It is our policy to require collateral when it is deemed appropriate. Varying degrees and types of collateral are secured depending upon management's credit evaluation.

Our consumer loan portfolio includes the following types of loans:

- Interest-only loans – A loan which allows a customer to pay the interest-only portion of the monthly payment for a period of time which results in lower payments during the initial loan period.
- Adjustable rate mortgage ("ARM") loans – A loan which allows us to adjust pricing on the loan in line with market movements.

The following table summarizes the balances of interest-only and ARM loans in our loan portfolios, including certain loans held for sale, at December 31, 2018 and 2017. Each category is not mutually exclusive and loans may appear in more than one category below.

At December 31,	2018	2017
	(in millions)	
Interest-only residential mortgage and home equity mortgage loans	\$ 3,208	\$ 3,424
ARM loans ⁽¹⁾	12,096	11,976

⁽¹⁾ During 2019 and 2020, approximately \$497 million and \$777 million, respectively, of the ARM loans will experience their first interest rate reset.

The following table summarizes the concentrations of first and second liens within the outstanding residential mortgage and home equity mortgage portfolios. Amounts in the table exclude residential mortgage loans held for sale of \$65 million and \$6 million at December 31, 2018 and 2017, respectively.

At December 31,	2018	2017
	(in millions)	
Closed end:		
First lien.....	\$ 17,383	\$ 17,273
Second lien	40	49
Revolving ⁽¹⁾	942	1,142
Total.....	<u>\$ 18,365</u>	<u>\$ 18,464</u>

⁽¹⁾ A majority of revolving are second lien mortgages.

Geographic Concentrations The following table reflects regional exposure at December 31, 2018 and 2017 for our real estate secured loan portfolios:

	Commercial Real Estate, including Construction Loans	Residential Mortgages and Home Equity Mortgages
December 31, 2018		
New York State	32.1%	31.8%
California	21.5	43.5
North Central United States	3.0	2.0
North Eastern United States, excluding New York State.....	6.4	7.8
Southern United States	28.9	10.4
Western United States, excluding California.....	8.1	4.5
Total.....	<u>100.0%</u>	<u>100.0%</u>
December 31, 2017		
New York State	34.0 %	31.9 %
California	22.0	42.6
North Central United States	3.2	2.3
North Eastern United States, excluding New York State.....	6.8	8.1
Southern United States	26.2	10.6
Western United States, excluding California.....	6.7	4.5
Mexico	1.1	—
Total.....	<u>100.0 %</u>	<u>100.0 %</u>

Commercial Credit Exposure Our commercial credit exposure is diversified across a broad range of industries. Commercial loans outstanding and unused commercial commitments by industry are presented in the table below:

At December 31,	2018		2017	
	Commercial Utilized	Unused Commercial Commitments	Commercial Utilized	Unused Commercial Commitments
	(in millions)			
Diversified financials	\$ 9,110	\$ 13,260	\$ 8,885	\$ 10,652
Real estate	9,084	3,523	8,532	3,048
Consumer services	4,283	3,433	3,884	2,792
Materials	3,494	7,517	3,884	6,379
Retailing	2,880	5,507	2,139	4,659
Energy	2,319	7,384	3,182	7,950
Capital goods	2,170	6,002	2,419	7,120
Commercial and professional services	1,991	4,046	1,981	3,576
Consumer durables and apparel	1,916	3,816	1,921	3,693
Technology hardware and equipment	1,618	6,824	1,921	5,597
Semiconductors and semiconductor equipment	1,407	1,518	198	1,252
Health care equipment and services	954	1,669	1,084	1,183
Banks	880	182	790	524
Software and services	832	1,499	734	2,331
Telecommunication services	796	590	255	400
Food, beverage and tobacco	732	2,985	818	3,242
Transportation	524	1,057	592	692
Food and staples retailing	501	1,857	517	1,481
Automobiles and components	458	1,126	580	1,276
Utilities	396	1,267	627	724
Total commercial credit exposure in top 20 industries ⁽¹⁾	46,345	75,062	44,943	68,571
All other industries	723	12,195	1,342	9,816
Total commercial credit exposure ⁽²⁾	\$ 47,068	\$ 87,257	\$ 46,285	\$ 78,387

⁽¹⁾ Based in utilization at December 31, 2018.

⁽²⁾ Excludes commercial credit exposures with affiliates.

Cross-Border Net Outstandings Cross-border net outstandings are amounts payable by residents of foreign countries regardless of the currency of claim and local country claims in excess of local country obligations. Cross-border net outstandings, as calculated in accordance with FFIEC guidelines, include deposits placed with other banks, loans, acceptances, securities available-for-sale, trading securities, revaluation gains on foreign exchange and derivative contracts and accrued interest receivable. Excluded from cross-border net outstandings are, among other things, the following: local country claims funded by non-local country obligations (U.S. dollar or other non-local currencies), principally certificates of deposit issued by a foreign branch, where the providers of funds agree that, in the event of the occurrence of a sovereign default or the imposition of currency exchange restrictions in a given country, they will not be paid until such default is cured or currency restrictions lifted or, in certain circumstances, they may accept payment in local currency or assets denominated in local currency; and cross-border claims that are guaranteed by cash or other external liquid collateral. Cross-border net outstandings that exceed .75 percent of total assets at year-end are summarized in the following table:

	Banks and Other Financial Institutions	Public Sector, Commercial and Industrial	Total
	(in millions)		
December 31, 2018:			
Japan	\$ 32	\$ 6,986	\$ 7,018
Brazil.....	402	2,932	3,334
United Kingdom	1,696	1,594	3,290
Cayman Islands.....	2,268	183	2,451
Canada	841	1,146	1,987
Total	<u>\$ 5,239</u>	<u>\$ 12,841</u>	<u>\$ 18,080</u>
December 31, 2017:			
Brazil.....	\$ 788	\$ 3,035	\$ 3,823
Japan	12	3,697	3,709
United Kingdom	2,090	401	2,491
Canada	445	1,053	1,498
Total	<u>\$ 3,335</u>	<u>\$ 8,186</u>	<u>\$ 11,521</u>
December 31, 2016:			
Brazil.....	\$ 854	\$ 4,628	\$ 5,482
Mexico	853	2,081	2,934
United Kingdom	1,456	356	1,812
Total	<u>\$ 3,163</u>	<u>\$ 7,065</u>	<u>\$ 10,228</u>

The increase in reported cross border net outstandings as compared with December 31, 2017 is primarily due to increased investments in Japanese sovereign securities as well as loan growth, which resulted in cross border net outstandings with the Cayman Islands rising above the reporting threshold.

Credit Risks Associated with Derivative Contracts Credit risk associated with derivatives is measured as the net replacement cost of derivative contracts in a receivable position in the event the counterparties of such contracts fail to perform under the terms of those contracts. In managing derivative credit risk, both the current exposure, which is the replacement cost of contracts on the measurement date, as well as an estimate of the potential change in value of contracts over their remaining lives are considered. Counterparties to our derivative activities include financial institutions, central clearing parties, foreign and domestic government agencies, corporations, funds (mutual funds, hedge funds, etc.), insurance companies and private clients as well as other HSBC entities. These counterparties are subject to regular credit review by the credit risk management department. To minimize credit risk, we may enter into legally enforceable master netting agreements which reduce risk by permitting the closeout and netting of transactions with the same counterparty upon occurrence of certain events. In addition, we reduce credit risk by obtaining collateral from counterparties. The determination of the need for and the levels of collateral will differ based on an assessment of the credit risk of the counterparty and/or regulatory requirements.

The total risk in a derivative contract is a function of a number of variables, such as:

- volatility of interest rates, currencies, equity or corporate reference entity used as the basis for determining contract payments;
- current market events or trends;
- country risk;
- maturity and liquidity of contracts;
- creditworthiness of the counterparties in the transaction;
- the existence of a master netting agreement among the counterparties; and
- existence and value of collateral received from counterparties to secure exposures.

The table below presents total credit risk exposure calculated using the general risk-based capital rules of the Basel III Standardized Approach which includes the net positive mark-to-market of the derivative contracts plus any adjusted potential future exposure as measured in reference to the notional amount. The regulatory capital rules recognize that bilateral netting agreements reduce credit risk and, therefore, allow for reductions of risk-weighted assets when netting requirements have been met and collateral exists. As a result, risk-weighted amounts for regulatory capital purposes are a portion of the original gross exposures. Furthermore, many contracts contain provisions that allow us to close out the transaction if the counterparty fails to post required collateral. In addition, many contracts give us the right to break the transactions earlier than the final maturity date. As a result, these contracts have potential future exposures that are often much smaller than the future exposures derived from the regulatory capital rules.

At December 31,	2018	2017
	(in millions)	
Risk associated with derivative contracts:		
Total credit risk exposure.....	\$ 30,643	\$ 30,737
Less: collateral held against exposure.....	5,251	7,213
Net credit risk exposure	<u>\$ 25,392</u>	<u>\$ 23,524</u>

The table below summarizes the risk profile of the counterparties to derivative contracts with credit risk exposure, net of cash and other highly liquid collateral. The ratings presented in the table below are equivalent ratings based on our internal credit rating system.

Rating equivalent at December 31,	Percent of Current Credit Risk Exposure, Net of Collateral	
	2018	2017
AAA to AA-.....	46%	65%
A+ to A-.....	44	23
BBB+ to BBB-.....	8	10
BB+ to B-.....	2	2
CCC+ and below.....	—	—
Total.....	<u>100%</u>	<u>100%</u>

The decrease in the ratings as compared with December 31, 2017 is primarily due to the downgrade of a large clearinghouse counterparty.

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. We manage the market risk associated with derivative contracts by establishing and monitoring limits as to the types and degree of risk that may be undertaken as well as through a range of hedging and risk management strategies. Market risk is measured daily by using Value at Risk and other methodologies. See the caption "Risk Management" in this MD&A for additional information regarding the use of Value at Risk analysis to monitor and manage market risk.

Liquidity and Capital Resources

Effective liquidity management is defined as ensuring we can meet customer loan requests, customer deposit maturities/withdrawals and other cash commitments efficiently under both normal operating conditions and under unpredictable circumstances of industry or market stress. To achieve this objective, we have guidelines that require sufficient liquidity to cover potential funding requirements and to avoid over-dependence on volatile, less reliable funding markets. Guidelines are set for the consolidated balance sheet of HSBC USA to ensure that it is a source of strength for our regulated, deposit-taking banking subsidiary, as well as to address the more limited sources of liquidity available to it as a holding company. Similar guidelines are set for HSBC Bank USA to ensure that it can meet its liquidity needs in various stress scenarios. Cash flow analysis, including stress testing scenarios, forms the basis for liquidity management and contingency funding plans. See "Risk Management" in this MD&A for further discussion of our approach towards liquidity risk management, including information regarding the key measures employed to define, monitor and control our liquidity and funding risk.

Interest Bearing Deposits with Banks totaled \$15,700 million and \$11,157 million at December 31, 2018 and 2017, respectively, of which \$14,376 million and \$10,338 million, respectively, were held with the Federal Reserve Bank. Balances may fluctuate from period to period depending upon our liquidity position at the time and our strategy for deploying liquidity. Surplus interest bearing deposits with the Federal Reserve Bank may be deployed into securities purchased under agreements to resell or other investments depending on market conditions and the opportunity to maximize returns.

Federal Funds Sold and Securities Purchased under Agreements to Resell totaled \$10,168 million and \$32,618 million at December 31, 2018 and 2017, respectively. Balances may fluctuate from period to period depending upon our liquidity position at the time and our strategy for deploying liquidity.

Trading Assets includes securities totaling \$17,041 million and \$10,151 million at December 31, 2018 and 2017, respectively. See "Balance Sheet Review" in this MD&A for further analysis and discussion on trends.

Securities includes securities available-for-sale and securities held-to-maturity totaling \$46,049 million and \$44,677 million at December 31, 2018 and 2017, respectively. See "Balance Sheet Review" in this MD&A for further analysis and discussion on trends.

Short-Term Borrowings totaled \$4,180 million and \$4,650 million at December 31, 2018 and 2017, respectively. See "Balance Sheet Review" in this MD&A for further analysis and discussion on short-term borrowing trends.

Deposits totaled \$110,955 million and \$118,702 million at December 31, 2018 and 2017, respectively, which included \$91,909 million and \$98,500 million, respectively, of core deposits as calculated in accordance with FFIEC guidelines. See "Balance Sheet Review" in this MD&A for further analysis and discussion on deposit trends.

Long-Term Debt decreased to \$30,628 million at December 31, 2018 from \$34,966 million at December 31, 2017. The following table summarizes issuances and retirements of long-term debt during 2018 and 2017:

Year Ended December 31,	2018	2017
	(in millions)	
Long-term debt issued.....	\$ 11,923	\$ 5,158
Long-term debt repaid.....	(14,704)	(8,953)
Net long-term debt repaid	<u>\$ (2,781)</u>	<u>\$ (3,795)</u>

See "Balance Sheet Review" in this MD&A for further analysis and discussion on long-term debt trends, including additional information on debt issued and repaid during 2018.

Under our shelf registration statement on file with the SEC, we may issue certain securities including debt securities and preferred stock. We satisfy the eligibility requirements for designation as a "well-known seasoned issuer," which allows us to file a registration statement that does not have a limit on issuance capacity. The ability to issue under the registration statement is limited by the authority granted by the Board of Directors. At December 31, 2018, we were authorized to issue up to \$36,000 million, of which \$19,751 million was available. HSBC Bank USA has a \$40,000 million Global Bank Note Program that provides for the issuance of subordinated and senior notes, of which \$14,048 million was available at December 31, 2018. We anticipate using the Global

Bank Note Program more in the future as part of our efforts designed to minimize overall funding costs while accessing diverse funding channels.

As a member of the FHLB and the Federal Reserve Bank of New York, we have secured borrowing facilities which are collateralized by loans and investment securities. At December 31, 2018, long-term debt included \$2,100 million of borrowings from the FHLB facility. Based upon the amounts pledged as collateral under these facilities, we have additional borrowing capacity of up to \$15,721 million.

Preferred Equity See Note 17, "Preferred Stock," in the accompanying consolidated financial statements for information regarding all outstanding preferred share issues.

Common Equity During 2018 and 2017, HSBC USA did not receive any cash capital contributions from its parent, HSBC North America, and did not make any capital contributions to its subsidiary, HSBC Bank USA.

Capital Ratios In managing capital, we develop targets for common equity Tier 1 capital to risk-weighted assets, Tier 1 capital to risk-weighted assets, total capital to risk-weighted assets, Tier 1 capital to adjusted quarterly average assets (i.e., the "Tier 1 leverage ratio") and Tier 1 capital to total leverage exposure (i.e., the "supplementary leverage ratio" or "SLR"). Capital targets are reviewed at least semi-annually to ensure they reflect our business mix and risk profile, as well as real-time conditions and circumstances. The following table summarizes HSBC USA's Basel III fully phased-in capital ratios calculated as of December 31, 2018 and 2017:

	2018	2017
Common equity Tier 1 capital to risk-weighted assets	13.6%	14.1%
Tier 1 capital to risk-weighted assets	14.6	15.2
Total capital to risk-weighted assets	17.2	18.1
Tier 1 leverage ratio ⁽¹⁾	11.0	9.9
Supplementary leverage ratio ⁽²⁾	7.6	7.3

⁽¹⁾ Adjusted quarterly average assets, the Tier 1 leverage ratio denominator, reflects quarterly average assets adjusted for amounts permitted to be deducted from Tier 1 capital.

⁽²⁾ Beginning January 1, 2018, HSBC USA is required to maintain the regulatory minimum SLR of 3 percent. Total leverage exposure, the SLR denominator, includes adjusted quarterly average assets plus certain off-balance sheet exposures.

HSBC USA manages capital in accordance with HSBC Group policy. The HSBC North America Internal Capital Adequacy Assessment Process ("ICAAP") works in conjunction with the HSBC Group's ICAAP. The HSBC North America ICAAP applies to HSBC Bank USA and evaluates regulatory capital adequacy and capital adequacy under various stress scenarios. Our approach is to meet our capital needs for these stress scenarios locally through activities which reduce risk. To the extent that local alternatives are insufficient, as a wholly-owned subsidiary of HSBC, we would seek support from our ultimate parent. Regulatory capital requirements are based on the amount of capital required to be held, plus applicable capital buffers, as defined by regulations, and the amount of risk-weighted assets and leverage exposure, also calculated based on regulatory definitions.

We are subject to regulatory capital rules issued by U.S. banking regulators including Basel III (the "Basel III rule") which, for banking organizations such as HSBC North America and HSBC Bank USA, became effective in 2014 with certain provisions being phased in over time through the beginning of 2019. Under the Basel III rule, there are two methods available to calculate risk-weighted assets, the generally-applicable Standardized Approach and the Advanced Approaches, which are required in addition to the Standardized Approach for large banking organizations that meet certain thresholds. As previously disclosed, in accordance with FRB rules, HSBC North America and HSBC Bank USA received regulatory approval to opt out of the Advanced Approaches and are calculating their risk-based capital requirements solely under the Standardized Approach. HSBC Bank USA submits an annual statement to the OCC to maintain this opt out. For additional discussion of the Basel III final rule requirements, including fully phased-in required minimum capital ratios, as well as a discussion of recent regulatory developments and their expected impact see Part I, "Regulation and Competition - Regulatory Capital and Liquidity Requirements," in this Form 10-K. We continue to review the composition of our capital structure and capital buffers in light of these developments.

Capital Planning and Stress Testing The FRB requires IHCs and large bank holding companies ("BHCs"), including HSBC North America, to comply with the FRB's capital plan rule and CCAR program, as well as the annual supervisory stress tests conducted by the FRB, and periodic company-run stress tests as required under DFAST, as amended by the Economic Growth, Regulatory Relief and Consumer Protection Act ("Relief Act"). HSBC Bank USA is subject to the OCC's DFAST requirements, which require certain banks to conduct annual company-run stress tests. 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 and periodic company-run exercises, on the financial condition and capital adequacy of a bank-holding company or bank over a nine quarter planning horizon. See Part I, "Regulation

and Competition - Regulatory Capital and Liquidity Requirements," in this Form 10-K for further discussion on capital planning and stress testing, including detail regarding the FRB's supervisory assessment as part of the CCAR process, as well as a discussion of recent regulatory developments and their expected impact.

HSBC North America submitted its latest CCAR capital plan and annual company-run DFAST results in April 2018 and its latest mid-cycle DFAST results in October 2018. HSBC Bank USA submitted its latest annual DFAST results in April 2018. In July 2018, HSBC North America and HSBC Bank USA publicly disclosed their most recent annual DFAST results. In October 2018, HSBC North America publicly disclosed the results of its mid-cycle DFAST results.

In June 2018, the FRB publicly disclosed its own DFAST and CCAR results and informed HSBC North America that it did not object to HSBC North America's capital plan or the planned capital distributions included in its 2018 CCAR submission.

Stress testing results are based solely on hypothetical adverse stress scenarios and should not be viewed or interpreted as forecasts of expected outcomes or capital adequacy or of the actual financial condition of HSBC North America or HSBC Bank USA. Capital planning and stress testing for HSBC North America or HSBC Bank USA may impact our future capital and liquidity.

While bank holding company regulatory capital compliance is generally performed at the HSBC North America level, and also separately for HSBC Bank USA, as a bank holding company we are required to meet minimum capital requirements imposed by the FRB. We present our capital ratios, together with HSBC Bank USA's in Note 24, "Retained Earnings and Regulatory Capital Requirements," in the accompanying consolidated financial statements.

HSBC USA Inc. HSBC USA is a wholly-owned subsidiary of HSBC North America, which is an indirect wholly-owned subsidiary of HSBC, and the parent company of HSBC Bank USA and other subsidiaries through which we offer consumer and commercial banking products and related financial services including derivatives, liquidity and cash management, trade finance and investment solutions. Our main source of funds is cash received from financing activities, primarily through debt issuance to third parties and affiliates. In addition, we receive cash from affiliates by issuing preferred stock, from subsidiaries in the form of dividends and from our parent by receiving capital contributions when necessary.

HSBC USA received cash dividends from its subsidiaries of \$137 million and \$136 million in 2018 and 2017, respectively. During 2018 and 2017, HSBC USA did not receive any cash capital contributions from its parent, HSBC North America.

HSBC USA has a number of obligations to meet with its available cash. It must be able to service its debt and meet the capital needs of its subsidiaries. It also must pay dividends on its preferred stock and may pay dividends on its common stock. HSBC USA paid dividends on its preferred stock totaling \$76 million and \$77 million in 2018 and 2017, respectively. HSBC USA did not pay any dividends on its common stock during either 2018 or 2017. We may pay dividends in the future, but will maintain our capital at levels consistent with our regulatory requirements, risk appetite and internal capital adequacy process.

At various times, we will make capital contributions to our subsidiaries to comply with regulatory guidance, support receivable growth, maintain acceptable investment grade ratings at the subsidiary level, or provide funding for long-term facilities and technology improvements. During 2018 and 2017, HSBC USA did not make any capital contributions its subsidiary, HSBC Bank USA.

As of December 31, 2018, HSBC Bank USA has the ability to pay dividends under bank regulatory guidelines, as cumulative net income for 2016 through 2018 exceeded dividends attributable to this period. Any reduction of permanent capital of HSBC Bank USA would require OCC approval. See Note 24, "Retained Earnings and Regulatory Capital Requirements," in the accompanying consolidated financial statements for further details. In determining the extent of dividends to pay, HSBC Bank USA must also consider the effect of dividend payments on applicable risk-based capital and leverage ratio requirements, as well as policy statements of federal regulatory agencies that indicate banking organizations should generally pay dividends out of current operating earnings.

Subsidiaries At December 31, 2018, we had one major subsidiary, HSBC Bank USA. We manage substantially all of our operations through HSBC Bank USA, which contributes to the funding of our businesses primarily through receiving deposits from customers; the collection of receivable balances; issuing short-term, medium-term and long-term debt and selling residential mortgage loans. The vast majority of our domestic medium-term notes and long-term debt is marketed through subsidiaries of HSBC. Intermediate and long-term debt may also be marketed through unaffiliated investment banks.

2019 Funding Strategy Our current estimate for funding needs and sources for 2019 are summarized in the following table:

	(in billions)
Increase (decrease) in funding needs:	
Net change in loans	\$ 8
Net change in short-term investments and securities	(3)
Net change in trading and other assets	6
Total funding needs	<u>\$ 11</u>
Increase (decrease) in funding sources:	
Net change in deposits	\$ 11
Net change in trading and other short-term liabilities	1
Net change in long-term debt	(1)
Total funding sources	<u>\$ 11</u>

The above table reflects a long-term funding strategy. Daily balances fluctuate as we accommodate customer needs, while ensuring that we have liquidity in place to support the balance sheet maturity funding profile. Should market conditions deteriorate, we have contingency plans to generate additional liquidity through the sales of assets or financing transactions. We remain confident in our ability to access the market for long-term debt funding needs in the current market environment. We continue to seek well-priced and stable customer deposits. We also continue to sell new agency-eligible mortgage loan originations to third parties.

HSBC Bank USA is subject to significant restrictions imposed by federal law on extensions of credit to, and certain other 'covered transactions' with HSBC USA and other affiliates. For further discussion, see Part I, "Regulation and Competition - Affiliate Transaction Restrictions," in this Form 10-K.

For further discussion relating to our sources of liquidity and contingency funding plan, see the caption "Risk Management" in this MD&A.

Capital Expenditures We made capital expenditures of \$20 million and \$37 million during 2018 and 2017, respectively. In addition to these amounts, during 2018 and 2017, we capitalized \$121 million and \$97 million, respectively, relating to the building of several new banking platforms as part of an initiative to improve and modernize our legacy business systems and build common platforms across HSBC.

Commitments See "Off-Balance Sheet Arrangements, Credit Derivatives and Other Contractual Obligations" in this MD&A for further information on our various commitments.

Contractual Cash Obligations The following table summarizes our long-term contractual cash obligations at December 31, 2018 by period due:

	2019	2020	2021	2022	2023	Thereafter	Total
	(in millions)						
Subordinated long-term debt ⁽¹⁾	\$ 66	\$ 1,974	\$ 203	\$ —	\$ —	\$ 3,706	\$ 5,949
Other long-term debt ⁽¹⁾	5,733	4,960	5,292	1,342	981	6,371	24,679
Other postretirement benefit obligations ⁽²⁾	4	4	4	3	3	15	33
Operating lease obligations ⁽³⁾	78	123	114	103	91	181	690
Purchase obligations ⁽⁴⁾	46	39	38	36	21	—	180
Total	<u>\$ 5,927</u>	<u>\$ 7,100</u>	<u>\$ 5,651</u>	<u>\$ 1,484</u>	<u>\$ 1,096</u>	<u>\$ 10,273</u>	<u>\$ 31,531</u>

⁽¹⁾ Represents future principal payments related to debt instruments included in Note 13, "Long-Term Debt," in the accompanying consolidated financial statements.

⁽²⁾ Represents estimated future employee benefits expected to be paid over the next ten years based on assumptions used to measure our benefit obligation at December 31, 2018. See Note 20, "Pension and Other Postretirement Benefits," in the accompanying consolidated financial statements.

⁽³⁾ Represents expected minimum lease payments, net of minimum sublease income, under noncancellable operating leases for premises and equipment included in Note 26, "Guarantees Arrangements, Pledged Assets and Repurchase Agreements" in the accompanying consolidated financial statements.

⁽⁴⁾ Represents binding agreements for mortgage servicing, credit card servicing, lockbox services, advertising and other services.

These cash obligations could be funded primarily through cash collections on loans and from the issuance of new unsecured debt or receipt of deposits.

The pension obligation for our employees are the contractual obligation of HSBC North America and, therefore, are excluded from the table above.

Off-Balance Sheet Arrangements, Credit Derivatives and Other Contractual Obligations

As part of our normal operations, we enter into credit derivatives and various off-balance sheet arrangements with affiliates and third parties. These arrangements arise principally in connection with our lending and client intermediation activities and involve primarily extensions of credit and, in certain cases, guarantees.

As a financial services provider, we routinely extend credit through loan commitments and lines and letters of credit and provide financial guarantees, including derivative transactions having characteristics of a guarantee. The contractual amounts of these financial instruments represent our maximum possible credit exposure in the event that a counterparty draws down the full commitment amount or we are required to fulfill our maximum obligation under a guarantee.

The following table provides maturity information related to our credit derivatives and off-balance sheet arrangements. Many of these commitments and guarantees expire unused or without default. As a result, we believe that the contractual amount is not representative of the actual future credit exposure or funding requirements.

	2019	2020	2021	2022	2023	Thereafter	Balance at December 31,	
							2018	2017
	(in millions)							
Standby letters of credit, net of participations ⁽¹⁾	\$ 6,688	\$ 1,116	\$ 569	\$ 218	\$ 267	\$ 114	\$ 8,972	\$ 8,708
Commercial letters of credit	216	—	—	—	2	—	218	234
Credit derivatives ⁽²⁾	7,999	4,930	5,472	7,362	18,155	1,466	45,384	42,328
Other commitments to extend credit:								
Commercial ⁽³⁾	23,097	8,733	13,883	13,888	26,301	3,400	89,302	78,787
Consumer	7,927	—	—	—	—	—	7,927	7,443
Total	<u>\$ 45,927</u>	<u>\$ 14,779</u>	<u>\$ 19,924</u>	<u>\$ 21,468</u>	<u>\$ 44,725</u>	<u>\$ 4,980</u>	<u>\$151,803</u>	<u>\$137,500</u>

⁽¹⁾ Includes \$1,321 million and \$1,264 million issued for the benefit of HSBC affiliates at December 31, 2018 and 2017, respectively.

⁽²⁾ Includes \$25,734 million and \$25,639 million issued for the benefit of HSBC affiliates at December 31, 2018 and 2017, respectively.

⁽³⁾ Includes \$2,045 million and \$400 million issued for the benefit of HSBC affiliates at December 31, 2018 and 2017, respectively.

Letters of Credit A letter of credit may be issued for the benefit of a customer, authorizing a third party to draw on the letter for specified amounts under certain terms and conditions. We issue commercial and standby letters of credit.

- A commercial letter of credit is drawn down on the occurrence of an expected underlying transaction, such as the delivery of goods. Upon the occurrence of the transaction, the amount drawn under the commercial letter of credit is recorded as a receivable from the customer in other assets and as a liability to the vendor in other liabilities until settled.
- A standby letter of credit is issued to third parties for the benefit of a customer and is essentially a guarantee that the customer will perform, or satisfy some obligation, under a contract. It irrevocably obligates us to pay a third party beneficiary when a customer either: (1) in the case of a performance standby letter of credit, fails to perform some contractual non-financial obligation, or (2) in the case of a financial standby letter of credit, fails to repay an outstanding loan or debt instrument. See Note 26, "Guarantee Arrangements, Pledged Assets and Repurchase Agreements," in the accompanying consolidated financial statements for additional information related to standby letter of credit off-balance sheet guarantee arrangements.

Credit Derivatives Credit derivative contracts are entered into both for our own benefit and to satisfy the needs of our customers. Credit derivatives are arrangements where one party (the "beneficiary") transfers the credit risk of a reference asset to another party (the "guarantor"). Under this arrangement the guarantor assumes the credit risk associated with the reference asset without directly owning it. The beneficiary agrees to pay to the guarantor a specified fee. In return, the guarantor agrees to reimburse the beneficiary an agreed amount if there is a default to the reference asset during the term of the contract.

We offset most of the market risk by entering into a buy protection credit derivative contract with another counterparty. Credit derivatives, although having characteristics of a guarantee, are accounted for as derivative instruments and are carried at fair value. The commitment amount included in the table above is the maximum amount that we could be required to pay, without consideration

of the approximately equal amount receivable from third parties and any associated collateral. See Note 26, "Guarantee Arrangements, Pledged Assets and Repurchase Agreements," in the accompanying consolidated financial statements for further discussion of credit derivative off-balance sheet guarantee arrangements.

Other Commitments to Extend Credit Other commitments to extend credit include arrangements whereby we are contractually obligated to extend credit in the form of loans, participations in loans, lease financing receivables, or similar transactions. Consumer commitments are comprised of certain unused MasterCard/Visa credit card lines, where we have the right to change terms or conditions upon notification to the customer, and commitments to extend credit secured by residential properties, where we have the right to change terms or conditions, for cause, upon notification to the customer. Commercial commitments comprise primarily those related to secured and unsecured loans and lines of credit.

In addition to the above, we have established and manage a number of constant net asset value ("CNAV") money market funds that invest in shorter-dated highly-rated money market securities to provide investors with a highly liquid and secure investment. These funds price the assets in their portfolio on an amortized cost basis, which enables them to create and liquidate shares at a constant price. The funds, however, are not permitted to price their portfolios at amortized cost if that amount varies by more than 50 basis points from the portfolio's market value. In that case, the fund would be required to price its portfolio at market value and consequently would no longer be able to create or liquidate shares at a constant price. We do not consolidate the CNAV funds because we do not absorb the majority of the expected future risk associated with the fund's assets, including interest rate, liquidity, credit and other relevant risks that are expected to affect the value of the assets.

Fair Value

Fair Value Hierarchy Fair value measurement accounting principles establish a fair value hierarchy structure that prioritizes the inputs to determine the fair value of an asset or liability (the "Fair Value Framework"). The Fair Value Framework distinguishes between inputs that are based on observed market data and unobservable inputs that reflect market participants' assumptions. It emphasizes the use of valuation methodologies that maximize observable market inputs. For financial instruments carried at fair value, the best evidence of fair value is a quoted price in an actively traded market (Level 1). Where the market for a financial instrument is not active, valuation techniques are used. The majority of our valuation techniques use market inputs that are either observable or indirectly derived from and corroborated by observable market data for substantially the full term of the financial instrument (Level 2). Because Level 1 and Level 2 instruments are determined by observable inputs, less judgment is applied in determining their fair values. In the absence of observable market inputs, the financial instrument is valued based on valuation techniques that feature one or more significant unobservable inputs (Level 3). The determination of the level of fair value hierarchy within which the fair value measurement of an asset or a liability is classified often requires judgment and may change over time as market conditions evolve. We consider the following factors in developing the fair value hierarchy:

- whether the asset or liability is transacted in an active market with a quoted market price;
- the level of bid-ask spreads;
- a lack of pricing transparency due to, among other things, complexity of the product and market liquidity;
- whether only a few transactions are observed over a significant period of time;
- whether the pricing quotations differ substantially among independent pricing services;
- whether inputs to the valuation techniques can be derived from or corroborated with market data; and
- whether significant adjustments are made to the observed pricing information or model output to determine the fair value.

Level 1 inputs are unadjusted quoted prices in active markets that the reporting entity has the ability to access for identical assets or liabilities. A financial instrument is classified as a Level 1 measurement if it is listed on an exchange or is an instrument actively traded in the over-the-counter ("OTC") market where transactions occur with sufficient frequency and volume. We regard financial instruments such as debt securities, equity securities and derivative contracts listed on the primary exchanges of a country to be actively traded. Non-exchange-traded instruments classified as Level 1 assets include securities issued by the U.S. Treasury, to-be-announced securities, non-callable securities issued by U.S. Government sponsored enterprises and certain foreign government-backed debt.

Level 2 inputs are those that are observable either directly or indirectly but do not qualify as Level 1 inputs. We classify mortgage pass-through securities, agency and certain non-agency mortgage collateralized obligations, certain derivative contracts, asset-backed securities, obligations of U.S. states and political subdivisions, corporate debt, certain foreign government-backed debt, preferred securities, securities purchased and sold under resale and repurchase agreements, precious metals, certain commercial loans held for sale, residential mortgage loans whose carrying amount was reduced based on the fair value of the underlying collateral and real estate owned as Level 2 measurements. Where possible, at least two quotations from independent sources are obtained based on transactions involving comparable assets and liabilities to validate the fair value of these instruments. We have

established a process to understand the methodologies and inputs used by the third party pricing services to ensure that pricing information meets the fair value objective and, where appropriate, this pricing data is back-tested to market trade executions. Where significant differences arise among the independent pricing quotes and the internally determined fair value, we investigate and reconcile the differences. If the investigation results in a significant adjustment to the fair value, the instrument will be classified as Level 3 within the fair value hierarchy. In general, we have observed that there is a correlation between the credit standing and the market liquidity of a non-derivative instrument.

Level 2 derivative instruments are generally valued based on discounted future cash flows or an option pricing model adjusted for counterparty credit risk and market liquidity. The fair value of certain derivative products is determined using valuation techniques based on inputs derived from observable indices traded in the OTC market. Appropriate control processes and procedures have been applied to ensure that the derived inputs are applied to value only those instruments that share similar risks to the relevant benchmark indices and therefore demonstrate a similar response to market factors.

Level 3 inputs are unobservable estimates that management expects market participants would use to determine the fair value of the asset or liability. That is, Level 3 inputs incorporate market participants' assumptions about risk and the risk premium required by market participants in order to bear that risk. We develop Level 3 inputs based on the best information available in the circumstances. At December 31, 2018 and 2017, our Level 3 measurements included the following: collateralized debt obligations ("CDOs") for which there is a lack of pricing transparency due to market illiquidity, certain structured deposits and structured notes for which the embedded credit, foreign exchange or equity derivatives have significant unobservable inputs (e.g., volatility or default correlations), asset-backed credit default swaps with certain inputs which are unobservable, certain subprime residential mortgage loans held for sale, certain corporate debt securities, certain asset-backed securities, impaired commercial loans, derivatives referenced to illiquid assets of less desirable credit quality, swap agreements entered into in conjunction with the sales of Visa Class B Shares for which the fair value is dependent upon the final resolution of the related litigation and a contingent consideration receivable associated with the sale of a portion of our Private Banking business. See Note 27, "Fair Value Measurements," in the accompanying consolidated financial statements for additional information on Level 3 inputs.

Level 3 Measurements The following table provides information about Level 3 assets/liabilities in relation to total assets/liabilities measured at fair value at December 31, 2018 and 2017:

	December 31, 2018	December 31, 2017
	(dollars are in millions)	
Level 3 assets ⁽¹⁾⁽²⁾	\$ 2,339	\$ 2,650
Total assets measured at fair value ⁽¹⁾⁽³⁾	81,126	89,368
Level 3 liabilities ⁽¹⁾	1,550	1,690
Total liabilities measured at fair value ⁽¹⁾	52,587	68,270
Level 3 assets as a percent of total assets measured at fair value	2.9%	3.0%
Level 3 liabilities as a percent of total liabilities measured at fair value	2.9%	2.5%

⁽¹⁾ Presented without netting which allows the offsetting of amounts relating to certain contracts if certain conditions are met.

⁽²⁾ Includes \$2,301 million of recurring Level 3 assets and \$38 million of non-recurring Level 3 assets at December 31, 2018. Includes \$2,359 million of recurring Level 3 assets and \$291 million of non-recurring Level 3 assets at December 31, 2017.

⁽³⁾ Includes \$81,030 million of assets measured on a recurring basis and \$96 million of assets measured on a non-recurring basis at December 31, 2018. Includes \$88,988 million of assets measured on a recurring basis and \$380 million of assets measured on a non-recurring basis at December 31, 2017.

See Note 27, "Fair Value Measurements," in the accompanying consolidated financial statements for information on additions to and transfers into (out of) Level 3 measurements during 2018 and 2017 as well as for further details including the classification hierarchy associated with assets and liabilities measured at fair value.

Effect of Changes in Significant Unobservable Inputs The fair value of certain financial instruments is measured using valuation techniques that incorporate pricing assumptions not supported by, derived from or corroborated by observable market data. The resultant fair value measurements are dependent on unobservable input parameters which can be selected from a range of estimates and may be interdependent. Changes in one or more of the significant unobservable input parameters may change the fair value measurements of these financial instruments. For the purpose of preparing the financial statements, the final valuation inputs selected are based on management's best judgment that reflect the assumptions market participants would use in pricing similar assets or liabilities.

The unobservable input parameters selected are subject to the internal valuation control processes and procedures. When we perform a test of all the significant input parameters to the extreme values within the range at the same time, it could result in an increase of the overall fair value measurement of approximately \$37 million or a decrease of the overall fair value measurement of approximately \$13 million at December 31, 2018. The effect of changes in significant unobservable input parameters are

primarily driven by the uncertainty in determining the fair value of credit derivatives executed against certain insurers and certain asset-backed securities including CDOs.

Risk Management

Overview Managing risk effectively is fundamental to the delivery of our strategic priorities.

Our risk management framework We use a comprehensive risk management framework across the organization and across all risk types underpinned by our risk culture. This 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.

Our risk culture refers to norms, attitudes and behaviors related to risk awareness, risk taking and risk management. We have long recognized the importance of a strong risk management culture, the fostering of which is a key responsibility of senior executives. Our risk culture is reinforced by our values and principles. It is instrumental in aligning the behaviors 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 set the tone from senior management and the Board of Directors. 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 behavior 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. Our risk culture is also reinforced by our approach to remuneration. Individual awards, including those for senior executives, are based on compliance with our values and the achievement of financial and non-financial objectives, which are aligned to our risk appetite and strategy.

Maintaining a conservative risk profile is a core part of our philosophy. This philosophy encompasses: maintaining a strong capital position defined by regulatory and internal capital ratios; having effective liquidity and funding management; generating returns that are in line with risk taken; and maintaining a sustainable and diversified earnings mix, delivering consistent returns. Additionally, we have zero tolerance for the following:

- knowingly engaging in any business, activity or association where foreseeable reputational risk or damage has not been considered and/or mitigated;
- operating without the appropriate systems and controls in place to prevent and detect financial crime and no appetite to conduct business with individuals or entities we believe are engaged in illicit behavior;
- deliberately or knowingly causing detriment to consumers arising from our products, services or operations or incurring a breach of the letter or spirit of regulatory requirements; and
- inappropriate market conduct by a member of our staff or by any of our lines of business.

Risk governance Our Board of Directors has the ultimate responsibility for effective management of risk and approves HUSI's risk appetite. It is advised on risk matters by the Risk Committee of the Board of Directors and the Compliance and Conduct Committee ("CCC"). In particular, the Risk Committee of the Board of Directors advises the Board of Directors on risk appetite and its alignment with our strategy, risk governance and internal controls as well as high-level risk related matters. Robust risk governance and accountability are embedded throughout our business through an established framework that helps to ensure appropriate oversight of and accountability for the effective management of risk.

Executive accountability for the ongoing monitoring, assessment and management of the risk environment and the effectiveness of the risk management framework resides with the HSBC North America Chief Risk Officer ("CRO") who is supported by the Risk Management Meeting of the HSBC USA Executive Committee ("RMM"). The management of financial crime risk resides with the Head of Financial Crime Compliance who is supported by the Financial Crime Risk Management Committee. Day-to-day responsibility for risk management is delegated to senior managers with individual accountability for decision making.

Our responsibilities All employees are responsible for identifying and managing risk within the scope of their role as part of the Three Lines of Defense ("LoD") model. This model delineates management accountabilities and responsibilities for risk management and the control environment, and underpins our approach to risk management by clarifying responsibilities, encouraging collaboration and enabling efficient coordination of risk and control activities. Under the Three LoD model, the First LoD owns the risks and is responsible for identifying, recording, reporting and managing risks, and ensuring that the right controls and assessments are in place to mitigate them. The Second LoD risk stewards set the policy and guidelines for managing specific risk areas, provide advice and guidance in relation to the risk, and challenge the First LoD on effective risk management. The Third LoD is our Internal Audit function, which provides independent and objective assurance of the adequacy of the design and operational effectiveness of our risk management framework and control governance process.

The principle of individual accountability is exercised across the organization and is fundamental to risk ownership and risk management. Decisions are not taken by committees, but by specific individuals, in accordance with the Three LoD model, to promote clear ownership of decisions. The Board of Directors and its sub-committees remain collective decision-making bodies. All employees are required to identify, assess and manage risk within the scope of their assigned responsibilities and, as such, they are critical to the effectiveness of the Three LoD model.

Risk function Our Risk function, headed by the CRO, is responsible for our risk management framework. This responsibility includes establishing policies, monitoring risk profiles and forward-looking risk identification and management. Our Risk function is made up of sub-functions covering all risks to our operations. The Risk function forms part of the Second LoD. It is independent from our lines of business, including sales and trading functions, to provide challenge, appropriate oversight and balance in risk/reward decisions. The CRO reports to the HSBC North America Chief Executive Officer ("CEO"), to the Risk Committee of the Board of Directors and to the HSBC Group CRO. Executive accountability for the ongoing monitoring, assessment and management of the risk environment and the effectiveness of risk management policies resides with the CRO, supported by the RMM.

Specific oversight of various risk management processes occurs through the following HUSI, HSBC North America or Risk Committees:

- the Asset and Liability Management Committee ("ALCO");
- the Financial Crime Risk Management Committee ("FCRMC");
- the Reputational Risk and Client Selection Committees ("RRCSCs"); and
- Line of Business Risk Management Meetings ("LoB RMMs").

Each of these committees, as well as the RMM, have separate charters which detail their respective roles and responsibilities.

The ALCO provides oversight of all liquidity, interest rate and market risk and is chaired by the HUSI Chief Financial Officer. Subject to the approval of our Board of Directors and HSBC Group, ALCO sets the limits of acceptable risk, monitors the adequacy of the tools used to measure risk and assesses the adequacy of reporting. In managing these risks, we seek to protect both our income stream and the value of our assets. ALCO also conducts contingency planning with regard to liquidity.

The FCRMC is the formal governance committee set up to ensure effective management of financial crime risk and to support the CEO in carrying out his financial crime risk responsibilities. Additionally, the HSBC North America Head of Financial Crime Compliance, who serves as the designated Bank Secrecy Act Compliance Officer for HUSI, is the delegated chair of the FCRMC.

The RRCSC structure ensures appropriate consideration of customers and transactions that may adversely affect our public perception. RRCSCs exist in each Business and are comprised of senior members from the business, risk, legal, financial crime and compliance departments and other invited parties. The RRCSCs provide decision-making and guidance in respect of reputational risks and customer selection matters, and are responsible for ensuring that issues are appropriately tracked and resolved.

Each LoB RMM is chaired by the respective LoB CRO. LoB RMMs provide recommendations and advice, as requested, to their respective CROs in the exercise of their powers, authorities and discretions in relation to the enterprise-wide management of all risks within or impacting their respective businesses.

Enterprise-wide risk management tools We use a range of tools to identify, monitor and manage risk. The key enterprise-wide risk management tools are summarized below:

- Risk appetite - The CRO oversees the development of our risk appetite which defines, shapes and monitors our risk profile. The HSBC North America Risk Appetite Statement ("RAS") is a written articulation of the aggregate level and types of risk that we are willing to accept in order to achieve our strategic business objectives. HSBC North America's conservative risk profile is articulated in the qualitative section of the RAS, which serves as guidance to embed risk appetite and supports strategic and operational decision making at HUSI. The quantitative section of the RAS contains a set of key metrics covering income generating risks that we accept as part of doing business, such as credit risk, and non-income generating risks, those which arise by virtue of our operations, such as operational risk.

Performance against the RAS metrics is monitored by senior management and reported to the RMM on a monthly basis, enabling senior management to monitor the risk profile and guide business activity to balance risk and return. All breaches of risk appetite thresholds are escalated and actions to remediate the breaches are documented. This process helps to embed a strong risk culture across our businesses. The risk appetite profile is one of the key tools in the wider enterprise risk management framework, which drives the core of our active risk management. The risk appetite profile is aligned to strategic and financial planning and therefore provides a top down view of risk and return objectives. Performance that falls outside of risk appetite is highlighted and appropriate mitigation actions are determined.

- Risk map - We utilize a risk map to provide a point-in-time view of our risk profile across a range of risk categories, including our principal banking risks. It assesses the potential of these risks to have a material impact on our financial results, reputation or sustainability of our business. Risks that have an 'amber' or 'red' rating require monitoring and mitigating action plans to be either in place or initiated to manage the risk down to acceptable levels.

- **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. The top and emerging risks framework enables us to take action which either stop these risks from materializing or limit their impact. We proactively assess the internal and external risk environment as well as review the themes identified across our businesses and functions to update our top and emerging risks as necessary. We define a 'top risk' as a thematic issue that may form and crystallize between six months and one year and that has the potential to materially affect our financial results, reputation or business model. The impact of a 'top risk' may be well understood by senior management and some mitigating actions may already be in place. An 'emerging risk' is a thematic issue with large unknown components that may form and crystallize beyond a one-year time horizon. If it were to materialize, it could have a material effect on our long-term strategy, profitability and/or reputation. Existing mitigating plans for an 'emerging risk' are likely to be minimal, reflecting the uncertain nature of these risks at this stage.
- **Risk identification** - Risk identification is a tool that allows us to create a holistic view of risks facing the organization stemming from our unique business activities and associated exposures, including those that are difficult to quantify or only materialize under stressful conditions. The process is integrated with and built upon existing risk management tools such as top and emerging risk reporting as well as risk and control assessments. The risk identification process takes place every quarter and involves senior representatives from all lines of defense. Senior management governance is provided by the RMM with results presented to the Risk Committee of the Board of Directors every quarter. Material risks identified are actively monitored and used to inform key aspects of our capital planning and stress testing program.
- **Stress testing** - Stress testing is an important tool we use to assess potential vulnerabilities in our businesses, business model or portfolios. We operate a comprehensive stress testing program that supports our risk management and capital planning. It includes execution of stress tests mandated by our regulators, is supported by dedicated teams and infrastructure, and is overseen by senior management. It demonstrates our capital strength and enhances our resilience to external shocks. It allows us to understand the sensitivities of the core assumptions in our strategic and capital plans and improve decision making through balancing risk and return. In addition to taking part in regulators' stress tests, we conduct our own internal stress tests. Internal stress test scenarios are closely aligned to our assessment of top and emerging risks and help inform risk appetite thresholds. These may prompt management actions, including a reduction in limits or direct exposures, or closer monitoring of exposures sensitive to stress.
- **Simulation models** - In the course of our regular risk management activities, we use simulation models to help quantify the risk we are taking. The output from some of these models is included in this section of our filing. By their nature, models are based on various assumptions and relationships. We believe that the assumptions used in these models are reasonable, but events may unfold differently than what is assumed in the models. In actual stressed market conditions, these assumptions and relationships may no longer hold, causing actual experience to differ significantly from the results predicted in the model. Consequently, model results may be considered reasonable estimates, with the understanding that actual results may differ significantly from model projections.

Our material risks The principal risks associated with our operations include the following:

- *Credit risk* is the risk of financial loss if a customer or counterparty fails to meet an obligation under a contract;
- *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, or that funding considered to be sustainable, and therefore used to fund assets, is not sustainable over time;
- *Interest rate risk* is the potential reduction of net interest income due to mismatched pricing between assets and liabilities as well as losses in value due to interest rate movements;
- *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;
- *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;
- *Regulatory compliance risk* is the risk that we fail to observe the letter and spirit of relevant laws, codes, rules, regulations and standards of good market practice causing us to incur fines, penalties and damage to our business and reputation;
- *Financial crime risk* is the risk that we knowingly or unknowingly help parties to commit or to further potentially illegal activity through the HSBC Group. It arises from day to day banking operations;
- *Reputational risk* is the risk arising from failure to meet stakeholder expectations as a result of any event, behavior, action or inaction, either by us, our employees, the HSBC Group or those with whom it is associated, that may cause stakeholders to form a negative view of us. This might also result in financial or non-financial impacts, loss of confidence or other consequences;

- *Strategic risk* is the risk that the business will fail to identify, execute and react appropriately to opportunities and/or threats arising from changes in the market, some of which may emerge over a number of years such as changing economic and political circumstances, customer requirements, demographic trends, regulatory developments or competitor action;
- *Model risk* is the potential for adverse consequences from decisions based on incorrect or misused model outputs and reports. This occurs primarily for two reasons: 1) the model may produce inaccurate outputs when compared with the intended business use and design objective; and 2) the model could be used incorrectly;
- *Pension risk* is the risk of increased costs from the post-employment benefit plans that we have established for our employees;
- *Sustainability risk* is the risk that financial services provided to customers indirectly result in unacceptable impacts on people or on the environment.

Credit Risk Management Credit risk is managed through a robust risk control framework which outlines clear and consistent policies, principles and guidance for risk managers. Credit risk is monitored using various internal risk management measures and within limits approved by individuals within a framework of delegated authorities.

The principle objectives of credit risk management are to:

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

Credit risk arises from various on- and off-balance sheet instruments and arrangements, such as:

- loan portfolios;
- investment portfolios;
- unfunded commitments such as letters of credit, lines of credit and unutilized credit card lines that customers can draw upon; and
- derivative financial instruments, such as interest rate swaps which, if more valuable today than when originally contracted, may represent an exposure to the counterparty to the contract.

While credit risk exists widely in our operations, diversification among various commercial and consumer portfolios helps to lessen risk exposure. Day-to-day management of credit and market risk is performed by the Chief Credit Officer/Head of Wholesale Credit and Market Risk North America and the HSBC North America RBWM Chief Risk Officer, who report directly to the CRO and maintain independent risk functions. The credit risk associated with wholesale commercial portfolios is managed by the Chief Credit Officer, while credit risk associated with retail consumer loan portfolios, such as credit cards, installment loans and residential mortgages, is managed by the RBWM Chief Risk Officer. Further discussion of credit risk can be found under the "Credit Quality" caption in this MD&A. Credit risk includes risk associated with cross-border exposures.

Our credit risk management procedures are designed for all stages of economic and financial cycles, including challenging periods of market volatility and economic uncertainty. The Credit Risk function continues to refine "early warning" indicators and reporting, including stress testing scenarios on the basis of recent experience. These risk management tools are embedded within our business planning process. Action has been taken, where necessary, to improve our resilience to risks associated with the current market conditions by selectively discontinuing business lines or products, closely managing underwriting criteria and investing in improved fraud prevention technologies.

The responsibilities of the Credit Risk function include:

- *Formulating credit risk policies* – Our policies are designed to ensure that all of our various retail and wholesale business units operate within clear standards of acceptable credit risk. Our policies ensure that the HSBC standards are consistently implemented across all businesses and that all regulatory requirements are also considered. Credit policies are reviewed and approved annually at the RMM and the Risk Committee of the Board of Directors.
- *Approving new credit exposures and independently assessing large exposures annually* – Credit approval authorities are delegated by the Risk Committee of the Board of Directors to the CRO with the authority to sub-delegate to the Chief Credit Officer and RBWM Chief Risk Officer. The Chief Credit Officer and RBWM Chief Risk Officer in turn delegate limited credit authority to the various lending units. However, most wholesale credits are reviewed and approved centrally through a dedicated Credit Approval Unit that reports directly to the Chief Credit Officer. In addition, the Chief Credit Officer coordinates the review of material credits with the HSBC Group Credit Risk which, subject to certain agreed-upon limits, will concur on material new and renewal transactions. Large retail credits are escalated to the RBWM Chief Risk Officer for review and concurrence.
- *Overseeing retail credit and collateral risk* – The RBWM Chief Risk Officer manages the credit and collateral risk associated with retail portfolios and is supported by expertise from a dedicated advanced risk analytics unit. Collateral risk in retail is where the underlying value of the property securing a retail loan may lose value due to macroeconomic

or industry conditions. This risk is actively managed through on-going monitoring of HPIs. In areas where we have identified property values as declining, maximum loan to values will be adjusted downward to compensate for this risk.

- *Maintaining and developing the governance and operation of the wholesale risk rating system* – A two-dimensional credit risk rating system is utilized in order to categorize exposures meaningfully and enable focused management of the risks involved. This ratings system is comprised of a 23 category customer risk rating, which considers the probability of default of an obligor and a separate assessment of a transaction's potential loss given default. Each credit grade has a probability of default estimate. Rating methodologies are based upon a wide range of analytics and market data-based tools, which are core inputs to the assessment of counterparty risk. Although automated risk rating processes are increasingly used, for larger facilities the ultimate responsibility for setting risk grades rests in each case with the final approving executive. Risk grades are reviewed frequently and amendments, where necessary, are implemented promptly.
- *Measuring portfolio credit risk* – We continue to advance the measurement of the risk in our credit portfolios using techniques such as stress testing, economic capital and correlation analysis in certain internal and Board of Directors reporting. Efforts continue to refine both the inputs and assumptions used to increase the usefulness in the evaluation of large and small commercial and retail customer portfolio products and business unit return on risk.
- *Monitoring portfolio performance* – Credit data warehouses have been implemented to centralize the reporting of credit risk, support the analysis of risk using tools such as economic capital, and to calculate credit loss reserves. This data warehouse also supports HSBC's wider effort to meet the requirements of Basel III and to generate credit reports for management and the Board of Directors.
- *Establishing counterparty and portfolio limits* – We monitor and limit our exposure to individual counterparties and to the combined exposure of related counterparties. In addition, selected industry portfolios, such as real estate, are subject to caps that are recommended by the Chief Credit Officer and reviewed where appropriate by management committees and the Board of Directors. Counterparty credit exposure related to derivative activities is also managed under approved limits. Since the exposure related to derivatives is variable and uncertain, internal risk management methodologies are used to calculate the 95 percent worst-case potential future exposure for each customer. These methodologies take into consideration, among other factors, cross-product close-out netting, collateral received from customers under Collateral Support Annexes ("CSAs"), termination clauses, and off-setting positions within the portfolio.
- *Managing problem loans* – Special attention is paid to problem loans. When appropriate, our wholesale Loan Management Unit and retail Collection and Recovery teams provide customers with intensive management and control support in order to help them avoid default wherever possible and maximize recoveries.
- *Establishing allowances for credit losses* – The Chief Credit Officer and the RBWM Chief Risk Officer share responsibility with the Chief Financial Officer for establishing appropriate levels of allowances for credit losses inherent in various loan portfolios.

Credit Review is an independent and critical Second LoD function. Its mission is to identify and evaluate areas of credit risk within our business. Credit Review will focus on the review and evaluation of wholesale and retail lending activities and will identify risks and provide an ongoing assessment as to the effectiveness of the risk management framework and the related portfolios. Credit Review will independently assess the business units and risk management functions to ensure the portfolios are managed and operating in a manner that is consistent with HSBC Group strategy, risk appetite, appropriate local and HSBC Group credit policies and procedures and applicable regulatory requirements. For example, this includes the unilateral authority to independently assess and revise customer risk ratings, facility grades and loss given default estimates. To ensure its independent stature, the Credit Review Delegation of Authority is endorsed by the Risk Committee of our Board of Directors which grants the Head of Credit Review unhindered access to the Risk Committee and executive sessions at the discretion of the Head of Credit Review. Accordingly, our Board of Directors has oversight of the Credit Review annual and ongoing plan, quarterly plan updates and results of reviews.

Liquidity Risk Management We continuously monitor the impact of market events on our liquidity positions and will continue to adapt our liquidity framework to reflect market events and the evolving regulatory landscape and view as to best practices. Historically, we have seen the greatest strain in the wholesale market as opposed to the retail market (the latter being the market from which we source stable demand and time deposit accounts which are less sensitive to market events or changes in interest rates).

Liquidity is managed to provide the ability to generate cash to meet lending, deposit withdrawal and other commitments at a reasonable cost in a reasonable amount of time while maintaining routine operations and market confidence. Market funding is coordinated with other HSBC Group entities, as the markets increasingly view debt issuances from the separate companies within the context of our common parent company. Liquidity management is performed at the HSBC North America, HSBC USA and HSBC Bank USA levels. Each entity is required to have sufficient liquidity for a crisis situation.

ALCO develops and implements policies and procedures to ensure that the minimum liquidity ratios and a strong overall liquidity position are maintained. ALCO projects cash flow requirements and determines the level of liquid assets and available funding sources to have at our disposal, with consideration given to anticipated deposit and balance sheet growth, contingent liabilities,

and the ability to access wholesale funding markets. In addition to base case projections, multiple stress scenarios are generated to simulate crisis conditions, including:

- run-off of non-stable deposits;
- inability to renew maturing interbank fundings;
- draw-downs of committed loan facilities;
- decreases in the market value of liquid securities;
- additional collateral requirements for derivative transactions under existing collateral support agreements;
- rating downgrades of HSBC USA or HSBC Bank USA; and
- increased discount on security values for repos or disposals.

In addition, ALCO monitors the overall mix of deposit and funding concentrations to avoid undue reliance on individual funding sources and large deposit relationships.

As part of our approach towards liquidity risk management, we employ the measures discussed below to define, monitor and control our liquidity and funding risk in accordance with HSBC policy.

The Basel Committee based Liquidity Coverage Ratio ("LCR") is designed to be a short-term liquidity measure to ensure banks have sufficient High Quality Liquid Assets ("HQLA") to cover net stressed cash outflows over the next 30 days. At both December 31, 2018 and 2017, HSBC USA's LCR under the EU LCR rule exceeded 100 percent. A LCR of 100 percent or higher reflects an unencumbered HQLA balance that is equal to or exceeds liquidity needs for a 30 calendar day liquidity stress scenario. HQLA consists of cash or assets that can be converted into cash at little or no loss of value in private markets. HSBC North America and HSBC Bank USA are also subject to the U.S. LCR rule. Under the U.S. rule, U.S. institutions, including HSBC North America and HSBC Bank USA, are required to maintain a minimum LCR of 100 percent and report LCR to U.S. regulators on a daily basis. During the years ended December 31, 2018 and 2017, HSBC Bank USA's LCR under the U.S. LCR rule remained above the 100 percent minimum requirement.

The European calibration of the Basel Committee based NSFR, which is a longer term liquidity measure with a 12-month time horizon to ensure a sustainable maturity structure of assets and liabilities, is still pending. Therefore, our calculation of NSFR is based on our current interpretation and understanding of the Basel Committee NSFR guidance, which may differ in future periods depending on completion of the European calibration and further implementation guidance from regulators. At both December 31, 2018 and 2017, HSBC USA's estimated NSFR exceeded 100 percent. A NSFR of 100 percent or more reflects an available stable funding balance from liabilities and capital over the next 12 months that is equal to or exceeds the required amount of funding for assets and off-balance sheet exposures. In April 2016, U.S. regulators issued for public comment a proposal to implement the NSFR in the United States, applicable to certain large banking organizations, including HSBC North America and HSBC Bank USA. At both December 31, 2018 and 2017, HSBC Bank USA's estimated NSFR, based on our current interpretation and understanding of the proposed U.S. NSFR rule, exceeded 100 percent.

Large BHCs and IHCs, such as HSBC North America, are also subject to additional liquidity requirements under the FRB's enhanced prudential standards issued pursuant to Section 165 of the Dodd-Frank Act. Under these enhanced prudential standards, IHCs are required to comply with various liquidity risk management standards and to maintain a liquidity buffer of unencumbered highly liquid assets based on the results of internal liquidity stress testing.

HSBC North America and HSBC Bank USA have adjusted their liquidity profiles to support compliance with these rules. HSBC North America and HSBC Bank USA may need to make further changes to their liquidity profiles to support compliance with any future final rules.

ALCO also maintains a liquidity management and contingency funding plan ("Contingency Funding Plan"), which identifies certain potential early indicators of liquidity problems, and actions that can be taken both initially and in the event of a liquidity crisis, to minimize the long-term impact on our businesses and customer relationships. The Contingency Funding Plan is reviewed annually and approved by the Risk Committee of our Board of Directors. We recognize a liquidity crisis can either be specific to us, relating to our ability to meet our obligations in a timely manner, or market-wide, caused by a macro risk event in the broader financial system. A range of indicators are monitored to attain an early warning of any liquidity issues. These include widening of key spreads or indices used to track market volatility, material reductions or extreme volatility in customer deposit balances, increased utilization of credit lines, widening of our own credit spreads and higher borrowing costs. In the event of a cash flow crisis, our objective is to fund cash requirements without access to the wholesale unsecured funding market for at least one year. Contingency funding needs will be satisfied primarily through sales of securities from the investment portfolio and secured borrowing using the mortgage portfolio as collateral. Securities may be sold or used as collateral in a repurchase agreement depending on the scenario. Portions of the mortgage portfolio may be used as collateral at the FHLB to increase borrowings. We maintain a Liquid Asset Buffer consisting of cash, short-term liquid assets and unencumbered government and other highly rated investment securities as a source of funding. Further, collateral is maintained at the Federal Reserve Bank discount window and the FHLB, providing additional secured borrowing capacity in a liquidity crisis.

In addition to the oversight provided by ALCO, Liquidity Risk Management ("LRM") is a Second LoD oversight function for liquidity which independently reports into the CRO. LRM's primary mandate is to strengthen our liquidity risk management framework through challenge and review of existing processes and recommending areas that need improvement to the RMM. LRM serves as an advisory function to senior management to ensure front line units with direct responsibility for managing liquidity risk are operating within their operating guidelines and defined risk appetite parameters. The LRM oversight mandate is carried out through critical evaluation and challenge of existing risk management processes including stress testing and ratio calculations.

Our liquidity risk management approach includes deposits, supplemented by wholesale borrowing to fund our balance sheet, and using security sales or secured borrowings for liquidity stress situations in our liquidity contingency plans. In addition, current regulatory initiatives require banks to retain a portfolio of HQLA. As such, we are maintaining a large portfolio of high quality sovereign and sovereign guaranteed securities.

Our ability to regularly attract wholesale funds at a competitive cost is enhanced by strong ratings from the major credit ratings agencies. The following table reflects the short and long-term credit ratings of HSBC USA and HSBC Bank USA at December 31, 2018:

	Moody's	S&P	Fitch
HSBC USA:			
Short-term borrowings.....	P-1	A-1	F1+
Long-term/senior debt	A2	A	AA-
HSBC Bank USA:			
Short-term borrowings.....	P-1	A-1+	F1+
Long-term/senior debt	Aa3⁽¹⁾	AA-	AA-

⁽¹⁾ Moody's long-term deposit rating for HSBC Bank USA was Aa2 at December 31, 2018.

Rating agencies continue to evaluate economic and geopolitical trends, regulatory developments, future profitability, risk management practices and legal matters, all of which could lead to adverse ratings actions.

Although we closely monitor and strive to manage factors influencing our credit ratings, there is no assurance that our credit ratings will not change in the future. At December 31, 2018, there were no pending actions in terms of changes to ratings on the debt of HSBC USA or HSBC Bank USA from any of the rating agencies.

Numerous factors, internal and external, may impact access to and costs associated with issuing debt in the global capital markets. These factors include our debt ratings, overall economic conditions, overall capital markets volatility and the effectiveness of the management of credit risks inherent in our customer base.

Cash resources, short-term investments and a trading asset portfolio are available to provide highly liquid funding for us. Additional liquidity is provided by available-for-sale and held-to-maturity debt securities. Approximately \$3,194 million of the debt securities in these portfolios at December 31, 2018 are expected to mature in 2019. The remaining \$42,855 million of debt securities not expected to mature in 2019 are available to provide liquidity by serving as collateral for secured borrowings, or if needed, by being sold. Further liquidity is available through our ability to sell or securitize loans in secondary markets through loan sales and securitizations. In 2018, we did not sell any residential mortgage loan portfolios other than the normal sales of agency-eligible mortgage loan originations.

It is the policy of HSBC Bank USA to maintain both primary and secondary collateral in order to ensure precautionary borrowing availability from the Federal Reserve Bank. Primary collateral is collateral that is physically maintained at the Federal Reserve Bank, and serves as a safety net against any unexpected funding shortfalls that may occur. Secondary collateral is collateral that is acceptable to the Federal Reserve Bank, but is not maintained there. If unutilized borrowing capacity were to be low, secondary collateral would be identified and maintained as necessary. Further liquidity is available from the FHLB.

See "Liquidity and Capital Resources" in this MD&A for further discussion of our liquidity position, including additional information regarding our outstanding borrowings and the remaining availability of our debt issuance programs.

Interest Rate Risk Management We are subject to interest rate risk associated with the repricing characteristics of our balance sheet assets and liabilities. Specifically, as interest rates change, amounts of interest earning assets and liabilities fluctuate, and interest earning assets reprice at intervals that do not correspond to the maturities or repricing patterns of interest bearing liabilities. This mismatch between assets and liabilities in repricing sensitivity results in changes to projected net interest income as interest rates move. To help manage the risks associated with changes in interest rates, and to manage net interest income within interest rate risk ranges management considers acceptable, we use derivative instruments such as interest rate swaps, options, futures and forwards as hedges to modify the repricing characteristics of specific assets, liabilities, forecasted transactions or firm commitments. Analysis of this risk is complicated by having to make assumptions on embedded optionality within certain product areas such as

the incidence of mortgage prepayments, and from behavioral assumptions regarding the economic duration of liabilities which are contractually repayable on demand such as current accounts. These assumptions around behavioral features are captured in our interest rate behavioralization framework, which is described further below. Day-to-day management of interest rate risk is centralized principally in Balance Sheet Management ("BSM"), which includes the non-trading interest rate risk positions transferred to it as discussed further under "Market Risk Management" below.

We have significant, but historically well controlled, interest rate risk in large part due to our portfolio of residential mortgages and mortgage backed securities, which consumers can prepay without penalty, and our large base of demand and savings deposits. These deposits can be withdrawn by consumers at will, but historically they have been a stable source of relatively low cost funds. Market risk exists principally in the Markets business and to a lesser extent in the residential mortgage business, where the pipeline of forward mortgage sales are hedged. We have little foreign currency exposure from investments in overseas operations, which are limited in scope. Total equity securities that are not classified as trading, excluding investments in FHLB stock and Federal Reserve Bank stock, represent less than one percent of total securities.

In the course of managing interest rate risk, an economic value of equity ("EVE") analysis is utilized in conjunction with a combination of other risk assessment techniques to identify and assess the potential impact of interest rate movements and take appropriate action. This combination of techniques, with some focusing on the impact of interest rate movements on the valuation of the balance sheet (e.g. EVE, present value of a basis point ("PVBP"), repricing gap analysis, capital risk, VaR) and others focusing on the impact of interest rate movements on earnings (e.g. net interest income simulation modeling, basis risk analysis) allows for comprehensive analyses from different perspectives. Refer to "Market Risk Management" below for discussion regarding the use of VaR analyses to monitor and manage interest rate risk.

A key element of managing interest rate risk is the management of the convexity of the balance sheet, largely resulting from the mortgage related products on the balance sheet. Convexity risk arises as mortgage loan consumers change their payment behavior significantly in response to large movements in market rates, but do not change behavior appreciably for smaller changes in market rates. Certain interest rate management tools, such as EVE and net interest income simulation modeling described below, better capture the embedded convexity in the balance sheet, while measures such as PVBP are designed to capture the risk of smaller changes in rates.

The assessment techniques discussed below act as a guide for managing interest rate risk associated with balance sheet composition and off-balance sheet hedging strategy (the risk position). Calculated values within limit ranges reflect an acceptable risk position, although possible future unfavorable trends may prompt adjustments to on or off-balance sheet exposure. Calculated values outside of limit ranges will result in consideration of adjustment of the risk position, or consideration of temporary dispensation from making adjustments.

Economic value of equity ("EVE") EVE represents the present value of the banking book cash flows that could be provided to our equity holder under a managed run-off scenario. An EVE sensitivity represents the change in EVE due to a defined movement in interest rates. We manage to an immediate parallel upward shock of 200 basis points and an immediate parallel downward shock of 200 basis points to the market implied interest rates. At both December 31, 2018 and 2017, our EVE remains higher than our book value of equity under the base case, up 200 basis points and down 200 basis points scenarios.

Repricing gap analysis The following table shows the repricing structure of our assets and liabilities at December 31, 2018. For assets and liabilities whose cash flows are subject to change due to movements in interest rates, such as the sensitivity of mortgage loans to prepayments, data is reported based on the earlier of expected repricing or maturity and reflects anticipated prepayments based on the current rate environment. The resulting "gaps" are reviewed to assess the potential sensitivity to earnings with respect to the direction, magnitude and timing of changes in market interest rates. Data shown is as of year-end, and one-day figures can be distorted by temporary swings in assets or liabilities.

December 31, 2018	Within One Year	After One But Within Five Years	After Five But Within Ten Years	After Ten Years	Total
	(in millions)				
Commercial loans	\$ 48,187	\$ 1,167	\$ 312	\$ 70	\$ 49,736
Residential mortgages and home equity mortgages	5,418	7,927	3,174	1,911	18,430
Credit card receivables	1,019	—	—	—	1,019
Other consumer loans	277	22	5	1	305
Total loans ⁽¹⁾	54,901	9,116	3,491	1,982	69,490
Securities available-for-sale and securities held-to-maturity..	8,735	17,606	12,622	7,086	46,049
Other assets	54,839	2,042	28	—	56,909
Total assets	118,475	28,764	16,141	9,068	172,448
Domestic deposits:					
Savings and demand	53,227	18,454	11,130	—	82,811
Time deposits	21,236	418	4	—	21,658
Long-term debt	14,628	9,050	4,250	2,700	30,628
Other liabilities/equity	23,081	14,152	118	—	37,351
Total liabilities and equity	112,172	42,074	15,502	2,700	172,448
Total balance sheet gap	6,303	(13,310)	639	6,368	—
Effect of derivative contracts	(1,107)	1,615	1,382	(1,890)	—
Total gap position	\$ 5,196	\$ (11,695)	\$ 2,021	\$ 4,478	\$ —

⁽¹⁾ Includes loans held for sale.

Various techniques are utilized to quantify and monitor risks associated with the repricing characteristics of our assets, liabilities and derivative contracts.

Net interest income simulation modeling techniques We utilize simulation modeling to monitor a number of interest rate scenarios for their impact on projected net interest income. These techniques simulate the impact on projected net interest income under various scenarios, such as rate shock scenarios, which assume immediate market rate movements by as much as 200 basis points, as well as scenarios in which rates gradually rise by as much as 200 basis point or fall by as much as 100 basis points, over a twelve month period. In the gradual scenarios, 25 percent of the interest rate movement occurs at the beginning of each quarter. The following table reflects the impact on our projected net interest income of the scenarios utilized by these modeling techniques:

	December 31, 2018		December 31, 2017	
	Amount	%	Amount	%
(dollars are in millions)				
Estimated increase (decrease) in projected net interest income (reflects projected rate movements on January 1, 2019 and 2018, respectively):				
Resulting from a gradual 100 basis point increase in the yield curve	\$ 99	3%	\$ 148	6%
Resulting from a gradual 100 basis point decrease in the yield curve	(121)	(4)	(138)	(5)
Resulting from a gradual 200 basis point increase in the yield curve	160	6	243	9
Other significant scenarios monitored (reflects projected rate movements on January 1, 2019 and 2018, respectively):				
Resulting from an immediate 50 basis point decrease in the yield curve	(112)	(4)	(116)	(5)
Resulting from an immediate 100 basis point increase in the yield curve	145	5	216	8
Resulting from an immediate 100 basis point decrease in the yield curve	(283)	(10)	(323)	(13)
Resulting from an immediate 200 basis point increase in the yield curve	245	8	350	14

Projected net interest income sensitivity figures represent the effect of movements in net interest income based on the projected yield curve scenarios and our current interest rate risk profile. This effect, however, does not incorporate actions which would probably be taken by BSM or in the businesses to mitigate the effect of interest rate risk. In reality, BSM seeks proactively to change the interest rate risk profile to minimize losses and optimize net revenues. The net interest income simulation modeling calculations assume that interest rates of all maturities move by the same amount in the 'up-shock' scenario. Rates are not assumed to become negative in the 'down-shock' scenario which may effectively result in non-parallel shock. In addition, the net interest income simulation modeling calculations take account of the effect on net interest income of anticipated differences in changes between interbank interest rates and interest rates over which the entity has discretion in terms of the timing and extent of rate changes. The projections do not take into consideration possible complicating factors such as the effect of changes in interest rates on the credit quality, size and composition of the balance sheet. Therefore, although this provides a reasonable estimate of interest rate sensitivity, actual results will differ from these estimates, possibly by significant amounts.

Interest rate risk behavioralization Unlike liquidity risk which is assessed on the basis of a very severe stress scenario, interest rate risk is assessed and managed according to business-as-usual conditions. In many cases the contractual profile of our assets and liabilities does not reflect the behavior observed.

Behavioralization is therefore used to assess the interest rate risk of our assets and liabilities and this assessed risk is transferred to BSM, in accordance with the rules governing the transfer of interest rate risk from the global businesses to BSM.

Behavioralization is applied in three key areas:

- the assessed re-pricing frequency of managed rate balances;
- the assessed duration of non-interest bearing balances, typically capital and current accounts; and
- the base case expected prepayment behavior or pipeline take-up rate for fixed rate balances with embedded optionality.

Interest rate behavioralization policies have to be formulated in line with the HSBC Group's behavioralization policies and approved at least annually by ALCO, regional Asset, Liability and Capital Management ("ALCM") and global ALCM, in conjunction with local, regional and HSBC Group risk monitoring teams.

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

- the amount of the current balance that can be assessed as stable under business-as-usual conditions; and
- for managed rate balances the historic market interest rate re-pricing behavior observed; or
- for non-interest bearing balances the duration for which the balance is expected to remain under business-as-usual conditions. This assessment is often driven by the re-investment tenors available to BSM to neutralize the risk through the use of fixed rate government bonds or interest rate derivatives, and for derivatives the availability of cash flow hedging capacity.

Capital risk/sensitivity of other comprehensive loss Large movements of interest rates could directly affect some reported capital balances and ratios. The mark-to-market valuation of available-for-sale securities is recorded on a tax effected basis to accumulated other comprehensive loss. This valuation mark is included in two important accounting based capital ratios: common equity Tier 1 capital to risk-weighted assets and total equity to total assets. Under the final rule adopting the Basel III regulatory capital reforms, the valuation mark was being phased into common equity Tier 1 capital over five years beginning in 2014. At December 31, 2018, we had an available-for-sale securities portfolio of approximately \$31,379 million with a negative mark-to-market adjustment of \$581 million. An increase of 25 basis points in interest rates of all maturities would lower the mark-to-market by approximately \$260 million to a net loss of \$841 million with the following results on our capital ratios:

	December 31, 2018		December 31, 2017	
	Actual	Proforma ⁽¹⁾	Actual	Proforma ⁽¹⁾
Common equity Tier 1 capital to risk-weighted assets	13.6%	13.5%	14.2%	14.1%
Total equity to total assets	11.9	11.8	10.7	10.7

⁽¹⁾ Proforma percentages reflect a 25 basis point increase in interest rates.

Market Risk Management Exposure to market risk is separated into two portfolios:

- *Trading portfolios* comprise positions arising from market-making and warehousing of client-derived positions.
- *Non-trading portfolios* comprise positions that primarily arise from the interest rate management of our retail and commercial banking assets and liabilities and financial investments classified as available-for-sale and held-to-maturity.

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 optimize return on risk while maintaining a market profile consistent with our established risk appetite.

The nature of the hedging and risk mitigation strategies performed corresponds to the market risk management instruments available. 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.

Market risk governance Market risk is managed and controlled through limits approved by the Risk Committee of the Board of Directors and the RMM, as well as the various businesses, and also ratified by the HSBC Group Risk Management Meeting. These limits are allocated across business lines and to the HSBC Group legal entities, including HSBC USA and HSBC Bank USA.

We have an independent market risk management and control function in North America which is responsible for setting the risk appetite, measuring market risk exposures in accordance with the policies defined by HSBC Group Risk, and monitoring and reporting these exposures against the prescribed limits on a daily basis.

Model risk is governed through model oversight committees at the regional and global Wholesale Credit and Market Risk levels. The Committees have direct oversight and approval responsibility for all traded risk models utilized for risk measurement and management and stress testing. They prioritize the development of models, methodologies and practices used for traded risk management and ensure that they remain within our risk appetite and business plans. We are committed to the ongoing development and enhancement of our in-house risk models subject to regulatory approval. Refer to "Model Risk Management" below for further discussion regarding the management and monitoring of model risk across North America.

Our control of market risk in the trading and non-trading portfolios is based on a policy of restricting operations to trading within a list of permissible instruments ultimately approved by HSBC Group Risk as well as enforcing new product approval procedures through a dedicated committee.

Market risk measures We use a range of tools to monitor and limit market risk exposures, including:

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

Value at Risk ("VaR") 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 capitalize them. 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 summarized in the 'Stress Testing' section below.

Our VaR models are predominantly based on historical simulation which incorporates the following features:

- historical market rates and prices are calculated with reference to foreign exchange rates, commodity prices, interest rates and the associated volatilities;
- potential market movements utilized for VaR are calculated with reference to data from the past two years; and
- scenario profit and losses are calculated utilizing the market scenarios for all relevant risk factors;
- VaR measures are calculated to a 99 percent 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.

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

- the use of historical data as a proxy for estimating future events may not encompass all potential events, particularly those which are extreme in nature;
- the use of a holding period assumes that all positions can be liquidated or the risks offset during that period, 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 percent confidence level does not take into account losses that might occur beyond this level of confidence; and
- 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 capitalize material market risks that are not adequately covered in the VaR model. Risk factors are reviewed on a regular basis and either incorporated directly in the VaR models, where possible, or quantified through the RNIV. RNIV stresses interest rate basis risk exposure and interest rate volatility skewness. RNIV risk-weighted assets make up approximately 10 percent of HUSI market risk risk-weighted assets, though contribution to total HUSI risk-weighted assets remains immaterial.

Stressed VaR Stressed VaR is primarily used for regulatory capital purposes and is integrated into the risk management process to facilitate efficient capital management. Stressed VaR complements other risk measures by providing severe potential losses associated with stressed market conditions. Stressed VaR modeling follows the same approach as VaR, except Stressed VaR calculates potential loss at a 99 percent confidence level for a one-day holding period based on a one year historical period that is calibrated to the most volatile period for the trading portfolio.

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 modeling.

A set of scenarios is used consistently across the HSBC Group. Scenarios are tailored to capture the relevant potential events or market movements at each level. The risk appetite around potential stress losses is set and monitored against corresponding limits.

The process is governed by the Stress Testing Review Group forum which, in conjunction with regional risk management, determines the scenarios to be applied. Main scenario types are as follows:

- single risk factor stress scenarios that are unlikely to be captured within the VaR models, such as the break of a currency peg;
- technical scenarios that incorporate the largest move in each risk factor independent from any underlying market correlation;
- hypothetical scenarios are mainly built on potential macroeconomic events, for example, the slowdown in mainland China and the potential effects of a sovereign debt default, including its wider contagion effects, curves steepening or flattening scenarios; and
- historical scenarios which incorporate past observations of market movements during periods of stress which are not captured within VaR.

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

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

Market risk in 2018 The U.S. market risk environment in 2018 was characterized by a hawkish tone from the FRB, trade tensions between the United States and China, and other geopolitical events.

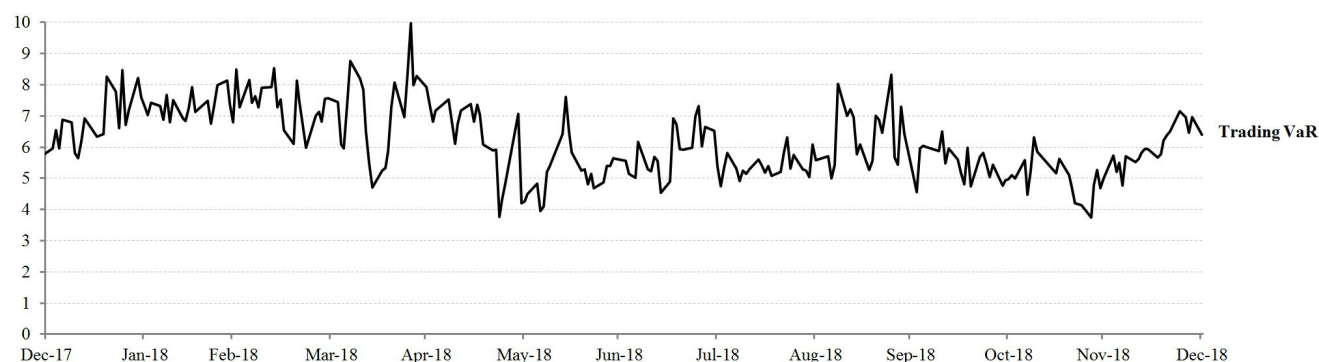
Continued strengthening to the U.S. labor market, rising economic activity, and low unemployment set the backdrop for the FRB to continue on their path of a less accommodative monetary policy, raising rates four times in 2018 and continuing reduction of its holdings of U.S. Treasury bonds and mortgage-backed securities. U.S. equity and credit markets had a steep decline in late December due to political uncertainty and fears over economic momentum and slower earnings growth, with information technology firms lowering financial forecasts. Political uncertainty was a recurring theme through the year, headlined by the continued U.S.-China trade dispute. The U.S. Government shutdown, which began December 22, 2018, became the longest shutdown in history.

Signs of a pullback in global economic growth have altered the balance of risk assessment from FRB policymakers. Ongoing trade tensions between China and the United States driving downside risks for both economies, and downward pressure on oil prices have lowered inflation expectations. Continued strong economic indicators with a backdrop of political uncertainty will be a major theme in 2019 with expectations that the Federal Open Market Committee will adopt a more cautious stance.

During May, an overall selloff in Emerging Markets was observed, as the U.S. dollar strengthened against most other currencies. The issue was exacerbated in Argentina where the currency depreciated significantly, driven by high inflation, high local interest rates, and low currency reserves. In Brazil, political uncertainty paralyzed the economy and increased volatility. The selloff reversed course in September due to completion of an International Monetary Fund assistance package to Argentina and a reduction of political uncertainty in Brazil leading up to the October election. While the market impact of these events was short term in nature, investor confidence was impacted, leading to reduced client demand and market liquidity.

Trading Portfolios Trading VaR generates from the Global Markets unit of the GB&M business segment. Portfolios are mainly comprised of foreign exchange products, interest rate swaps and precious metals (i.e., gold, silver, platinum) in both North America and emerging markets.

Trading VaR at December 31, 2018 was relatively flat as compared with December 31, 2017 as the Global Markets business in the United States continued to focus on customer facilitation and expanded further into high-yield credit and interest rate derivative markets. Interest rate and credit spread risk comprise the main drivers of exposure.

Daily VaR (trading portfolios), 99 percent 1 day (in millions):

The following table summarizes our trading VaR for 2018 and 2017:

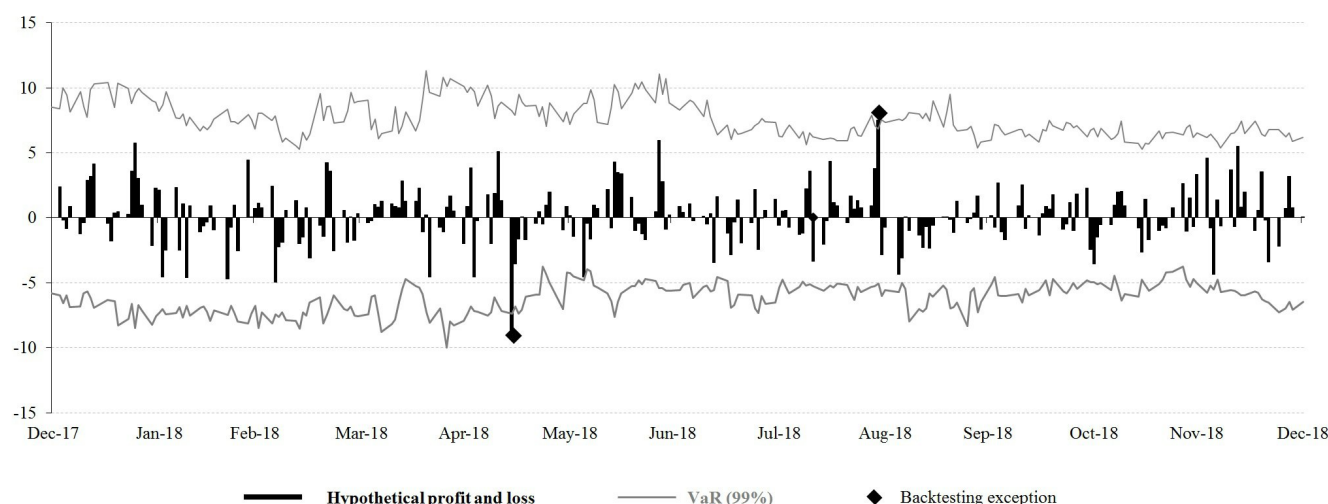
	Foreign exchange and commodity	Interest rate	Credit Spread	Portfolio diversification ⁽¹⁾	Total ⁽²⁾
(in millions)					
At December 31, 2018	\$ 2	\$ 6	\$ 1	\$ (3)	\$ 6
Full Year 2018					
Average	2	6	1	(3)	6
Maximum	5	11	2		10
Minimum	—	3	—		4
At December 31, 2017	\$ 2	\$ 5	\$ 1	\$ (2)	\$ 6
Full Year 2017					
Average	2	6	1	(3)	6
Maximum	4	9	1		9
Minimum	—	4	1		4

⁽¹⁾ 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, foreign exchange, interest rate and credit spread, 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 occur on different days for different risk types, it is not meaningful to calculate a portfolio diversification benefit for these measures.

⁽²⁾ The total VaR is non-additive across risk types due to diversification effects. For presentation purposes, portfolio diversification of the VaR for trading portfolios includes VaR-based risk-not-in-VaR.

Back-testing We routinely validate the accuracy of our VaR models by back-testing them against hypothetical profit and loss that excludes non-modeled items such as fees, commissions and revenues of intra-day transactions from the actual reported profit and loss. We would expect, on average, to see two or three profits and two or three losses in excess of VaR at the 99 percent confident level over a one-year period. The actual number of profits or losses in excess of VaR over this period can therefore be used to gauge how well the models are performing. To ensure a conservative approach to calculating our risk exposures, it is important to note that profits in excess of VaR are only considered when back-testing the accuracy of models and are not used for capital purposes.

In 2018, we experienced two back-testing exceptions against hypothetical profit and loss: a loss exception driven by an overall sell off in emerging markets, which was exacerbated due to specific macroeconomic conditions in Argentina; and a profit exception, driven by a continued sell off in emerging markets largely attributable to Argentina. There was no evidence of model errors or control failures.

Back-testing of trading VaR against our hypothetical profit and loss (in millions):

Non-trading Portfolios Non-trading VaR predominantly relates to BSM and represents the potential negative changes in the investment portfolio market value (which includes available-for-sale and held-to-maturity assets) and associated hedges. Our investment portfolio holdings are mainly comprised of U.S. Treasury, U.S. Government agency mortgage-backed and U.S. Government sponsored mortgage-backed securities. Our non-trading VaR exposure is driven by interest rates and agency spread volatility.

Non-trading VaR was lower in 2018 due primarily to a reduction of risk in our investment portfolio, specifically from reduced holdings of U.S. Treasuries and U.S. Government sponsored mortgage-backed securities.

The following table summarizes our non-trading VaR for 2018 and 2017:

	Interest rate	Credit Spread	Portfolio diversification ⁽¹⁾	Total ⁽¹⁾
	(in millions)			
At December 31, 2018	\$ 22	\$ 18	\$ (6)	\$ 34
Full Year 2018				
Average	55	20	(17)	58
Maximum	80	22		79
Minimum	22	16		34
At December 31, 2017	\$ 39	\$ 18	\$ (12)	\$ 45
Full Year 2017				
Average	49	21	(11)	59
Maximum	79	31		74
Minimum	36	17		44

⁽¹⁾ Refer to the Trading VaR table above for additional information.

Non-trading VaR also includes the interest rate risk of non-trading financial assets and liabilities held by the global businesses and transfer priced into BSM which has the mandate to centrally manage and hedge it. For a broader discussion on how interest rate risk is managed, please refer to the "Interest Rate Risk Management" section above.

Interest rate swaps used by BSM to hedge the interest rate risk of the investment portfolio and transfer price risk from the banking book are typically classified as either a fair value hedge or a cash flow hedge and included within our non-traded VaR. In case there is residual market risk that cannot be efficiently and conveniently hedged by BSM they are managed by ALCO in segregated ALCO books. ALCO books risk is calculated and monitored via the same framework described above for the trading books, namely sensitivities, VaR, stress testing and associated limits.

Stressed VaR The following table reflects stressed VaR at December 31, 2018 and 2017:

At December 31,	2018	2017
	(in millions)	
Stressed VaR (1-day equivalent)	\$ 27	\$ 14

Stressed VaR at December 31, 2018 was higher as compared with December 31, 2017 driven by increased inventory in rates and foreign exchange products as well as the impact of higher market rates.

Operational Risk Management Operational risk arises from day-to-day operations or external events, and is relevant to every aspect of our business. Our strategy is to manage operational risks in a cost effective manner, within targeted levels consistent with the risk appetite. Our Operational Risk Management Framework ("ORMF") ensures minimum standards of governance and organization over operational risk and internal control throughout HUSI and covers all our businesses and operations (including all entities, activities, processes, systems and products). Under the ORMF, risk and control assessments provide an end to end view of operational risk. Material risks are assigned an inherent risk assessment based on the likelihood and the direct (financial costs) and indirect impacts to the business. An assessment of the effectiveness of key controls that mitigate these risks is made and a residual risk assessment is determined. An operational risk database is used to record risk and control assessments and track related issues and mitigation action plans. The risk assessments, which are refreshed based on relevant triggers, provide an up-to-date view of the operational risk profile.

During 2018, our most material risks are in the financial crime and regulatory compliance, and information/cyber domains. The incidence of and response to regulatory proceedings and other adversarial proceedings against financial services firms is significant. We have prioritized resources to develop and execute remedial actions to regulatory matters, including enhancing or adding internal controls. The threat of cyberattacks is managed within our Security Risk function as discussed further below.

We have established an independent operational risk management discipline in the United States which is led by the U.S. Head of Operational Risk, Risk Strategy and Credit Review, reporting to the CRO. The mission of the Operational Risk Management Meeting, chaired by the U.S. Head of Operational Risk, Risk Strategy and Credit Review, is to provide governance and strategic oversight of the ORMF, including the identification, assessment, monitoring and appetite of operational risk. Selected results and reports from this meeting are communicated to the RMM and subsequently to the Risk Committee of the Board of Directors. Management in the First LoD is responsible for identifying, managing and controlling operational risk. In addition, the central Operational Risk function, in conjunction with the other Second LoD subject matter experts, provides functional oversight by coordinating the following activities:

- developing operational risk policies and procedures;
- developing and managing methodologies and tools to support the identification, assessment, and monitoring of operational risks;
- providing firm-wide reporting;
- providing operational risk training and awareness programs for employees throughout the firm;
- communicating with the First LoD to ensure the ORMF is executed within their respective business or function;
- independently reviewing the operational risk and control assessments, communicating results to business management and monitoring remedial actions that may be necessary to improve the assessments; and
- modeling operational risk losses and scenarios for capital management purposes.

Management of operational risk includes identification, assessment, monitoring, mitigation and reporting of the results of risk events, including losses. These key components of the ORMF have been communicated by issuance of HSBC standards and procedures. Details and local application of the standards have been documented and communicated by issuance of a U.S. Operational Risk Standard.

Management practices include standard reporting to senior management and the Operational Risk Management Meeting of material risks, significant control deficiencies, risk mitigation action plans, losses and key risk indicators. We also monitor external operational risk events to ensure that we remain in line with best practice and take into account lessons learned from publicized operational failures within the financial services industry. Operational risk management is an integral part of the new product development and approval process and the employee performance management process, as applicable.

Internal audit, which is the Third LoD, provides an important independent check on controls and test institutional compliance with the ORMF. Internal audit utilizes a risk-based approach to determine its audit coverage in order to provide an independent assessment of the design and effectiveness of key controls over our operations, regulatory compliance and reporting. This includes reviews of the ORMF, the effectiveness and accuracy of the risk assessment process, and the loss data collection and reporting activities.

Security risk is the risk to the business from terrorism, information security, incidents/disasters, cyberattacks, insider risk and groups hostile to HSBC interests. The role of the Security Risk function ("SR") is the protection of people, property, assets and

information by reducing the security risk to the business. To achieve this, SR is organizationally part of the business it supports and they advise and assist senior executive management who have overall responsibility for security issues. Security risk issues are managed at the HSBC Group level by HSBC Global Security Risk. This unit, which has responsibility for information, contingency, physical, terrorism and insider risks are fully integrated within the HSBC Group Risk function. This enables management to identify and mitigate the permutations of these and other non-financial risks to its businesses across the jurisdictions in which we operate.

The security of our information and technology infrastructure is crucial for maintaining our applications and processes while protecting our customers and the HSBC brand. In common with other financial institutions and multinational organizations, we face a growing threat of cyberattacks that continue to increase in sophistication. A failure of our defenses against such attacks could result in financial loss or the loss of customer data or other sensitive information which could undermine both our reputation and our ability to attract and retain our customers. We experienced cyberattacks in 2018, none of which resulted in material financial loss. We continue to mature our cyber intelligence capabilities as the cyber threat landscape evolves. These intelligence monitoring capabilities increase our agility and ability to respond with increased detection and response capabilities reducing potential exposure to cyber threats. Regulators have listed cybersecurity as their top concern in 2018. Regulation continues to increase from multiple jurisdictions and perspectives, and is deployed without coordination with other regulators. HSBC is engaged with peer institutions working to address regulatory harmonization as it relates to cyber and information security. We have met with the U.S. Treasury Department and all regulatory bodies (e.g. the OCC, FRB, FDIC, Commodity Futures Trading Commission, etc.) to progress harmonization. Cybersecurity will continue to be a strong focus of ongoing initiatives to strengthen the control environment and our readiness to respond in the event of an attack.

Regulatory Compliance Risk Management Regulatory compliance risk arises from the risks associated with breaching our duty to clients and other counter-parties, inappropriate market conduct, and breaching other regulatory requirements. Regulatory compliance risk is measured by reference to identified metrics, key risk indicators, testing of controls by the three lines of defense, employee feedback, customer complaints and through regulatory feedback. Regulatory compliance risks are assessed through detailed assessments and reported to the RMM and the Board of Directors through the reporting of RAS metrics and the Regulatory Compliance Enterprise Risk Assessment report. Regulatory compliance risk is managed by establishing and communicating appropriate policies and procedures, training employees in regulatory requirements, establishing controls, and monitoring and testing controls to help ensure that the regulatory requirements are being adhered to. Proactive assessment and enhancement of controls is undertaken where required.

The Second LoD risk stewards provide independent, objective oversight and challenge and promote a compliance-orientated culture, supporting the businesses in delivering fair outcomes for customers, maintaining the integrity of financial markets and achieving our strategic objectives. Any actual or potential regulatory breaches require prompt identification and escalation to the Regulatory Compliance function or other applicable risk stewards. Any major breaches, gaps, issues and emerging risks are escalated to RMM and the Board of Directors, as appropriate.

The Regulatory Compliance function oversees the management of regulatory compliance risk for laws, codes, rules, regulations and standards that align under its scope of oversight as the Second LoD risk steward. As a Board of Directors sub-committee, the CCC oversees our compliance risk management program (both Regulatory Compliance and Financial Crime Risk) as well as fiduciary matters as discussed further below.

Compliance related regulatory findings In 2010, HSBC Bank USA entered into a consent cease and desist order with the OCC and our parent, HSBC North America, entered into a consent cease and desist order with the FRB. In 2012, HSBC Bank USA further entered into an enterprise-wide compliance consent order (each an "Order" and together, the "Orders"). These Orders, which required improvements to establish and sustain an effective compliance risk management program across our U.S. businesses, including improvements to Bank Secrecy Act and Anti-Money Laundering compliance, were terminated by the OCC and FRB in 2018.

Fiduciary Risk is the risk of breaching fiduciary duties where we act in a fiduciary capacity as trustee, investment manager or as mandated by law or regulation. It is the risk associated with failing to offer services honestly and properly to clients in that capacity. Fiduciary risks reside in our PB businesses (such as Investment Management, Personal Trust, Security Operation Services) and other business lines outside of PB (such as Corporate Trust). Fiduciary risk is governed by the CCC. The CCC has delegated day-to-day management and oversight responsibilities to management, whose primary oversight body for management of fiduciary activity is the Fiduciary Risk Management Meeting, chaired by the U.S. Head of Enterprise Compliance. The U.S. Head of Enterprise Compliance reports to the U.S. Head of Regulatory Compliance.

Financial Crime Risk Management Financial crime risk management is the framework in place to identify and deter potential illegal activity from occurring by, at, or through the HSBC Group. It is embedded in our day to day operations and culture.

The Financial Crime Compliance function ("FCC") is led by the U.S. Head of FCC, who reports to the CEO and the HSBC Global Head of FCC and Group Money Laundering Reporting Officer. FCC provides oversight to enable us to build on our achievements in managing financial crime risk effectively and to continue to strengthen financial crime detection, and anti-money laundering

("AML"), sanctions, fraud, and anti-bribery and corruption compliance. The U.S. Head of FCC has delegated authority from the CEO over the FCRMC which escalates to the CCC on matters relating to financial crime and fraud risk management.

FCC is a sub-function of the Compliance function, which also includes Regulatory Compliance, Financial Crime Threat Mitigation ("FCTM"), Regulatory Affairs, Assurance, and Chief Operating Office. FCTM is a global capability to proactively identify, analyze and investigate financial crime risk and ensure proper mitigation of these risks. It works closely with the lines of business and functions to provide the information needed to mitigate financial crime risk. FCC continues to embed policies and procedures, introduce new technology solutions, and support a culture of compliance needed to effectively manage financial crime risk including the enterprise wide compliance risk management program.

Reputational Risk Management The safeguarding of our reputation is of paramount importance to our continued prosperity and is the responsibility of every member of our staff. Reputational risk can arise from social, ethical or environmental issues, or as a consequence of operational and other risk events. Our good reputation depends upon the way in which we conduct our business, but can also be affected by the way in which customers to whom we provide financial services conduct themselves.

Reputational risk relates to stakeholders' perceptions, whether based on fact or otherwise. Stakeholder expectations are constantly changing and thus, reputational risk is dynamic and will differ between geographies, groups and individuals.

We tolerate a limited degree of reputational risk arising from business activities or association where foreseeable reputational risk has been escalated to the appropriate level of management, carefully considered and/or mitigated and is determined to fall to acceptable risk thresholds as defined by the HSBC Group risk appetite statement. Since reputational risk can arise from all aspects of operations and activities, all businesses and functions are required to articulate and track reputational risk.

Reputational risk is considered and assessed by the HSBC Group Management Board, the HSBC Group and local Board of Directors and senior management during the establishment of standards for all major aspects of business and the formulation of policy and products. These policies, which are an integral part of the internal control systems, are communicated through manuals and statements of policy, internal communication and training. The policies set out operational procedures in all areas of reputational risk, including money laundering deterrence, economic sanctions, environmental impact, anti-corruption measures, employee relations, inappropriate market conduct and breach of regulatory duty and requirements.

We have taken steps over the past several years to de-risk our businesses and product offering to reduce reputational risk. In addition, we continue to strengthen our internal control structure to minimize the risk of operational and financial failure and to ensure that a full appraisal of reputational risk is made before strategic decisions are taken.

The RMM and FCRMC provide governance and oversight of reputational risk. Each business reviews transactions and customers that may adversely affect our public perception via their RRCSC. The RRCSCs are chaired by a senior executive and are comprised of senior members from the business, risk, legal, financial crime and compliance departments and other invited parties. The RRCSCs are responsible for reviewing the individual merits and involved parties in higher-risk transactions, and approving or declining customer relationships and transactions based on the potential risks to us. In addition to the RRCSCs, the responsibility of the practical implementation of such policies and the compliance with the letter and spirit of them rests with our CEO and senior management of our businesses.

Strategic Risk Management Strategic risk may be mitigated by consideration of the potential opportunities and challenges through the strategic planning process. This risk is also a function of the compatibility of our strategic goals, the business strategies developed to achieve those goals, the resources deployed against those goals and the quality of implementation.

We have established a strong internal control structure to minimize the impact of strategic risk to our earnings and capital. All changes in strategy as well as the process in which new strategies are implemented are subject to detailed reviews and approvals at business line, functional, regional, board and HSBC levels. This process is monitored by the Strategy and Planning function to ensure compliance with our policies and standards.

Model Risk Management In order to manage the risks arising out of the use of incorrect or misused model output or reports, a comprehensive model risk governance framework has been established that provides oversight and challenge to all models across HSBC North America. The framework includes a HSBC North America Model Standards Policy that aligns with model risk management regulations. Each area that uses models maintains model management procedures in accordance with the Model Standards Policy. A HSBC North America model and non-model inventory is maintained and updated on a quarterly basis. In addition, a model risk measurement framework is used to measure, mitigate and monitor model risk across HSBC North America. Model risk is managed on an ongoing basis by the CRO Meeting, which is chaired by the CRO with broad representation from across our businesses and support functions.

The Independent Model Review ("IMR") function, which reports directly to the CRO, is responsible for providing effective challenge of models and critical processes implemented for use within HSBC North America. Reviews are conducted in-line with supervisory guidance on model risk management issued by the OCC and FRB as well as other applicable internal and regulatory guidelines. Effective challenge is defined as a critical analysis by objective, informed parties who can identify model limitations and assumptions and produce appropriate changes. IMR activities are segregated from the model development process to ensure

that incentives are aligned with the function's role to challenge models and identify model limitations, and the authority and access provided by the Board of Directors provides the function with the necessary influence to ensure that its recommendations are acted upon. The IMR process assesses model development, implementation, use, validation, and governance. IMR scope covers models reported on the HSBC North America model inventory and critical non model processes. Examples of models and processes that IMR reviews include: Credit Risk, Market Risk, Operational Risk, CCAR, ICAAP, Economic Capital, Allowance for Loan and Lease Losses, Loss Forecasting, AML, Counterparty Credit Risk, Interest Rate Risk, Risk Sensitivity, Hedging and Fair Value Adjustment.

Pension Risk Management Certain employees are eligible to participate in the HSBC North America qualified defined benefit pension plan which has been frozen. At December 31, 2018, plan assets were lower than projected plan liabilities resulting in an under-funded status. The accumulated benefit obligation exceeded the fair value of the plan assets by approximately \$302 million. As these obligations relate to the HSBC North America pension plan, only a portion of this deficit could be considered our responsibility. We and other HSBC North America affiliates with employees participating in this plan will be required to make up this shortfall over a number of years as specified under the Pension Protection Act. This can be accomplished through direct contributions, appreciation in plan assets and/or increases in interest rates resulting in lower liability valuations. See Note 20, "Pension and Other Postretirement Benefits," in the accompanying consolidated financial statements for further information concerning the HSBC North America defined benefit plan.

Sustainability Risk Management Sustainability risk is measured by assessing the potential sustainability impacts of a customer's activities and assigning a sustainability risk rating. Sustainability risk is monitored by the businesses and the Credit Approval Unit, as well as Group Sustainability Risk. Sustainability risk managers in the Wholesale Credit Risk function, with input from Group Sustainability Risk, are responsible for advising our businesses on managing environmental and social risks. The Wholesale Credit Risk function's responsibilities in relation to sustainability risk include:

- overseeing our sustainability risk standards, our application of the Equator Principles and our sustainability policies (covering agricultural commodities, chemicals, defense, energy, forestry, mining and metals, Ramsar Wetlands and UNESCO World Heritage Sites);
- undertaking an independent review of transactions, including escalating transactions to Group Sustainability Risk where sustainability risks are assessed to be high and approving transactions where sustainability risks are of a lower magnitude; and
- providing training and capacity building within our businesses to ensure sustainability risks are identified and mitigated consistently.

GLOSSARY OF TERMS

Balance Sheet Management – Is responsible for managing our liquidity and funding. Balance Sheet Management ("BSM") also manages our structural interest rate position within a limit structure.

Basis point – A unit that is commonly used to calculate changes in interest rates. The relationship between percentage changes and basis points can be summarized as a 1 percent change equals a 100 basis point change or .01 percent change equals 1 basis point.

CDS – Credit Default Swap.

Contractual Delinquency – A method of determining aging of past due accounts based on the past due status of payments under the loan. Delinquency status may be affected by customer account management policies and practices such as the re-age of accounts or modification arrangements.

Delinquency Ratio – Two-months-and-over contractual delinquency expressed as a percentage of loans and loans held for sale at a given date.

Efficiency Ratio – Total operating expenses expressed as a percentage of the sum of net interest income and other revenues.

First Line of Defense or First LoD – Part of the Three Lines of Defense ("LoD") model for managing risk. The First LoD is predominately comprised of management who are accountable and responsible for their day to day activities, processes and controls. The First LoD owns the risks and is responsible for identifying, recording, reporting and managing risks, and ensuring that the right controls and assessments are in place to mitigate them.

FRB – The Federal Reserve Board; our principal regulator.

Futures Contract – An exchange-traded contract to buy or sell a stated amount of a financial instrument or index at a specified future date and price.

Global Bank Note Program – A \$40 billion note program, under which HSBC Bank USA issues senior and subordinated debt.

Goodwill – The excess of purchase price over the fair value of identifiable net assets acquired, reduced by liabilities assumed in a business combination.

Group Reporting Basis – A measure of reporting results using financial information prepared on the basis of HSBC Group's accounting and reporting policies which apply International Financial Reporting Standards as issued by the International Accounting Standards Board and endorsed by the European Union.

HQLA - High Quality Liquid Assets; cash or assets that can be converted into cash quickly through sales (or by being pledged as collateral) with no significant loss of value.

Interest Rate Swap – Contract between two parties to exchange interest payments on a stated principal amount (notional principal) for a specified period. Typically, one party makes fixed rate payments, while the other party makes payments using a variable rate.

LIBOR – London Interbank Offered Rate; a widely quoted market rate which is frequently the index used to determine the rate at which we borrow funds.

Liquidity – A measure of how quickly we can convert assets to cash or raise additional cash by issuing debt.

Loan-to-Value ("LTV") Ratio – For first liens, the current loan balance expressed as a percentage of the current property value. For second liens, the current loan balance plus the senior lien amount at origination expressed as a percentage of the current property value.

Mortgage Servicing Rights ("MSRs") – An intangible asset which represents the right to service mortgage loans. These rights are recognized at the time the related loans are sold or the rights are acquired.

Net Charge-off Ratio – Net charge-offs of loans expressed as a percentage of average loans outstanding for a given period.

Net Interest Income – Interest income earned on interest-bearing assets less interest expense on deposits and borrowed funds.

Net Interest Income to Total Assets – Net interest income expressed as a percentage of average total assets for a given period.

Net Interest Margin – Net interest income expressed as a percentage of average interest earning assets for a given period.

Nonaccruing Loans – Loans on which we no longer accrue interest because ultimate collection is unlikely.

OCC – The Office of the Comptroller of the Currency; the principal regulator for HSBC Bank USA.

Options – A contract giving the owner the right, but not the obligation, to buy or sell a specified item at a fixed price for a specified period.

Portfolio Seasoning – Relates to the aging of origination vintages. Loss patterns emerge slowly over time as new accounts are booked.

Rate of Return on Common Equity – Net income (loss), reduced by preferred dividends, divided by average common equity for a given period.

Rate of Return on Risk-Weighted Assets - Net income (loss) divided by average risk-weighted assets for a given period.

Rate of Return on Tangible Common Equity - Net income (loss), reduced by preferred dividends, divided by average common equity less goodwill and intangible assets (purchased credit card relationships) for a given period.

Rate of Return on Total Assets – Net income (loss) divided by average total assets for a given period.

Rate of Return on Total Equity – Net income (loss) divided by average total equity for a given period.

Residential Mortgage Loan – Closed-end loans and revolving lines of credit secured by first or second liens on residential real estate. Depending on the type of residential mortgage, interest can either be fixed or adjustable.

REO – Real Estate Owned

SEC – The Securities and Exchange Commission.

Second Line of Defense or Second LoD – Part of the Three LoD model for managing risk. The Second LoD is predominately comprised of various functions, such as Finance, Legal, Risk, Compliance and Human Resources, whose role as risk stewards is to set the policy and guidelines for managing specific risk areas, provide advice and guidance in relation to the risk, and challenge the First LoD on effective risk management.

TDR Loans – Troubled debt restructurings, which are loans for which the original contractual terms have been modified to provide for terms that are less than we would be willing to accept for new loans with comparable risk because of deterioration in the borrower's financial condition.

Third Line of Defense or Third LoD – Part of the Three LoD model for managing risk. The Third LoD is comprised of our Internal Audit function, which provides independent and objective assurance of the adequacy of the design and operational effectiveness of our risk management framework and governance control process.

Three Lines of Defense Model – This model delineates management accountabilities and responsibilities for risk management and the control environment and underpins our approach to risk management by clarifying responsibilities, encouraging collaboration and enabling efficient coordination of risk and control activities.

Total Equity to Total Assets – Total equity expressed as a percentage of total assets as of a given date.

U.S. GAAP – Generally accepted accounting principles in the United States.

CONSOLIDATED AVERAGE BALANCES AND INTEREST RATES

The following table summarizes the year-to-date average daily balances of the principal components of assets, liabilities and equity together with their respective interest amounts and rates earned or paid, presented on a taxable equivalent basis, which resulted in increases to interest income on securities of nil, nil and \$1 million during the years ended December 31, 2018, 2017 and 2016, respectively. Net interest margin is calculated by dividing net interest income by the average interest earning assets from which interest income is earned. Loan interest for the years ended December 31, 2018, 2017 and 2016 included fees of \$72 million, \$74 million and \$80 million respectively.

	2018			2017			2016		
	Average Balance	Interest	Rate	Average Balance	Interest	Rate	Average Balance	Interest	Rate
	(dollars are in millions)								
Assets:									
Interest bearing deposits with banks	\$ 21,868	\$ 440	2.01%	\$ 38,811	\$ 447	1.15%	\$ 31,999	\$ 165	.52%
Federal funds sold and securities purchased under resale agreements	6,309	205	3.25	7,263	222	3.06	12,881	200	1.55
Trading securities	13,369	213	1.59	10,646	209	1.96	11,556	262	2.27
Securities	45,433	1,131	2.49	47,492	952	2.01	52,469	957	1.82
Loans:									
Commercial	47,826	1,840	3.85	50,474	1,511	2.99	61,401	1,537	2.50
Consumer:									
Residential mortgages	17,416	604	3.47	17,418	583	3.35	18,001	596	3.31
Home equity mortgages.....	1,084	50	4.61	1,289	50	3.88	1,506	52	3.45
Credit cards.....	845	69	8.17	658	70	10.64	668	71	10.63
Other consumer	362	26	7.18	451	27	5.99	476	28	5.88
Total consumer	19,707	749	3.80	19,816	730	3.68	20,651	747	3.62
Total loans	67,533	2,589	3.83	70,290	2,241	3.19	82,052	2,284	2.78
Other	3,797	77	2.03	2,997	52	1.74	2,394	43	1.80
Total interest earning assets.....	\$ 158,309	\$ 4,655	2.94%	\$ 177,499	\$ 4,123	2.32%	\$ 193,351	\$ 3,911	2.02%
Allowance for credit losses	(573)			(888)			(1,012)		
Cash and due from banks	1,140			1,112			998		
Other assets.....	19,167			20,820			13,855		
Total assets	\$ 178,043			\$ 198,543			\$ 207,192		
Liabilities and Equity									
Domestic deposits:									
Savings deposits	\$ 48,153	\$ 319	.66%	\$ 49,635	\$ 237	.48%	\$ 50,949	\$ 135	.26%
Time deposits.....	22,372	557	2.49	22,709	357	1.57	25,594	264	1.03
Other interest bearing deposits	10,248	157	1.53	11,023	53	.48	7,827	10	.13
Foreign deposits:									
Foreign banks deposits	4,304	19	.44	6,302	36	.57	8,747	45	.51
Other interest bearing deposits	1,434	19	1.32	3,144	19	.60	4,099	14	.34
Deposits held for sale	149	1	.57	228	1	.53	—	—	—
Total interest bearing deposits	86,660	1,072	1.24	93,041	703	.76	97,216	468	.48
Short-term borrowings	6,292	172	2.73	9,465	124	1.31	10,153	79	.78
Long-term debt	31,433	1,123	3.57	37,155	998	2.69	36,204	864	2.39
Total interest bearing deposits and debt.....	124,385	2,367	1.90	139,661	1,825	1.31	143,573	1,411	.98
Tax liabilities and other	1,347	36	2.67	1,284	25	1.95	821	15	1.83
Total interest bearing liabilities	\$ 125,732	\$ 2,403	1.91%	\$ 140,945	\$ 1,850	1.31%	\$ 144,394	\$ 1,426	.99%
Net interest income/Interest rate spread		\$ 2,252	1.03%		\$ 2,273	1.01%		\$ 2,485	1.03%
Noninterest bearing deposits	25,651			29,686			31,682		
Other liabilities	6,695			7,149			10,168		
Total equity	19,965			20,763			20,948		
Total liabilities and equity	\$ 178,043			\$ 198,543			\$ 207,192		
Net interest margin on average earning assets			1.42%			1.28%			1.28%
Net interest income to average total assets			1.26%			1.14%			1.20%

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Information required by this Item is included within Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in the Risk Management section under the captions "Interest Rate Risk Management" and "Market Risk Management."

Item 8. Financial Statements and Supplementary Data

Our 2018 Financial Statements meet the requirements of Regulation S-X. The 2018 Financial Statements and supplementary financial information specified by Item 302 of Regulation S-K are set forth below.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholder of
HSBC USA Inc.:

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of HSBC USA Inc. and its subsidiaries ("the Company") as of December 31, 2018 and 2017, and the related consolidated statements of income (loss), comprehensive income (loss), changes in equity and cash flows for each of the three years in the period ended December 31, 2018, including the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As discussed in Note 15 to the consolidated financial statements, the Company changed the manner in which it accounts for classification and measurement of financial liabilities measured under the fair value option in 2017.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits of these consolidated financial statements in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ PricewaterhouseCoopers LLP
New York, New York
February 19, 2019

We have served as the Company's auditor since 2015.

CONSOLIDATED STATEMENT OF INCOME (LOSS)

Year Ended December 31,	2018	2017	2016
	(in millions)		
Interest income:			
Loans.....	\$ 2,589	\$ 2,241	\$ 2,284
Securities.....	1,131	952	956
Trading securities.....	213	209	262
Short-term investments.....	645	669	365
Other	77	52	43
Total interest income	4,655	4,123	3,910
Interest expense:			
Deposits	1,072	703	468
Short-term borrowings.....	172	124	79
Long-term debt	1,123	998	864
Other	36	25	15
Total interest expense	2,403	1,850	1,426
Net interest income.....	2,252	2,273	2,484
Provision for credit losses	(73)	(165)	372
Net interest income after provision for credit losses	2,325	2,438	2,112
Other revenues:			
Credit card fees, net	50	46	52
Trust and investment management fees.....	135	156	153
Other fees and commissions	684	669	721
Trading revenue	625	354	227
Other securities gains, net.....	24	52	70
Servicing and other fees from HSBC affiliates	356	348	289
Gain (loss) on instruments designated at fair value and related derivatives.....	19	43	(71)
Other income (loss).....	6	334	(37)
Total other revenues	1,899	2,002	1,404
Operating expenses:			
Salaries and employee benefits.....	830	1,077	981
Support services from HSBC affiliates.....	1,603	1,549	1,495
Occupancy expense, net.....	185	202	171
Other expenses.....	1,020	563	651
Total operating expenses	3,638	3,391	3,298
Income before income tax	586	1,049	218
Income tax expense	266	1,228	89
Net income (loss)	\$ 320	\$ (179)	\$ 129

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME (LOSS)

Year Ended December 31,	2018	2017	2016
	(in millions)		
<i>Net income (loss)</i>	\$ 320	\$ (179)	\$ 129
Net change in unrealized gains (losses), net of tax:			
Investment securities	(220)	211	(227)
Fair value option liabilities attributable to our own credit spread.....	324	(193)	—
Derivatives designated as cash flow hedges	40	(7)	13
Pension and post-retirement benefit plans	8	2	3
<i>Total other comprehensive income (loss)</i>	152	13	(211)
<i>Comprehensive income (loss)</i>	\$ 472	\$ (166)	\$ (82)

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED BALANCE SHEET

At December 31,	2018	2017
	(in millions, except share data)	
Assets⁽¹⁾		
Cash and due from banks.....	\$ 1,514	\$ 1,115
Interest bearing deposits with banks.....	15,700	11,157
Federal funds sold and securities purchased under agreements to resell (includes nil and \$80 million designated under fair value option at December 31, 2018 and 2017, respectively).....	10,168	32,618
Trading assets (includes \$2.5 billion and \$3.2 billion of assets pledged to creditors at December 31, 2018 and 2017, respectively).....	21,978	16,150
Securities available-for-sale (includes \$822 million and \$524 million of assets pledged to creditors at December 31, 2018 and 2017, respectively).....	31,379	30,700
Securities held-to-maturity (fair value of \$14.4 billion and \$13.9 billion at December 31, 2018 and 2017, respectively).....	14,670	13,977
Loans.....	68,978	72,563
Less – allowance for credit losses.....	541	681
Loans, net.....	68,437	71,882
Loans held for sale (includes \$109 million and \$471 million designated under fair value option at December 31, 2018 and 2017, respectively).....	512	715
Properties and equipment, net.....	158	185
Goodwill.....	1,607	1,607
Other assets.....	6,325	7,129
Total assets	\$ 172,448	\$ 187,235
Liabilities⁽¹⁾		
Debt:		
Domestic deposits:		
Noninterest bearing.....	\$ 25,639	\$ 28,153
Interest bearing (includes \$8.2 billion and \$7.7 billion designated under fair value option at December 31, 2018 and 2017, respectively).....	78,830	84,223
Foreign deposits:		
Noninterest bearing.....	202	322
Interest bearing.....	6,274	5,331
Deposits held for sale.....	10	673
Total deposits.....	110,955	118,702
Short-term borrowings (includes \$560 million and \$2.0 billion designated under fair value option at December 31, 2018 and 2017, respectively).....	4,180	4,650
Long-term debt (includes \$11.2 billion and \$12.9 billion designated under fair value option at December 31, 2018 and 2017, respectively).....	30,628	34,966
Total debt.....	145,763	158,318
Trading liabilities.....	3,643	4,879
Interest, taxes and other liabilities.....	2,536	3,944
Total liabilities	151,942	167,141
Equity		
Preferred stock (no par value; 40,999,000 shares authorized; 1,265 shares issued and outstanding at both December 31, 2018 and 2017).....	1,265	1,265
Common equity:		
Common stock (\$5 par; 150,000,000 shares authorized; 714 shares issued and outstanding at both December 31, 2018 and 2017).....	—	—
Additional paid-in capital.....	18,136	18,130
Retained earnings.....	1,471	1,130
Accumulated other comprehensive loss.....	(366)	(431)
Total common equity.....	19,241	18,829
Total equity	20,506	20,094
Total liabilities and equity	\$ 172,448	\$ 187,235

- ⁽¹⁾ The following table summarizes assets and liabilities related to our consolidated variable interest entities ("VIEs") at December 31, 2018 and 2017 which are consolidated on our balance sheet. Assets and liabilities exclude intercompany balances that eliminate in consolidation. See Note 25, "Variable Interest Entities," for additional information.

At December 31,	2018	2017
	(in millions)	
Assets		
Other assets.....	\$ 112	\$ 154
Total assets.....	<u>\$ 112</u>	<u>\$ 154</u>
Liabilities		
Long-term debt.....	\$ 66	\$ 73
Interest, taxes and other liabilities.....	37	59
Total liabilities.....	<u>\$ 103</u>	<u>\$ 132</u>

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

Year Ended December 31,	2018	2017	2016
	(in millions)		
Preferred stock			
Balance at beginning of period.....	\$ 1,265	\$ 1,265	\$ 1,265
Preferred stock issuance.....	—	—	1,265
Preferred stock redemption.....	—	—	(1,265)
Balance at end of period.....	<u>\$ 1,265</u>	<u>\$ 1,265</u>	<u>\$ 1,265</u>
Common stock			
Balance at beginning and end of period.....	—	—	—
Additional paid-in capital			
Balance at beginning of period.....	18,130	18,148	18,169
Employee benefit plans.....	6	(18)	(21)
Balance at end of period.....	<u>18,136</u>	<u>18,130</u>	<u>18,148</u>
Retained earnings			
Balance at beginning of period.....	1,130	1,560	1,498
Reclassification from accumulated other comprehensive loss of cumulative effect adjustment to initially apply new accounting guidance for equity investments which were previously classified as available-for-sale, net of tax.....	(4)	—	—
Cumulative effect adjustment to initially apply new accounting guidance for equity investments which were previously measured at cost, net of tax.....	10	—	—
Reclassification from accumulated other comprehensive loss of cumulative effective adjustment to initially apply new accounting guidance for stranded tax effects resulting from the Tax Cuts and Jobs Act ("Tax Legislation").....	91	—	—
Reclassification to accumulated other comprehensive loss of cumulative effect adjustment to initially apply new accounting guidance for financial liabilities measured under the fair value option, net of tax.....	—	(174)	—
Balance at beginning of period, adjusted.....	<u>1,227</u>	<u>1,386</u>	<u>1,498</u>
Net income (loss).....	320	(179)	129
Cash dividends declared on preferred stock.....	(76)	(77)	(67)
Balance at end of period.....	<u>1,471</u>	<u>1,130</u>	<u>1,560</u>
Accumulated other comprehensive loss			
Balance at beginning of period.....	(431)	(618)	(407)
Reclassification to retained earnings of cumulative effect adjustment to initially apply new accounting guidance for equity investments which were previously classified as available-for-sale, net of tax.....	4	—	—
Reclassification to retained earnings of cumulative effective adjustment to initially apply new accounting guidance for stranded tax effects resulting from Tax Legislation.....	(91)	—	—
Reclassification from retained earnings of cumulative effect adjustment to initially apply new accounting guidance for financial liabilities measured under the fair value option, net of tax.....	—	174	—
Balance at beginning of period, adjusted.....	<u>(518)</u>	<u>(444)</u>	<u>(407)</u>
Other comprehensive income (loss), net of tax.....	152	13	(211)
Balance at end of period.....	<u>(366)</u>	<u>(431)</u>	<u>(618)</u>
Total common equity	<u>19,241</u>	<u>18,829</u>	<u>19,090</u>
Total equity	<u>\$ 20,506</u>	<u>\$ 20,094</u>	<u>\$ 20,355</u>
Shares of preferred stock			
Number of shares at beginning of period.....	1,265	1,265	21,447,500
Number of shares of preferred stock issued to parent.....	—	—	1,265
Number of shares of preferred stock redeemed.....	—	—	(21,447,500)
Number of shares at end of period.....	<u>1,265</u>	<u>1,265</u>	<u>1,265</u>
Shares of common stock			
Number of shares at beginning and end of period.....	714	714	714

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

Year Ended December 31,	2018	2017	2016
	(in millions)		
<i>Cash flows from operating activities</i>			
Net income (loss).....	\$ 320	\$ (179)	\$ 129
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	(80)	(112)	(45)
Provision for credit losses	(73)	(165)	372
Deferred income tax provision	151	303	(140)
Net realized gains on securities available-for-sale	(24)	(52)	(70)
Net change in other assets and liabilities	(1,830)	(462)	1,723
Net change in loans held for sale:			
Originations and purchases of loans held for sale	(2,399)	(2,360)	(2,398)
Sales and collections of loans held for sale	2,850	2,522	2,581
Net change in trading assets and liabilities	(7,076)	671	(2,312)
Lower of amortized cost or fair value adjustments on loans held for sale	(5)	(18)	83
Loss (gain) on instruments designated at fair value and related derivatives	(19)	(43)	71
Net cash provided by (used in) operating activities	<u>(8,185)</u>	<u>105</u>	<u>(6)</u>
<i>Cash flows from investing activities</i>			
Net change in federal funds sold and securities purchased under agreements to resell	22,450	(2,596)	(10,176)
Securities available-for-sale:			
Purchases of securities available-for-sale	(10,540)	(9,229)	(22,815)
Proceeds from sales of securities available-for-sale	5,169	14,196	19,462
Proceeds from maturities of securities available-for-sale	4,224	1,800	1,930
Securities held-to-maturity:			
Purchases of securities held-to-maturity	(3,007)	(3,722)	(1,538)
Proceeds from maturities of securities held-to-maturity	2,276	2,512	2,704
Change in loans:			
Collections, net of originations	2,527	(19)	7,391
Loans sold to third parties	758	2,183	1,621
Net cash used for acquisitions of properties and equipment	(17)	(36)	(32)
Net outflows related to the sale of a portion of our Private Banking business	(515)	(320)	—
Other, net	50	549	114
Net cash provided by (used in) investing activities	<u>23,375</u>	<u>5,318</u>	<u>(1,339)</u>
<i>Cash flows from financing activities</i>			
Net change in deposits	(6,928)	(10,290)	10,525
Debt:			
Net change in short-term borrowings	(469)	(449)	110
Issuance of long-term debt	11,923	5,158	8,694
Repayment of long-term debt	(14,704)	(8,948)	(4,869)
Preferred stock issuance	—	—	1,265
Preferred stock redemption	—	—	(1,265)
Other increases (decreases) in capital surplus	6	(18)	(21)
Dividends paid	(76)	(77)	(67)
Net cash provided by (used in) financing activities	<u>(10,248)</u>	<u>(14,624)</u>	<u>14,372</u>
Net change in cash and due from banks and interest bearing deposits with banks ⁽¹⁾	<u>4,942</u>	<u>(9,201)</u>	<u>13,027</u>
Cash and due from banks and interest bearing deposits with banks at beginning of period ⁽¹⁾	<u>12,272</u>	<u>21,473</u>	<u>8,446</u>
<i>Cash and due from banks and interest bearing deposits with banks at end of period⁽¹⁾</i>	<u>\$ 17,214</u>	<u>\$ 12,272</u>	<u>\$ 21,473</u>

CONSOLIDATED STATEMENT OF CASH FLOWS (Continued)

Year Ended December 31,	2018	2017	2016
	(in millions)		
<i>Supplemental disclosure of cash flow information</i>			
Interest paid during the period	\$ 2,350	\$ 1,816	\$ 1,446
Net income taxes paid (refunded) during the period	348	783	(289)
<i>Supplemental disclosure of non-cash investing activities</i>			
Transfer of loans to held for sale, net	1,042	1,253	1,588
Transfer of other assets to loans held for sale.....	—	—	78
Fair value of properties added to real estate owned upon foreclosure	11	12	41

⁽¹⁾ As a result of adopting new accounting guidance in 2018, we changed our presentation of cash and cash equivalents to include cash and due from banks as well as interest bearing deposits with banks, which includes restricted cash. See Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," for further discussion.

The accompanying notes are an integral part of the consolidated financial statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note	Page	Note	Page
1 Organization	114	16 Income Taxes	159
2 Summary of Significant Accounting Policies and New Accounting Pronouncements	115	17 Preferred Stock	161
3 Trading Assets and Liabilities.....	125	18 Accumulated Other Comprehensive Loss	162
4 Securities.....	126	19 Share-Based Plans	163
5 Loans.....	131	20 Pension and Other Postretirement Benefits	163
6 Allowance for Credit Losses	142	21 Fee Income from Contracts with Customers	165
7 Loans Held for Sale	144	22 Related Party Transactions	167
8 Properties and Equipment, Net.....	145	23 Business Segments.....	170
9 Goodwill	145	24 Retained Earnings and Regulatory Capital Requirements	176
10 Sale of Certain Private Banking Client Relationships.....	146	25 Variable Interest Entities.....	177
11 Deposits	146	26 Guarantee Arrangements, Pledged Assets and Repurchase Agreements.....	179
12 Short-Term Borrowings	147	27 Fair Value Measurements	184
13 Long-Term Debt	148	28 Litigation and Regulatory Matters.....	199
14 Derivative Financial Instruments.....	149	29 Financial Statements of HSBC USA Inc. (Parent).....	207
15 Fair Value Option.....	156	30 Subsequent Event.....	209

1. Organization

HSBC USA Inc. ("HSBC USA"), incorporated under the laws of Maryland, is a New York State based bank holding company and a wholly-owned subsidiary of HSBC North America Holdings Inc. ("HSBC North America"), which is an indirect wholly-owned subsidiary of HSBC Holdings plc ("HSBC" and, together with its subsidiaries, "HSBC Group"). HSBC USA (together with its subsidiaries, "HUSI") may also be referred to in these notes to the consolidated financial statements as "we," "us" or "our."

Through our subsidiaries, we offer a comprehensive range of consumer and commercial banking products and related financial services. HSBC Bank USA, National Association (together with its subsidiaries, "HSBC Bank USA"), our principal U.S. banking subsidiary, is a national banking association with banking branch offices and/or representative offices in 17 states and the District of Columbia. In addition to our domestic offices, we maintain foreign branch offices, subsidiaries and/or representative offices in Europe, Asia and Latin America. HSBC Bank USA is also an international dealer in derivative instruments denominated in U.S. dollars and other currencies, focusing on structuring transactions to meet clients' needs.

2. Summary of Significant Accounting Policies and New Accounting Pronouncements

Significant Accounting Policies

Basis of Presentation The consolidated financial statements include the accounts of HSBC USA and all subsidiaries in which we hold, directly or indirectly, more than 50 percent of the voting rights, or where we exercise control, including all variable interest entities ("VIEs") in which we are the primary beneficiary. Investments in companies where we have significant influence over operating and financing decisions, which primarily are those where the percentage of ownership is at least 20 percent but not more than 50 percent, are accounted for under the equity method and reported as equity method investments in other assets. All significant intercompany accounts and transactions have been eliminated.

We assess whether an entity is a VIE and, if so, whether we are its primary beneficiary at the time of initial involvement with the entity and on an ongoing basis. A VIE is an entity in which the equity investment at risk is not sufficient to finance the entity's activities without additional subordinated financial support, or as a group, the holders of equity investment at risk lack either a) the power through voting rights or similar rights to direct the activities of the entity that most significantly impacts the entity's economic performance; or b) the obligation to absorb the entity's expected losses, the right to receive the expected residual returns, or both. A VIE must be consolidated by its primary beneficiary, which is the entity with the power to direct the activities of a VIE that most significantly impact its economic performance and the obligation to absorb losses of, or the right to receive benefits from, the VIE that could potentially be significant to the VIE.

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates. Areas which we consider to be critical accounting estimates and require a high degree of judgment and complexity include allowance for credit losses, goodwill impairment, valuation of financial instruments, derivatives held for hedging, deferred tax asset valuation allowances and contingent liabilities. Certain reclassifications have been made to prior period amounts to conform to the current period presentation.

Cash and Cash Equivalents For the purpose of reporting cash flows, cash and cash equivalents include both cash and due from banks and interest bearing deposits with banks, which are inclusive of any restricted cash. Restricted cash represents required reserve balances maintained with the Federal Reserve Bank as discussed further in Note 24, "Retained Earnings and Regulatory Capital Requirements."

Resale and Repurchase Agreements We enter into purchases and borrowings of securities under agreements to resell (resale agreements) and sales of securities under agreements to repurchase (repurchase agreements) substantially identical securities. Resale and repurchase agreements are accounted for as secured lending and secured borrowing transactions, respectively.

With the exception of certain resale and repurchase agreements for which the fair value option has been elected and are further discussed in Note 15, "Fair Value Option," the amounts advanced under resale agreements and the amounts borrowed under repurchase agreements are carried on the consolidated balance sheet at the amount advanced or borrowed, plus accrued interest to date. Interest earned on resale agreements is reported as interest income. Interest paid on repurchase agreements is reported as interest expense. We offset resale and repurchase agreements executed with the same counterparty under legally enforceable netting agreements that meet the applicable netting criteria as permitted by generally accepted accounting principles.

Repurchase agreements may require us to deposit cash or other collateral with the lender. In connection with resale agreements, it is our policy to obtain possession of collateral, which may include the securities purchased, with market value in excess of the principal amount loaned. The market value of the collateral subject to the resale and repurchase agreements is regularly monitored, and additional collateral is obtained or provided when appropriate, to ensure appropriate collateral coverage of these secured financing transactions.

Trading Assets and Liabilities Financial instruments utilized in trading activities are stated at fair value. Fair value is generally based on quoted market prices. If quoted market prices are not available, fair values are estimated based on dealer quotes, pricing models, using observable inputs where available or quoted prices for instruments with similar characteristics. Where applicable, fair value is determined by reference to quotes provided by multiple independent pricing services. Fair value determined by internal pricing models is regularly substantiated by the price level executed in the market and the internal pricing models used are periodically validated by the Markets Independent Model Review ("IMR") function. Realized and unrealized gains and losses are recognized in trading revenues.

Securities Securities acquired principally for the purpose of selling them in the near term are classified as trading assets and reported at fair value. Fair value adjustments to trading securities and gains and losses on the sale of such securities are reported in trading revenue.

Debt securities that we have the ability and intent to hold to maturity are reported at cost adjusted for amortization of premiums and accretion of discounts, which are recognized as adjustments to yield over the contractual lives of the related securities.

All other debt securities are classified as available-for-sale ("AFS") and carried at fair value, with unrealized gains and losses, net of related income taxes, recorded as adjustments to common equity as a component of accumulated other comprehensive loss.

Realized gains and losses on sales of securities available-for-sale and securities held-to-maturity are computed on a specific identified cost basis and are reported in other securities gains, net. When the fair value of a security has declined below its amortized cost basis, we evaluate the decline to assess if it is considered other-than-temporary. For debt securities that we intend to sell or for which it is more likely than not that we will be required to sell before the recovery of its amortized cost basis, the decline in fair value below the security's amortized cost is deemed to be other than temporary and we recognize an other-than-temporary impairment loss in earnings equal to the difference between the security's amortized cost and its fair value. For a debt security that we do not intend to sell and for which it is not more likely than not that we will be required to sell prior to recovery of its amortized cost basis, but for which we nonetheless do not expect to recover the entire amortized cost basis of the security, we recognize the portion of the decline in the security's fair value below its amortized cost that represents a credit loss as an other-than-temporary impairment in earnings and the remaining portion of the decline as an other-than-temporary impairment in other comprehensive income (loss). For these debt securities, a new cost basis is established, which reflects the amount of the other-than-temporary impairment loss recognized in earnings.

Beginning January 1, 2018, equity securities that are not classified as trading are reported in other assets and measured at fair value with changes in fair value recognized in other income (loss). Equity securities that are not considered to have readily determinable fair values are carried at amortized cost, less impairment, adjusted for observable price changes. Prior to January 1, 2018, equity securities that were not classified as trading were reported in securities available-for-sale and measured at fair value with changes in fair value recognized in other comprehensive income (loss) or, for equity securities without readily determinable fair values, carried at amortized cost less impairment in other assets.

Investments in Federal Home Loan Bank stock and Federal Reserve Bank stock are recorded at cost less impairment.

Loans Loans are stated at amortized cost, which represents the principal amount outstanding, net of unearned income, charge-offs, unamortized purchase premium or discount, unamortized nonrefundable fees and related direct loan origination costs and purchase accounting fair value adjustments. The carrying amount of loans represents their amortized cost reduced by the allowance for credit losses.

Premiums and discounts and purchase accounting fair value adjustments are recognized as adjustments to yield over the estimated or contractual lives of the related loans. Interest income is recorded based on the effective interest method.

Troubled debt restructurings ("TDR Loans") are loans for which the original contractual terms have been modified to provide for terms that are less than we would be willing to accept for new loans with comparable risk because of deterioration in the borrower's financial condition. Interest on TDR Loans is recognized when collection is reasonably assured. For commercial nonaccrual TDR Loans, the resumption of interest accrual generally occurs when the borrower has complied with the modified payment terms and conditions for twelve months while maintaining compliance with other terms and conditions of that specific restructuring. For consumer nonaccrual TDR Loans, interest accruals are resumed when the loan becomes current or becomes less than 90 days delinquent and six months of consecutive payments have been made. Modifications resulting in TDR Loans may include changes to one or more terms of the loan, including but not limited to, a change in interest rate, an extension of the amortization period, a reduction in payment amount and partial forgiveness or deferment of principal, accrued interest or other loan covenants.

Nonrefundable fees and related direct costs associated with the origination of loans are deferred and netted against outstanding loan balances. The amortization of net deferred fees, which include points on real estate secured loans and costs, is recognized in interest income, generally by the interest method, based on the estimated or contractual lives of the related loans. Amortization periods are periodically adjusted for loan prepayments and changes in other market assumptions. Annual fees on credit cards, net of direct lending costs, are deferred and amortized on a straight-line basis over one year.

Nonrefundable fees related to lending activities other than direct loan origination are recognized in other revenues over the period in which the related service is provided. This includes fees associated with loan commitments, revolving credit facilities, standby letters of credit, loan syndication and other transaction based fees. Loan syndication fees received for managing a syndication and other transaction based fees are recognized at the point in time the transaction occurs. Fees associated with loan commitments, revolving credit facilities and standby letters of credit are recognized on a straight-line basis over the period the service is performed. In the event a loan commitment or standby letter of credit is exercised, the remaining unamortized fee is recognized as an adjustment to yield over the loan term. For additional information, as well as a full discussion of how revenue associated with all of our various fee-based activities is recognized, see Note 21, "Fee Income from Contracts with Customers."

Allowance for Credit Losses We maintain an allowance for credit losses that is, in the judgment of management, adequate to absorb estimated probable incurred losses in our commercial and consumer loan portfolios. The adequacy of the allowance for credit losses is assessed in accordance with generally accepted accounting principles and is based, in part, upon an evaluation of various factors including:

- an analysis of individual exposures where applicable;
- current and historical loss experience;

- changes in the overall size and composition of the portfolio; and
- specific adverse situations and general economic conditions.

Loss estimates are reviewed periodically and adjustments are reported in earnings when they become known. As these estimates are influenced by factors outside of our control, such as borrower performance and economic conditions, there is uncertainty inherent in these estimates.

For commercial loans individually evaluated for impairment, we conduct a periodic assessment on a loan-by-loan basis of losses we believe to be inherent in the loan portfolio. When it is deemed probable, based upon known facts and circumstances, that full contractual interest and principal on an individual loan will not be collected in accordance with its contractual terms, the loan is considered impaired. An impairment reserve is established primarily based on the present value of expected future cash flows, discounted at the loan's original effective interest rate, or as a practical expedient, the fair value of the collateral if the loan is collateral dependent or the loan's observable market price if the loan is traded in the market. Generally, impaired loans include loans in nonaccruing status, loans which have been assigned a specific allowance for credit losses, loans which have been partially charged off, and TDR Loans. Problem commercial loans are assigned various obligor grades, which are used in the allowance for credit losses methodology. In assigning the obligor ratings to a particular loan, among the risk factors considered are the obligor's debt capacity and financial position, the level of earnings, the amount and sources for repayment, the level of contingencies, management strength and the industry or geography in which the obligor operates.

Formula-based reserves are also established against commercial loans when, based upon an analysis of relevant data, it is probable that a loss has been incurred and the amount of that loss can be reasonably estimated, even though an actual loss has yet to be identified. This methodology uses the probability of default from the customer risk rating assigned to each counterparty together with the estimated loss emergence period (estimate of the period of time between a loss occurring and the confirming event of its charge-off) of the separate portfolios. The "Loss Given Default" rating assigned to each transaction or facility is based on the collateral securing the transaction and the measure of exposure based on the transaction. Specifically, the presence of collateral (secured vs. unsecured), the loan-to-value ratio and the quality of the collateral are the primary drivers of Loss Given Default. A separate reserve for credit losses associated with off-balance sheet exposures, including unfunded lending commitments such as letters of credit, guarantees to extend credit and financial guarantees, is also maintained which is recorded as a component of other expense and included in other liabilities, which incorporates estimates of the probability that customers will actually draw upon off-balance sheet obligations. These reserves are determined by reference to continuously monitored and updated historical loss rates or factors, derived from a migration analysis which considers net charge-off experience by loan and industry type in relation to internal customer credit grading.

We estimate probable losses for pools of homogeneous consumer loans and certain small business loans which do not qualify as TDR Loans using a roll rate migration analysis that estimates the likelihood that a loan will progress through the various stages of delinquency and ultimately charge-off. This migration analysis incorporates estimates of the period of time between a loss occurring and the confirming event of its charge-off. This analysis also considers delinquency status, loss experience and severity and takes into account whether borrowers have filed for bankruptcy or have been subject to account management actions, such as the re-age or modification of accounts. We also take into consideration the loss severity expected based on the underlying collateral, if any, for the loan in the event of default based on historical and recent trends which are updated monthly based on a rolling average of several months' data using the most recently available information.

In addition, loss reserves on consumer and commercial loans are maintained to reflect our judgment of portfolio risk factors which may not be fully reflected in the statistical calculations or when historical trends are not reflective of current inherent losses in the portfolio. Portfolio risk factors considered in establishing the allowance for credit losses on loans include, as appropriate, growth, including new lending markets and customer concentrations, product mix and risk selection, unemployment rates, bankruptcy trends, loan product features such as adjustable rate loans, economic conditions such as industry and business performance and trends in housing markets and interest rates, portfolio seasoning, account management policies and practices, model imprecision, changes in underwriting practices, current levels of charge-off and delinquencies, changes in laws and regulations, geopolitical risks and market volatility, customer concentration and other factors which can affect payment patterns on outstanding loans such as natural disasters. We also consider key ratios such as allowance as a percentage of loans, allowance as a percentage of nonperforming loans and allowance as a percentage of net charge-offs in developing our allowance estimates.

For loans which have been identified as TDR Loans, provisions for credit losses are maintained primarily based on the present value of expected future cash flows, discounted at the loan's original effective interest rate, or as a practical expedient, the fair value of the collateral if the loan is collateral dependent or, for commercial loans, the observable market price if the loan is traded in the market. TDR Loans are considered to be impaired loans. Interest income on TDR Loans is recognized in the same manner as loans which are not TDR Loans. For consumer loans, once a loan is classified as a TDR Loan, it continues to be reported as such until it is paid off or charged-off. For commercial loans, if a TDR Loan subsequently performs in accordance with the new terms and such terms represent current market rates at the time of restructure, such loan will no longer be reported as a TDR Loan beginning in the year after restructure.

Charge-Off and Nonaccrual Policies and Practices Our charge-off and nonaccrual policies differ by product and are summarized below:

Product	Charge-off Policies and Practices	Nonaccrual Policies and Practices
Commercial Loans <i>Real estate, including construction</i> <i>Business and corporate banking</i> <i>Global banking</i> <i>Other commercial</i>	Commercial loan balances are charged off at the time all or a portion of the balance is deemed uncollectible.	Loans are generally categorized as nonaccruing when contractually delinquent for more than three months and in the opinion of management, reasonable doubt exists with respect to the ultimate collectibility of interest or principal based on certain factors including the period of time past due and adequacy of collateral. When classified as nonaccruing, any accrued interest recorded on the loan is generally deemed uncollectible and reversed against income. Interest income is subsequently recognized only to the extent of cash received until the loan is placed on accrual status. In instances where there is doubt as to collectibility of principal, interest payments received are applied to principal. Loans are not reclassified as accruing until interest and principal payments are current and future payments are reasonably assured.
Residential Mortgage Loans	Carrying amounts in excess of fair value less costs to sell are generally charged off at the time foreclosure is initiated or when settlement is reached with the borrower, but not to exceed the end of the month in which the account becomes six months contractually delinquent. If foreclosure is not pursued and there is no reasonable expectation for recovery, the account is generally charged off no later than the end of the month in which the account becomes six months contractually delinquent. ⁽¹⁾	Loans are generally designated as nonaccruing when contractually delinquent for more than three months. When classified as nonaccruing, any accrued interest on the loan is generally deemed uncollectible and reversed against income. Interest accruals are resumed when the loan either becomes current or becomes less than three months delinquent and six months of consecutive payments have been made.
Credit Cards	Loan balances are generally charged off by the end of the month in which the account becomes six months contractually delinquent.	Interest generally accrues until charge-off.
Other Consumer Loans	Loan balances are generally charged off by the end of the month in which the account becomes four months contractually delinquent.	Interest generally accrues until charge-off.

⁽¹⁾ Values are determined based upon broker price opinions or appraisals which are updated at least every 180 days less estimated costs to sell. During the quarterly period between updates, real estate price trends are reviewed on a geographic basis and additional downward adjustments are recorded as necessary. Fair values of foreclosed properties at the time of acquisition are initially determined based upon broker price opinions. Subsequent to acquisition, a more detailed property valuation is performed, reflecting information obtained from a walk-through of the property in the form of a listing agent broker price opinion as well as an independent broker price opinion or appraisal. A valuation is determined from this information within 90 days and any additional write-downs required are recorded through charge-off at that time. In determining the appropriate amounts to charge-off when a property is acquired in exchange for a loan, we do not consider losses on sales of foreclosed properties resulting from deterioration in value during the period the collateral is held because these losses result from future loss events which cannot be considered in determining the fair value of the collateral at the acquisition date.

Charge-offs involving a bankruptcy for credit card receivables occurs by the end of the month, 60 days after notification or 180 days contractually delinquent, whichever comes first.

Delinquency status for loans is determined using the contractual method which is based on the status of payments under the loan. An account is generally considered to be contractually delinquent when payments have not been made in accordance with the loan terms. Delinquency status may be affected by customer account management policies and practices such as the restructure, re-age or modification of accounts.

Payments received on commercial nonaccrual loans are generally applied to reduce the principal balance of such loans. For consumer nonaccrual loans, payments are generally applied first to reduce the current interest on the earliest payment due with any remainder applied to reduce the principal balance associated with that payment date.

Loans Held for Sale Loans are classified as held for sale when they are not expected to be held for the foreseeable future because of management's lack of intent to hold. With the exception of certain commercial loans for which the fair value option has been elected and are further discussed in Note 15, "Fair Value Option," loans classified as held for sale are recorded at the lower of amortized cost or estimated fair value, which is not in excess of their carrying value at the time of designation. Consumer loans are valued on an aggregate portfolio basis while commercial loans are generally valued on an individual loan basis. The fair value estimates of consumer loans are determined primarily using either observed market prices of instruments with similar characteristics or the discounted cash flow method with estimated inputs in prepayment rates, default rates, loss severity, and market rate of return. The fair value estimates of commercial loans held for sale are determined primarily using observable market pricing obtained from independent sources, relevant broker quotes or observed market prices of instruments with similar characteristics. For loans other than those classified as nonaccrual, interest income is determined by applying each loan's contractual rate to the loan's outstanding customer balance, exclusive of unearned income, deferred fees, deferred costs, premium and discount. Periodic adjustments to fair value are recognized in other income (loss) in the consolidated statement of income (loss).

Transfers of Financial Assets Transfers of financial assets in which we have surrendered control over the transferred assets are accounted for as sales. In assessing whether control has been surrendered, we consider whether the transferee would be a consolidated affiliate, the existence and extent of any continuing involvement in the transferred financial assets and the impact of all arrangements or agreements made contemporaneously with, or in contemplation of, the transfer, even if they were not entered into at the time of transfer.

If the sale criteria are met, the transferred financial assets are removed from our balance sheet and a gain or loss on sale is recognized. If the sale criteria are not met, the transfer is recorded as a secured borrowing in which the assets remain on our balance sheet and the proceeds from the transaction are recognized as a liability. For the majority of financial asset transfers, it is clear whether or not we have surrendered control. For other transfers, such as in connection with complex transactions or where we have continuing involvement such as servicing responsibilities, we generally obtain a legal opinion as part of evaluating whether the transfer results in a sale.

Properties and Equipment, Net Properties and equipment are recorded at cost, net of accumulated depreciation. Depreciation is recorded on a straight-line basis over the estimated useful lives of the related assets, which generally range from 3 to 40 years. Leasehold improvements are depreciated over the shorter of the useful life of the improvement or the term of the lease. The costs of maintenance and repairs are expensed as incurred. Impairment testing is performed whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable.

Goodwill Goodwill, representing the excess of purchase price over the fair value of identifiable net assets acquired, results from business combinations. Goodwill is not amortized, but is reviewed for impairment at a minimum on an annual basis at the reporting unit level using discounted cash flow and market approaches. The market approach focuses on valuation multiples for reasonably similar publicly traded companies and also considers recent market transactions, while the discounted cash flows method utilizes cash flow estimates based on recent internal forecasts and discount rates that we believe adequately reflect the risk and uncertainty in our internal forecasts and are appropriate based on the implicit market rates in current comparable transactions. Impairment is reviewed as of an interim date if circumstances indicate that it is more likely than not that the carrying amount of a reporting unit is above fair value. The carrying amount of a reporting unit is determined on the basis of capital invested in the unit including attributable goodwill. We determine the invested capital of a reporting unit by applying to the reporting unit's risk-weighted assets a capital charge consistent with the targets assigned and monitored through our capital management monitoring framework, and additionally, allocating to each reporting unit the remaining carrying amount of HUSI's net assets. Accordingly, the entire carrying amount of HUSI's net assets is allocated to our reporting units. We consider significant and long-term changes in industry and economic conditions to be examples of primary indicators of potential impairment.

Reposessed Collateral Non-financial collateral acquired in satisfaction of a loan is initially recognized at the lower of amortized cost or the collateral's fair value less estimated costs to sell and is reported in other assets. Once a property is classified as real estate owned ("REO"), we do not consider the losses on past sales of foreclosed properties when determining the fair value of any collateral during the period it is held in REO. Any subsequent declines in fair value less estimated costs to sell are recorded through a valuation allowance. Recoveries in fair value less estimated costs to sell are recognized as a reduction of the valuation allowance but not in excess of cumulative losses previously recognized subsequent to the date of repossession. Adjustments to the valuation allowance, costs of holding reposessed collateral, and any gain or loss on disposition are credited or charged to operating expense.

Collateral We pledge assets as collateral as required for various transactions involving security repurchase agreements, public deposits, Treasury tax and loan notes, derivative financial instruments, short-term borrowings and long-term borrowings. Non-cash assets that have been pledged as collateral, including those that can be sold or repledged by the secured party, continue to be reported on our consolidated balance sheet.

We also accept collateral, primarily as part of various transactions involving security resale agreements. Non-cash collateral accepted by us, including collateral that we can sell or re-pledge, is excluded from our consolidated balance sheet. If we resell the collateral, we recognize the proceeds and a liability to return the collateral.

The market value of collateral we have accepted or pledged is regularly monitored and additional collateral is obtained or provided as necessary to ensure appropriate collateral coverage in these transactions.

Derivative Financial Instruments Derivative financial instruments are recognized on the consolidated balance sheet at fair value. On the date a derivative contract is entered into, we designate it as either:

- a qualifying hedge of the fair value of a recognized asset or liability or of an unrecognized firm commitment (fair value hedge);
- a qualifying hedge of the variability of cash flows to be received or paid related to a recognized asset, liability or forecasted transaction (cash flow hedge); or
- a trading instrument or a non-qualifying (economic) hedge.

Changes in the fair value of a derivative designated as a fair value hedge, along with the changes in the fair value of the hedged asset or liability that is attributable to the hedged risk (including losses or gains on firm commitments), are recorded in current period earnings. Changes in the fair value of a derivative that has been designated as a cash flow hedge, to the extent effective as a hedge, are recorded in accumulated other comprehensive loss, net of income taxes, and reclassified into earnings in the period during which the hedged item affects earnings. Ineffectiveness in the hedging relationship is reflected in current period earnings. Changes in the fair value of derivatives held for trading purposes or which do not qualify for hedge accounting are reported in current period earnings.

At the inception of each designated qualifying hedge, we formally document all relationships between hedging instruments and hedged items, as well as its risk management objective and strategy for undertaking various hedge transactions, the nature of the hedged risk, and how hedge effectiveness will be assessed and how ineffectiveness will be measured. This process includes linking all derivatives that are designated as fair value or cash flow hedges to specific assets and liabilities on the balance sheet or to specific firm commitments or forecasted transactions. We also formally assess both at inception and on a quarterly basis, whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in fair values or cash flows of hedged items and whether they are expected to continue to be highly effective in future periods. This assessment is conducted using statistical regression analysis.

Earnings volatility may result from the on-going mark to market of certain economically viable derivative contracts that do not satisfy the hedging requirements in accordance with accounting principles generally accepted in the United States ("U.S. GAAP") as well as from the hedge ineffectiveness associated with the qualifying hedges.

Embedded Derivatives We may acquire or originate a financial instrument that contains a derivative instrument embedded within it. Upon origination or acquisition of any such instrument, we assess whether the economic characteristics of the embedded derivative are clearly and closely related to the economic characteristics of the principal component of the financial instrument (i.e., the host contract) and whether a separate instrument with the same terms as the embedded instrument would meet the definition of a derivative instrument.

When we determine that: (1) the embedded derivative possesses economic characteristics that are not clearly and closely related to the economic characteristics of the host contract; and (2) a separate instrument with the same terms would qualify as a derivative instrument, the embedded derivative is either separated from the host contract (bifurcated), carried at fair value, and designated as a trading instrument or the entire financial instrument is carried at fair value with all changes in fair value recorded to current period earnings. If bifurcation is elected, the consideration for the hybrid financial instrument that is allocated to the bifurcated derivative reduces the consideration that is allocated to the host contract with the difference being recognized over the life of the financial instrument.

Hedge Discontinuation We discontinue hedge accounting prospectively when:

- the derivative is no longer effective or expected to be effective in offsetting changes in the fair value or cash flows of a hedged item (including firm commitments or forecasted transactions) related to the designated risk;
- the derivative expires or is sold, terminated, or exercised;
- it is unlikely that a forecasted transaction will occur;
- the hedged firm commitment no longer meets the definition of a firm commitment; or
- the designation of the derivative as a hedging instrument is no longer appropriate.

When hedge accounting is discontinued because it is determined that the derivative no longer qualifies as an effective fair value or cash flow hedge, the hedging relationship will cease. The hedging instrument will continue to be carried on the balance sheet at fair value, with changes in fair value recognized in current period earnings.

In the case of a discontinued fair value hedge of a recognized asset or liability, as long as the hedged item continues to exist on the balance sheet, the hedged item will no longer be adjusted for changes in fair value attributable to the hedged risk. The basis adjustment that had previously been recorded to the hedged item during the period from the hedge designation date to the hedge discontinuation date is recognized as an adjustment to the yield of the hedged item over the remaining life of the hedged item.

In the case of a discontinued cash flow hedge of a recognized asset or liability, as long as the hedged item continues to exist on the balance sheet, further changes in fair value of the hedging derivative will no longer be recorded in other comprehensive income (loss). The balance applicable to the discontinued hedging relationship will be recognized in earnings over the remaining life of the hedged item as an adjustment to yield. If the discontinued hedged item was a forecasted transaction where it is probable the forecasted transaction will not occur at the end of the original specified time period or within an additional two-month period thereafter, any amounts recorded in accumulated other comprehensive loss are immediately reclassified to current period earnings.

In the case of a cash flow hedge, if the previously hedged item is sold or extinguished, the basis adjustment to the underlying asset or liability or any remaining unamortized other comprehensive income (loss) balance will be reclassified to current period earnings.

In all other situations in which hedge accounting is discontinued, the derivative will be carried at fair value on the consolidated balance sheet, with changes in its fair value recognized in current period earnings unless redesignated in a qualifying cash flow hedge.

Interest Rate Lock Commitments We enter into commitments to originate residential mortgage loans whereby the interest rate on the loan is set prior to funding (rate lock commitments). The interest rate lock commitments on residential mortgage loans that are classified as held for sale are considered to be derivatives and are recorded at fair value in other assets or other liabilities in the consolidated balance sheet. Changes in fair value are recorded as a component of other income (loss) in the consolidated statement of income (loss).

Share-Based Compensation We use the fair value based method of accounting for awards of HSBC stock granted to employees under various restricted share and employee stock purchase plans. Stock compensation costs are recognized prospectively for all new awards granted under these plans. Compensation expense relating to restricted share awards is based upon the fair value on the date of grant and is charged to earnings over the requisite service period (e.g., vesting period), less estimated forfeitures. When modeling awards with vesting that is dependent on performance conditions, these performance conditions are incorporated into the model using Monte Carlo simulation. The expected life of these awards depends on the behavior of the award holders, which is incorporated into the model consistent with historical observable data.

Beginning January 1, 2017, all excess tax benefits and tax deficiencies for share-based payment awards are recorded within income tax expense in the consolidated statement of income (loss), rather than directly to additional paid-in capital.

Pension and Other Postretirement Benefits We recognize the funded status of the postretirement benefit plans on the consolidated balance sheet. Net postretirement benefit cost charged to current earnings related to these plans is based on various actuarial assumptions regarding expected future experience.

Certain employees are participants in various defined contribution, defined benefit and other supplemental retirement plans sponsored by HSBC North America. Our portion of the expense related to these plans is allocated to us and charged to current earnings.

We maintain various 401(k) plans covering substantially all employees. Employer contributions to the plan, which are charged to current earnings, are based on employee contributions.

Income Taxes HSBC USA is included in HSBC North America's consolidated Federal income tax return and in various combined State income tax returns. As such, we have entered into a tax allocation agreement with HSBC North America and its subsidiary entities (the "HNAH Group") which governs the current amount of taxes to be paid or received by the various entities included in the consolidated return filings. Generally, such agreements allocate taxes to members of the HNAH Group based on the calculation of tax on a separate return basis, adjusted for the utilization or limitation of credits of the consolidated group. To the extent all the tax attributes available cannot be currently utilized by the consolidated group, the proportionate share of the utilized attribute is allocated based on each affiliate's percentage of the available attribute computed in a manner that is consistent with the taxing jurisdiction's laws and regulations regarding the ordering of utilization. In addition, we file some separate company State tax returns.

We recognize deferred tax assets and liabilities for the future tax consequences related to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, and for State tax credits and State net operating losses. Deferred tax assets and liabilities are measured using the enacted tax rates and laws that will be in effect when the deferred tax items are expected to be realized. If applicable, valuation allowances are recorded to reduce deferred tax assets to the amounts we conclude are more likely than not to be realized. Since we are included in HSBC North America's consolidated Federal tax return and various combined State tax returns, the related evaluation of the recoverability of the deferred tax assets is performed at the HSBC North America consolidated level. We consider the HNAH Group's consolidated deferred tax assets and various sources of taxable income in reaching conclusions on recoverability of deferred tax assets. The HNAH Group evaluates deferred

tax assets for recoverability using a consistent approach which considers the relative impact of negative and positive evidence, including historical financial performance, projections of future taxable income, future reversals of existing taxable temporary differences, tax planning strategies and any available carryback capacity. In evaluating the need for a valuation allowance, the HNAH Group estimates future taxable income based on management approved business plans. This process involves significant management judgment about assumptions that are subject to change from period to period.

Where a valuation allowance is determined to be necessary at the HSBC North America consolidated level, such allowance is allocated to principal subsidiaries within the HNAH Group in a manner that is systematic, rational and consistent with the broad principles of accounting for income taxes. The methodology generally allocates the valuation allowance to the principal subsidiaries based primarily on the entity's relative contribution to the HNAH Group's consolidated deferred tax asset against which the valuation allowance is being recorded.

Further evaluation is performed at the HSBC USA legal entity level to evaluate the need for a valuation allowance where we file separate company State income tax returns. Foreign taxes paid are applied as credits to reduce Federal income taxes payable, to the extent that such credits can be utilized.

Payments associated with any incremental Base Erosion and Anti-Abuse Tax are reflected in tax expense in the period incurred.

We recognize accrued interest related to uncertain tax positions in interest expense in the consolidated statement of income (loss) and recognize penalties, if any, related to uncertain tax positions as a component of other expenses in the consolidated statement of income (loss).

Transactions with Related Parties In the normal course of business, we enter into transactions with HSBC and its subsidiaries. These transactions occur at prevailing market rates and terms and include funding arrangements, derivative, servicing arrangements, information technology, centralized support services, banking and other miscellaneous services.

New Accounting Pronouncements

The following new accounting pronouncements were adopted effective January 1, 2018:

- ***Recognition of Revenue from Contracts with Customers*** In May 2014, the Financial Accounting Standards Board ("FASB") issued an Accounting Standards Update ("ASU") which provides a principles-based framework for revenue recognition. Additionally, the ASU requires improved disclosures to help users of financial statements better understand the nature, amount, timing, and uncertainty of revenue that is recognized. The core principle of the five-step revenue recognition framework is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The scope of the new guidance is limited to certain revenues classified as fee based income. We did not identify any changes to our revenue recognition policies necessary in order to comply with the ASU. Therefore, the adoption of this guidance did not have any impact on our financial position or results of operations. See Note 21, "Fee Income from Contracts with Customers," for the new disclosure required by this standard.
- ***Financial Instruments - Classification and Measurement (Excluding Financial Liabilities Measured Under the Fair Value Option)*** In January 2016, the FASB issued an ASU which changed aspects of its guidance on classification and measurement of financial instruments. The ASU requires equity investments (except those accounted for under the equity method or those that result in consolidation) to be measured at fair value with changes in fair value recognized in net income (loss). Under a practicability exception, entities may measure equity investments that do not have readily determinable fair values at cost less impairment adjusted for observable price changes. Under this exception, a qualitative assessment for impairment will be required and, if impairment exists, the carrying amount of the investments must be adjusted to their fair value and an impairment loss recognized in net income (loss). Additionally, the ASU requires new disclosure related to equity investments and modifies certain disclosure requirements related to the fair value of financial instruments. The adoption of this guidance required a cumulative effect adjustment to the consolidated balance sheet as of January 1, 2018, resulting in an increase in retained earnings of \$10 million, after tax, to reflect the impact of recording certain equity investments at fair value which were previously measured at cost, as well as a reclassification from accumulated other comprehensive loss to retained earnings of an after tax loss of \$4 million related to equity investments which were previously classified as available-for-sale. The adoption of this guidance also resulted in a reclassification of \$12 million and \$177 million of equity investments which were previously classified as trading securities and available-for-sale securities, respectively, to other assets as of January 1, 2018. See Note 4, "Securities," for the new disclosure required by this standard.
- ***Statement of Cash Flows - Classification of Certain Cash Receipts and Cash Payments*** In August 2016, the FASB issued an ASU that provides targeted amendments to clarify how certain cash receipts and cash payments should be classified in the statement of cash flows. Under the ASU, the portion of the cash payments attributable to accreted interest for the settlement of zero-coupon bonds should be classified as cash outflows for operating activities rather than financing activities and cash proceeds from the settlement of bank-owned life insurance policies should be classified as cash inflows from investing activities rather than operating activities. While the adoption of this guidance resulted in a change in classification

in the statement of cash flows, it did not have a material impact on the statement of cash flows, and it did not have any impact on our financial position or results of operations. The adoption of this guidance required prior periods to be revised and resulted in increases in cash used in operating activities of \$8 million and \$3 million, increases in cash provided by investing activities of \$3 million and \$3 million, and decreases in cash used in financing activities of \$5 million and nil during the years ended December 31, 2017 and 2016, respectively.

- Statement of Cash Flows - Restricted Cash** In November 2016, the FASB issued an ASU that clarifies how restricted cash and restricted cash equivalents should be presented in the statement of cash flows. The ASU requires entities to show the changes in the total of cash, cash equivalents, restricted cash and restricted cash equivalents in the statement of cash flows. Our retrospective adoption includes changes to our presentation of cash and cash equivalents in our consolidated statement of cash flows to include cash and due from banks as well as interest bearing deposits with banks, which includes restricted cash reserve balances maintained with the Federal Reserve Bank. While the adoption of this guidance resulted in a change in classification in the statement of cash flows, it did not have any impact on our financial position or results of operations. The adoption of this guidance required prior periods to be revised and resulted in a decrease in cash provided by investing activities of \$9,081 million and an increase in cash provided by investing activities of \$12,760 million during the years ended December 31, 2017 and 2016, respectively.
- Business Combinations - Clarifying the Definition of a Business** In January 2017, the FASB issued an ASU which provides clarification on the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The amendments in the ASU provide a screen to determine when an integrated set of activities and assets (a "set") is not a business. The screen requires that when substantially all of the fair value of the gross assets acquired (or disposed of) is concentrated in a single identifiable asset or a group of similar identifiable assets, the set is not a business. The amendments also provide a framework to assist entities in evaluating whether both an input and a substantive process are present. The adoption of this guidance did not have any impact on our financial position or results of operations.
- Compensation - Retirement Benefits** In March 2017, the FASB issued an ASU that requires only the service cost component of net periodic pension and postretirement benefit costs to be reported in salaries and employee benefits in the consolidated statement of income (loss) while the other components of net periodic pension and postretirement benefit costs are required to be reported separately from the service cost component. The guidance is not applicable, however, to multiemployer plans. The adoption of this guidance did not have a material impact on our financial statement presentation.
- Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Loss** In February 2018, the FASB issued an ASU that allows for the reclassification of tax effects related to future tax obligations or benefits recorded within accumulated other comprehensive loss (referred to as stranded tax effects) to retained earnings resulting from the change in the federal corporate income tax rate in the Tax Legislation which was signed into law on December 22, 2017. We elected to early adopt this guidance in the first quarter of 2018 and recorded a cumulative effect adjustment to the consolidated balance sheet, resulting in a reclass of approximately \$91 million of tax benefits from accumulated other comprehensive loss to retained earnings as of January 1, 2018.

The following are accounting pronouncements which will be adopted in future periods:

- Leases** In February 2016, the FASB issued an ASU which requires a lessee to recognize a lease liability and a right-of-use asset on its balance sheet for all leases, including operating leases, with a term greater than 12 months. Lease classification is still performed, with any lease classified as a finance lease reported as a financing transaction. The ASU does not substantially change lessor accounting. Additionally, the ASU makes several other targeted amendments including a) revising the definition of lease payments to include fixed payments by the lessee to cover lessor costs related to ownership of the underlying asset such as for property taxes or insurance; b) requiring seller-lessees in a sale-leaseback transaction to recognize the entire gain from the sale of the underlying asset at the time of sale rather than over the leaseback term; and c) expanding disclosures to provide quantitative and qualitative information about lease transactions. The ASU is effective for all annual and interim periods beginning January 1, 2019. We conducted a review of our existing lease contracts and service contracts which may contain embedded leases and recorded a gross-up of our balance sheet of approximately \$780 million as a result of recognizing lease liabilities and corresponding right of use assets for operating leases upon adoption as of January 1, 2019. The adoption of this guidance also required a cumulative effect adjustment to the consolidated balance sheet to recognize the previously deferred gain on the sale and leaseback of our 452 Fifth Avenue property, which resulted in an increase in retained earnings of \$27 million, after tax, as of January 1, 2019. The adoption of this guidance will not result in material changes to the recognition of operating lease expense.
- Financial Instruments - Credit Impairment** In June 2016, the FASB issued an ASU that significantly changes how entities will measure credit losses for most financial assets and certain other instruments that are not measured at fair value through net income (loss). The ASU requires entities to estimate and recognize an allowance for lifetime expected credit losses for loans (including TDR Loans), held-to-maturity debt securities, off-balance sheet credit exposures and certain other financial assets measured at amortized cost. The ASU also requires entities to recognize an allowance for credit losses on AFS debt

securities and revises the accounting model for purchased credit impaired loans and debt securities. Additionally, existing disclosures will also be revised under the ASU. The ASU is effective for all annual and interim periods beginning January 1, 2020 and is required to be applied by recording a cumulative effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective. While early adoption is permitted beginning in the first quarter of 2019, we have not elected early adoption. Our implementation efforts continued throughout 2018, assessing existing credit loss forecasting models and processes against the new guidance to determine modifications that will be required. Our implementation plan has progressed through the initial design, build, and testing phase and, in the first quarter of 2019, we will begin testing the end to end operating model. While we continue to evaluate the impact the new guidance will have on our financial position and results of operations, we currently expect the new guidance may result in an increase to our allowance for credit losses given the change to estimated losses over the contractual life of the loan portfolio as well as the adoption of an allowance for debt securities. The amount of any change to our allowance is still under review and will depend, in part, upon the composition of our loan and held-to-maturity securities portfolios at the adoption date as well as economic conditions and loss forecasts at that date.

- ***Goodwill Impairment Testing*** In January 2017, the FASB issued an ASU that simplifies the accounting for goodwill impairment by removing step two of the goodwill impairment test. Under step two, an entity was required to determine the fair value of individual assets and liabilities of a reporting unit (including unrecognized assets and liabilities) using the procedure for determining fair values in a business combination. Under the new guidance, goodwill impairment will now be measured at the amount by which a reporting unit's carrying amount, including those with a zero or negative carrying amount, exceeds its fair value. Any resulting impairment is limited to the carrying amount of goodwill. An entity must also disclose the amount of goodwill allocated to each reporting unit with a zero or negative carrying amount. The ASU is effective for all annual and interim periods beginning January 1, 2020 and is required to be applied prospectively with early adoption permitted. The adoption of this guidance is not expected to have a material impact on the results of our goodwill impairment testing, our financial position or results of operations.
- ***Premium Amortization on Purchased Callable Debt Securities*** In March 2017, the FASB issued an ASU that shortens the premium amortization period for purchased non-contingently callable debt securities by requiring the premium to be amortized to the earliest call date, rather than the contractual maturity date. After the earliest call date, if the call option is not exercised, the effective yield will be reset using the payment terms of the debt security. The new guidance does not change the discount amortization period for purchased debt securities. The discount continues to be amortized to the contractual maturity date. The ASU is effective for all annual and interim periods beginning January 1, 2019 and is required to be applied by recording a cumulative effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective. The adoption of this guidance will not have a material impact on our financial position or results of operations.
- ***Derivatives and Hedging - Targeted Improvements to Accounting for Hedging Activities*** In August 2017, the FASB issued an ASU amending its hedge accounting guidance to expand an entity's ability to hedge nonfinancial and financial risk components, reduce complexity in fair value hedges of interest rate risk and ease the requirements for effectiveness testing and hedge documentation. The new guidance also eliminates the requirement to separately measure and report hedge ineffectiveness and generally requires the entire change in the fair value of a hedging instrument to be presented in the same income statement line as the hedged item. Existing disclosures will also be revised. The ASU is effective for all annual and interim periods beginning January 1, 2019, and is required to be applied by recording a cumulative effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective. The adoption of this guidance will not have a material impact on our financial position or results of operations.
- ***Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement*** In August 2018, the FASB issued an ASU that eliminates, amends and adds certain disclosure requirements for fair value measurements. The ASU is effective for all annual and interim periods beginning January 1, 2020, with early adoption permitted. We elected to early adopt the new guidance related to the eliminated and amended disclosure requirements in the fourth quarter of 2018. While adoption of the remaining guidance will result in changes to our existing disclosures, it will not have any impact on our financial position or results of operations.

There have been no additional accounting pronouncements issued that are expected to have or could have a material impact on our financial position or results of operations.

3. Trading Assets and Liabilities

Trading assets and liabilities consisted of the following:

At December 31,	2018	2017
	(in millions)	
Trading assets:		
U.S. Treasury	\$ 5,368	\$ 3,391
U.S. Government agency issued or guaranteed	111	122
U.S. Government sponsored enterprises	41	210
Asset-backed securities	208	236
Corporate and foreign bonds	10,562	6,180
Equity securities	751	12
Precious metals	1,889	2,274
Derivatives, net	3,048	3,725
Total trading assets	<u>\$ 21,978</u>	<u>\$ 16,150</u>
Trading liabilities:		
Securities sold, not yet purchased	\$ 738	\$ 1,722
Payables for precious metals	215	524
Derivatives, net	2,690	2,633
Total trading liabilities	<u>\$ 3,643</u>	<u>\$ 4,879</u>

At December 31, 2018 and 2017, the fair value of derivatives included in trading assets is net of \$2,013 million and \$3,423 million, respectively, relating to amounts recognized for the obligation to return cash collateral received under master netting agreements with derivative counterparties.

At December 31, 2018 and 2017, the fair value of derivatives included in trading liabilities is net of \$3,458 million and \$3,680 million, respectively, relating to amounts recognized for the right to reclaim cash collateral paid under master netting agreements with derivative counterparties.

See Note 14, "Derivative Financial Instruments," for further information on our trading derivatives and related collateral.

4. Securities

Our securities available-for-sale and securities held-to-maturity portfolios consisted of the following:

December 31, 2018	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in millions)			
Securities available-for-sale:				
U.S. Treasury	\$ 13,549	\$ 106	\$ (365)	\$ 13,290
U.S. Government sponsored enterprises:				
Mortgage-backed securities	5,541	6	(154)	5,393
Collateralized mortgage obligations	686	1	(35)	652
Direct agency obligations	2,831	37	(2)	2,866
U.S. Government agency issued or guaranteed:				
Mortgage-backed securities	4,442	1	(171)	4,272
Collateralized mortgage obligations	1,140	9	(29)	1,120
Direct agency obligations	295	9	—	304
Asset-backed securities collateralized by:				
Home equity	44	—	(2)	42
Other	102	5	—	107
Foreign debt securities ⁽¹⁾	3,330	3	—	3,333
Total available-for-sale securities	<u>\$ 31,960</u>	<u>\$ 177</u>	<u>\$ (758)</u>	<u>\$ 31,379</u>
Securities held-to-maturity:				
U.S. Government sponsored enterprises:				
Mortgage-backed securities	\$ 1,812	\$ 1	\$ (34)	\$ 1,779
Collateralized mortgage obligations	1,878	34	(26)	1,886
U.S. Government agency issued or guaranteed:				
Mortgage-backed securities	2,104	2	(63)	2,043
Collateralized mortgage obligations	8,863	35	(176)	8,722
Obligations of U.S. states and political subdivisions	11	—	—	11
Asset-backed securities collateralized by residential mortgages	2	—	—	2
Total held-to-maturity securities	<u>\$ 14,670</u>	<u>\$ 72</u>	<u>\$ (299)</u>	<u>\$ 14,443</u>

December 31, 2017	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in millions)			
Securities available-for-sale:				
U.S. Treasury	\$ 15,340	\$ 153	\$ (329)	\$ 15,164
U.S. Government sponsored enterprises:				
Mortgage-backed securities	3,616	—	(77)	3,539
Collateralized mortgage obligations	648	—	(24)	624
Direct agency obligations	3,369	85	—	3,454
U.S. Government agency issued or guaranteed:				
Mortgage-backed securities	5,152	1	(87)	5,066
Collateralized mortgage obligations	792	1	(18)	775
Direct agency obligations	419	19	—	438
Asset-backed securities collateralized by:				
Home equity	54	—	(3)	51
Other	506	4	—	510
Foreign debt securities ⁽¹⁾	902	—	—	902
Equity securities	183	—	(6)	177
Total available-for-sale securities	<u>\$ 30,981</u>	<u>\$ 263</u>	<u>\$ (544)</u>	<u>\$ 30,700</u>
Securities held-to-maturity:				
U.S. Government sponsored enterprises:				
Mortgage-backed securities	\$ 2,113	\$ 10	\$ (12)	\$ 2,111
Collateralized mortgage obligations	1,281	41	(18)	1,304
U.S. Government agency issued or guaranteed:				
Mortgage-backed securities	2,485	4	(13)	2,476
Collateralized mortgage obligations	8,083	18	(106)	7,995
Obligations of U.S. states and political subdivisions	12	1	—	13
Asset-backed securities collateralized by residential mortgages	3	—	—	3
Total held-to-maturity securities	<u>\$ 13,977</u>	<u>\$ 74</u>	<u>\$ (149)</u>	<u>\$ 13,902</u>

⁽¹⁾ Foreign debt securities represent public sector entity, bank or corporate debt.

Net unrealized losses were higher within the available-for-sale portfolio as compared with December 31, 2017 due primarily to increasing yields on U.S. Government agency mortgage-backed, U.S. Government sponsored mortgage-backed and U.S. Treasury securities.

The following table summarizes gross unrealized losses and related fair values at December 31, 2018 and 2017 classified as to the length of time the losses have existed:

December 31, 2018	One Year or Less			Greater Than One Year		
	Number of Securities	Gross Unrealized Losses	Aggregate Fair Value of Investment	Number of Securities	Gross Unrealized Losses	Aggregate Fair Value of Investment
(dollars are in millions)						
Securities available-for-sale:						
U.S. Treasury	8	\$ (12)	\$ 1,013	41	\$ (353)	\$ 8,828
U.S. Government sponsored enterprises	55	(6)	538	159	(185)	3,698
U.S. Government agency issued or guaranteed	8	(2)	106	72	(198)	4,825
Asset-backed securities	1	—	—	4	(2)	42
Foreign debt securities	16	—	1,724	—	—	—
Securities available-for-sale	<u>88</u>	<u>\$ (20)</u>	<u>\$ 3,381</u>	<u>276</u>	<u>\$ (738)</u>	<u>\$ 17,393</u>
Securities held-to-maturity:						
U.S. Government sponsored enterprises	103	\$ (8)	\$ 684	511	\$ (52)	\$ 1,739
U.S. Government agency issued or guaranteed	111	(14)	769	491	(225)	7,372
Obligations of U.S. states and political subdivisions	1	—	—	1	—	—
Securities held-to-maturity	<u>215</u>	<u>\$ (22)</u>	<u>\$ 1,453</u>	<u>1,003</u>	<u>\$ (277)</u>	<u>\$ 9,111</u>

December 31, 2017	One Year or Less			Greater Than One Year		
	Number of Securities	Gross Unrealized Losses	Aggregate Fair Value of Investment	Number of Securities	Gross Unrealized Losses	Aggregate Fair Value of Investment
(dollars are in millions)						
Securities available-for-sale:						
U.S. Treasury	3	\$ (3)	\$ 463	48	\$ (326)	\$ 10,285
U.S. Government sponsored enterprises	83	(7)	883	77	(94)	3,109
U.S. Government agency issued or guaranteed	52	(85)	5,161	23	(20)	573
Asset-backed securities	—	—	—	4	(3)	51
Foreign debt securities	10	—	733	1	—	44
Equity securities	—	—	—	1	(6)	177
Securities available-for-sale	<u>148</u>	<u>\$ (95)</u>	<u>\$ 7,240</u>	<u>154</u>	<u>\$ (449)</u>	<u>\$ 14,239</u>
Securities held-to-maturity:						
U.S. Government sponsored enterprises	264	\$ (5)	\$ 1,126	284	\$ (25)	\$ 1,020
U.S. Government agency issued or guaranteed	116	(48)	5,973	506	(71)	2,962
Obligations of U.S. states and political subdivisions	1	—	—	2	—	—
Securities held-to-maturity	<u>381</u>	<u>\$ (53)</u>	<u>\$ 7,099</u>	<u>792</u>	<u>\$ (96)</u>	<u>\$ 3,982</u>

Although the fair value of a particular security may be below its amortized cost, it does not necessarily result in a credit loss and hence an other-than-temporary impairment. The decline in fair value may be caused by, among other things, the illiquidity of the market. We have reviewed the securities for which there is an unrealized loss for other-than-temporary impairment in accordance with our accounting policies, discussed further below. At December 31, 2018 and 2017, we do not consider any of our debt securities to be other-than-temporarily impaired as we expect to recover their amortized cost basis and we neither intend nor expect to be required to sell these securities prior to recovery, even if that equates to holding securities until their individual maturities. However, other-than-temporary impairments may occur in future periods if the credit quality of the securities deteriorates.

Other-Than-Temporary Impairment On a quarterly basis, we perform an assessment to determine whether there have been any events or economic circumstances to indicate that a debt security with an unrealized loss has suffered other-than-temporary impairment. A debt security is considered impaired if its fair value is less than its amortized cost basis at the reporting date. If impaired, we assess whether the impairment is other-than-temporary.

If we intend to sell the debt security or if it is more-likely-than-not that we will be required to sell the debt security before the recovery of its amortized cost basis, the impairment is considered other-than-temporary and the unrealized loss is recorded in earnings. An impairment is also considered other-than-temporary if a credit loss exists (i.e., the present value of the expected future cash flows is less than the amortized cost basis of the debt security). In the event a credit loss exists, the credit loss component of an other-than-temporary impairment is recorded in earnings while the remaining portion of the impairment loss attributable to factors other than credit loss is recognized, net of tax, in other comprehensive income (loss).

For all securities held in the available-for-sale or held-to-maturity portfolios for which unrealized losses attributed to factors other than credit existed, we do not have the intention to sell and believe we will not be required to sell the securities for contractual, regulatory or liquidity reasons as of the reporting date. In determining whether a credit loss exists and the period over which the debt security is expected to recover, we considered the following factors:

- The length of time and the extent to which the fair value has been less than the amortized cost basis;
- The credit protection features embedded within the instrument, which includes but is not limited to credit subordination positions, payment structure, over collateralization, protective triggers and financial guarantees provided by third parties;
- Changes in the near term prospects of the issuer or the underlying collateral of a security such as changes in default rates, loss severities given default and significant changes in prepayment assumptions;
- The level of excess cash flows generated from the underlying collateral supporting the principal and interest payments of the debt securities; and
- Any adverse change to the credit conditions of the issuer, the monoline insurer or the security such as credit downgrades by the rating agencies.

During 2018, 2017 and 2016, none of our debt securities were determined to have other-than-temporary impairment, as such, there were no other-than-temporary impairment losses recognized related to credit loss.

Other securities gains, net The following table summarizes realized gains and losses on investment securities transactions attributable to available-for-sale securities:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Gross realized gains.....	\$ 54	\$ 65	\$ 142
Gross realized losses.....	(30)	(13)	(72)
Net realized gains	<u>\$ 24</u>	<u>\$ 52</u>	<u>\$ 70</u>

Contractual Maturities and Yields The following table summarizes the amortized cost and fair values of securities available-for-sale and securities held-to-maturity at December 31, 2018 by contractual maturity. Expected maturities differ from contractual maturities because borrowers have the right to prepay obligations without prepayment penalties in certain cases. The table below also reflects the distribution of maturities of debt securities held at December 31, 2018, together with the approximate taxable equivalent yield of the portfolio. The yields shown are calculated by dividing annualized interest income, including the accretion of discounts and the amortization of premiums, by the amortized cost of securities outstanding at December 31, 2018. Yields on tax-exempt obligations have been computed on a taxable equivalent basis using applicable statutory tax rates.

Taxable Equivalent Basis	Within One Year		After One But Within Five Years		After Five But Within Ten Years		After Ten Years	
	Amount	Yield	Amount	Yield	Amount	Yield	Amount	Yield
(dollars are in millions)								
Available-for-sale:								
U.S. Treasury	\$ —	—%	\$ 5,456	2.03%	\$ 5,701	2.19%	\$ 2,392	3.10%
U.S. Government sponsored enterprises	1,358	3.19	1,261	2.64	2,244	2.81	4,195	3.16
U.S. Government agency issued or guaranteed	—	—	72	2.17	10	3.65	5,795	2.73
Asset-backed securities	—	—	—	—	56	5.42	90	4.03
Foreign debt securities	1,780	.04	1,550	2.48	—	—	—	—
Total amortized cost	<u>\$ 3,138</u>	1.40%	<u>\$ 8,339</u>	2.21%	<u>\$ 8,011</u>	2.39%	<u>\$ 12,472</u>	2.96%
Total fair value	<u>\$ 3,143</u>		<u>\$ 8,288</u>		<u>\$ 7,746</u>		<u>\$ 12,202</u>	
Held-to-maturity:								
U.S. Government sponsored enterprises	\$ 50	2.22%	\$ 389	2.71%	\$ 163	2.63%	\$ 3,088	2.96%
U.S. Government agency issued or guaranteed	—	—	18	3.86	26	3.58	10,923	2.66
Obligations of U.S. states and political subdivisions	1	4.67	5	3.17	5	4.37	—	—
Asset-backed securities	—	—	—	—	—	—	2	8.41
Total amortized cost	<u>\$ 51</u>	2.27%	<u>\$ 412</u>	2.77%	<u>\$ 194</u>	2.80%	<u>\$ 14,013</u>	2.73%
Total fair value	<u>\$ 51</u>		<u>\$ 409</u>		<u>\$ 190</u>		<u>\$ 13,793</u>	

Equity Securities As discussed more fully in Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," beginning January 1, 2018, equity securities that are not classified as trading are reported in other assets and measured at fair value with changes in fair value recognized in net income (loss).

Included in other assets at December 31, 2018 were \$278 million of equity securities which were carried at fair value and \$7 million of equity securities without readily determinable fair values which were carried at amortized cost, less impairment, adjusted for observable price changes.

On a quarterly basis, we perform an assessment to determine whether any equity securities without readily determinable fair values are impaired. In the event an equity security is deemed impaired, the security is written down to fair value with impairment recorded in earnings. At December 31, 2018, none of our equity securities without readily determinable fair values were determined to be impaired.

Also included in other assets were investments in Federal Home Loan Bank ("FHLB") stock and Federal Reserve Bank stock of \$156 million and \$631 million, respectively, at December 31, 2018 and \$201 million and \$631 million, respectively, at December 31, 2017.

5. Loans

Loans consisted of the following:

At December 31,	2018	2017
	(in millions)	
Commercial loans:		
Real estate, including construction.....	\$ 11,344	\$ 10,533
Business and corporate banking.....	13,066	12,504
Global banking ⁽¹⁾	20,167	20,088
Other commercial ⁽²⁾	4,765	9,910
Total commercial.....	<u>49,342</u>	<u>53,035</u>
Consumer loans:		
Residential mortgages.....	17,383	17,273
Home equity mortgages.....	982	1,191
Credit cards.....	1,019	721
Other consumer.....	252	343
Total consumer.....	<u>19,636</u>	<u>19,528</u>
Total loans.....	<u>\$ 68,978</u>	<u>\$ 72,563</u>

⁽¹⁾ Represents large multinational firms including globally focused U.S. corporate and financial institutions, U.S. dollar lending to multinational banking clients managed by HSBC on a global basis and complex large business clients supported by Global Banking and Markets relationship managers.

⁽²⁾ Includes loans to HSBC affiliates which totaled \$2,274 million and \$6,750 million at December 31, 2018 and 2017, respectively. See Note 22, "Related Party Transactions," for additional information regarding loans to HSBC affiliates.

We have loans outstanding to certain executive officers and directors. The loans were made on substantially the same terms, including interest rates and collateral, as those prevailing at the time for comparable transactions with other persons and do not involve more than normal risk of collectibility. The aggregate amount of such loans did not exceed 5 percent of total equity at either December 31, 2018 or 2017.

Net deferred origination costs totaled \$77 million and \$81 million at December 31, 2018 and 2017, respectively. At December 31, 2018 and 2017, we had a net unamortized premium on our loans of \$11 million and \$8 million, respectively.

Aging Analysis of Past Due Loans The following table summarizes the past due status of our loans, excluding loans held for sale, at December 31, 2018 and 2017. The aging of past due amounts is determined based on the contractual delinquency status of payments under the loan. An account is generally considered to be contractually delinquent when payments have not been made in accordance with the loan terms. Delinquency status is affected by customer account management policies and practices such as re-age, which results in the re-setting of the contractual delinquency status to current.

At December 31, 2018	Past Due		Total Past Due 30 Days or More	Current ⁽¹⁾	Total Loans
	30 - 89 Days	90+ Days			
(in millions)					
Commercial loans:					
Real estate, including construction	\$ 76	\$ 3	\$ 79	\$ 11,265	\$ 11,344
Business and corporate banking	79	38	117	12,949	13,066
Global banking.....	—	—	—	20,167	20,167
Other commercial	15	—	15	4,750	4,765
Total commercial	170	41	211	49,131	49,342
Consumer loans:					
Residential mortgages.....	469	254	723	16,660	17,383
Home equity mortgages.....	14	27	41	941	982
Credit cards.....	13	14	27	992	1,019
Other consumer.....	5	5	10	242	252
Total consumer.....	501	300	801	18,835	19,636
Total loans	\$ 671	\$ 341	\$ 1,012	\$ 67,966	\$ 68,978

At December 31, 2017	Past Due		Total Past Due 30 Days or More	Current ⁽¹⁾	Total Loans
	30 - 89 Days	90+ Days			
(in millions)					
Commercial loans:					
Real estate, including construction	\$ 27	\$ 9	\$ 36	\$ 10,497	\$ 10,533
Business and corporate banking	25	5	30	12,474	12,504
Global banking.....	—	25	25	20,063	20,088
Other commercial	43	—	43	9,867	9,910
Total commercial	95	39	134	52,901	53,035
Consumer loans:					
Residential mortgages.....	369	344	713	16,560	17,273
Home equity mortgages.....	11	36	47	1,144	1,191
Credit cards.....	8	9	17	704	721
Other consumer.....	5	7	12	331	343
Total consumer.....	393	396	789	18,739	19,528
Total loans	\$ 488	\$ 435	\$ 923	\$ 71,640	\$ 72,563

⁽¹⁾ Loans less than 30 days past due are presented as current.

Contractual Maturities Contractual maturities of loans outstanding at December 31, 2018 were as follows:

	2019	2020	2021	2022	2023	Thereafter	Total
	(in millions)						
Commercial loans:							
Real estate, including construction.....	\$ 4,380	\$ 1,750	\$ 1,482	\$ 1,231	\$ 1,801	\$ 700	\$ 11,344
Business and corporate banking	5,045	2,016	1,707	1,418	2,075	805	13,066
Global banking	7,787	3,111	2,634	2,189	3,202	1,244	20,167
Other commercial	1,840	735	622	517	757	294	4,765
Consumer loans:							
Residential mortgages	688	453	459	456	479	14,848	17,383
Home equity mortgages ⁽¹⁾	413	216	131	80	52	90	982
Credit cards ⁽²⁾	—	1,019	—	—	—	—	1,019
Other consumer	93	132	11	6	3	7	252
Total.....	<u>\$ 20,246</u>	<u>\$ 9,432</u>	<u>\$ 7,046</u>	<u>\$ 5,897</u>	<u>\$ 8,369</u>	<u>\$ 17,988</u>	<u>\$ 68,978</u>

⁽¹⁾ Home equity mortgage maturities reflect estimates based on historical payment patterns.

⁽²⁾ As credit card receivables do not have stated maturities, the table reflects estimates based on historical payment patterns.

As a substantial portion of consumer loans, based on our experience, will be renewed or repaid prior to contractual maturity, the above maturity schedule should not be regarded as a forecast of future cash collections. The following table summarizes contractual maturities of loans outstanding at December 31, 2018 due after one year by repricing characteristic:

December 31, 2018	After One But Within Five Years	After Five Years
	(in millions)	
Receivables at predetermined interest rates	\$ 1,860	\$ 4,772
Receivables at floating or adjustable rates	28,884	13,216
Total.....	<u>\$ 30,744</u>	<u>\$ 17,988</u>

Nonaccrual Loans Nonaccrual loans, including nonaccrual loans held for sale, and accruing loans 90 days or more delinquent consisted of the following:

At December 31,	2018	2017
	(in millions)	
Nonaccrual loans:		
Commercial:		
Real estate, including construction.....	\$ 7	\$ 12
Business and corporate banking	70	215
Global banking	65	385
Other commercial	1	1
Total commercial.....	143	613
Consumer:		
Residential mortgages ⁽¹⁾⁽²⁾⁽³⁾	341	414
Home equity mortgages ⁽¹⁾⁽²⁾	55	67
Consumer nonaccrual loans held for sale	1	1
Total consumer	397	482
Total nonaccruing loans	540	1,095
Accruing loans contractually past due 90 days or more:		
Commercial:		
Business and corporate banking	1	1
Total commercial.....	1	1
Consumer:		
Credit cards	14	9
Other consumer	6	8
Total consumer	20	17
Total accruing loans contractually past due 90 days or more	21	18
Total nonperforming loans	\$ 561	\$ 1,113

⁽¹⁾ At December 31, 2018 and 2017, nonaccrual consumer mortgage loans held for investment include \$289 million and \$360 million, respectively, of loans that are carried at the lower of amortized cost or fair value of the collateral less cost to sell.

⁽²⁾ Nonaccrual consumer mortgage loans held for investment include all loans which are 90 or more days contractually delinquent as well as loans discharged under Chapter 7 bankruptcy and not re-affirmed and second lien loans where the first lien loan that we own or service is 90 or more days contractually delinquent.

⁽³⁾ Nonaccrual consumer mortgage loans for all periods does not include guaranteed loans purchased from the Government National Mortgage Association. Repayment of these loans is predominantly insured by the Federal Housing Administration and as such, these loans have different risk characteristics from the rest of our consumer loan portfolio.

The following table provides additional information on our nonaccrual loans:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Interest income that would have been recorded if the nonaccrual loans had been current in accordance with contractual terms during the period.....	\$ 46	\$ 68	\$ 91
Interest income that was recorded on nonaccrual loans and included in interest income during the period	31	24	22

Impaired Loans A loan is considered to be impaired when it is deemed probable that not all principal and interest amounts due according to the contractual terms of the loan agreement will be collected. Probable losses from impaired loans are quantified and recorded as a component of the overall allowance for credit losses. Commercial and consumer loans for which we have modified the loan terms as part of a troubled debt restructuring are considered to be impaired loans. Additionally, commercial loans in nonaccrual status, or that have been partially charged-off or assigned a specific allowance for credit losses are also considered impaired loans.

Troubled debt restructurings TDR Loans represent loans for which the original contractual terms have been modified to provide for terms that are less than what we would be willing to accept for new loans with comparable risk because of deterioration in the borrower's financial condition.

Modifications for consumer or commercial loans may include changes to one or more terms of the loan, including, but not limited to, a change in interest rate, extension of the amortization period, reduction in payment amount and partial forgiveness or deferment of principal, accrued interest or other loan covenants. A substantial amount of our modifications involve interest rate reductions on consumer loans, which lower the amount of interest income we are contractually entitled to receive in future periods. Through lowering the interest rate and other loan term changes, we believe we are able to increase the amount of cash flow that will ultimately be collected from the loan, given the borrower's financial condition. TDR Loans are reserved for primarily based on the present value of expected future cash flows, discounted at the loan's original effective interest rate, which generally results in a higher reserve requirement for these loans, or as a practical expedient, the fair value of the collateral if the loan is collateral dependent or, for commercial loans, the observable market price if the loan is traded in the market. Once a consumer loan is classified as a TDR Loan, it continues to be reported as such until it is paid off or charged-off. For commercial loans, if subsequent performance is in accordance with the new terms and such terms reflect current market rates at the time of restructure, they will no longer be reported as a TDR Loan beginning in the year after restructuring. During the years ended 2018, 2017 and 2016 there were no commercial loans that met this criteria and were removed from TDR Loan classification.

The following table presents information about loans which were modified during 2018, 2017 and 2016 and as a result of this action became classified as TDR Loans:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Commercial loans:			
Business and corporate banking	\$ 6	\$ 40	\$ 323
Global banking.....	—	160	—
Total commercial	6	200	323
Consumer loans:			
Residential mortgages.....	26	34	62
Home equity mortgages.....	5	9	8
Credit cards.....	4	4	4
Total consumer.....	35	47	74
Total.....	\$ 41	\$ 247	\$ 397

The weighted-average contractual rate reduction for consumer loans which became classified as TDR Loans during 2018, 2017 and 2016 was 1.93 percent, 1.91 percent and 1.48 percent, respectively. The weighted-average contractual rate reduction for commercial loans was not significant in either the number of loans or rate.

The following table presents information about our TDR Loans and the related allowance for credit losses for TDR Loans:

	December 31, 2018		December 31, 2017	
	Carrying Value	Unpaid Principal Balance	Carrying Value	Unpaid Principal Balance
	(in millions)			
TDR Loans: ⁽¹⁾⁽²⁾				
Commercial loans:				
Business and corporate banking	\$ 68	\$ 86	\$ 194	\$ 266
Global banking.....	113	119	175	180
Total commercial ⁽³⁾	181	205	369	446
Consumer loans:				
Residential mortgages ⁽⁴⁾	640	730	683	779
Home equity mortgages ⁽⁴⁾	35	65	33	66
Credit cards	3	4	4	4
Total consumer.....	678	799	720	849
Total TDR Loans ⁽⁵⁾	\$ 859	\$ 1,004	\$ 1,089	\$ 1,295
Allowance for credit losses for TDR Loans: ⁽⁶⁾				
Commercial loans:				
Business and corporate banking	\$ 12		\$ 12	
Global banking.....	—		19	
Total commercial	12		31	
Consumer loans:				
Residential mortgages.....	3		7	
Home equity mortgages	1		1	
Credit cards	1		1	
Total consumer.....	5		9	
Total allowance for credit losses for TDR Loans	\$ 17		\$ 40	

⁽¹⁾ TDR Loans are considered to be impaired loans. For commercial loans, impaired loans include other loans in addition to TDR Loans which totaled \$54 million and \$329 million at December 31, 2018 and 2017, respectively.

⁽²⁾ The carrying value of TDR Loans includes basis adjustments on the loans, such as partial charge-offs, unamortized deferred fees and costs on originated loans and premiums or discounts on purchased loans.

⁽³⁾ Additional commitments to lend to commercial borrowers whose loans have been modified in TDR Loans totaled \$151 million and \$245 million at December 31, 2018 and 2017, respectively.

⁽⁴⁾ At December 31, 2018 and 2017, the carrying value of consumer mortgage TDR Loans held for investment includes \$615 million and \$655 million, respectively, of loans that are recorded at the lower of amortized cost or fair value of the collateral less cost to sell.

⁽⁵⁾ At December 31, 2018 and 2017, the carrying value of TDR Loans includes \$286 million and \$559 million, respectively, of loans which are classified as nonaccrual.

⁽⁶⁾ Included in the allowance for credit losses.

The following table presents information about average TDR Loans and interest income recognized on TDR Loans:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Average balance of TDR Loans:			
Commercial loans:			
Real estate, including construction	\$ —	\$ 19	\$ 69
Business and corporate banking	122	246	292
Global banking	124	154	121
Total commercial	246	419	482
Consumer loans:			
Residential mortgages	660	704	740
Home equity mortgages	35	31	25
Credit cards	4	4	5
Total consumer	699	739	770
Total average balance of TDR Loans	\$ 945	\$ 1,158	\$ 1,252
Interest income recognized on TDR Loans:			
Commercial loans:			
Real estate, including construction	\$ —	\$ —	\$ 4
Business and corporate banking	12	7	8
Global banking	3	2	1
Total commercial	15	9	13
Consumer loans:			
Residential mortgages	27	28	25
Home equity mortgages	2	2	1
Total consumer	29	30	26
Total interest income recognized on TDR Loans	\$ 44	\$ 39	\$ 39

The following table presents consumer loans which were classified as TDR Loans during the previous 12 months which subsequently became 60 days or greater contractually delinquent during the years ended December 31, 2018, 2017 and 2016:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Consumer loans:			
Residential mortgages	\$ 8	\$ 9	\$ 24
Home equity mortgages	2	2	—
Total consumer	\$ 10	\$ 11	\$ 24

During the years ended December 31, 2018, 2017 and 2016, there were no commercial TDR Loans which were classified as TDR Loans during the previous 12 months which subsequently became 90 days or greater contractually delinquent.

Impaired commercial loans The following table presents information about impaired commercial loans and the related impairment reserve:

	Amount with Impairment Reserves ⁽¹⁾	Amount without Impairment Reserves ⁽¹⁾	Total Impaired Commercial Loans ⁽¹⁾⁽²⁾	Impairment Reserve	Unpaid Principal Balance
(in millions)					
At December 31, 2018					
Real estate, including construction	\$ 3	\$ 3	\$ 6	\$ 1	\$ 6
Business and corporate banking	58	37	95	18	109
Global banking	—	133	133	—	140
Other commercial	—	1	1	—	1
Total commercial	<u>\$ 61</u>	<u>\$ 174</u>	<u>\$ 235</u>	<u>\$ 19</u>	<u>\$ 256</u>
At December 31, 2017					
Real estate, including construction	\$ —	\$ 11	\$ 11	\$ —	\$ 11
Business and corporate banking	121	129	250	45	311
Global banking	262	175	437	82	520
Total commercial	<u>\$ 383</u>	<u>\$ 315</u>	<u>\$ 698</u>	<u>\$ 127</u>	<u>\$ 842</u>

⁽¹⁾ Reflects the carrying value of impaired commercial loans and includes basis adjustments on the loans, such as partial charge-offs, unamortized deferred fees and costs on originated loans and premiums or discounts on purchased loans.

⁽²⁾ Includes impaired commercial loans that are also considered TDR Loans which totaled \$181 million and \$369 million at December 31, 2018 and 2017, respectively.

The following table presents information about average impaired commercial loans and interest income recognized on impaired commercial loans:

Year Ended December 31,	2018	2017	2016
(in millions)			
Average balance of impaired commercial loans:			
Real estate, including construction	\$ 9	\$ 32	\$ 83
Business and corporate banking	200	304	344
Global banking	239	554	487
Other commercial	—	4	7
Total average balance of impaired commercial loans	<u>\$ 448</u>	<u>\$ 894</u>	<u>\$ 921</u>
Interest income recognized on impaired commercial loans:			
Real estate, including construction	\$ —	\$ —	\$ 4
Business and corporate banking	15	9	9
Global banking	7	2	—
Total interest income recognized on impaired commercial loans	<u>\$ 22</u>	<u>\$ 11</u>	<u>\$ 13</u>

Commercial Loan Credit Quality Indicators The following credit quality indicators are monitored for our commercial loan portfolio:

Criticized loans Criticized loan classifications presented in the table below are determined by the assignment of various criticized facility grades based on the risk rating standards of our regulator. The following table summarizes criticized commercial loans:

	Special Mention	Substandard	Doubtful	Total
	(in millions)			
At December 31, 2018				
Real estate, including construction	\$ 452	\$ 93	\$ 4	\$ 549
Business and corporate banking.....	193	314	15	522
Global banking.....	262	277	—	539
Other commercial.....	—	1	—	1
Total commercial.....	<u>\$ 907</u>	<u>\$ 685</u>	<u>\$ 19</u>	<u>\$ 1,611</u>
At December 31, 2017				
Real estate, including construction	\$ 467	\$ 117	\$ 1	\$ 585
Business and corporate banking.....	477	519	44	1,040
Global banking.....	452	1,612	82	2,146
Other commercial.....	11	—	—	11
Total commercial.....	<u>\$ 1,407</u>	<u>\$ 2,248</u>	<u>\$ 127</u>	<u>\$ 3,782</u>

Nonperforming The following table summarizes the status of our commercial loan portfolio, excluding loans held for sale:

	Performing Loans	Nonaccrual Loans	Accruing Loans Contractually Past Due 90 days or More	Total
(in millions)				
At December 31, 2018				
Real estate, including construction	\$ 11,337	\$ 7	\$ —	\$ 11,344
Business and corporate banking	12,995	70	1	13,066
Global banking.....	20,102	65	—	20,167
Other commercial	4,764	1	—	4,765
Total commercial	<u>\$ 49,198</u>	<u>\$ 143</u>	<u>\$ 1</u>	<u>\$ 49,342</u>
At December 31, 2017				
Real estate, including construction	\$ 10,521	\$ 12	\$ —	\$ 10,533
Business and corporate banking	12,288	215	1	12,504
Global banking.....	19,703	385	—	20,088
Other commercial	9,909	1	—	9,910
Total commercial	<u>\$ 52,421</u>	<u>\$ 613</u>	<u>\$ 1</u>	<u>\$ 53,035</u>

Credit risk profile The following table shows the credit risk profile of our commercial loan portfolio:

	Investment Grade ⁽¹⁾	Non- Investment Grade	Total
	(in millions)		
At December 31, 2018			
Real estate, including construction	\$ 6,769	\$ 4,575	\$ 11,344
Business and corporate banking	5,674	7,392	13,066
Global banking.....	14,764	5,403	20,167
Other commercial	3,990	775	4,765
Total commercial	<u>\$ 31,197</u>	<u>\$ 18,145</u>	<u>\$ 49,342</u>
At December 31, 2017			
Real estate, including construction	\$ 7,456	\$ 3,077	\$ 10,533
Business and corporate banking	5,752	6,752	12,504
Global banking.....	13,218	6,870	20,088
Other commercial	8,341	1,569	9,910
Total commercial	<u>\$ 34,767</u>	<u>\$ 18,268</u>	<u>\$ 53,035</u>

⁽¹⁾ Investment grade includes commercial loans with credit ratings of at least BBB- or above or the equivalent based on our internal credit rating system.

Consumer Loan Credit Quality Indicators The following credit quality indicators are utilized for our consumer loan portfolio:

Delinquency The following table summarizes dollars of two-months-and-over contractual delinquency and as a percent of total loans and loans held for sale ("delinquency ratio") for our consumer loan portfolio:

	December 31, 2018		December 31, 2017	
	Delinquent Loans	Delinquency Ratio	Delinquent Loans	Delinquency Ratio
	(dollars are in millions)			
Residential mortgages ⁽¹⁾⁽²⁾	\$ 347	1.99%	\$ 425	2.46%
Home equity mortgages ⁽¹⁾⁽²⁾	30	3.05	39	3.27
Credit cards	20	1.96	12	1.66
Other consumer	8	2.62	10	2.48
Total consumer	<u>\$ 405</u>	<u>2.05%</u>	<u>\$ 486</u>	<u>2.48%</u>

⁽¹⁾ At December 31, 2018 and 2017, consumer mortgage loan delinquency includes \$254 million and \$342 million, respectively, of loans that are carried at the lower of amortized cost or fair value of the collateral less cost to sell, including \$1 million and \$1 million, respectively, relating to loans held for sale.

⁽²⁾ At December 31, 2018 and 2017, consumer mortgage loans and loans held for sale include \$125 million and \$159 million, respectively, of loans that were in the process of foreclosure.

Nonperforming The following table summarizes the status of our consumer loan portfolio, excluding loans held for sale:

	Performing Loans	Nonaccrual Loans	Accruing Loans Contractually Past Due 90 days or More	Total
(in millions)				
At December 31, 2018				
Residential mortgages	\$ 17,042	\$ 341	\$ —	\$ 17,383
Home equity mortgages.....	927	55	—	982
Credit cards.....	1,005	—	14	1,019
Other consumer	246	—	6	252
Total consumer	<u>\$ 19,220</u>	<u>\$ 396</u>	<u>\$ 20</u>	<u>\$ 19,636</u>
At December 31, 2017				
Residential mortgages	\$ 16,859	\$ 414	\$ —	\$ 17,273
Home equity mortgages.....	1,124	67	—	1,191
Credit cards.....	712	—	9	721
Other consumer	335	—	8	343
Total consumer	<u>\$ 19,030</u>	<u>\$ 481</u>	<u>\$ 17</u>	<u>\$ 19,528</u>

Troubled debt restructurings See discussion of impaired loans above for further details on this credit quality indicator.

Concentration of Credit Risk At December 31, 2018 and 2017, our loan portfolios included interest-only residential mortgage and home equity mortgage loans totaling \$3,208 million and \$3,424 million, respectively. An interest-only residential mortgage loan allows a customer to pay the interest-only portion of the monthly payment for a period of time which results in lower payments during the initial loan period. However, subsequent events affecting a customer's financial position could affect the ability of customers to repay the loan in the future when the principal payments are required which increases the credit risk of this loan type.

6. Allowance for Credit Losses

The following table summarizes the changes in the allowance for credit losses by product and the related loan balance by product during the years ended December 31, 2018, 2017 and 2016:

	Commercial				Consumer				
	Real Estate, including Construction	Business and Corporate Banking	Global Banking	Other Comm'l	Residential Mortgages	Home Equity Mortgages	Credit Cards	Other Consumer	Total
	(in millions)								
Year Ended December 31, 2018									
Allowance for credit losses – beginning of period.....	\$ 82	\$ 244	\$ 264	\$ 18	\$ 25	\$ 11	\$ 32	\$ 5	\$ 681
Provision charged (credited) to income.....	34	(31)	(109)	(3)	(18)	(3)	55	2	(73)
Charge-offs.....	—	(41)	(48)	—	(7)	(7)	(35)	(4)	(142)
Recoveries.....	—	47	1	—	13	6	6	2	75
Net (charge-offs) recoveries.....	—	6	(47)	—	6	(1)	(29)	(2)	(67)
Allowance for credit losses – end of period.....	\$ 116	\$ 219	\$ 108	\$ 15	\$ 13	\$ 7	\$ 58	\$ 5	\$ 541
Ending balance: collectively evaluated for impairment.....	\$ 115	\$ 201	\$ 108	\$ 15	\$ 10	\$ 6	\$ 57	\$ 5	\$ 517
Ending balance: individually evaluated for impairment.....	1	18	—	—	3	1	1	—	24
Total allowance for credit losses.....	\$ 116	\$ 219	\$ 108	\$ 15	\$ 13	\$ 7	\$ 58	\$ 5	\$ 541
Loans:									
Collectively evaluated for impairment ⁽¹⁾ ...	\$ 11,338	\$ 12,971	\$ 20,034	\$ 4,764	\$ 16,486	\$ 919	\$ 1,016	\$ 252	\$ 67,780
Individually evaluated for impairment ⁽²⁾ ...	6	95	133	1	56	4	3	—	298
Loans carried at lower of amortized cost or fair value less cost to sell.....	—	—	—	—	841	59	—	—	900
Total loans.....	\$ 11,344	\$ 13,066	\$ 20,167	\$ 4,765	\$ 17,383	\$ 982	\$ 1,019	\$ 252	\$ 68,978
Year Ended December 31, 2017									
Allowance for credit losses – beginning of period.....	\$ 92	\$ 317	\$ 508	\$ 13	\$ 26	\$ 20	\$ 34	\$ 7	\$ 1,017
Provision charged (credited) to income.....	(3)	(59)	(116)	6	(7)	(8)	22	—	(165)
Charge-offs.....	(7)	(37)	(141)	(1)	(4)	(6)	(30)	(4)	(230)
Recoveries.....	—	23	13	—	10	5	6	2	59
Net (charge-offs) recoveries.....	(7)	(14)	(128)	(1)	6	(1)	(24)	(2)	(171)
Allowance for credit losses – end of period.....	\$ 82	\$ 244	\$ 264	\$ 18	\$ 25	\$ 11	\$ 32	\$ 5	\$ 681
Ending balance: collectively evaluated for impairment.....	\$ 82	\$ 199	\$ 182	\$ 18	\$ 18	\$ 10	\$ 31	\$ 5	\$ 545
Ending balance: individually evaluated for impairment.....	—	45	82	—	7	1	1	—	136
Total allowance for credit losses.....	\$ 82	\$ 244	\$ 264	\$ 18	\$ 25	\$ 11	\$ 32	\$ 5	\$ 681
Loans:									
Collectively evaluated for impairment ⁽¹⁾ ...	\$ 10,522	\$ 12,254	\$ 19,651	\$ 9,910	\$ 16,308	\$ 1,121	\$ 717	\$ 343	\$ 70,826
Individually evaluated for impairment ⁽²⁾ ...	11	250	437	—	57	4	4	—	763
Loans carried at lower of amortized cost or fair value less cost to sell.....	—	—	—	—	908	66	—	—	974
Total loans.....	\$ 10,533	\$ 12,504	\$ 20,088	\$ 9,910	\$ 17,273	\$ 1,191	\$ 721	\$ 343	\$ 72,563

	Commercial				Consumer				
	Real Estate, including Construction	Business and Corporate Banking	Global Banking	Other Comm'l	Residential Mortgages	Home Equity Mortgages	Credit Cards	Other Consumer	Total
	(in millions)								
Year Ended December 31, 2016									
Allowance for credit losses – beginning of period	\$ 86	\$ 407	\$ 267	\$ 19	\$ 68	\$ 24	\$ 32	\$ 9	\$ 912
Provision charged (credited) to income ⁽³⁾ ..	—	10	348	(6)	(9)	(1)	26	4	372
Charge-offs ⁽³⁾⁽⁴⁾	(1)	(110)	(107)	—	(45)	(8)	(30)	(8)	(309)
Recoveries	7	10	—	—	12	5	6	2	42
Net (charge-offs) recoveries	6	(100)	(107)	—	(33)	(3)	(24)	(6)	\$ (267)
Allowance for credit losses – end of period	\$ 92	\$ 317	\$ 508	\$ 13	\$ 26	\$ 20	\$ 34	\$ 7	\$ 1,017
Ending balance: collectively evaluated for impairment	\$ 91	\$ 262	\$ 257	\$ 12	\$ 17	\$ 19	\$ 33	\$ 7	\$ 698
Ending balance: individually evaluated for impairment	1	55	251	1	9	1	1	—	319
Total allowance for credit losses	\$ 92	\$ 317	\$ 508	\$ 13	\$ 26	\$ 20	\$ 34	\$ 7	\$ 1,017
Loans:									
Collectively evaluated for impairment ⁽¹⁾ ...	\$ 10,847	\$ 13,738	\$ 22,820	\$ 5,758	\$ 16,165	\$ 1,335	\$ 683	\$ 382	\$ 71,728
Individually evaluated for impairment ⁽²⁾ ...	43	342	661	7	60	3	5	—	1,121
Loans carried at lower of amortized cost or fair value less cost to sell	—	—	—	—	956	70	—	—	1,026
Total loans	\$ 10,890	\$ 14,080	\$ 23,481	\$ 5,765	\$ 17,181	\$ 1,408	\$ 688	\$ 382	\$ 73,875

⁽¹⁾ Other commercial includes loans to HSBC affiliates totaling \$2,274 million, \$6,750 million and \$3,274 million at December 31, 2018, 2017 and 2016, respectively, for which we do not carry an associated allowance for credit losses.

⁽²⁾ For consumer loans and certain small business loans, these amounts represent TDR Loans for which we evaluate reserves using a discounted cash flow methodology. Each loan is individually identified as a TDR Loan and then grouped together with other TDR Loans with similar characteristics. The discounted cash flow analysis is then applied to these groups of TDR Loans. Loans individually evaluated for impairment exclude TDR Loans that are carried at the lower of amortized cost or fair value of the collateral less cost to sell which totaled \$615 million, \$655 million and \$672 million at December 31, 2018, 2017 and 2016, respectively.

⁽³⁾ The provision for credit losses and charge-offs for residential mortgage loans during 2016 includes \$11 million related to the lower of amortized cost or fair value adjustment attributable to credit factors for loans transferred to held for sale. See Note 7, "Loans Held for Sale," for additional information.

⁽⁴⁾ For collateral dependent loans that are transferred to held for sale, the existing allowance for credit losses at the time of transfer are recognized as a charge-off. We transferred to held for sale certain residential mortgage loans during 2016 and, accordingly, we recognized the existing allowance for credit losses on these loans as additional charge-offs totaling \$22 million during 2016.

7. Loans Held for Sale

Loans held for sale consisted of the following:

At December 31,	2018	2017
	(in millions)	
Commercial loans:		
Real estate, including construction.....	\$ 27	\$ 115
Global banking	367	533
Total commercial.....	394	648
Consumer loans:		
Residential mortgages	65	6
Other consumer	53	61
Total consumer	118	67
Total loans held for sale	\$ 512	\$ 715

Commercial Loans Commercial loans held for sale primarily consists of certain loans that we have elected to designate under the fair value option which include loans that we originate in connection with our participation in a number of syndicated credit facilities with the intent of selling them to unaffiliated third parties as well as loans that we purchase from the secondary market and hold as hedges against our exposure to certain total return swaps. The fair value of these loans totaled \$109 million and \$471 million at December 31, 2018 and 2017, respectively. See Note 15, "Fair Value Option," for additional information. In addition, at December 31, 2017, commercial loans held for sale included \$115 million of syndicated real estate loans that were sold during 2018.

Commercial loans held for sale also includes certain loans that we no longer intend to hold for investment and transferred to held for sale which totaled \$285 million and \$62 million at December 31, 2018 and 2017, respectively. During 2018 and 2017, we reversed \$5 million and \$5 million, respectively, of the lower of amortized cost or fair value adjustment previously recorded on commercial loans held for sale as a component of other income (loss) in the consolidated statement of income (loss) as a result of an increase in fair value due to improved pricing compared with recording \$35 million of lower of amortized cost or fair value adjustments associated with the write-down of commercial loans held for sale during 2016.

Consumer Loans Prior to 2018 applications, we sold agency-eligible residential mortgage loan originations on a servicing released basis directly to PHH Mortgage Corporation ("PHH Mortgage"). Beginning with 2018 applications, PHH Mortgage is no longer obligated to purchase these loans from us directly upon origination and instead we currently market these loans for sale to other third parties on a servicing retained basis. Gains and losses from the sale of these residential mortgage loans are reflected as a component of other income (loss) in the accompanying consolidated statement of income (loss).

Other consumer loans held for sale reflects student loans which we no longer originate.

Loans held for sale are subject to market risk, liquidity risk and interest rate risk, in that their value will fluctuate as a result of changes in market conditions, as well as the credit environment. As discussed above, prior to 2018 applications, PHH Mortgage was obligated to purchase agency-eligible loans from us directly upon origination and, as such, we retained none of the risk of market changes in mortgage rates for these loans purchased by PHH Mortgage. Beginning with 2018 applications, we now market these loans for sale to other third parties. As a result, in 2018, we have reinstated an economic hedging program to offset changes in the fair value of these mortgage loans held for sale, from the time of commitment to sale, attributable to changes in market interest rates, partially mitigating the interest rate risk for these mortgage loans. Revenue associated with this economic hedging program, which is reflected as a component of other income (loss) in the consolidated statement of income (loss), was a loss of \$1 million during 2018.

During 2017, we completed the sale to third parties of the portfolio of residential mortgage loans that we previously purchased from HSBC Finance Corporation ("HSBC Finance") and transferred to held for sale during 2016. These residential mortgage loans had an unpaid principal balance of \$581 million (aggregate carrying value of \$536 million) at the time of sale and we recognized a gain on sale of approximately \$50 million, including transaction costs. During 2017, we reversed \$1 million of the lower of amortized cost or fair value adjustment previously recorded on this portfolio of loans as a component of other income (loss) in the consolidated statement of income (loss) as a result of an increase in fair value due to improved pricing.

During 2016, we transferred these residential mortgage loans and associated home equity mortgage loans, with a total unpaid principal balance of approximately \$648 million at the time of transfer, to held for sale. The carrying value of these loans prior to transfer, after considering the fair value of the property less costs to sell, as applicable, was approximately \$628 million, including accrued interest. During 2016, we recorded an initial lower of cost or fair value adjustment of \$11 million associated with the

newly transferred loans, all of which was attributed to credit factors and recorded as a component of the provision for credit losses in the consolidated statement of income (loss). During 2016, we also recorded \$4 million of additional lower of amortized cost or fair value adjustment on these loans held for sale as a component of other income (loss) in the consolidated statement of income (loss) as a result of a reduction in the estimated pricing on specific pools of loans.

In addition to the residential mortgage loans discussed above, during 2017 we completed the sale to a third party of certain residential mortgage loans which previously had been written down to the lower of amortized cost or fair value of the collateral less cost to sell (generally 180 days past due) in accordance with our existing charge-off policies and were transferred to held for sale during 2016. These residential mortgage loans had an unpaid principal balance of \$364 million (aggregate carrying value of \$276 million) at the time of sale and we recognized a loss on sale of approximately \$2 million, largely reflecting transaction costs. During 2017, we reversed \$5 million of the lower of amortized cost or fair value adjustment previously recorded on these loans as a component of other income (loss) in the consolidated statement of income (loss) as a result of an increase in fair value due to improved pricing.

During 2016, we transferred these residential mortgage loans, with a total unpaid principal balance of approximately \$568 million at the time of transfer, to held for sale. The carrying value of these loans prior to transfer, after considering the fair value of the property less costs to sell, was approximately \$473 million, including related escrow advances. During 2016, we recorded an initial lower of amortized cost or fair value adjustment of \$45 million associated with the newly transferred loans, all of which was attributed to non-credit factors and recorded as a component of other income (loss) in the consolidated statement of income (loss). During 2016, we also recorded \$8 million of additional lower of amortized cost or fair value adjustment on these loans held for sale as a component of other income (loss) in the consolidated statement of income (loss) as a result of a reduction in the estimated pricing on specific pools of loans subsequent to the initial transfer.

Valuation Allowances Excluding the commercial loans designated under the fair value option discussed above, loans held for sale are recorded at the lower of amortized cost or fair value, with adjustments to fair value being recorded as a valuation allowance through other revenues. The valuation allowance on consumer loans held for sale was \$4 million and \$5 million at December 31, 2018 and 2017, respectively. The valuation allowance on commercial loans held for sale was \$3 million and \$10 million at December 31, 2018 and 2017, respectively.

8. Properties and Equipment, Net

Properties and equipment, net is summarized in the following table:

At December 31,	2018	2017
	(in millions)	
Land	\$ 8	\$ 8
Buildings and improvements	619	609
Furniture and equipment	145	145
Total.....	772	762
Accumulated depreciation and amortization.....	(614)	(577)
Properties and equipment, net.....	<u>\$ 158</u>	<u>\$ 185</u>

Depreciation and amortization expense totaled \$44 million, \$51 million and \$60 million in 2018, 2017 and 2016, respectively.

9. Goodwill

Goodwill was \$1,607 million at both December 31, 2018 and 2017, respectively. Goodwill for these periods reflects accumulated impairment losses of \$670 million, which were recognized in prior periods.

During the third quarter of 2018, we completed our annual impairment test of goodwill and determined that the fair value of all of our reporting units exceeded their respective carrying amounts.

10. Sale of Certain Private Banking Client Relationships

In August 2017, our Private Banking business entered into an agreement to refer parts of its Latin America portfolio, consisting primarily of clients based in areas where we do not have a corporate presence, including Central America and the Andean Pact, to UBS Wealth Management Americas ("UBS"). Under the terms of the agreement, we facilitate the referral of these client relationships to UBS, including the transfer of their client assets as well as the transfer of the relationship managers and client service employees that support these clients. At the time the agreement was signed, total client assets associated with these relationships consisted of approximately \$3.5 billion in client investments (which were not reported on our balance sheet) and \$1.7 billion in client deposits (which were reported on our balance sheet). Loans associated with these client relationships were not included in the agreement. UBS will pay us a fee of 0.5 percent of the aggregate client assets transferred during the first two years after the agreement was signed. Therefore, the consideration we expect to receive is contingent upon the clients' decisions to transfer their accounts to UBS, the timing and amounts of client assets transferred and the acceptance of the client assets by UBS. As a result of entering into the agreement, we recorded the contingent consideration expected to be received of \$15 million as a receivable at estimated fair value within other assets and recognized a pre-tax gain on sale, net of allocated goodwill and transaction costs, of \$8 million in other income (loss) in 2017. The fair value of the contingent consideration is estimated using a discounted cash flow methodology with changes in fair value recognized in other income (loss). During 2018, we reduced the contingent consideration receivable to \$12 million and recognized a \$3 million loss in other income (loss) as a result of a decline in estimated fair value based on the amount of client assets transferred to date and a revised estimate of the amount of remaining client assets that we expect will be transferred.

Through December 31, 2018, we have completed the transfers of approximately \$1.5 billion of client investments and \$0.8 billion of client deposits to UBS. We have estimated the amount of remaining client deposits that we expect will be transferred to UBS, which was approximately \$10 million at December 31, 2018 compared with \$673 million at December 31, 2017, and have classified them as held for sale in our consolidated balance sheet. No lower of cost or fair value adjustment was required as a result of the transfer of deposits to held for sale. An additional \$11 million of deposits at December 31, 2018 could be transferred in the event all remaining client deposits associated with these client relationships were to be transferred.

11. Deposits

Total deposits was \$110,955 million and \$118,702 million at December 31, 2018 and 2017, respectively, of which \$8,154 million and \$7,693 million, respectively, were carried at fair value. At December 31, 2018 and 2017, total deposits included \$10 million and \$673 million, respectively, of deposits classified as held for sale.

The following table presents the aggregate amount of time deposit accounts exceeding \$250,000 at December 31, 2018 and 2017:

At December 31,	2018	2017
	(in millions)	
Domestic deposits	\$ 12,560	\$ 13,875
Foreign deposits	516	629
Total	<u>\$ 13,076</u>	<u>\$ 14,504</u>

The scheduled maturities of all time deposits at December 31, 2018 are summarized in the following table:

	Domestic Deposits	Foreign Deposits	Total
	(in millions)		
2019:			
0-90 days.....	\$ 8,657	\$ 408	\$ 9,065
91-180 days.....	3,253	123	3,376
181-365 days.....	1,489	1	1,490
	13,399	532	13,931
2020	1,130	—	1,130
2021	1,280	—	1,280
2022	1,108	—	1,108
2023	949	—	949
Thereafter	3,792	—	3,792
	<u>\$ 21,658</u>	<u>\$ 532</u>	<u>\$ 22,190</u>

Overdraft deposits, which are classified as loans, were approximately \$453 million and \$321 million at December 31, 2018 and 2017, respectively.

Federal Deposit Insurance Corporation ("FDIC") assessment fees, which are recorded as a component of other expenses in the consolidated statement of income (loss), totaled \$135 million, \$138 million and \$168 million during 2018, 2017 and 2016, respectively. During 2018, FDIC assessment fees were impacted by an immaterial out of period adjustment which increased FDIC assessment fee expense by \$25 million in connection with fee assessments related to prior years.

12. Short-Term Borrowings

Short-term borrowings consisted of the following:

	December 31,					
	2018	Rate	2017	Rate	2016	Rate
	(dollars are in millions)					
Securities sold under repurchase agreements ⁽¹⁾	\$ 1,466	4.16%	\$ 3,365	2.10%	\$ 3,672	1.17%
Average during year.....	\$ 4,189	2.86	\$ 8,100	1.28	\$ 7,272	.72
Maximum month-end balance.....	5,829		11,351		11,950	
Commercial paper.....	2,532	2.70	1,154	1.56	1,251	1.20
Other	182		131		178	
Total short-term borrowings	<u>\$ 4,180</u>		<u>\$ 4,650</u>		<u>\$ 5,101</u>	

⁽¹⁾ The following table presents the quarter end and average quarterly balances of securities sold under repurchase agreements:

	2018				2017				2016			
	Fourth	Third	Second	First	Fourth	Third	Second	First	Fourth	Third	Second	First
	(in millions)											
Quarter end balance	\$ 1,466	\$ 2,471	\$ 2,743	\$ 2,792	\$ 3,365	\$ 6,494	\$ 7,558	\$ 4,069	\$ 3,672	\$ 3,986	\$ 3,969	\$ 5,529
Average quarterly balance	3,045	3,550	5,008	5,182	5,457	12,566	9,272	5,050	4,593	5,959	10,461	8,117

13. Long-Term Debt

The composition of long-term debt is presented in the following table. Interest rates on floating rate notes are determined periodically by formulas based on certain money market rates or, in certain instances, by minimum interest rates as specified in the agreements governing the issues. Interest rates and maturity dates in effect at December 31, 2018 are shown in the below table.

				At December 31,	
	Maturity Date Range	Interest Rate Range	Interest Rate Weighted Average	2018	2017
				(in millions)	
Issued or acquired by HSBC USA:					
Senior debt:					
Fixed-rate notes	2019-2025	2.25% - 4.20%	3.01%	\$ 7,886	\$ 10,185
Floating-rate notes	2019	3.24%	3.24%	350	849
Structured notes	2019-2045	2.40% - 5.11%	3.41%	8,850	9,137
Total senior debt				17,086	20,171
Subordinated debt:					
Fixed-rate notes	2020-2097	5.00% - 9.30%	6.16%	1,170	1,170
Floating-rate notes	2025	3.66%	3.66%	850	850
Total subordinated debt				2,020	2,020
Mark-to-market adjustment on fair value option debt				(243)	1,125
Total issued or acquired by HSBC USA				18,863	23,316
Issued or acquired by HSBC Bank USA and its subsidiaries:					
Senior debt:					
Fixed-rate notes	2021-2026	3.67% - 4.37%	3.89%	4,927	—
Floating-rate notes	2019-2040	0.93% - 1.38%	1.33%	31	4,031
Structured notes	2019-2028	2.69% - 9.07%	5.85%	769	393
FHLB advances - floating-rate	2019-2036	2.50% - 3.33%	2.88%	2,100	3,100
Total senior debt				7,827	7,524
Subordinated fixed-rate notes	2020-2039	4.88% - 7.00%	5.70%	3,676	3,572
Long-term debt issued by VIE - fixed-rate	2019	17.20%	17.20%	66	73
Mark-to-market adjustment on fair value option debt				196	481
Total issued or acquired by HSBC Bank USA and its subsidiaries				11,765	11,650
Total long-term debt				\$ 30,628	\$ 34,966

At December 31, 2018 and 2017, we had structured notes totaling \$9,314 million and \$10,656 million, respectively, and subordinated debt totaling \$1,935 million and \$2,230 million, respectively, for which we have elected fair value option accounting and are therefore carried at fair value. See Note 15, "Fair Value Option," for further details.

As a member of the FHLB and the Federal Reserve Bank of New York, we have secured borrowing facilities which are collateralized by loans and investment securities. At December 31, 2018 and 2017, borrowings from the FHLB facility totaled \$2,100 million and \$3,100 million, respectively, which is included in long-term debt. Based upon the amounts pledged as collateral under these facilities, we have additional borrowing capacity of up to \$15,721 million at December 31, 2018.

Maturities of long-term debt at December 31, 2018 were as follows:

	(in millions)
2019	\$ 5,799
2020	6,934
2021	5,495
2022	1,342
2023	981
Thereafter	10,077
Total	<u>\$ 30,628</u>

14. Derivative Financial Instruments

In the normal course of business, the derivative instruments we enter into are for trading, market making and risk management purposes. For financial reporting purposes, derivative instruments are designated in one of the following categories: (a) hedging instruments designated as qualifying hedges under derivative and hedge accounting principles, (b) financial instruments held for trading or (c) non-qualifying economic hedges. The derivative instruments held are predominantly swaps, futures, options and forward contracts. All derivatives are stated at fair value. Where we enter into enforceable master netting agreements with counterparties, the master netting agreements permit us to net those derivative asset and liability positions and to offset cash collateral held and posted with the same counterparty.

The following table presents the fair value of derivative contracts by major product type on a gross basis. Gross fair values exclude the effects of both counterparty netting as well as collateral, and therefore are not representative of our exposure. The table below also presents the amounts of counterparty netting and cash collateral that have been offset in the consolidated balance sheet, as well as cash and securities collateral posted and received under enforceable master netting agreements that do not meet the criteria for netting. Derivative assets and liabilities which are not subject to an enforceable master netting agreement, or are subject to a netting agreement where an appropriate legal opinion to determine such agreements are enforceable has not been either sought or obtained, have not been netted in the table below. Where we have received or posted collateral under netting agreements where an appropriate legal opinion to determine such agreements are enforceable has not been either sought or obtained, the related collateral also has not been netted in the table below.

	December 31, 2018		December 31, 2017	
	Derivative Assets	Derivative Liabilities	Derivative Assets	Derivative Liabilities
(in millions)				
Derivatives accounted for as fair value hedges⁽¹⁾				
OTC-cleared ⁽²⁾	\$ 6	\$ —	\$ 84	\$ 390
Bilateral OTC ⁽²⁾	—	117	—	134
Interest rate contracts	6	117	84	524
Derivatives accounted for as cash flow hedges⁽¹⁾				
Foreign exchange contracts - bilateral OTC⁽²⁾	11	32	10	—
OTC-cleared ⁽²⁾	—	—	4	86
Bilateral OTC ⁽²⁾	—	13	—	22
Interest rate contracts	—	13	4	108
Total derivatives accounted for as hedges	17	162	98	632
Trading derivatives not accounted for as hedges⁽³⁾				
Exchange-traded ⁽²⁾	2	45	6	59
OTC-cleared ⁽²⁾	50	14	11,905	10,526
Bilateral OTC ⁽²⁾	9,866	10,780	11,549	12,997
Interest rate contracts	9,918	10,839	23,460	23,582
Exchange-traded ⁽²⁾	—	15	4	—
Bilateral OTC ⁽²⁾	15,897	15,684	15,746	14,666
Foreign exchange contracts	15,897	15,699	15,750	14,666
Equity contracts - bilateral OTC⁽²⁾	2,034	2,061	2,820	2,806
Exchange-traded ⁽²⁾	16	274	52	108
Bilateral OTC ⁽²⁾	829	626	502	613
Precious metals contracts	845	900	554	721
OTC-cleared ⁽²⁾	125	107	67	75
Bilateral OTC ⁽²⁾	825	831	589	485
Credit contracts	950	938	656	560
Other non-qualifying derivatives not accounted for as hedges⁽¹⁾				
OTC-cleared ⁽²⁾	—	—	519	60
Bilateral OTC ⁽²⁾	133	216	170	164
Interest rate contracts	133	216	689	224
Foreign exchange contracts - bilateral OTC⁽²⁾	13	2	—	—
Equity contracts - bilateral OTC⁽²⁾	512	805	1,264	145
Precious metals contracts - bilateral OTC⁽²⁾	—	—	—	1
Credit contracts - bilateral OTC⁽²⁾	6	9	—	24
Other contracts - bilateral OTC⁽²⁾⁽⁴⁾	5	40	6	52
Total derivatives	30,330	31,671	45,297	43,413
Less: Gross amounts of receivable / payable subject to enforceable master netting agreements⁽⁵⁾⁽⁷⁾	25,172	25,172	36,394	36,394
Less: Gross amounts of cash collateral received / posted subject to enforceable master netting agreements⁽⁶⁾⁽⁷⁾	2,020	3,675	4,480	3,823
Net amounts of derivative assets / liabilities presented in the balance sheet	3,138	2,824	4,423	3,196
Less: Gross amounts of financial instrument collateral received / posted subject to enforceable master netting agreements but not offset in the consolidated balance sheet	832	568	742	370
Net amounts of derivative assets / liabilities	\$ 2,306	\$ 2,256	\$ 3,681	\$ 2,826

⁽¹⁾ Derivative assets / liabilities related to cash flow hedges, fair value hedges and derivative instruments held for purposes other than for trading are recorded in other assets / interest, taxes and other liabilities on the consolidated balance sheet.

⁽²⁾ Over-the-counter ("OTC") derivatives include derivatives executed and settled bilaterally with counterparties without the use of an organized exchange or central clearing house. The credit risk associated with bilateral OTC derivatives is managed through obtaining collateral and enforceable master netting agreements. OTC-cleared derivatives are executed bilaterally in the OTC market but then novated to a central clearing counterparty, whereby the central clearing counterparty becomes the counterparty to each of the original counterparties. Exchange traded derivatives are executed directly on an organized exchange. Credit risk is minimized for OTC-cleared derivatives and exchange traded derivatives through daily margining requirements. During the first quarter of 2018, a central clearing counterparty amended its rules for OTC-cleared interest rate derivatives to legally re-characterize daily variation margin

payments to be settlement payments as opposed to cash collateral posted. The impact of reflecting the rule change for this central clearing counterparty as of December 31, 2017 would have been a reduction in gross derivative assets and liabilities of approximately \$11.5 billion and \$10.3 billion, respectively, with corresponding decreases in the related counterparty and cash collateral netting.

- (3) Trading related derivative assets / liabilities are recorded in trading assets / trading liabilities on the consolidated balance sheet.
- (4) Consists of swap agreements entered into in conjunction with the sales of Visa Inc. ("Visa") Class B common shares ("Class B Shares").
- (5) Represents the netting of derivative receivable and payable balances for the same counterparty under enforceable netting agreements.
- (6) Represents the netting of cash collateral posted and received by counterparty under enforceable netting agreements.
- (7) Netting is performed at a counterparty level in cases where enforceable master netting agreements are in place, regardless of the type of derivative instrument. Therefore, we have not allocated netting to the different types of derivative instruments shown in the table above.

See Note 26, "Guarantee Arrangements, Pledged Assets and Repurchase Agreements," for further information on offsetting related to resale and repurchase agreements and securities borrowing and lending arrangements.

Derivatives Held for Risk Management Purposes Our risk management policy requires us to identify, analyze and manage risks arising from the activities conducted during the normal course of business. We use derivative instruments as an asset and liability management tool to manage our exposures in interest rate, foreign currency and credit risks in existing assets and liabilities, commitments and forecasted transactions. The accounting for changes in fair value of a derivative instrument will depend on whether the derivative has been designated and qualifies for hedge accounting.

We designate derivative instruments to offset the fair value risk and cash flow risk arising from fixed-rate and floating-rate assets and liabilities as well as forecasted transactions. We assess the hedging relationships, both at the inception of the hedge and on an ongoing basis, using a regression approach to determine whether the designated hedging instrument is highly effective in offsetting changes in the fair value or the cash flows attributable to the hedged risk. Accounting principles for qualifying hedges require us to prepare detailed documentation describing the relationship between the hedging instrument and the hedged item, including, but not limited to, the risk management objective, the hedging strategy and the methods to assess and measure the ineffectiveness of the hedging relationship. We discontinue hedge accounting when we determine that the hedge is no longer highly effective, the hedging instrument is terminated, sold or expired, the designated forecasted transaction is not probable of occurring, or when the designation is removed by us.

Fair Value Hedges In the normal course of business, we hold fixed-rate loans and securities and issue fixed-rate senior and subordinated debt obligations. The fair value of fixed-rate (U.S. dollar and non-U.S. dollar denominated) assets and liabilities fluctuates in response to changes in interest rates or foreign currency exchange rates. We utilize interest rate swaps, forward and futures contracts and foreign currency swaps to minimize our exposure to changes in fair value caused by interest rate and foreign currency volatility. The changes in the fair value of the hedged item designated in a qualifying hedge are captured as an adjustment to the carrying amount of the hedged item (basis adjustment). If the hedging relationship is terminated and the hedged item continues to exist, the basis adjustment is amortized over the remaining life of the hedged item.

We recorded basis adjustments for active fair value hedges which increased the carrying amount of our debt by \$8 million at December 31, 2018 and decreased the carrying amount of our debt by \$132 million at December 31, 2017. During 2018, 2017 and 2016, we amortized \$2 million, \$5 million and \$6 million, respectively, of basis adjustments related to terminated and/or re-designated fair value hedges of our debt. The total accumulated unamortized basis adjustments related to terminated and/or re-designated fair value hedges amounted to a decrease in the carrying amount of our debt of \$59 million at December 31, 2018 and an increase in the carrying amount of our debt of \$7 million at December 31, 2017.

We recorded basis adjustments for active fair value hedges of AFS securities which increased the carrying amount of the securities by \$137 million and \$279 million at December 31, 2018 and 2017, respectively.

The following table presents information on gains and losses on derivative instruments designated and qualifying as hedging instruments in fair value hedges and the hedged items in fair value hedges and their locations on the consolidated statement of income (loss):

	Gain (Loss) on Derivative		Gain (Loss) on Hedged Items		Net Ineffective Gain (Loss) Recognized
	Net Interest Income	Other Income (Loss)	Net Interest Income	Other Income (Loss)	Other Income (Loss)
(in millions)					
Year Ended December 31, 2018					
Interest rate contracts / AFS Securities	\$ (41)	\$ 322	\$ 362	\$ (309)	\$ 13
Interest rate contracts / long-term debt.....	(58)	74	(233)	(74)	—
Total.....	<u>\$ (99)</u>	<u>\$ 396</u>	<u>\$ 129</u>	<u>\$ (383)</u>	<u>\$ 13</u>
Year Ended December 31, 2017					
Interest rate contracts / AFS Securities	\$ (121)	\$ 33	\$ 367	\$ (35)	\$ (2)
Interest rate contracts / long-term debt.....	12	(24)	(257)	29	5
Total.....	<u>\$ (109)</u>	<u>\$ 9</u>	<u>\$ 110</u>	<u>\$ (6)</u>	<u>\$ 3</u>
Year Ended December 31, 2016					
Interest rate contracts / AFS Securities	\$ (178)	\$ 59	\$ 374	\$ (74)	\$ (15)
Interest rate contracts / long-term debt.....	32	(82)	(155)	80	(2)
Total.....	<u>\$ (146)</u>	<u>\$ (23)</u>	<u>\$ 219</u>	<u>\$ 6</u>	<u>\$ (17)</u>

Cash Flow Hedges We own or issue floating rate financial instruments and enter into forecasted transactions that give rise to variability in future cash flows. As a part of our risk management strategy, we use interest rate swaps, currency swaps and futures contracts to mitigate risk associated with variability in the cash flows. Changes in fair value of a derivative instrument associated with the effective portion of a qualifying cash flow hedge are recognized in other comprehensive income (loss). When the cash flows being hedged materialize and are recorded in income or expense, the associated gain or loss from the hedging derivative previously recorded in accumulated other comprehensive loss ("AOCI") is reclassified into earnings in the same accounting period in which the designated forecasted transaction or hedged item affects earnings. If a cash flow hedge of a forecasted transaction is de-designated because it is no longer highly effective, or if the hedge relationship is terminated, the cumulative gain or loss on the hedging derivative to that date will continue to be reported in AOCI unless it is probable that the hedged forecasted transaction will not occur by the end of the originally specified time period as documented at the inception of the hedge, at which time the cumulative gain or loss is released into earnings.

At December 31, 2018, active cash flow hedge relationships extend or mature through July 2036. During 2018, \$23 million of losses related to terminated and/or re-designated cash flow hedge relationships were amortized to earnings from AOCI compared with losses of \$17 million during both 2017 and 2016. During the next twelve months, we expect to amortize \$33 million of remaining losses to earnings resulting from these terminated and/or re-designated cash flow hedges. The interest accrual related to the hedging instruments is recognized in interest income.

The following table presents information on gains and losses on derivative instruments designated and qualifying as hedging instruments in cash flow hedges (including amounts recognized in AOCI from all terminated cash flow hedges) and their locations on the consolidated statement of income (loss):

Gain (Loss) Recognized in AOCI on Derivative (Effective Portion)			Location of Gain (Loss) Reclassified from AOCI into Income (Effective Portion)	Gain (Loss) Reclassified From AOCI into Income (Effective Portion)			Location of Gain (Loss) Recognized in Income on the Derivative (Ineffective Portion and Amount Excluded from Effectiveness Testing)	Gain (Loss) Recognized in Income on the Derivative (Ineffective Portion)			
2018	2017	2016		2018	2017	2016		2018	2017	2016	
(in millions)											
Year Ended December 31,											
Foreign exchange contracts	\$ (2)	\$ 1	\$ (1)	Net interest income	\$ —	\$ —	\$ —	Other income (loss)	\$ —	\$ —	\$ —
Interest rate contracts	31	(30)	6	Net interest income	(23)	(17)	(17)	Other income (loss)	(1)	1	—
Total	\$ 29	\$ (29)	\$ 5		\$ (23)	\$ (17)	\$ (17)		\$ (1)	\$ 1	\$ —

Trading Derivatives and Non-Qualifying Hedging Activities In addition to risk management, we also enter into derivative contracts, including buy- and sell-protection credit derivatives, for the purposes of trading and market making, or repackaging risks to form structured trades to meet clients' risk taking objectives. Additionally, we buy or sell securities and use derivatives to mitigate the market risks arising from our trading activities with our clients that exceed our risk appetite. We also use buy-protection credit derivatives to manage our counterparty credit risk exposure. Where we enter into derivatives for trading purposes, realized and unrealized gains and losses are recognized in trading revenue. Prior to the sale of our remaining mortgage servicing rights ("MSRs") portfolio during the fourth quarter of 2016, we used forward purchases or sales of to-be-announced ("TBA") securities to economically hedge changes in the fair value of our MSRs. Changes in the fair value of TBA positions, which were considered derivatives, were recorded in other income (loss). Counterparty credit risk associated with OTC derivatives, including risk-mitigating buy-protection credit derivatives, are recognized as an adjustment to the fair value of the derivatives and are recorded in trading revenue.

Our non-qualifying hedging and other activities include:

- Derivative contracts related to the fixed-rate long-term debt issuances and hybrid instruments, including all structured notes and deposits, for which we have elected fair value option accounting. These derivative contracts are non-qualifying hedges but are considered economic hedges.
- Credit default swaps which are designated as economic hedges against the credit risks within our loan portfolio. In the event of an impairment loss occurring in a loan that is economically hedged, the impairment loss is recognized as provision for credit losses while the gain on the credit default swap is recorded as other income (loss).
- Swap agreements entered into in conjunction with the sales of Visa Class B Shares to a third party to retain the litigation risk associated with the Class B Shares sold until the related litigation is settled and the Class B Shares can be converted into Class A common shares ("Class A Shares"). See Note 26, "Guarantee Arrangements, Pledged Assets and Repurchase Agreements," for additional information.
- Beginning in 2018, forward purchases or sales of TBA securities used to economically hedge changes in the fair value of agency-eligible residential mortgage loans held for sale attributable to changes in market interest rates. Changes in the fair value of TBA positions, which are considered derivatives, are recorded in other income (loss). See Note 7, "Loans Held for Sale," for additional information.

Derivative instruments designated as economic hedges that do not qualify for hedge accounting are recorded at fair value through profit and loss. Realized and unrealized gains and losses on economic hedges are recognized in gain (loss) on instruments designated at fair value and related derivatives or other income (loss) while the derivative asset or liability positions are reflected as other assets or other liabilities.

The following table presents information on gains and losses on derivative instruments held for trading purposes and their locations on the consolidated statement of income (loss):

Location of Gain (Loss) Recognized in Income on Derivatives		Amount of Gain (Loss) Recognized in Income on Derivatives		
		Year Ended December 31,		
		2018	2017	2016
		(in millions)		
Interest rate contracts	Trading revenue	\$ 303	\$ (209)	\$ (283)
Interest rate contracts	Other income (loss)	—	—	36
Foreign exchange contracts	Trading revenue	105	192	386
Equity contracts	Trading revenue	100	2	6
Precious metals contracts	Trading revenue	376	220	(20)
Credit contracts	Trading revenue	(52)	(110)	(71)
Total		<u>\$ 832</u>	<u>\$ 95</u>	<u>\$ 54</u>

The following table presents information on gains and losses on derivative instruments held for non-qualifying hedging and other activities and their locations on the consolidated statement of income (loss):

Location of Gain (Loss) Recognized in Income on Derivatives		Amount of Gain (Loss) Recognized in Income on Derivatives		
		Year Ended December 31,		
		2018	2017	2016
		(in millions)		
Interest rate contracts	Gain (loss) on instruments designated at fair value and related derivatives	\$ (120)	\$ 62	\$ (12)
Interest rate contracts	Other income (loss)	(1)	—	—
Foreign exchange contracts	Gain (loss) on instruments designated at fair value and related derivatives	(11)	6	30
Equity contracts	Gain (loss) on instruments designated at fair value and related derivatives	(981)	1,121	466
Credit contracts	Other income (loss)	(3)	(43)	(70)
Other contracts ⁽¹⁾	Other income (loss)	(15)	(10)	—
Total		<u>\$ (1,131)</u>	<u>\$ 1,136</u>	<u>\$ 414</u>

⁽¹⁾ Consists of swap agreements entered into in conjunction with the sales of Visa Class B Shares.

Credit-Risk Related Contingent Features The majority of our derivative contracts contain provisions that require us to maintain a specific credit rating from each of the major credit rating agencies. Sometimes the derivative instrument transactions are a part of broader structured product transactions. If our credit ratings were to fall below the current ratings, the counterparties to our derivative instruments could demand us to post additional collateral. The amount of additional collateral required to be posted will depend on whether we are downgraded by one or more notches. The aggregate fair value of all derivative instruments with credit-risk related contingent features that were in a net liability position at December 31, 2018 was \$979 million, for which we had posted collateral of \$422 million. The aggregate fair value of all derivative instruments with credit-risk-related contingent features that were in a net liability position at December 31, 2017 was \$1,063 million, for which we had posted collateral of \$758 million. Substantially all of the collateral posted is in the form of cash or securities available-for-sale. See Note 26, "Guarantee Arrangements, Pledged Assets and Repurchase Agreements," for further details.

The following table presents the amount of additional collateral that we would be required to post (from the current collateral level) related to derivative instruments with credit-risk related contingent features if our long-term ratings were downgraded by one or two notches. A downgrade by a single rating agency that does not result in a rating lower than a preexisting corresponding rating provided by another rating agency will generally not result in additional collateral.

	One-notch downgrade	Two-notch downgrade
	(in millions)	
Amount of additional collateral to be posted upon downgrade	\$ 32	\$ 37

Notional Value of Derivative Contracts The following table summarizes the notional values of derivative contracts:

At December 31,	2018	2017
	(in millions)	
Interest rate:		
Futures and forwards	\$ 787,049	\$ 735,757
Swaps	3,203,048	2,687,273
Options written	106,009	77,144
Options purchased	107,561	93,042
	<u>4,203,667</u>	<u>3,593,216</u>
Foreign exchange:		
Swaps, futures and forwards	1,052,088	924,163
Options written	30,567	25,911
Options purchased	31,069	26,617
Spot.....	31,084	19,401
	<u>1,144,808</u>	<u>996,092</u>
Commodities, equities and precious metals:		
Swaps, futures and forwards	41,328	38,709
Options written	28,595	31,631
Options purchased	40,236	43,202
	<u>110,159</u>	<u>113,542</u>
Credit derivatives	97,298	90,290
Other contracts ⁽¹⁾	736	644
Total.....	<u>\$ 5,556,668</u>	<u>\$ 4,793,784</u>

⁽¹⁾ Consists of swap agreements entered into in conjunction with the sales of Visa Class B Shares.

15. Fair Value Option

We report our results to HSBC in accordance with HSBC Group accounting and reporting policies ("Group Reporting Basis"), which apply International Financial Reporting Standards ("IFRSs") as issued by the International Accounting Standards Board ("IASB") and endorsed by the European Union ("EU"). We typically have elected to apply fair value option ("FVO") accounting to selected financial instruments to align the measurement attributes of those instruments under U.S. GAAP and the Group Reporting Basis and to simplify the accounting model applied to those financial instruments. We elected to apply FVO accounting to certain commercial loans held for sale, certain securities purchased and sold under resale and repurchase agreements, certain fixed-rate long-term debt issuances and all of our hybrid instruments, including structured notes and deposits. Excluding the fair value movement on fair value option liabilities attributable to our own credit spread, which as a result of adopting new accounting guidance is recorded in other comprehensive income (loss) beginning January 1, 2017, changes in the fair value of fair value option assets and liabilities as well as the mark-to-market adjustment on the related derivatives and the net realized gains or losses on these derivatives are reported in gain (loss) on instruments designated at fair value and related derivatives in the consolidated statement of income (loss). Prior to January 1, 2017, the fair value movement on fair value option liabilities attributable to our own credit spread changes was reported in gain (loss) on instruments designated at fair value and related derivatives.

Loans We elected to apply FVO accounting to certain commercial syndicated loans which are originated with the intent to sell and certain commercial loans that we purchased from the secondary market and hold as hedges against our exposure to certain total return swaps and include these loans as loans held for sale in the consolidated balance sheet. The election allows us to account for these loans at fair value which is consistent with the manner in which the instruments are managed. Where available, fair value is based on observable market pricing obtained from independent sources, relevant broker quotes or observed market prices of instruments with similar characteristics. Where observable market parameters are not available, fair value is determined based on contractual cash flows adjusted for estimates of prepayment rates, expected default rates and loss severity discounted at management's estimate of the expected rate of return required by market participants. We also consider loan-specific risk mitigating factors such as collateral arrangements in determining the fair value estimate. Interest from these loans is recorded as interest income in the consolidated statement of income (loss). Because a substantial majority of the loans elected for the fair value option are floating rate assets, changes in their fair value are primarily attributable to changes in loan-specific credit risk factors. The components of gain (loss) related to loans designated at fair value are summarized in the table below. At December 31, 2018 and 2017, no loans for which the fair value option has been elected were 90 days or more past due or in nonaccrual status.

Resale and Repurchase Agreements We elected to apply FVO accounting to certain securities purchased and sold under resale and repurchase agreements which are trading in nature. The election allows us to account for these resale and repurchase agreements at fair value which is consistent with the manner in which the instruments are managed. The fair value of the resale and repurchase agreements is determined using market rates currently offered on comparable transactions with similar underlying collateral and maturities. Interest on these resale and repurchase agreements is recorded as interest income or expense in the consolidated statement of income (loss). The components of gain (loss) related to these resale and repurchase agreements designated at fair value are summarized in the table below.

Long-Term Debt (Own Debt Issuances) We elected to apply FVO accounting for certain fixed-rate long-term debt for which we had applied or otherwise would elect to apply fair value hedge accounting. The election allows us to achieve a similar accounting effect without having to meet the hedge accounting requirements. The own debt issuances elected under FVO are traded in secondary markets and, as such, the fair value is determined based on observed prices for the specific instruments. The observed market price of these instruments reflects the effect of changes to our own credit spreads and interest rates. Interest on the fixed-rate debt accounted for under FVO is recorded as interest expense in the consolidated statement of income (loss). The components of gain (loss) in the consolidated statement of income (loss) related to long-term debt designated at fair value are summarized in the table below.

Hybrid Instruments We elected to apply FVO accounting to all of our hybrid instruments issued, including structured notes and deposits. The valuation of the hybrid instruments is predominantly driven by the derivative features embedded within the instruments and our own credit risk. Cash flows of the hybrid instruments in their entirety, including the embedded derivatives, are discounted at an appropriate rate for the applicable duration of the instrument adjusted for our own credit spreads. The credit spreads applied to structured notes are determined with reference to our own debt issuance rates observed in the primary and secondary markets, internal funding rates, and structured note rates in recent executions while the credit spreads applied to structured deposits are determined using market rates currently offered on comparable deposits with similar characteristics and maturities. Interest on this debt is recorded as interest expense in the consolidated statement of income (loss). The components of gain (loss) in the consolidated statement of income (loss) related to hybrid instruments designated at fair value are summarized in the table below.

The following table summarizes the fair value and unpaid principal balance for items we account for under FVO:

	Fair Value	Unpaid Principal Balance	Fair Value Over (Under) Unpaid Principal Balance
	(in millions)		
At December 31, 2018			
Commercial loans held for sale.....	\$ 109	\$ 120	\$ (11)
Securities sold under repurchase agreements	560	560	—
Fixed rate long-term debt.....	1,935	1,750	185
Hybrid instruments:			
Structured deposits	8,154	8,441	(287)
Structured notes.....	9,314	9,546	(232)
At December 31, 2017			
Commercial loans held for sale.....	\$ 471	\$ 483	\$ (12)
Securities purchased under resale agreements	80	80	—
Securities sold under repurchase agreements	2,032	2,031	1
Fixed rate long-term debt.....	2,230	1,750	480
Hybrid instruments:			
Structured deposits	7,693	7,685	8
Structured notes.....	10,656	9,530	1,126

Components of Gain (Loss) on Instruments Designated at Fair Value and Related Derivatives The following table summarizes the components of gain (loss) on instruments designated at fair value and related derivatives reflected in the consolidated statement of income (loss) for the years ended December 31, 2018, 2017 and 2016:

	Loans	Securities Purchased Under Resale Agreements	Securities Sold Under Repurchase Agreements	Long-Term Debt	Hybrid Instruments	Total
(in millions)						
Year Ended December 31, 2018						
Interest rate and other components ⁽¹⁾	\$ —	\$ —	\$ 1	\$ 99	\$ 1,035	\$ 1,135
Credit risk component ⁽²⁾	(4)	—	—	—	—	(4)
Total mark-to-market on financial instruments designated at fair value	(4)	—	1	99	1,035	1,131
Mark-to-market on related derivatives	—	—	—	(95)	(1,062)	(1,157)
Net realized gain on related long-term debt derivatives	—	—	—	45	—	45
Gain (loss) on instruments designated at fair value and related derivatives	<u>\$ (4)</u>	<u>\$ —</u>	<u>\$ 1</u>	<u>\$ 49</u>	<u>\$ (27)</u>	<u>\$ 19</u>
Year Ended December 31, 2017						
Interest rate and other components ⁽¹⁾	\$ —	\$ (1)	\$ 2	\$ 6	\$ (1,151)	\$ (1,144)
Credit risk component ⁽²⁾	(2)	—	—	—	—	(2)
Total mark-to-market on financial instruments designated at fair value	(2)	(1)	2	6	(1,151)	(1,146)
Mark-to-market on related derivatives	—	—	—	(31)	1,163	1,132
Net realized gain on related long-term debt derivatives	—	—	—	57	—	57
Gain (loss) on instruments designated at fair value and related derivatives	<u>\$ (2)</u>	<u>\$ (1)</u>	<u>\$ 2</u>	<u>\$ 32</u>	<u>\$ 12</u>	<u>\$ 43</u>
Year Ended December 31, 2016						
Interest rate and other components ⁽¹⁾	\$ —	\$ —	\$ 4	\$ (2)	\$ (543)	\$ (541)
Credit risk component ⁽²⁾	22	—	—	(3)	(33)	(14)
Total mark-to-market on financial instruments designated at fair value	22	—	4	(5)	(576)	(555)
Mark-to-market on related derivatives	—	—	—	(31)	452	421
Net realized gain on related long-term debt derivatives	—	—	—	63	—	63
Gain (loss) on instruments designated at fair value and related derivatives	<u>\$ 22</u>	<u>\$ —</u>	<u>\$ 4</u>	<u>\$ 27</u>	<u>\$ (124)</u>	<u>\$ (71)</u>

⁽¹⁾ As it relates to hybrid instruments, interest rate and other components primarily includes interest rate, foreign exchange and equity contract risks.

⁽²⁾ As a result of adopting new accounting guidance in 2017, beginning January 1, 2017, the fair value movement on fair value option liabilities attributable to our own credit spread is recorded in common equity as a component of other comprehensive income (loss).

16. Income Taxes

In December 2017, Tax Legislation was signed into law which reduced the Federal corporate income tax rate from 35 percent to 21 percent effective January 1, 2018. During 2017, we increased our income tax provision by \$865 million as a result of the Federal corporate tax rate change, due to a lower carrying value of our net deferred tax asset.

Total income taxes was as follows:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Provision for income taxes	\$ 266	\$ 1,228	\$ 89
Income tax expense (benefit) included in common equity related to:			
Unrealized gains (losses) on investment securities	(68)	127	(135)
Unrealized gains (losses) on fair value option liabilities attributable to our own credit spread ⁽¹⁾	103	(115)	—
Unrealized gains (losses) on derivatives designated as cash flow hedges.....	12	(5)	9
Employer accounting for post-retirement plans	3	1	2
Cumulative effective adjustment to initially apply new accounting guidance for stranded tax effects resulting from Tax Legislation ⁽²⁾	91	—	—
Total income taxes	<u>\$ 407</u>	<u>\$ 1,236</u>	<u>\$ (35)</u>

⁽¹⁾ As a result of adopting new accounting guidance in 2017, beginning January 1, 2017, the fair value movement on fair value option liabilities attributable to our own credit spread is recorded in common equity as a component of other comprehensive income (loss).

⁽²⁾ See Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," for additional discussion.

The components of the provision for income taxes were as follows:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Current:			
Federal	\$ 68	\$ 795	\$ 191
State and local.....	41	109	27
Foreign.....	6	21	11
Total current.....	<u>115</u>	<u>925</u>	<u>229</u>
Deferred.....	<u>151</u>	<u>303</u>	<u>(140)</u>
Provision for income taxes	<u>\$ 266</u>	<u>\$ 1,228</u>	<u>\$ 89</u>

The following table provides an analysis of the difference between effective rates based on the provision for income taxes attributable to pretax income and the statutory U.S. Federal income tax rate:

Year Ended December 31,	2018		2017		2016	
	(dollars are in millions)					
Tax expense at the U.S. Federal statutory income tax rate	\$ 123	21.0%	\$ 367	35.0%	\$ 76	35.0%
Increase (decrease) in rate resulting from:						
State and local taxes, net of Federal benefit.....	40	6.8	28	2.7	10	4.6
Adjustment of Federal tax rate used to value deferred taxes ⁽¹⁾ ...	(31)	(5.3)	865	82.4	—	—
Adjustment of State tax rate used to value deferred taxes ⁽²⁾	2	.3	(15)	(1.4)	4	1.8
Non-deductible FDIC assessment fees	27	4.6	—	—	—	—
Other non-deductible / non-taxable items ⁽³⁾	107	18.3	1	.1	21	9.6
Items affecting prior periods ⁽⁴⁾	(1)	(.2)	6	.6	(2)	(.9)
Uncertain tax positions.....	6	1.0	—	—	(4)	(1.8)
Low income housing and other tax credit investments	(5)	(.9)	(17)	(1.6)	(17)	(7.8)
Stock-based compensation ⁽⁵⁾	(2)	(.2)	(8)	(.8)	—	—
Other.....	—	—	1	.1	1	.5
Provision for income taxes.....	\$ 266	45.4%	\$ 1,228	117.1%	\$ 89	40.8%

⁽¹⁾ For 2018, the amount primarily relates to tax return adjustments on certain deferred tax assets impacted by the Federal tax rate change. For 2017, the amount relates to the effects of revaluing our net deferred tax asset for new Tax Legislation that was enacted in December 2017.

⁽²⁾ For 2017, the amount includes an out of period adjustment to our deferred tax asset balance which decreased tax expense by \$9 million.

⁽³⁾ For 2018, the amount primarily relates to non-deductible penalties related to legal matters. For 2016, the amount mainly relates to the accrual of non-deductible penalties.

⁽⁴⁾ For 2017, the amount relates to the impact of adjustments associated with filing the 2016 State income tax returns and changes in tax credits as a result of filing the 2016 Federal income tax return.

⁽⁵⁾ As a result of adopting new accounting guidance, beginning January 1, 2017, all excess tax benefits and tax deficiencies for share-based payment awards are recorded within income tax expense in the consolidated statement of income (loss).

The components of the net deferred tax asset are presented in the following table:

At December 31,	2018	2017
	(in millions)	
Deferred tax assets:		
Allowance for credit losses.....	\$ 131	\$ 166
Interests in real estate mortgage investment conduits ⁽¹⁾	182	175
Unrealized losses on investment securities.....	164	96
Capitalized costs ⁽²⁾	680	724
Fair value adjustments	—	26
Other	350	385
Total deferred tax assets.....	<u>1,507</u>	<u>1,572</u>
Valuation allowance.....	<u>(6)</u>	<u>(6)</u>
Total deferred tax assets, net of valuation allowance	<u>1,501</u>	<u>1,566</u>
Deferred tax liabilities:		
Fair value adjustments	75	—
Amortization of intangible assets	18	18
Other	22	8
Total deferred tax liabilities	<u>115</u>	<u>26</u>
Net deferred tax asset	<u>\$ 1,386</u>	<u>\$ 1,540</u>

⁽¹⁾ Real estate mortgage investment conduits ("REMICs") are investment vehicles that hold commercial and residential mortgages in trust and issue securities representing an undivided interest in these mortgages. HSBC Bank USA holds portfolios of noneconomic residual interests in a number of REMICs. This

item represents tax basis in such interests which has accumulated as a result of tax rules requiring the recognition of income related to such noneconomic residuals.

⁽²⁾ Reflects our tax return election to capitalize certain service costs.

A reconciliation of the beginning and ending amount of unrecognized tax benefits related to uncertain tax positions is as follows:

	2018	2017	2016
	(in millions)		
Balance at January 1,	\$ 17	\$ 16	\$ 26
Additions based on tax positions related to the current year	2	2	2
Additions for tax positions of prior years	6	—	—
Reductions for tax positions of prior years	—	(1)	(8)
Reductions related to settlements with taxing authorities	(1)	—	(4)
Balance at December 31,	<u>\$ 24</u>	<u>\$ 17</u>	<u>\$ 16</u>

The total amount of unrecognized tax benefits that, if recognized, would affect the effective income tax rate was \$19 million, \$13 million and \$10 million at December 31, 2018, 2017 and 2016, respectively. Included in the unrecognized tax benefits are certain items the recognition of which would not affect the effective tax rate, such as the tax effect of temporary differences and the amount of State taxes that would be deductible for U.S. Federal tax purposes. It is reasonably possible that there could be a change in the amount of our unrecognized tax benefits within the next 12 months due to settlements or statutory expirations in various State and local tax jurisdictions.

It is our policy to recognize accrued interest related to uncertain tax positions in interest expense in the consolidated statement of income (loss) and to recognize penalties, if any, related to uncertain tax positions as a component of other expenses in the consolidated statement of income (loss). Accruals for the payment of interest associated with uncertain tax positions totaled \$7 million, \$4 million and \$3 million at December 31, 2018, 2017 and 2016, respectively. Our accrual for the payment of interest associated with uncertain tax positions increased by \$3 million during 2018 and increased by \$1 million during 2017.

Deferred tax assets and liabilities are recognized for the future tax consequences related to the differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, for State net operating losses and for State tax credits. Our net deferred tax assets, including deferred tax liabilities, totaled \$1,386 million and \$1,540 million at December 31, 2018 and 2017, respectively.

See Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," for further discussion regarding our accounting policy relating to the evaluation, recognition and measurement of both the HNAH Group's and HSBC USA's deferred tax assets and liabilities. In evaluating the need for a valuation allowance at December 31, 2018, it has been determined that HNAH Group projections of future taxable income from U.S. operations based on management approved business plans provide sufficient and appropriate support for the recognition of our net deferred tax assets. At December 31, 2018, we have valuation allowances against certain State capital loss carryforwards for which the aforementioned projections of future taxable income do not provide the appropriate support.

Federal income tax returns for 2015 and forward remain open to examination by the Internal Revenue Service.

We remain subject to State and local income tax examinations for years 2008 and forward. We are currently under audit by various State and local tax jurisdictions. Uncertain tax positions are reviewed on an ongoing basis and are adjusted in light of changing facts and circumstances, including progress of tax audits, developments in case law and the closing of statute of limitations. Such adjustments are reflected in the tax provision.

At December 31, 2018, for State tax purposes, we had apportioned and pre-tax effected net operating loss carryforwards of \$11 million which expire as follows: \$10 million in 2024 - 2028 and \$1 million in 2029 - 2036.

17. Preferred Stock

HSBC USA preferred stock outstanding was \$1,265 million at both December 31, 2018 and 2017 and included 1,265 shares of 6.0 percent Non-Cumulative Series I Preferred Stock issued to HSBC North America. Dividends on the 6.0 percent Non-Cumulative Series I Preferred Stock are non-cumulative and will be payable when and if declared by our Board of Directors semi-annually on the first business day of June and December of each year at the stated rate of 6.0 percent. The Series I Preferred Stock may be redeemed at our option, in whole or in part, on or after May 31, 2021 or at any time after we receive notice from the Federal Reserve Board ("FRB") that the Series I Preferred Stock may no longer be included in the calculation of regulatory capital as a result of any subsequent changes in applicable laws, rules or regulations, at a redemption price equal to \$1,000,000 per share, plus an amount equal to any declared and unpaid dividends, but only after receipt of written approval from the FRB.

18. Accumulated Other Comprehensive Loss

Accumulated other comprehensive loss includes certain items that are reported directly within a separate component of equity. The following table presents changes in accumulated other comprehensive loss balances:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Unrealized gains (losses) on investment securities:			
Balance at beginning of period.....	\$ (250)	\$ (461)	\$ (234)
Cumulative effective adjustment to initially apply new accounting guidance for equity investments which were previously classified as available-for-sale, net of tax of \$2 million ⁽¹⁾	4	—	—
Cumulative effective adjustment to initially apply new accounting guidance for stranded tax effects resulting from Tax Legislation ⁽¹⁾	(53)	—	—
Balance at beginning of period, adjusted	(299)	(461)	(234)
Other comprehensive income (loss) for period:			
Net unrealized gains (losses) arising during period, net of tax of \$(68) million, \$136 million and \$(125) million, respectively.....	(215)	227	(209)
Reclassification adjustment for gains realized in net income (loss), net of tax of \$(6) million, \$(19) million and \$(26) million, respectively ⁽²⁾	(18)	(33)	(44)
Amortization of net unrealized losses on securities transferred from available-for-sale to held-to-maturity realized in net income (loss), net of tax of \$4 million, \$10 million and \$16 million, respectively ⁽³⁾	13	17	26
Total other comprehensive income (loss) for period.....	(220)	211	(227)
Balance at end of period	(519)	(250)	(461)
Unrealized gains (losses) on fair value option liabilities attributable to our own credit spread:			
Balance at beginning of period.....	(19)	—	—
Cumulative effective adjustment to initially apply new accounting guidance for stranded tax effects resulting from Tax Legislation ⁽¹⁾	(4)	—	—
Cumulative effect adjustment to initially apply new accounting guidance for financial liabilities measured under the fair value option, net of tax of \$103 million ⁽⁴⁾	—	174	—
Balance at beginning of period, adjusted	(23)	174	—
Other comprehensive income (loss) for period:			
Net unrealized gains (losses) arising during period, net of tax of \$103 million and \$(115) million, respectively ..	324	(193)	—
Total other comprehensive income (loss) for period.....	324	(193)	—
Balance at end of period	301	(19)	—
Unrealized gains (losses) on derivatives designated as cash flow hedges:			
Balance at beginning of period.....	(164)	(157)	(170)
Cumulative effective adjustment to initially apply new accounting guidance for stranded tax effects resulting from Tax Legislation ⁽¹⁾	(35)	—	—
Balance at beginning of period, adjusted	(199)	(157)	(170)
Other comprehensive income (loss) for period:			
Net unrealized gains (losses) arising during period, net of tax of \$7 million, \$(11) million and \$3 million, respectively	22	(18)	2
Reclassification adjustment for losses realized in net income (loss), net of tax of \$5 million, \$6 million and \$6 million, respectively ⁽⁵⁾	18	11	11
Total other comprehensive income (loss) for period.....	40	(7)	13
Balance at end of period	(159)	(164)	(157)
Pension and postretirement benefit liability:			
Balance at beginning of period.....	2	—	(3)
Cumulative effective adjustment to initially apply new accounting guidance for stranded tax effects resulting from Tax Legislation ⁽¹⁾	1	—	—
Balance at beginning of period, adjusted	3	—	(3)
Other comprehensive income (loss) for period:			
Change in unfunded pension and postretirement liability, net of tax of \$3 million, less than \$1 million and \$2 million, respectively.....	8	2	3
Total other comprehensive income for period.....	8	2	3
Balance at end of period	11	2	—
Total accumulated other comprehensive loss at end of period.....	\$ (366)	\$ (431)	\$ (618)

⁽¹⁾ See Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," for additional discussion.

- (2) Amount reclassified to net income (loss) is included in other securities gains, net in our consolidated statement of income (loss).
- (3) Amount amortized to net income (loss) is included in interest income in our consolidated statement of income (loss). During 2014, we transferred securities from available-for-sale to held-to-maturity. At the date of transfer, AOCI included net pretax unrealized losses related to the transferred securities which are being amortized over the remaining contractual life of each security as an adjustment of yield in a manner consistent with the amortization of any premium or discount.
- (4) As a result of adopting new accounting guidance in 2017, beginning January 1, 2017, the fair value movement on fair value option liabilities attributable to our own credit spread is recorded in common equity as a component of other comprehensive income (loss).
- (5) Amount reclassified to net income (loss) is included in interest income (expense) in our consolidated statement of income (loss).

19. Share-Based Plans

Employee Stock Purchase Plans The HSBC International Employee Share Purchase Plan (the "HSBC ShareMatch Plan") allowed eligible employees to purchase HSBC shares with a maximum monthly contribution of \$320 in 2018, \$325 in 2017 and \$325 in 2016. For every three shares purchased under the HSBC ShareMatch Plan (the "Investment Share") the employee is awarded an additional share at no charge (the "Matching Share"). The Investment Share is fully vested at the time of purchase while the Matching Share vests at the end of three years contingent upon continuing employment with the HSBC Group.

Compensation expense related to Employee Stock Purchase Plans was less than \$1 million in 2018, 2017 and 2016, respectively.

Restricted Share Plans Under the HSBC Group Share Plan, share-based awards have been granted to key employees typically in the form of restricted share units. These shares have been granted subject to either time-based vesting or performance based-vesting, typically over three to five years. Annual awards to employees are generally subject to three-year time-based vesting. We also issue a small number of off-cycle grants each year, primarily for reasons related to recruitment of new employees. Compensation expense for restricted share awards totaled \$25 million, \$31 million and \$38 million in 2018, 2017 and 2016, respectively. At December 31, 2018, future compensation cost related to grants which have not yet fully vested is approximately \$14 million. This amount is expected to be recognized over a weighted-average period of one year.

20. Pension and Other Postretirement Benefits

Defined Benefit Pension Plan Certain employees are eligible to participate in the HSBC North America qualified defined benefit pension plan (either the "HSBC North America Pension Plan" or the "Plan") which facilitates a unified employee benefit policy and unified employee benefit plan administration for HSBC companies operating in the United States. Future benefit accruals for legacy participants under the final average pay formula and future contributions under the cash balance formula were previously discontinued and, as a result, the Plan is frozen.

The components of pension expense for the defined benefit pension plan recorded in our consolidated statement of income (loss) and shown in the table below reflect the portion of pension expense of the combined HSBC North America Pension Plan which has been allocated to us. We have not been allocated any portion of the Plan's net pension liability.

Year Ended December 31,	2018	2017	2016
	(in millions)		
Interest cost on projected benefit obligation	\$ 60	\$ 71	\$ 70
Expected return on plan assets	(78)	(88)	(86)
Amortization of net actuarial loss.....	20	33	42
Administrative costs	6	4	4
Loss on partial settlement of Plan pension obligation.....	—	35	—
Pension expense.....	<u>\$ 8</u>	<u>\$ 55</u>	<u>\$ 30</u>

During 2018, pension expense was impacted by an immaterial out of period adjustment which increased pension expense by \$10 million in connection with pension valuation changes related to prior years.

During 2017, HSBC North America completed a limited-time offer to former vested Plan employees who had not yet commenced receiving payment of their annuity benefit to elect a) an immediate lump sum payment; b) an immediate annuity (reduced for early payment under the terms of the Plan); or c) to retain their existing benefit in an annuity to be paid under the original terms of the Plan. Payments to former employees who elected to participate in an early distribution were made by HSBC North America in December. As a result, our allocated pension expense during 2017 included a settlement loss of approximately \$35 million due primarily to an acceleration of a portion of the Plan's actuarial losses which had been reflected in HSBC North America's AOCI.

The assumptions used in determining pension expense of the HSBC North America Pension Plan are as follows:

	2018	2017	2016
Discount rate.....	4.25%	3.60%	4.25%
Expected long-term rate of return on Plan assets	5.50	5.50	5.50

Defined Contribution and Other Supplemental Retirement Plans We maintain a 401(k) plan covering substantially all employees. Employer contributions to the plan are based on employee contributions. Total expense recognized for this plan was approximately \$29 million, \$34 million and \$33 million in 2018, 2017 and 2016, respectively.

Certain employees are participants in various defined contribution and other non-qualified supplemental retirement plans all of which have been frozen. Total expense recognized for these plans was approximately \$3 million, \$2 million and \$3 million in 2018, 2017 and 2016, respectively.

Postretirement Plans Other Than Pensions Our employees also participate in plans which provide medical and life insurance benefits to certain retirees and eligible dependents. These plans cover substantially all employees who meet certain age and vested service requirements. We have instituted dollar limits on payments under the plans to control the cost of future medical benefits. The following table reflects the components of the net periodic postretirement benefit cost:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Interest cost on accumulated benefit obligation	\$ 2	\$ 2	2
Amortization of net actuarial gain	(2)	(1)	—
Net periodic postretirement benefit cost.....	<u>\$ —</u>	<u>\$ 1</u>	<u>\$ 2</u>

The assumptions used in determining the net periodic postretirement benefit cost for our postretirement benefit plans are as follows:

	2018	2017	2016
Discount rate.....	3.45%	3.95%	3.95%
Salary increase assumption.....	3.00	3.00	3.00

A reconciliation of the beginning and ending balances of the accumulated postretirement benefit obligation is as follows:

	2018	2017
	(in millions)	
Accumulated benefit obligation at beginning of year	\$ 53	\$ 55
Interest cost	2	2
Actuarial gains	(8)	—
Benefits paid, net.....	(5)	(4)
Accumulated benefit obligation at end of year	<u>\$ 42</u>	<u>\$ 53</u>

Our postretirement benefit plans are funded on a pay-as-you-go basis. We currently estimate that we will pay benefits of approximately \$4 million relating to our postretirement benefit plans in 2019. The funded status of our postretirement benefit plans was a liability of \$42 million at December 31, 2018.

Estimated future benefit payments for our postretirement benefit plans are summarized in the following table:

	(in millions)
2019	\$ 4
2020	4
2021	4
2022	3
2023	3
2024-2028	15

The assumptions used in determining the benefit obligation of our postretirement benefit plans at December 31 are as follows:

	2018	2017	2016
Discount rate	4.15%	3.45%	3.95%
Salary increase assumption	3.00	3.00	3.00

For measurement purposes, 7.1 percent (pre-65) and, as it relates to the postretirement benefit plans which were not amended to eliminate future health cost increases, 7.4 percent (post-65) annual rates of increase in the per capita costs of covered health care benefits were assumed for 2018. These rates are assumed to decrease gradually reaching the ultimate rate of 4.5 percent in 2026, and remain at that level thereafter.

21. Fee Income from Contracts with Customers

The following table summarizes fee income from contracts with customers disaggregated by type of activity, as well as a reconciliation to total other revenues, during the years ended December 31, 2018, 2017 and 2016. Following the table is a description of the various types of fee-based activities and how revenue associated with these activities is recognized.

	2018	2017	2016
	(in millions)		
Credit card fees, net	\$ 50	\$ 46	\$ 52
Trust and investment management fees	135	156	153
Other fees and commissions:			
Account services	284	291	293
Credit facilities	344	310	349
Other fees	56	68	79
Total other fees and commissions	684	669	721
Servicing and other fees from HSBC affiliates	356	348	289
Insurance ⁽¹⁾	11	14	20
Total fee income from contracts with customers	1,236	1,233	1,235
Other non-fee revenues	663	769	169
Total other revenues ⁽²⁾	\$ 1,899	\$ 2,002	\$ 1,404

⁽¹⁾ Included within other income (loss) in the consolidated statement of income (loss).

⁽²⁾ See Note 23, "Business Segments," for a reconciliation of total other revenues on a U.S. GAAP basis to other operating income for each business segment under the Group Reporting Basis.

Credit card fees, net Credit card fees, net includes interchange fees earned from merchants who accept our cards in connection with the purchase of their goods and/or services. These fees are recognized when we satisfy the performance obligation by simultaneously approving a card holder's purchase at the point of sale and remitting payment to the merchant. We recognized interchange fees of \$88 million, \$79 million and \$76 million during the years ended December 31, 2018, 2017 and 2016, respectively. Annual fees on credit cards, net of direct lending costs, are billed upfront and recognized on a straight-line basis over one year. Other credit card fees such as cash advance and over-limit fees are transaction based and are recognized and billed at the point in time the transaction occurs which is when the performance obligation is met. Costs related to our credit card rewards program vary based on multiple factors including card holder activity, card holder reward redemption rates and card holder reward selections. These costs are recorded when the rewards are earned by the customer and are presented as a reduction to credit card fees. Credit card rewards program costs totaled \$45 million, \$37 million and \$30 million during the years ended December 31, 2018, 2017 and 2016, respectively.

Trust and investment management fees Trust and investment management fees include investment management and administration fees which are typically billed as a percentage of the average value of a customer's assets during an agreed payment period or for some contracts, the value of a customer's assets at the end of an agreed payment period and therefore represent variable consideration. The fee percentage and payment period are agreed with the customer upfront. Generally, payment periods are monthly or quarterly and coincide with our reporting periods, thereby resolving the uncertainty of the variable consideration by the reporting date. For payment periods that do not coincide with our reporting periods, judgment is required to estimate the fee and determine the amount to include in an accrual. An accrual is only recorded to the extent it is highly probable that a significant reversal of revenue will not occur. In most cases, a significant reversal of revenue is not highly probable. Other trust and investment management fees are

transaction based and are recognized and billed at the point in time the transaction occurs which is when the performance obligation is met. From time to time, we may also receive performance fees from some funds, though these fees are typically only recognized when the performance fee is determinable and the uncertainty of the variable consideration is resolved.

Account services We provide services for commercial and consumer customer accounts that generate fees from various activities including: accounts statements, ATM transactions, cash withdrawals, wire transfers, remittances, check cashing, debit cards and internet and phone banking. The fees for these services are established in the customer account agreement and are either billed individually at the time the service is performed or on a monthly basis for a package or bundle of services as the services are performed. The performance obligation for these services is met when the services are performed. Customer account agreements typically include a package of services with multiple performance obligations or a bundle of services making up a single performance obligation. In the case of a package of services, the pattern of transfer to the customer is usually the same for all services, and therefore the package of services is treated as a single performance obligation. In some cases, a package or bundle of services is billed upfront as an annual fee and recognized on a straight-line basis over one year as the services are performed and the performance obligation is met.

Credit facilities Credit facilities fees include fees generated from lending activities that are not included in the direct loan origination fees which are recognized in interest income as an adjustment to yield. This includes fees associated with loan commitments, revolving credit facilities, standby letters of credit, loan syndication and other transaction based fees. These fees are either billed as a fixed price or as a percentage of the approved lending limit or transaction value. The fee percentage is agreed with the customer upfront. Although the percentage-based fees represent variable consideration, the uncertainty of the variable consideration is resolved by the time the revenue is recognized as the lending limit or transaction value is known on the contract or transaction date. Loan syndication fees received for managing a syndication and other transaction based fees are recognized and billed at the point in time the transaction occurs, which is when the performance obligation is met. Fees associated with loan commitments, revolving credit facilities and standby letters of credit are billed upfront and recognized on a straight-line basis over the period the service is performed which is when the performance obligation is met (e.g., the commitment period). In the event a loan commitment or standby letter of credit is exercised, the remaining unamortized fee is recognized as an adjustment to yield over the loan term.

Other fees and commissions Other fees and commissions include fees received associated with various other activities such as custody services, imports/exports, clearing and other miscellaneous services. These fees are typically transaction based and are recognized and billed at the point in time the transaction occurs which is when the performance obligation is met. Fees earned from providing customers with custody services are typically recognized and billed on a monthly basis over the period the service is performed which is when the performance obligation is met, as a percentage of the value of the customer's assets held in custody (calculated daily or monthly).

Servicing and other fees from HSBC affiliates We receive fees from other HSBC affiliates for providing them with various banking, wealth management and other miscellaneous services as well as support for certain administrative and global business activities. These fees are reported in servicing and other fees from HSBC affiliates and are typically recognized and billed on a monthly basis over the period the service is performed or for some fees that are transaction based, at the point in time the transaction occurs, which is when the performance obligation is met. See Note 22, "Related Party Transactions," for additional information regarding the various services provided and other transactions with HSBC affiliates.

Insurance We earn commissions from the sale of third-party insurance policies which are typically recognized on a weekly or monthly basis, when the policy goes into effect which is when the performance obligation is met.

Deferred Fee Income

Information related to deferred fee income on loan commitments, revolving credit facilities and standby letters of credit is included in Note 26, "Guarantee Arrangements, Pledged Assets and Repurchase Agreements," and Note 27, "Fair Value Measurements." Excluding these items, we had deferred fee income related to certain account service fees that are paid upfront and recognized over the service period and annual fees on credit cards which collectively totaled \$2 million and \$1 million at December 31, 2018 and December 31, 2017, respectively. We expect to recognize this revenue over a remaining period of one year or less.

Other than as described above under trust and investment management fees, we do not use significant judgments in the determination of the amount and timing of fee income from contracts with customers. Additionally, costs to obtain or fulfill contracts with customers were immaterial.

22. Related Party Transactions

In the normal course of business, we conduct transactions with HSBC and its subsidiaries. HSBC policy requires that these transactions occur at prevailing market rates and terms and, where applicable, these transactions are compliant with United States banking regulations. All extensions of credit by (and certain credit exposures of) HSBC Bank USA to other HSBC affiliates (other than FDIC insured banks) are legally required to be secured by eligible collateral. The following tables and discussions below present the more significant related party balances and the income (expense) generated by related party transactions:

At December 31,	2018	2017
	(in millions)	
Assets:		
Cash and due from banks	\$ 245	\$ 191
Interest bearing deposits with banks.....	1,000	473
Securities purchased under agreements to resell ⁽¹⁾	—	1,115
Trading assets	102	63
Loans	2,274	6,750
Other ⁽²⁾	169	134
Total assets	<u>\$ 3,790</u>	<u>\$ 8,726</u>
Liabilities:		
Deposits	\$ 12,000	\$ 10,521
Trading liabilities.....	349	737
Short-term borrowings.....	638	1,595
Long-term debt	7,845	4,841
Other ⁽²⁾	333	387
Total liabilities	<u>\$ 21,165</u>	<u>\$ 18,081</u>

⁽¹⁾ Reflects purchases of securities which other HSBC affiliates have agreed to repurchase.

⁽²⁾ Other assets and other liabilities primarily consist of derivative balances associated with hedging activities and other miscellaneous account receivables and payables.

Year Ended December 31,	2018	2017	2016
	(in millions)		
Income (Expense):			
Interest income.....	\$ 107	\$ 65	\$ 122
Interest expense	(367)	(267)	(166)
Net interest expense.....	(260)	(202)	(44)
Trading revenue (expense)	1,370	(615)	(1,297)
Servicing and other fees from HSBC affiliates:			
HSBC Bank plc.....	176	154	156
HSBC Markets (USA) Inc. ("HMUS")	112	71	34
HSBC Finance	3	44	40
Other HSBC affiliates.....	65	79	59
Total servicing and other fees from HSBC affiliates.....	356	348	289
Gain (loss) on instruments designated at fair value and related derivatives	(1,052)	1,108	467
Support services from HSBC affiliates:			
HSBC Technology & Services (USA) ("HTSU")	(1,198)	(1,165)	(1,027)
HMUS.....	(105)	(121)	(214)
Other HSBC affiliates.....	(300)	(263)	(254)
Total support services from HSBC affiliates.....	(1,603)	(1,549)	(1,495)
Rental income from HSBC affiliates, net ⁽¹⁾	48	54	60
Stock based compensation expense ⁽²⁾	(25)	(31)	(39)

⁽¹⁾ We receive rental income from our affiliates, and in some cases pay rental expense to our affiliates, for rent on certain office space. Net rental income from our affiliates is recorded as a component of occupancy expense, net in our consolidated statement of income (loss).

⁽²⁾ Employees may participate in one or more stock compensation plans sponsored by HSBC. These expenses are included in salaries and employee benefits in our consolidated statement of income (loss). Certain employees are also eligible to participate in a defined benefit pension plan and other postretirement plans sponsored by HSBC North America which are discussed in Note 20, "Pension and Other Postretirement Benefits."

During 2018, our results were impacted by an immaterial out of period adjustment which increased servicing and other fees from HSBC affiliates by approximately \$10 million in connection with costs reimbursements related to prior years.

Funding Arrangements with HSBC Affiliates:

We use HSBC affiliates to fund a portion of our borrowing and liquidity needs. At December 31, 2018 and 2017, long-term debt with affiliates reflected \$7.8 billion and \$4.9 billion, respectively, of borrowings from HSBC North America. During the fourth quarter of 2018, \$4.0 billion of these borrowings were repaid and were replaced as discussed below. The remaining outstanding balances include:

- \$1.5 billion of fixed-rate senior debt which was issued during the fourth quarter of 2018 and matures in March 2021;
- \$2.0 billion of fixed-rate senior debt which was issued during the fourth quarter of 2018 and matures in May 2021;
- \$0.9 billion of floating-rate subordinated debt which was issued in 2015 and matures in May 2025;
- \$2.0 billion of fixed-rate senior debt which was issued during the fourth quarter of 2018 and matures in September 2025;
- and
- \$1.5 billion of fixed-rate senior debt which was issued during the fourth quarter of 2018 and matures in March 2026.

We have a \$150 million uncommitted line of credit with HSBC North America. There was no outstanding balance under this credit facility at either December 31, 2018 or 2017.

We have also incurred short-term borrowings with certain affiliates, largely securities sold under repurchase agreements with HSBC Securities (USA) Inc. ("HSI"). In addition, certain affiliates have also placed deposits with us.

Lending and Derivative Related Arrangements Extended to HSBC Affiliates:

At December 31, 2018 and 2017, we had the following loan balances outstanding with HSBC affiliates:

At December 31,	2018	2017
	(in millions)	
HMUS and subsidiaries	\$ 2,235	\$ 6,690
Other short-term affiliate lending	39	60
Total loans	<u>\$ 2,274</u>	<u>\$ 6,750</u>

HMUS and subsidiaries We have extended loans and lines, some of them uncommitted, to HMUS and its subsidiaries in the amount of \$12.8 billion and \$7.9 billion at December 31, 2018 and 2017, respectively, of which \$2.2 billion and \$6.7 billion, respectively, was outstanding. The maturities of the outstanding balances range from overnight to three months. Each borrowing is re-evaluated prior to its maturity date and either extended or allowed to mature. Included in the outstanding borrowings at December 31, 2017 was a \$5.0 billion overnight loan to HSI that was repaid in early January as the wire process from HSI to settle daily activity failed.

We have extended lines of credit to various other HSBC affiliates totaling \$3.9 billion which did not have any outstanding balances at either December 31, 2018 and 2017.

Other short-term affiliate lending In addition to loans and lines extended to affiliates discussed above, from time to time we may extend loans to affiliates which are generally short term in nature. At December 31, 2018 and 2017, there were \$39 million and \$60 million, respectively, of these loans outstanding.

HSBC Finance During 2017, we received \$28 million of loan prepayment fees from HSBC Finance associated with the payoff of their loan, which were included in servicing and other fees from HSBC affiliates.

Derivative Contracts As part of a global HSBC strategy to offset interest rate or other market risks associated with certain securities, debt issues and derivative contracts with unaffiliated third parties, we routinely enter into derivative transactions with HSBC Bank plc and other HSBC affiliates. The notional value of derivative contracts related to these transactions was approximately \$809.5 billion and \$768.4 billion at December 31, 2018 and 2017, respectively. The net credit exposure (defined as the net fair value of derivative assets and liabilities, including any collateral received) related to the contracts was approximately \$108 million and \$64 million at December 31, 2018 and 2017, respectively. Our Global Banking and Markets business accounts for these transactions on a mark to market basis, with the change in value of contracts with HSBC affiliates substantially offset by the change in value of related contracts entered into with unaffiliated third parties.

Services Provided Between HSBC Affiliates:

Under multiple service level agreements, we provide services to and receive services from various HSBC affiliates. The following summarizes these activities:

- HSBC North America's technology and support services, including risk management, compliance, operations, finance, tax, legal, human resources, corporate affairs and other shared services, are centralized within HTSU. HTSU also provides certain item processing and statement processing activities to us. The fees we pay HTSU for the centralized support services and processing activities are included in support services from HSBC affiliates. We also receive fees from HTSU for providing certain administrative services to them. The fees we receive from HTSU are included in servicing and other fees from HSBC affiliates. In certain cases, for facilities used by HTSU, we may guarantee their performance under the lease agreements.
- We use other subsidiaries of HSBC, including HSBC Global Services Limited an HSBC subsidiary located outside of the United States, to provide various support services to our operations, including among other areas, information technology, software development, customer service, collection, risk management and accounting. The expenses related to these services are included in support services from HSBC affiliates.
- We utilize HSI, a subsidiary of HMUS, for broker dealer, debt underwriting, customer referrals, loan syndication and other treasury and traded markets related services, pursuant to service level agreements. Debt underwriting fees charged by HSI are deferred as a reduction of long-term debt and amortized to interest expense over the life of the related debt. Fees charged by HSI for the other services are included in support services from HSBC affiliates. We also receive fees from HSI for providing certain wealth management services to them. The fees we receive from HSI are included in servicing and other fees from HSBC affiliates.
- We receive fees from other subsidiaries of HSBC, including HSBC Bank plc, for providing them with banking and other miscellaneous services as well as support for certain administrative and global business activities. These fees are reported in servicing and other fees from HSBC affiliates.

- Prior to 2018, we received residential mortgage loan servicing fees from HSBC Finance for services performed on their behalf and paid residential mortgage loan servicing fees to HSBC Finance for services performed on our behalf. The fees we received from HSBC Finance were reported in servicing and other fees from HSBC affiliates. During 2017, HSBC Finance completed the execution of their receivable sales program and, as a result, we are no longer servicing residential mortgage loans for HSBC Finance. Fees we paid to HSBC Finance were reported in support services from HSBC affiliates. This included fees paid for the servicing of residential mortgage loans that we previously purchased from HSBC Finance. During 2017, we sold these residential mortgage loans to third parties.

Other Transactions with HSBC Affiliates

At both December 31, 2018 and 2017, we had \$1,265 million of non-cumulative preferred stock issued and outstanding to HSBC North America. See Note 17, "Preferred Stock," for additional details.

23. Business Segments

We have five distinct business segments that we utilize for management reporting and analysis purposes, which are aligned with HSBC's global business strategy: Retail Banking and Wealth Management ("RBWM"), Commercial Banking ("CMB"), Global Banking and Markets ("GB&M"), Private Banking ("PB") and a Corporate Center ("CC"). There have been no changes in the basis of our segmentation as compared with the presentation in our Annual Report on Form 10-K for the year ended December 31, 2017 ("2017 Form 10-K").

Net interest income of each segment represents the difference between actual interest earned on assets and interest incurred on liabilities of the segment, adjusted for a funding charge or credit that includes both interest rate and liquidity components. Segments are charged a cost to fund assets (e.g. customer loans) and receive a funding credit for funds provided (e.g. customer deposits) based on equivalent market rates that incorporate both repricing (interest rate risk) and tenor (liquidity) characteristics. The objective of these charges/credits is to transfer interest rate risk from the segments to one centralized unit in Balance Sheet Management, recognize term funding costs/benefits and more appropriately reflect the profitability of the segments.

Certain other revenue and operating expense amounts are also apportioned among the business segments based upon the benefits derived from this activity or the relationship of this activity to other segment activity. These inter-segment transactions are accounted for as if they were with third parties.

Our segment results are presented in accordance with HSBC Group accounting and reporting policies, which apply International Financial Reporting Standards ("IFRSs") as issued by the IASB and endorsed by the EU, and, as a result, our segment results are prepared and presented using financial information prepared on the Group Reporting Basis as operating results are monitored and reviewed, trends are evaluated and decisions about allocating resources, such as employees, are primarily made on this basis. We continue, however, to monitor capital adequacy and report to regulatory agencies on a U.S. GAAP basis.

As discussed more fully below, during 2018, we adopted new accounting guidance under the Group Reporting Basis for the requirements of IFRS 9, "Financial Instruments" ("IFRS 9"), and we also implemented a change in accounting policy under the Group Reporting Basis to classify structured notes and deposits as liabilities designated under the fair value option. There have been no additional changes in the measurement of segment profit as compared with the presentation in our 2017 Form 10-K.

A summary of significant differences between U.S. GAAP and the Group Reporting Basis as they impact our results is presented below:

Net Interest Income

Expected credit losses / loan impairment - As discussed more fully below under "Expected Credit Losses (Provision for Credit Losses)," under the Group Reporting Basis the amount of impairment relating to the discounting of future cash flows unwinds with the passage of time. There is no similar requirement under U.S. GAAP.

Loan origination - Certain loan fees and incremental direct loan origination costs, which would not have been incurred but for the origination of the loans, are deferred and amortized to earnings over the life of the loan under the Group Reporting Basis. Certain loan fees and incremental direct loan origination costs, including internal costs directly attributable to the origination of loans in addition to direct salaries, are deferred and amortized to earnings over the life of the loan under U.S. GAAP. Loan origination deferrals are more stringent under the Group Reporting Basis and generally result in lower costs being deferred than permitted under U.S. GAAP. In addition, all deferred loan origination fees, costs and loan premiums must be recognized based on the expected life of the loan under the Group Reporting Basis as part of the effective interest calculation, while under U.S. GAAP, they may be recognized on either a contractual or expected life basis.

Deposit incentives - Under the Group Reporting Basis, costs associated with cash back incentives offered on customer deposits are deferred and amortized to interest expense over the incentive period, while under U.S. GAAP, such costs are recognized immediately in operating expenses.

Other Operating Income (Total Other Revenues)

Loans held for sale - For loans transferred to held for sale subsequent to origination, the Group Reporting Basis requires these loans to be reported separately on the balance sheet when certain criteria are met which are generally more stringent than those under U.S. GAAP, but does not change the recognition and measurement criteria. Accordingly, for the Group Reporting Basis, such loans continue to be accounted for and credit losses continue to be measured in accordance with IFRS 9 (or for periods prior to 2018, IAS 39, "Financial Instruments: Recognition and Measurement" ("IAS 39")), with any gain or loss recorded at the time of sale. U.S. GAAP requires loans that meet the held for sale classification requirements be transferred to a held for sale category and subsequently be measured at the lower of amortized cost or fair value. Under U.S. GAAP, the component of the lower of amortized cost or fair value adjustment upon transfer to held for sale related to credit risk is recorded in provision for credit losses while the component related to interest rates and liquidity factors is recorded in other revenues. Changes in the lower of amortized cost or fair value after the initial transfer to held for sale are recorded in other revenues to the extent permissible.

For loans originated with the intent to sell, the Group Reporting Basis requires these loans to be classified as trading assets and recorded at their fair value, with gains and losses recorded in trading revenue. Under U.S. GAAP, such loans are classified as loans held for sale and, with the exception of certain loans accounted for under FVO accounting, are recorded at the lower of amortized cost or fair value, with changes in the lower of amortized cost or fair value adjustment recorded in other revenues to the extent permissible.

Structured notes and deposits - Beginning January 1, 2018, HSBC concluded that a change in accounting policy and presentation from trading liabilities to liabilities designated under the fair value option for structured notes and deposits under the Group Reporting Basis would be appropriate since it would better align with the presentation of similar financial instruments by peers under IFRSs and therefore provide more relevant information about the effect of these financial liabilities on reported financial position and performance. As a result, the fair value movement on structured notes and deposits attributable to our own credit spread is now being recorded in other comprehensive income (loss) under the Group Reporting Basis, consistent with U.S. GAAP as discussed further below. Prior to January 1, 2018, structured notes and deposits were classified as trading liabilities under the Group Reporting Basis and carried at fair value with changes in fair value recorded in earnings. During 2017 and 2016, total other revenues under the Group Reporting Basis in GB&M included losses of \$85 million and \$33 million, respectively, from the fair value movement on structured notes and deposits attributable to our own credit spread.

Under U.S. GAAP, we elected to apply fair value option accounting to these structured notes and deposits. Beginning January 1, 2017, the adoption of new accounting guidance under U.S. GAAP required the fair value movement on fair value option liabilities, including structured notes and deposits, attributable to our own credit spread to be recorded in other comprehensive income (loss). Prior to January 1, 2017, the fair value movement on fair value option liabilities, including structured notes and deposits, attributable to our own credit spread was recorded in earnings.

Low income housing tax credit investments - Under the Group Reporting Basis, the amortization of our investment balance and associated tax benefits are presented net in other operating income. Under U.S. GAAP, amortization of our investment balance and associated tax benefits are presented net in income tax expense.

Renewable energy tax credit investments - Renewable energy tax credit investments are reported as available-for-sale securities and measured at fair value under the Group Reporting Basis, with changes in fair value recognized in equity. Under U.S. GAAP, these investments are accounted for under the equity method, with the amortization of our investment balance presented in other revenues and the tax benefits obtained presented in income tax expense.

Servicing assets - Under the Group Reporting Basis, servicing assets are initially recorded on the balance sheet at cost and amortized over the projected life of the assets. Servicing assets are periodically tested for impairment with impairment adjustments charged against current earnings. Under U.S. GAAP, servicing assets are initially recorded on the balance sheet at fair value. All subsequent adjustments to fair value are reflected in other revenues. During the fourth quarter of 2016, we sold our remaining MSRs portfolio.

Expected Credit Losses (Provision for Credit Losses)

Expected credit losses / loan impairment - On January 1, 2018, we adopted new accounting guidance under the Group Reporting Basis in conjunction with HSBC's adoption of the requirements of IFRS 9 with the exception of the provisions relating to the presentation of gains and losses on financial instruments designated at fair value which were previously adopted in 2017.

Under IFRS 9, expected credit losses ("ECL") are recognized for a) financial assets measured at amortized cost, including loans, securities purchased under agreements to resell and certain debt securities; b) financial assets measured at fair value with changes in fair value recorded through other comprehensive income (loss), primarily debt securities; and c) certain loan commitments and financial guarantee contracts. Financial assets which have not experienced a significant increase in credit risk since initial recognition are considered to be in 'stage 1'; financial assets which are considered to have experienced a significant increase in credit risk are in 'stage 2'; and financial assets for which there is objective evidence of impairment so are considered to be in default or otherwise credit-impaired are in 'stage 3'. At initial recognition and for financial assets that remain in stage 1, an allowance (or provision in the case of some loan commitments and financial guarantees) is required for ECL resulting from default events that are possible

within the next 12 months ("12-month ECL"). In the event of a significant increase in credit risk, an allowance (or provision) is required for ECL resulting from all possible default events over the expected life of the financial instrument ("lifetime ECL") and financial assets are moved to stage 2 or stage 3.

The adoption of the new accounting guidance on January 1, 2018 on our customer loan portfolio resulted in an increase to our customer loan allowance for ECL of approximately \$60 million with a corresponding charge to equity under the Group Reporting Basis. The impact of adoption on the allowance for other financial assets was not significant. Prior to 2018, impairment under the Group Reporting Basis was measured in accordance with IAS 39 and recognized when there was objective evidence of impairment.

Under U.S. GAAP, we maintain an allowance for credit losses that reflects our estimate of probable incurred losses in the existing loan portfolio. For commercial loans collectively evaluated for impairment, we utilize a loss emergence period greater than 12 months for calculating the allowance for credit losses under U.S. GAAP, while under the Group Reporting Basis, a loss emergence period is not applicable under IFRS 9. Under IFRS 9, a majority of our commercial loans are considered to be in stage 1 and a 12-month ECL is recorded for these loans under the Group Reporting Basis. As a result of the different approaches, the allowance for credit losses for commercial loans is currently higher under U.S. GAAP than under the Group Reporting Basis. Prior to 2018, we utilized different loss emergence periods for calculating the allowance for credit losses under U.S. GAAP and the Group Reporting Basis. On an annual basis, we conduct reviews of our loss emergence period estimate used for U.S. GAAP reporting purposes based upon regulatory guidance and bank industry practice in the United States and, prior to 2018, we separately conducted annual reviews of the loss emergence period estimate under the Group Reporting Basis. These reviews resulted in a longer emergence period under U.S. GAAP than under the Group Reporting Basis and, therefore, the allowance for credit losses for commercial loans collectively evaluated for impairment was higher under U.S. GAAP than under the Group Reporting Basis. This difference in loss emergence period was primarily attributable to the different approaches used for U.S. GAAP and the Group Reporting Basis. We determined that, based on the judgment involved and the practice which had evolved in different jurisdictions, both approaches for estimating loss emergence periods resulted in an appropriate allowance for credit losses under the reporting basis to which each was being applied.

In addition to the differences discussed above related to loss emergence period and from using an ECL approach under the Group Reporting Basis, beginning in 2018, compared with an incurred loss approach under U.S. GAAP, the Group Reporting Basis utilizes discounting for estimating credit losses on customer loans including recovery estimates. The amount of impairment relating to the discounting unwinds with the passage of time. Under U.S. GAAP, discounting is applied only to the extent loans are considered TDR Loans. Also under the Group Reporting Basis, if the fair value on secured loans previously written down increases because collateral values have improved and the improvement can be related objectively to an event occurring after recognition of the write-down, such write-down is reversed, which is not permitted under U.S. GAAP. Additionally under the Group Reporting Basis, future recoveries on charged-off loans or loans written down to fair value less cost to obtain title and sell are accrued for on a discounted basis and a recovery asset is recorded. Subsequent recoveries are recorded to earnings when received under U.S. GAAP, but are adjusted against the recovery asset under the Group Reporting Basis.

Loans held for sale - As discussed more fully above under "Other Operating Income (Total Other Revenues)," under U.S. GAAP, the credit risk component of the lower of amortized cost or fair value adjustment related to the transfer of loans to held for sale is recorded in provision for credit losses. There is no similar requirement under the Group Reporting Basis.

Operating Expenses

Property - The sale and leaseback of our 452 Fifth Avenue property, including the 1 W. 39th Street building, in 2010 resulted in the recognition of a gain under the Group Reporting Basis, while under U.S. GAAP, such gain is deferred and was being recognized over the lease term (which was ten years) due to our continuing involvement. During 2017, we extended the lease for an additional five years as well as the amortization of the deferred gain to reflect the new lease term.

Pension and other postretirement benefit costs - Pension expense under U.S. GAAP is generally higher than under the Group Reporting Basis as a result of the amortization of the amount by which actuarial losses exceeds the higher of 10 percent of the projected benefit obligation or fair value of plan assets (the corridor). In addition, under the Group Reporting Basis, pension expense is determined using a finance cost component comprising the net interest on the net defined benefit liability which does not reflect the benefit from the expectation of higher returns on plan assets. In 2018, pension expense was higher under U.S. GAAP due primarily to the impact of an immaterial out of period adjustment which increased pension expense under U.S. GAAP by \$10 million in connection with pension valuation changes related to prior years. Under the Group Reporting Basis, this expense was recorded directly to retained earnings. In 2017, pension expense was higher under U.S. GAAP due primarily to the impact of HSBC North America completing a limited-time lump sum offer to former vested HSBC North America Pension Plan employees. Under the Group Reporting Basis, completion of the offer resulted in a benefit from reducing HSBC North America's net underfunded status, while under U.S. GAAP, this benefit was more than offset by expense from an acceleration of a portion of the Plan's actuarial losses which had been reflected in HSBC North America's accumulated other comprehensive income. Under the Group Reporting Basis, these actuarial losses are recorded directly to retained earnings.

Loan origination - As discussed more fully above under "Net interest income," loan origination cost deferrals are more stringent under the Group Reporting Basis and generally result in lower costs being deferred than permitted under U.S. GAAP.

Deposit incentives - As discussed more fully above under "Net interest income," incentive costs on customer deposits are deferred and amortized to interest expense under the Group Reporting Basis, while under U.S. GAAP, such costs are recognized immediately in operating expenses.

Litigation expense - Under U.S. GAAP, litigation accruals are recorded when it is probable a liability has been incurred and the amount is reasonably estimable. Under the Group Reporting Basis, a present obligation and a probable outflow of economic benefits must exist for an accrual to be recorded. This may create differences in the timing of accrual recognition between the Group Reporting Basis and U.S. GAAP. Additionally, under the Group Reporting Basis, legal costs to defend litigation are accrued at the time that a liability is recorded for the related litigation, while under U.S. GAAP, these costs are recognized as services are performed.

Assets

Derivatives - Under U.S. GAAP, derivative receivables and payables with the same counterparty may be reported on a net basis in the balance sheet when there is a legally enforceable netting agreement in place. In addition, under U.S. GAAP, fair value amounts recognized for the obligation to return cash collateral received or the right to reclaim cash collateral paid are offset against the fair value of derivative instruments. Under the Group Reporting Basis, these agreements do not necessarily meet the requirements for offset, and therefore such derivative receivables and payables are presented gross on the balance sheet.

Securities transferred to held-to-maturity - During 2014, we transferred securities from available-for-sale to held-to-maturity and, as a result, AOCI under both the Group Reporting Basis and U.S. GAAP included net pretax unrealized losses related to the transferred securities which were being amortized over the remaining contractual life of each security as an adjustment of yield. As a result of adopting IFRS 9 under the Group Reporting Basis, effective January 1, 2018, the remaining unamortized net pretax unrealized losses were reclassified out of AOCI and adjusted against the carrying value of the securities held-to-maturity, while under U.S. GAAP, such unrealized losses remain in AOCI and continue to amortize as an adjustment to yield.

Unquoted equity securities - Under the Group Reporting Basis, the Visa Class B Shares were classified as available-for-sale securities and measured at fair value, with changes in fair value recognized in equity. Under U.S. GAAP, the Visa Class B Shares were measured at cost and classified in other assets. Beginning in 2016 and into 2017, we sold substantially all of our remaining Visa Class B Shares to a third party.

Loans - As discussed more fully above under "Other Operating Income (Total Other Revenues)," on a Group Reporting Basis, loans designated as held for sale at the time of origination and accrued interest are classified as trading assets. However, the accounting requirements governing when loans previously held for investment are transferred to a held for sale category are more stringent under the Group Reporting Basis than under U.S. GAAP which results in loans generally being reported as held for sale later than under U.S. GAAP.

Precious metal loans - Under U.S. GAAP, precious metals leased or loaned to customers are reclassified from trading precious metals into loans and are carried at amortized cost, while under the Group Reporting Basis, precious metals leased or loaned to customers continue to be part of the precious metal inventory recorded in other assets and are carried at fair value.

Loan allowance - As discussed more fully above under "Expected Credit Losses (Provision for Credit Losses)," beginning in 2018, we use an ECL approach for estimating credit losses under the Group Reporting Basis compared with an incurred loss approach under U.S. GAAP. In addition, for commercial loans collectively evaluated for impairment, we utilize a loss emergence period greater than 12 months for calculating the allowance for credit losses under U.S. GAAP, while under the Group Reporting Basis, a loss emergence period is no longer used beginning in 2018 under IFRS 9. Prior to 2018, we utilized different loss emergence periods for U.S. GAAP and the Group Reporting Basis.

Goodwill - The Group Reporting Basis and U.S. GAAP require goodwill to be tested for impairment at least annually, or more frequently if circumstances indicate that goodwill may be impaired. Under the Group Reporting Basis, goodwill was amortized until 2005, however goodwill was amortized under U.S. GAAP until 2002, which resulted in a lower carrying amount of goodwill under the Group Reporting Basis.

The following table summarizes the results for each segment on a Group Reporting Basis, as well as provides a reconciliation of total results under the Group Reporting Basis to U.S. GAAP consolidated totals:

	Group Reporting Basis Consolidated Amounts									
	RBWM	CMB	GB&M	PB	CC	Adjustments/ Reconciling Items	Total	Group Reporting Basis Adjustments ⁽²⁾	Group Reporting Basis Reclassi- fications ⁽³⁾	U.S. GAAP Consolidated Totals
	(in millions)									
Year Ended December 31, 2018										
Net interest income	\$ 889	\$ 797	\$ 610	\$ 172	\$ 91	\$ —	\$ 2,559	\$ (16)	\$ (291)	\$ 2,252
Other operating income.....	297	226	751	73	257	—	1,604	(9)	304	1,899
Total operating income	1,186	1,023	1,361	245	348	—	4,163	(25)	13	4,151
Expected credit losses / provision for credit losses .	38	(43)	(194)	(4)	4	—	(199)	115	11	(73)
	1,148	1,066	1,555	249	344	—	4,362	(140)	2	4,224
Operating expenses	1,286	589	834	236	688	—	3,633	3	2	3,638
Profit (loss) before income tax expense	\$ (138)	\$ 477	\$ 721	\$ 13	\$ (344)	\$ —	\$ 729	\$ (143)	\$ —	\$ 586
Balances at end of period:										
Total assets	\$ 19,000	\$ 25,047	\$ 73,187	\$ 6,797	\$ 79,344	\$ —	\$ 203,375	\$ (30,927)	\$ —	\$ 172,448
Total loans, net ⁽¹⁾	16,918	23,913	18,895	5,715	1,599	—	67,040	(2,428)	3,825	68,437
Goodwill	581	358	—	321	—	—	1,260	347	—	1,607
Total deposits ⁽¹⁾	32,612	23,604	30,181	8,193	2,781	—	97,371	(2,017)	15,601	110,955
Year Ended December 31, 2017										
Net interest income	\$ 886	\$ 739	\$ 585	\$ 217	\$ (40)	\$ —	\$ 2,387	\$ (48)	\$ (66)	\$ 2,273
Other operating income.....	526	216	617	94	274	—	1,727	200	75	2,002
Total operating income	1,412	955	1,202	311	234	—	4,114	152	9	4,275
Expected credit losses / provision for credit losses .	25	(52)	(94)	2	—	—	(119)	(72)	26	(165)
	1,387	1,007	1,296	309	234	—	4,233	224	(17)	4,440
Operating expenses	1,185	558	881	244	465	—	3,333	75	(17)	3,391
Profit (loss) before income tax expense	\$ 202	\$ 449	\$ 415	\$ 65	\$ (231)	\$ —	\$ 900	\$ 149	\$ —	\$ 1,049
Balances at end of period:										
Total assets	\$ 18,707	\$ 23,644	\$ 72,734	\$ 8,190	\$ 97,038	\$ —	\$ 220,313	\$ (33,078)	\$ —	\$ 187,235
Total loans, net.....	16,685	22,444	19,125	6,405	3,556	—	68,215	(1,397)	5,064	71,882
Goodwill	581	358	—	321	—	—	1,260	347	—	1,607
Total deposits	34,186	24,239	25,476	8,470	4,923	—	97,294	(3,261)	24,669	118,702
Year Ended December 31, 2016										
Net interest income	\$ 818	\$ 749	\$ 567	\$ 207	\$ 132	\$ (2)	\$ 2,471	\$ (76)	\$ 89	\$ 2,484
Other operating income.....	363	229	785	89	127	2	1,595	(104)	(87)	1,404
Total operating income	1,181	978	1,352	296	259	—	4,066	(180)	2	3,888
Expected credit losses / provision for credit losses .	70	50	383	—	(9)	—	494	(78)	(44)	372
	1,111	928	969	296	268	—	3,572	(102)	46	3,516
Operating expenses	1,131	591	986	232	338	—	3,278	(26)	46	3,298
Profit (loss) before income tax expense	\$ (20)	\$ 337	\$ (17)	\$ 64	\$ (70)	\$ —	\$ 294	\$ (76)	\$ —	\$ 218
Balances at end of period:										
Total assets	\$ 19,618	\$ 25,082	\$ 85,215	\$ 7,714	\$ 108,877	\$ —	\$ 246,506	\$ (45,234)	\$ 29	\$ 201,301
Total loans, net.....	16,889	24,125	21,914	6,024	3,512	—	72,464	(405)	799	72,858
Goodwill	581	358	—	325	—	—	1,264	348	—	1,612
Total deposits	32,472	22,005	22,260	11,618	6,989	—	95,344	(4,379)	38,283	129,248

- (1) In addition to the changes discussed above, in conjunction with HSBC's adoption of the requirements of IFRS 9 HUSI also adopted changes in presentation under the Group Reporting Basis related to affiliate loans and deposits as well as cash collateral posted and received. Beginning January 1, 2018, affiliate loans have been reclassified from other assets to loans, affiliate deposits have been reclassified from other liabilities to deposits, cash collateral posted has been reclassified from loans to other assets and cash collateral received has been reclassified from deposits to other liabilities. As a result of these changes, total loans, net and total deposits in the GB&M segment decreased \$0.1 billion and increased \$8.3 billion, respectively, and total loans, net and total deposits in the CC segment decreased \$2.2 billion and increased \$0.3 billion, respectively, at December 31, 2018.
- (2) Represents adjustments associated with differences between U.S. GAAP and the Group Reporting Basis. These adjustments, which are more fully described above, consist of the following:

	Net Interest Income	Other Revenues	Provision for Credit Losses	Operating Expenses	Profit (Loss) before Income Tax Expense	Total Assets
(in millions)						
December 31, 2018						
Deposit incentives	\$ 9	\$ —	\$ —	\$ 20	\$ (11)	\$ (10)
Derivatives	—	—	—	—	—	(30,866)
Expected credit losses / loan impairment	(6)	—	118	—	(124)	(386)
Goodwill	—	—	—	—	—	347
Loan origination	(29)	(3)	—	(14)	(18)	45
Loans held for sale	9	6	(3)	—	18	45
Pension and other postretirement benefit costs ..	—	—	—	8	(8)	(44)
Property	—	—	—	(8)	8	7
Securities transferred to held-to-maturity	—	—	—	—	—	(76)
Other	1	(12)	—	(3)	(8)	11
Total adjustments	<u>\$ (16)</u>	<u>\$ (9)</u>	<u>\$ 115</u>	<u>\$ 3</u>	<u>\$ (143)</u>	<u>\$ (30,927)</u>
December 31, 2017						
Derivatives	\$ —	\$ —	\$ —	\$ —	\$ —	\$ (32,900)
Expected credit losses / loan impairment	(43)	—	(72)	—	29	(332)
Goodwill	—	(1)	—	—	(1)	347
Loan origination	(19)	—	—	(14)	(5)	42
Loans held for sale	9	141	—	—	150	21
Pension and other postretirement benefit costs ..	—	—	—	94	(94)	(263)
Property	—	—	—	(11)	11	8
Structured notes and deposits	—	85	—	—	85	—
Other	5	(25)	—	6	(26)	(1)
Total adjustments	<u>\$ (48)</u>	<u>\$ 200</u>	<u>\$ (72)</u>	<u>\$ 75</u>	<u>\$ 149</u>	<u>\$ (33,078)</u>
December 31, 2016						
Derivatives	\$ —	\$ —	\$ —	\$ —	\$ —	\$ (44,911)
Expected credit losses / loan impairment	(57)	7	(58)	1	7	(326)
Goodwill	—	—	—	—	—	348
Loan origination	(21)	—	—	(19)	(2)	35
Loans held for sale	—	(80)	(20)	—	(60)	(31)
Pension and other postretirement benefit costs ..	—	—	—	19	(19)	(191)
Property	—	—	—	(19)	19	16
Unquoted equity securities	—	—	—	—	—	(163)
Other	2	(31)	—	(8)	(21)	(11)
Total adjustments	<u>\$ (76)</u>	<u>\$ (104)</u>	<u>\$ (78)</u>	<u>\$ (26)</u>	<u>\$ (76)</u>	<u>\$ (45,234)</u>

- (3) Represents differences in financial statement presentation between U.S. GAAP and the Group Reporting Basis.

24. Retained Earnings and Regulatory Capital Requirements

Bank dividends are one of the sources of funds used for payment of shareholder dividends and other HSBC USA cash needs. Approval from the Office of the Comptroller of the Currency ("OCC") is required if the total of all dividends HSBC Bank USA declares in any year exceeds the cumulative net income for that year, combined with the net income for the two preceding years reduced by dividends attributable to those years. OCC approval also is required for a reduction of permanent capital of HSBC Bank USA. Under a separate restriction, payment of dividends is prohibited in amounts greater than undivided profits then on hand, after deducting actual losses and bad debts. Bad debts are debts due and unpaid for a period of six months unless well secured, as defined, and in the process of collection. In February 2019, HSBC Bank USA's Board of Directors approved a common stock return of capital of \$2.4 billion to be paid to HSBC USA during the first quarter of 2019.

HSBC Bank USA is also required to maintain reserve balances either in the form of vault cash or on deposit with the Federal Reserve Bank, based on a percentage of deposits. At December 31, 2018 and 2017, HSBC Bank USA was required to maintain \$2,205 million and \$2,929 million, respectively, of reserve balances with the Federal Reserve Bank which are reported within interest bearing deposits with banks on the consolidated balance sheet.

The following table summarizes the capital amounts and ratios of HSBC USA and HSBC Bank USA, calculated in accordance with banking regulations in effect at December 31, 2018 and 2017:

	December 31, 2018			December 31, 2017		
	Capital Amount	Well-Capitalized Ratio ⁽¹⁾	Actual Ratio	Capital Amount	Well-Capitalized Ratio ⁽¹⁾	Actual Ratio
(dollars are in millions)						
Common equity Tier 1 ratio:						
HSBC USA.....	\$ 17,459	4.5% ⁽²⁾	13.6%	\$ 17,428	4.5% ⁽²⁾	14.2%
HSBC Bank USA.....	19,456	6.5	15.7	19,294	6.5	16.7
Tier 1 capital ratio:						
HSBC USA.....	18,724	6.0	14.6	18,696	6.0	15.3
HSBC Bank USA.....	21,956	8.0	17.7	21,786	8.0	18.8
Total capital ratio:						
HSBC USA.....	21,972	10.0	17.2	22,565	10.0	18.4
HSBC Bank USA.....	25,293	10.0	20.4	25,522	10.0	22.1
Tier 1 leverage ratio:						
HSBC USA.....	18,724	4.0 ⁽²⁾	11.0	18,696	4.0 ⁽²⁾	9.9
HSBC Bank USA.....	21,956	5.0	13.1	21,786	5.0	11.7
Supplementary leverage ratio ("SLR"):						
HSBC USA.....	18,724	3.0 ⁽³⁾	7.6			N/A
HSBC Bank USA.....	21,956	3.0 ⁽³⁾	9.1			N/A
Risk-weighted assets:						
HSBC USA.....	127,917			122,584		
HSBC Bank USA.....	124,112			115,667		
Adjusted quarterly average assets: ⁽⁴⁾						
HSBC USA.....	170,565			188,774		
HSBC Bank USA.....	168,154			186,551		
Total leverage exposure: ⁽⁵⁾						
HSBC USA.....	245,796			N/A		
HSBC Bank USA.....	242,264			N/A		

⁽¹⁾ HSBC USA and HSBC Bank USA are categorized as "well-capitalized," as defined by their principal regulators. To be categorized as well-capitalized under regulatory guidelines, a banking institution must have the ratios reflected in the above table, and must not be subject to a directive, order, or written agreement to meet and maintain specific capital levels.

⁽²⁾ There are no common equity Tier 1 or Tier 1 leverage ratio components in the definition of a well-capitalized bank holding company. The ratios shown are the regulatory minimum ratios.

- (3) Beginning January 1, 2018, HSBC USA and HSBC Bank USA are required to maintain the regulatory minimum SLR of 3 percent. There is no SLR component in the definition of a well-capitalized banking institution.
- (4) Represents the Tier 1 leverage ratio denominator which reflects quarterly average assets adjusted for amounts permitted to be deducted from Tier 1 capital.
- (5) Represents the SLR denominator which includes adjusted quarterly average assets plus certain off-balance sheet exposures.

N/A Not Applicable

We are subject to regulatory capital rules issued by U.S. banking regulators including Basel III (the "Basel III rule") which, for banking organizations such as HSBC North America and HSBC Bank USA, became effective in 2014 with certain provisions being phased in over time through the beginning of 2019. As a result, the capital ratios in the table above are reported in accordance with the fully phased-in Basel III rule for December 31, 2018 and in accordance with the transition rules within the Basel III rule for December 31, 2017. In addition, risk-weighted assets in the table above are calculated using the generally-applicable Standardized Approach.

During 2018 and 2017, HSBC USA did not receive any cash capital contributions from its parent, HSBC North America, and did not make any capital contributions to its subsidiary, HSBC Bank USA.

25. Variable Interest Entities

In the ordinary course of business, we have organized special purpose entities ("SPEs") primarily to structure financial products to meet our clients' investment needs, to facilitate clients to access and raise financing from capital markets and to securitize financial assets held to meet our own funding needs. For disclosure purposes, we aggregate SPEs based on the purpose, risk characteristics and business activities of the SPEs. An SPE is a VIE if it lacks sufficient equity investment at risk to finance its activities without additional subordinated financial support or, as a group, the holders of the equity investment at risk lack either a) the power through voting or similar rights to direct the activities of the entity that most significantly impacts the entity's economic performance; or b) the obligation to absorb the entity's expected losses, the right to receive the expected residual returns, or both.

Variable Interest Entities We consolidate VIEs in which we hold a controlling financial interest as evidenced by the power to direct the activities of a VIE that most significantly impact its economic performance and the obligation to absorb losses of, or the right to receive benefits from, the VIE that could potentially be significant to the VIE and therefore are deemed to be the primary beneficiary. We take into account our entire involvement in a VIE (explicit or implicit) in identifying variable interests that individually or in the aggregate could be significant enough to warrant our designation as the primary beneficiary and hence require us to consolidate the VIE or otherwise require us to make appropriate disclosures. We consider our involvement to be potentially significant where we, among other things, (i) enter into derivative contracts to absorb the risks and benefits from the VIE or from the assets held by the VIE; (ii) provide a financial guarantee that covers assets held or liabilities issued by a VIE; (iii) sponsor the VIE in that we design, organize and structure the transaction; and (iv) retain a financial or servicing interest in the VIE.

We are required to evaluate whether to consolidate a VIE when we first become involved and on an ongoing basis. In almost all cases, a qualitative analysis of our involvement in the entity provides sufficient evidence to determine whether we are the primary beneficiary. In rare cases, a more detailed analysis to quantify the extent of variability to be absorbed by each variable interest holder is required to determine the primary beneficiary.

Consolidated VIEs The following table summarizes assets and liabilities related to our consolidated VIEs at December 31, 2018 and 2017 which are consolidated on our balance sheet. Assets and liabilities exclude intercompany balances that eliminate in consolidation.

	December 31, 2018		December 31, 2017	
	Consolidated Assets	Consolidated Liabilities	Consolidated Assets	Consolidated Liabilities
(in millions)				
Low income housing limited liability partnership:				
Other assets	\$ 112	\$ —	\$ 154	\$ —
Long-term debt.....	—	66	—	73
Interest, taxes and other liabilities.....	—	37	—	59
Total	<u>\$ 112</u>	<u>\$ 103</u>	<u>\$ 154</u>	<u>\$ 132</u>

Low income housing limited liability partnership In 2009, all low income housing investments held by us at the time were transferred to a Limited Liability Partnership ("LLP") in exchange for debt and equity while a third party invested cash for an equity interest that is mandatorily redeemable at a future date. The LLP was created in order to ensure the utilization of future tax benefits from these low income housing tax projects. The LLP was deemed to be a VIE as it does not have sufficient equity investment at risk to finance its activities. Upon entering into this transaction, we concluded that we are the primary beneficiary

of the LLP due to the nature of our continuing involvement and, as a result, we consolidate the LLP and report the equity interest issued to the third party investor in other liabilities and the assets of the LLP in other assets on our consolidated balance sheet. The investments held by the LLP represent equity investments in the underlying low income housing partnerships. The LLP does not consolidate the underlying partnerships because it does not have the power to direct the activities of the partnerships that most significantly impact the economic performance of the partnerships.

As a practical expedient, we amortize our low income housing investments in proportion to the allocated tax benefits under the proportional amortization method and present the associated tax benefits net of investment amortization in income tax expense.

Unconsolidated VIEs We also have variable interests in other VIEs that are not consolidated because we are not the primary beneficiary. The following table provides additional information on these unconsolidated VIEs, including the variable interests held by us and our maximum exposure to loss arising from our involvements in these VIEs, at December 31, 2018 and 2017:

	Total Assets Held by Unconsolidated VIEs	Carrying Value of Variable Interests Held Reported as		Maximum Exposure to Loss
		Assets	Liabilities	
	(in millions)			
At December 31, 2018				
Structured note vehicles.....	\$ 3,033	\$ 1,803	\$ 20	\$ 3,003
Limited partnership investments.....	1,578	454	209	454
Total.....	<u>\$ 4,611</u>	<u>\$ 2,257</u>	<u>\$ 229</u>	<u>\$ 3,457</u>
At December 31, 2017				
Structured note vehicles.....	\$ 3,019	\$ 1,803	\$ 6	\$ 3,013
Limited partnership investments.....	1,566	412	262	412
Refinancing SPE.....	412	116	—	116
Total.....	<u>\$ 4,997</u>	<u>\$ 2,331</u>	<u>\$ 268</u>	<u>\$ 3,541</u>

Information on the types of VIEs with which we are involved, the nature of our involvement and the variable interests held in those entities is presented below.

Structured note vehicles We provide derivatives, such as interest rate and currency swaps, to structured note vehicles and, in certain instances, invest in the vehicles' debt instruments. We hold variable interests in these structured note vehicles in the form of total return swaps under which we take on the risks and benefits of the structured notes they issue. The same risks and benefits are passed on to third party entities through back-end total return swaps. We earn a spread for facilitating the transaction. Since we do not have the power to direct the activities of the VIE and are not the primary beneficiary, we do not consolidate them. Our maximum exposure to loss is the notional amount of the derivatives wrapping the structured notes. The maximum exposure to loss of \$3,003 million at December 31, 2018 will occur in the unlikely scenario where the value of the structured notes is reduced to zero and, at the same time, the counterparty of the back-end swap defaults with zero recovery. In certain instances, we hold credit default swaps with the structured note vehicles under which we receive credit protection on specified reference assets in exchange for the payment of a premium. Through these derivatives, the vehicles assume the credit risk associated with the reference assets which are then passed on to the holders of the debt instruments they issue. Because they create rather than absorb variability, the credit default swaps we hold are not considered variable interests. We record all investments in, and derivative contracts with, unconsolidated structured note vehicles at fair value on our consolidated balance sheet.

During 2017, one of the structured note vehicles was unwound and our investment in the structured note vehicle along with the related derivatives were terminated. As a result, we recognized a gain of approximately \$11 million, largely reflecting a make-whole payment provided by a third party guarantor of the investment. At the time of unwind, our investment in the structured note vehicle had a total carrying value of \$1,081 million, which was recorded in trading assets on the consolidated balance sheet.

Limited partnership investments We invest as a limited partner in partnerships that operate qualified affordable housing, renewable energy and community development projects. The returns of these investments are generated primarily from the tax benefits, including Federal tax credits and tax deductions from operating losses in the project companies. In addition, some of the investments also help us comply with the Community Reinvestment Act. Certain limited partnership structures are considered to be VIEs because either (a) they do not have sufficient equity investment at risk or (b) the limited partners with equity at risk do not have substantive kick-out rights through voting rights or substantive participating rights over the general partner. As a limited partner, we are not the primary beneficiary of the VIEs and do not consolidate them. Our investments in these partnerships are recorded in other assets on the consolidated balance sheet. The maximum exposure to loss shown in the table above represents our recorded investments.

Refinancing SPE Prior to the second quarter of 2018, we organized and provided loans to a SPE to purchase a senior secured financing facility from the originator designed to finance a third party borrower's acquisition of a portfolio of commercial real estate loans in Mexico. During the second quarter of 2018, the loans we provided to the SPE were repaid in full and the SPE was terminated.

Third-party sponsored securitization entities We invest in asset-backed securities issued by third party sponsored securitization entities which may be considered VIEs. The investments are transacted at arm's-length and decisions to invest are based on a credit analysis of the underlying collateral assets or the issuer. We are a passive investor in these issuers and do not have the power to direct the activities of these issuers. As such, we do not consolidate these securitization entities. Additionally, we do not have other involvements in servicing or managing the collateral assets or provide financial or liquidity support to these issuers which potentially give rise to risk of loss exposure. These investments are an integral part of the disclosure in Note 3, "Trading Assets and Liabilities," Note 4, "Securities," and Note 27, "Fair Value Measurements," and, therefore, are not disclosed in this note to avoid redundancy.

26. Guarantee Arrangements, Pledged Assets and Repurchase Agreements

Guarantee Arrangements As part of our normal operations, we enter into credit derivatives and various off-balance sheet guarantee arrangements with affiliates and third parties. These arrangements arise principally in connection with our lending and client intermediation activities and include standby letters of credit and certain credit derivative transactions. The contractual amounts of these arrangements represent our maximum possible credit exposure in the event that we are required to fulfill the maximum obligation under the contractual terms of the guarantee.

The following table presents total carrying value and contractual amounts of our sell protection credit derivatives and major off-balance sheet guarantee arrangements at December 31, 2018 and 2017. Following the table is a description of the various arrangements.

	December 31, 2018		December 31, 2017	
	Carrying Value	Notional / Maximum Exposure to Loss	Carrying Value	Notional / Maximum Exposure to Loss
	(in millions)			
Credit derivatives ⁽¹⁾⁽²⁾	\$ (562)	\$ 45,384	\$ 303	\$ 42,328
Financial standby letters of credit, net of participations ⁽³⁾⁽⁴⁾	—	5,302	—	5,128
Performance standby letters of credit, net of participations ⁽³⁾⁽⁴⁾	—	3,670	—	3,580
Total	<u>\$ (562)</u>	<u>\$ 54,356</u>	<u>\$ 303</u>	<u>\$ 51,036</u>

⁽¹⁾ Includes \$25,734 million and \$25,639 million of notional issued for the benefit of HSBC affiliates at December 31, 2018 and 2017, respectively.

⁽²⁾ For credit derivatives, the maximum loss is represented by the notional amounts without consideration of mitigating effects from collateral or recourse arrangements.

⁽³⁾ Includes \$1,321 million and \$1,264 million of both financial and performance standby letters of credit issued for the benefit of HSBC affiliates at December 31, 2018 and 2017, respectively.

⁽⁴⁾ For standby letters of credit, maximum loss represents losses to be recognized assuming the letters of credit have been fully drawn and the obligors have defaulted with zero recovery.

Credit-Risk Related Guarantees

Credit derivatives Credit derivatives are financial instruments that transfer the credit risk of a reference obligation from the credit protection buyer to the credit protection seller who is exposed to the credit risk without buying the reference obligation. We sell credit protection on underlying reference obligations (such as loans or securities) by entering into credit derivatives, primarily in the form of credit default swaps, with various institutions. We account for all credit derivatives at fair value. Where we sell credit protection to a counterparty that holds the reference obligation, the arrangement is effectively a financial guarantee on the reference obligation. Under a credit derivative contract, the credit protection seller will reimburse the credit protection buyer upon occurrence of a credit event (such as bankruptcy, insolvency, restructuring or failure to meet payment obligations when due) as defined in the derivative contract, in return for a periodic premium. Upon occurrence of a credit event, we will pay the counterparty the stated notional amount of the derivative contract and receive the underlying reference obligation. The recovery value of the reference obligation received could be significantly lower than its notional principal amount when a credit event occurs.

Certain derivative contracts are subject to master netting arrangements and related collateral agreements. A party to a derivative contract may demand that the counterparty post additional collateral in the event its net exposure exceeds certain predetermined

limits and when the credit rating falls below a certain grade. We set the collateral requirements by counterparty such that the collateral covers various transactions and products, and is not allocated to specific individual contracts.

We manage our exposure to credit derivatives using a variety of risk mitigation strategies where we enter into offsetting hedge positions or transfer the economic risks, in part or in entirety, to investors through the issuance of structured credit products. We actively manage the credit and market risk exposure in the credit derivative portfolios on a net basis and, as such, retain no or a limited net position at any time. The following table summarizes our net credit derivative positions at December 31, 2018 and 2017:

	December 31, 2018		December 31, 2017	
	Carrying / Fair Value	Notional	Carrying / Fair Value	Notional
(in millions)				
Sell-protection credit derivative positions	\$ (562)	\$ 45,384	\$ 303	\$ 42,328
Buy-protection credit derivative positions.....	601	51,914	(188)	47,962
Net position ⁽¹⁾	<u>\$ 39</u>	<u>\$ 6,530</u>	<u>\$ 115</u>	<u>\$ 5,634</u>

⁽¹⁾ Positions are presented net in the table above to provide a complete analysis of our risk exposure and depict the way we manage our credit derivative portfolio. The offset of the sell-protection credit derivatives against the buy-protection credit derivatives may not be legally binding in the absence of master netting agreements with the same counterparty. Furthermore, the credit loss triggering events for individual sell protection credit derivatives may not be the same or occur in the same period as those of the buy protection credit derivatives thereby not providing an exact offset.

Standby letters of credit A standby letter of credit is issued to a third party for the benefit of a client and is a guarantee that the client will perform or satisfy certain obligations under a contract. It irrevocably obligates us to pay a specified amount to the third party beneficiary if the client fails to perform the contractual obligation. We issue two types of standby letters of credit: performance and financial. A performance standby letter of credit is issued where the client is required to perform some non-financial contractual obligation, such as the performance of a specific act, whereas a financial standby letter of credit is issued where the client's contractual obligation is of a financial nature, such as the repayment of a loan or debt instrument.

The issuance of a standby letter of credit is subject to our credit approval process and collateral requirements. We charge fees for issuing letters of credit commensurate with the client's credit evaluation and the nature of any collateral. Included in other liabilities are deferred fees on standby letters of credit amounting to \$43 million and \$48 million at December 31, 2018 and 2017, respectively. Also included in other liabilities is an allowance for credit losses on unfunded standby letters of credit of \$16 million and \$26 million at December 31, 2018 and 2017, respectively.

The following table summarizes the credit ratings related to guarantees including the ratings of counterparties against which we sold credit protection and financial standby letters of credit at December 31, 2018 as an indicative proxy of payment risk:

Notional/Contractual Amounts	Average Life (in years)	Credit Ratings of the Obligors		
		Investment Grade	Non-Investment Grade	Total
(dollars are in millions)				
Sell-protection Credit Derivatives ⁽¹⁾				
Single name credit default swaps ("CDS").....	3.2	\$ 25,051	\$ 8,773	\$ 33,824
Index credit derivatives	4.5	3,998	6,025	10,023
Total return swaps.....	2.4	1,283	254	1,537
Subtotal.....		30,332	15,052	45,384
Standby Letters of Credit ⁽²⁾	1.2	7,558	1,414	8,972
Total.....		\$ 37,890	\$ 16,466	\$ 54,356

⁽¹⁾ The credit ratings in the table represent external credit ratings for classification as investment grade and non-investment grade.

⁽²⁾ External ratings for most of the obligors are not available. Presented above are the internal credit ratings which are developed using similar methodologies and rating scale equivalent to external credit ratings for purposes of classification as investment grade and non-investment grade.

Our internal credit ratings are determined based on HSBC's risk rating systems and processes which assign a credit grade based on a scale which ranks the risk of default of a client. The credit grades are assigned and used for managing risk and determining level of credit exposure appetite based on the client's operating performance, liquidity, capital structure and debt service ability. In addition, we also incorporate subjective judgments into the risk rating process concerning such things as industry trends,

comparison of performance to industry peers and perceived quality of management. We compare our internal risk ratings to outside external rating agency benchmarks, where possible, at the time of formal review and regularly monitor whether our risk ratings are comparable to the external ratings benchmark data.

A non-investment grade rating of a referenced obligor has a negative impact to the fair value of the credit derivative and increases the likelihood that we will be required to perform under the credit derivative contract. We employ market-based parameters and, where possible, use the observable credit spreads of the referenced obligors as measurement inputs in determining the fair value of the credit derivatives. We believe that such market parameters are more indicative of the current status of payment/performance risk than external ratings by the rating agencies which may not be forward-looking in nature and, as a result, lag behind those market-based indicators.

Non Credit-Risk Related Guarantees and Other Arrangements

Visa covered litigation In 2008, we received Class B Shares as part of Visa's initial public offering ("IPO"). Pursuant to the IPO, we, along with all the other Class B shareholders, agreed to indemnify Visa for the claims and obligations arising from certain specific covered litigation. The Class B Shares are not eligible to be converted into publicly traded Class A Shares until settlement of the covered litigation described in Note 28, "Litigation and Regulatory Matters." Accordingly, the Class B Shares are considered restricted and are only transferable under limited circumstances, which include transfers to other Class B shareholders.

Beginning in 2016 and into 2017, we sold substantially all of our remaining Visa Class B Shares to a third party. The net pre-tax gains associated with these sales, which totaled approximately \$312 million and \$71 million during 2017 and 2016, respectively, were recorded as a component of other income (loss) in the consolidated statement of income (loss). Under the terms of the sale agreements, we entered into swap agreements with the purchaser to retain the litigation risk associated with the Class B Shares sold until the related litigation is settled and the Class B Shares can be converted into Class A Shares. These swaps had a carrying value of \$40 million and \$52 million at December 31, 2018 and 2017, respectively. The swap agreements we entered into with the purchaser requires us to (a) make periodic payments, calculated by reference to the market price of Class A Shares and (b) make or receive payments based on subsequent changes in the conversion rate of Class B Shares into Class A Shares. In 2017, we entered into a total return swap position to economically hedge the periodic payments made under these swap agreements. The payments under the derivative will continue until the Class B Shares are able to be converted into Class A Shares. During 2018, we recorded a loss of \$7 million related to a change in the Visa Class B Share conversion rate announced by Visa as a result of the outstanding litigation. The fair value of the swap agreements is estimated using a discounted cash flow methodology and is dependent upon the final resolution of the related litigation. Changes in fair value between periods are recognized in other income (loss). See Note 14, "Derivative Financial Instruments," for further information.

Clearing houses and exchanges We are a member of various exchanges and clearing houses that trade and clear securities and/or derivatives contracts. Under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, members of a clearing house may be required to contribute to a guaranty fund to backstop members' obligations to the clearing house. As a member, we may be required to pay a proportionate share of the financial obligations of another member who defaults on its obligations to the exchange or the clearing house. Our guarantee obligations would arise only if the exchange or clearing house had exhausted its resources. Any potential contingent liability under these membership agreements cannot be estimated.

Lease Obligations We are obligated under a number of noncancellable operating leases for premises and equipment. Certain leases contain renewal options and escalation clauses. Office space leases generally require us to pay certain operating expenses. We have entered into agreements to sublease certain office space. Net rental expense under operating leases was \$103 million, \$94 million and \$80 million in 2018, 2017 and 2016, respectively. Included in net rental expense is rental income received from our affiliates for rent on certain office space. As owner or lessee of the properties, we have entered into agreements with affiliates to charge them rent based on the office space utilized by their employees during the period. See Note 22, "Related Party Transactions," for further disclosure.

Future net minimum lease commitments under noncancellable operating lease arrangements were as follows:

Year Ending December 31,	Minimum Lease Payments	Minimum Sublease Income	Net
	(in millions)		
2019	\$ 136	\$ (58)	\$ 78
2020	125	(2)	123
2021	115	(1)	114
2022	103	—	103
2023	91	—	91
Thereafter	182	(1)	181
Net minimum lease commitments	<u>\$ 752</u>	<u>\$ (62)</u>	<u>\$ 690</u>

Mortgage Loan Repurchase Obligations We have provided various representations and warranties related to the origination and sale of mortgage loans including, among other things, the ownership of the loans, the validity of the liens, the loan selection and origination process, and the compliance to the origination criteria established by the government agencies. In the event of a breach of our representations and warranties, we may be obligated to repurchase the loans with identified defects or to indemnify the buyers. Our contractual obligation arises only when the breach of representations and warranties are discovered and repurchase is demanded. From 2013 to 2017, agency-eligible mortgage loan originations were sold directly to PHH Mortgage and PHH Mortgage is responsible for origination representations and warranties for all loans purchased. With the insourcing of our mortgage fulfillment operations, beginning with 2018 applications, we are now responsible for origination representations and warranties for all new agency-eligible mortgage loan originations sold to third parties.

In estimating our repurchase liability arising from breaches of representations and warranties, we consider historical losses on residual risks not covered by settlement agreements adjusted for any risk factors not captured in the historical losses as well as the level of outstanding repurchase demands received. Outstanding repurchase demands received totaled \$2 million, \$3 million and \$6 million at December 31, 2018, 2017 and 2016, respectively.

The following table summarizes the change in our estimated repurchase liability during 2018, 2017 and 2016 for obligations arising from the breach of representations and warranties associated with mortgage loans sold:

Year Ended December 31,	2018	2017	2016
	(in millions)		
Balance at beginning of period.....	\$ 10	\$ 12	\$ 17
Decrease in liability recorded through earnings.....	(1)	(1)	(3)
Realized losses.....	(1)	(1)	(2)
Balance at end of period.....	<u>\$ 8</u>	<u>\$ 10</u>	<u>\$ 12</u>

Our repurchase liability of \$8 million at December 31, 2018 represents our best estimate of the loss that has been incurred, including interest, arising from breaches of representations and warranties associated with mortgage loans sold. Because the level of mortgage loan repurchase losses is dependent upon economic factors, investor demand strategies and other external risk factors such as housing market trends that may change, the level of the liability for mortgage loan repurchase losses requires significant judgment. We continue to evaluate our methods of determining the best estimate of loss based on recent trends. As these estimates are influenced by factors outside our control, there is uncertainty inherent in these estimates making it reasonably possible that they could change. The range of reasonably possible losses in excess of our recorded repurchase liability is between zero and \$25 million at December 31, 2018. This estimated range of reasonably possible losses was determined based upon modifying the assumptions utilized in our best estimate of probable losses to reflect what we believe to be reasonably possible adverse assumptions.

Securitization Activity In addition to the repurchase risk described above, we have also been involved as a sponsor/seller of loans used to facilitate whole loan securitizations underwritten by our affiliate, HSI. In this regard, we began acquiring residential mortgage loans in 2005 which were warehoused on our balance sheet with the intent of selling them to HSI to facilitate HSI's whole loan securitization program which was discontinued in 2007. During 2005-2007, we purchased and sold \$24 billion of such loans to HSI which were subsequently securitized and sold by HSI to third parties. See "Mortgage Securitization Matters" in Note 28, "Litigation and Regulatory Matters," for additional discussion of related exposure.

Pledged Assets

Pledged assets included in the consolidated balance sheet consisted of the following:

	December 31, 2018	December 31, 2017
	(in millions)	
Interest bearing deposits with banks	\$ 3,225	\$ 2,952
Trading assets ⁽¹⁾	2,465	3,185
Securities available-for-sale ⁽²⁾	7,440	7,210
Securities held-to-maturity ⁽²⁾	1,747	2,131
Loans ⁽³⁾	18,189	17,404
Other assets ⁽⁴⁾	2,289	2,253
Total.....	<u>\$ 35,355</u>	<u>\$ 35,135</u>

⁽¹⁾ Trading assets are primarily pledged against liabilities associated with repurchase agreements.

- (2) Securities are primarily pledged against derivatives, public fund deposits, trust deposits and various short-term and long term borrowings, as well as providing capacity for potential secured borrowings from the FHLB and the Federal Reserve Bank of New York.
- (3) Loans are primarily residential mortgage loans pledged against current and potential borrowings from the FHLB and the Federal Reserve Bank of New York.
- (4) Other assets represent cash on deposit with non-banks related to derivative collateral support agreements.

Debt securities pledged as collateral under repurchase agreements that can be sold or repledged by the secured party continue to be reported on the consolidated balance sheet. The fair value of securities available-for-sale that could be sold or repledged was \$822 million and \$524 million at December 31, 2018 and 2017, respectively. The fair value of trading assets that could be sold or repledged was \$2,464 million and \$3,185 million at December 31, 2018 and 2017, respectively.

The fair value of collateral we accepted under security resale agreements but was not reported on the consolidated balance sheet was \$13,004 million and \$34,759 million at December 31, 2018 and 2017, respectively. Of this collateral, \$11,904 million and \$32,459 million could be sold or repledged at December 31, 2018 and 2017, respectively, of which \$243 million and \$1,231 million, respectively, had been sold or repledged as collateral under repurchase agreements or to cover short sales.

Repurchase Agreements

We enter into purchases of securities under agreements to resell (resale agreements) and sales of securities under agreements to repurchase (repurchase agreements) identical or substantially the same securities. Resale and repurchase agreements are accounted for as secured lending and secured borrowing transactions, respectively.

Repurchase agreements may require us to deposit cash or other collateral with the lender. In connection with resale agreements, it is our policy to obtain possession of collateral, which may include the securities purchased, with market value in excess of the principal amount loaned. The market value of the collateral subject to the resale and repurchase agreements is regularly monitored, and additional collateral is obtained or provided when appropriate, to ensure appropriate collateral coverage of these secured financing transactions.

The following table provides information about resale and repurchase agreements that are subject to offset at December 31, 2018 and 2017:

				Gross Amounts Not Offset in the Balance Sheet		
	Gross Amounts Recognized	Gross Amounts Offset in the Balance Sheet ⁽¹⁾	Net Amounts Presented in the Balance Sheet	Financial Instruments ⁽²⁾	Cash Collateral Received / Pledged	Net Amount ⁽³⁾
	(in millions)					
At December 31, 2018						
Assets:						
Securities purchased under resale agreements	\$ 12,035	\$ 1,867	\$ 10,168	\$ 10,165	\$ —	\$ 3
Liabilities:						
Securities sold under repurchase agreements	\$ 3,333	\$ 1,867	\$ 1,466	\$ 1,458	\$ —	\$ 8
At December 31, 2017						
Assets:						
Securities purchased under resale agreements	\$ 33,974	\$ 1,356	\$ 32,618	\$ 32,616	\$ —	\$ 2
Liabilities:						
Securities sold under repurchase agreements	\$ 4,721	\$ 1,356	\$ 3,365	\$ 3,364	\$ —	\$ 1

(1) Represents recognized amount of resale and repurchase agreements with counterparties subject to legally enforceable netting agreements that meet the applicable netting criteria as permitted by generally accepted accounting principles.

(2) Represents securities received or pledged to cover financing transaction exposures.

(3) Represents the amount of our exposure that is not collateralized / covered by pledged collateral.

The following table provides the class of collateral pledged and remaining contractual maturity of repurchase agreements accounted for as secured borrowings at December 31, 2018 and 2017:

	Overnight and Continuous	Up to 30 Days	31 to 90 Days	91 Days to One Year	Greater Than One Year	Total
(in millions)						
At December 31, 2018						
U.S. Treasury, U.S. Government sponsored and U.S. Government agency securities	\$ 1,773	\$ 369	\$ —	\$ 191	\$ 1,000	\$ 3,333
At December 31, 2017						
U.S. Treasury, U.S. Government sponsored and U.S. Government agency securities	\$ 1,166	\$ 838	\$ 888	\$ 284	\$ 1,464	\$ 4,640
Foreign debt securities	—	81	—	—	—	81
Total repurchase agreements accounted for as secured borrowings	\$ 1,166	\$ 919	\$ 888	\$ 284	\$ 1,464	\$ 4,721

27. Fair Value Measurements

Accounting principles related to fair value measurements provide a framework for measuring fair value that focuses on the exit price that would be received to sell an asset or paid to transfer a liability in the principal market (or in the absence of the principal market, the most advantageous market) accessible in an orderly transaction between willing market participants (the "Fair Value Framework"). Where required by the applicable accounting standards, assets and liabilities are measured at fair value using the "highest and best use" valuation premise. Fair value measurement guidance clarifies that financial instruments do not have alternative use and, as such, the fair value of financial instruments should be determined using an "in-exchange" valuation premise. However, the fair value measurement literature provides a valuation exception and permits an entity to measure the fair value of a group of financial assets and financial liabilities with offsetting credit risks and/or market risks based on the exit price it would receive or pay to transfer the net risk exposure of a group of assets or liabilities if certain conditions are met. We elected to apply the measurement exception to a group of derivative instruments with offsetting credit risks and market risks, which primarily relate to interest rate, foreign currency, debt and equity price risk, and commodity price risk as of the reporting date.

Fair Value Adjustments The best evidence of fair value is quoted market price in an actively traded market, where available. In the event listed price or market quotes are not available, valuation techniques that incorporate relevant transaction data and market parameters reflecting the attributes of the asset or liability under consideration are applied. Where applicable, fair value adjustments are made to ensure the financial instruments are appropriately recorded at fair value. The fair value adjustments reflect the risks associated with the products, contractual terms of the transactions, and the liquidity of the markets in which the transactions occur. The fair value adjustments are broadly categorized by the following major types:

Credit valuation adjustment - The credit valuation adjustment is an adjustment to a group of financial assets and financial liabilities, predominantly derivative assets and derivative liabilities, to reflect the credit quality of the parties to the transaction in arriving at fair value. A credit valuation adjustment to a financial asset is required to reflect the default risk of the counterparty. A debit valuation adjustment to a financial liability is recorded to reflect the default risk of HUSI. See "Valuation Techniques - Derivatives" below for additional details.

Liquidity risk adjustment - The liquidity risk adjustment (primarily in the form of bid-offer adjustment) reflects the cost that would be incurred to close out the market risks by hedging, disposing or unwinding the position. Valuation models generally produce mid-market values. The bid-offer adjustment is made in such a way that results in a measure that reflects the exit price that most represents the fair value of the financial asset or financial liability under consideration or, where applicable, the fair value of the net market risk exposure of a group of financial assets or financial liabilities. These adjustments relate primarily to Level 2 assets.

Model valuation adjustment - Where fair value measurements are determined using an internal valuation model based on observable and unobservable inputs, certain valuation inputs may be less readily determinable. There may be a range of possible valuation inputs that market participants may assume in determining the fair value measurement. The resultant fair value measurement has inherent measurement risk if one or more parameters are unobservable and must be estimated. An input valuation adjustment is necessary to reflect the likelihood that market participants may use different input parameters, and to mitigate the possibility of measurement error. In addition, the values derived from valuation techniques are affected by the choice of valuation model and model limitation. When different valuation techniques are available, the choice of valuation model can be subjective. Furthermore, the valuation model applied may have measurement limitations. In those cases, an additional valuation adjustment is also applied to mitigate the measurement risk. Model valuation adjustments are not material and relate primarily to Level 2 instruments.

We apply stress scenarios in determining appropriate liquidity risk and model risk adjustments for Level 3 fair values by reviewing the historical data for unobservable inputs (e.g., correlation, volatility). Some stress scenarios involve at least a 95 percent confidence interval (i.e., two standard deviations). We also utilize unobservable parameter adjustments when instruments are valued using internally developed models which reflects the uncertainty in the value estimates provided by the model.

Funding Fair Value Adjustment ("FFVA") - The FFVA reflects the estimated present value of the future market funding cost or benefit associated with funding uncollateralized derivative exposure at rates other than the Overnight Indexed Swap ("OIS") rate. See "Valuation Techniques - Derivatives" below for additional details.

Fair Value Hierarchy The Fair Value Framework establishes a three-tiered fair value hierarchy as follows:

Level 1 *quoted market price* - Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2 *valuation technique using observable inputs* - Level 2 inputs include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are inactive, and measurements determined using valuation models where all significant inputs are observable, such as interest rates and yield curves that are observable at commonly quoted intervals.

Level 3 *valuation technique with significant unobservable inputs* - Level 3 inputs are unobservable inputs for the asset or liability and include situations where fair values are measured using valuation techniques based on one or more significant unobservable inputs.

Classification within the fair value hierarchy is based on whether the lowest hierarchical level input that is significant to the fair value measurement is observable. As such, the classification within the fair value hierarchy is dynamic and can be transferred to other hierarchy levels in each reporting period.

Where fair value measurements are determined based on information obtained from independent pricing services or brokers, Finance applies appropriate validation procedures to substantiate fair value. For price validation purposes, quotations from at least two independent pricing sources are obtained for each financial instrument, where possible.

The following factors are considered in determining fair values:

- similarities between the asset or the liability under consideration and the asset or liability for which quotation is received;
- collaboration of pricing by referencing to other independent market data such as market transactions and relevant benchmark indices;
- consistency among different pricing sources;
- the valuation approach and the methodologies used by the independent pricing sources in determining fair value;
- the elapsed time between the date to which the market data relates and the measurement date;
- the source of the fair value information; and
- whether the security is traded in an active or inactive market.

Greater weight is given to quotations of instruments with recent market transactions, pricing quotes from dealers who stand ready to transact, quotations provided by market-makers who structured such instrument and market consensus pricing based on inputs from a large number of survey participants. Any significant discrepancies among the external quotations are reviewed and adjustments to fair values are recorded where appropriate. Where the transaction volume of a specific instrument has been reduced and the fair value measurement becomes less transparent, Finance will apply more detailed procedures to understand and challenge the appropriateness of the unobservable inputs and the valuation techniques used by the independent pricing service. Where applicable, Finance will develop a fair value estimate using its own pricing model inputs to test reasonableness. Where fair value measurements are determined using internal valuation models, Finance will validate the fair value measurement by either developing unobservable inputs based on the industry consensus pricing surveys in which we participate or back testing by observing the actual settlements occurring soon after the measurement date.

Assets and Liabilities Recorded at Fair Value on a Recurring Basis The following table presents information about our assets and liabilities measured at fair value on a recurring basis at December 31, 2018 and 2017, and indicates the fair value hierarchy of the valuation techniques utilized to determine such fair value. Unless otherwise noted below, assets and liabilities in the following table are recorded at fair value through net income (loss).

December 31, 2018	Fair Value Measurements on a Recurring Basis					
	Level 1	Level 2	Level 3	Gross Balance	Netting ⁽⁸⁾	Net Balance
	(in millions)					
Assets:						
Trading assets, excluding derivatives:						
U.S. Treasury, U.S. Government agencies and sponsored enterprises.....	5,368	152	—	5,520	—	5,520
Asset-backed securities:						
Collateralized debt obligations.....	—	—	100	100	—	100
Residential mortgages.....	—	—	16	16	—	16
Student loans.....	—	—	92	92	—	92
Corporate and other domestic debt securities.....	—	—	1,803	1,803	—	1,803
Debt securities issued by foreign entities.....	8,552	207	—	8,759	—	8,759
Equity securities.....	751	—	—	751	—	751
Precious metals trading.....	—	1,889	—	1,889	—	1,889
Derivatives: ⁽¹⁾						
Interest rate contracts.....	2	10,053	2	10,057	—	10,057
Foreign exchange contracts.....	—	15,919	2	15,921	—	15,921
Equity contracts.....	—	2,449	97	2,546	—	2,546
Precious metals contracts.....	16	829	—	845	—	845
Credit contracts.....	—	883	73	956	—	956
Other contracts ⁽²⁾	—	—	5	5	—	5
Derivatives netting.....	—	—	—	—	(27,192)	(27,192)
Total derivatives.....	18	30,133	179	30,330	(27,192)	3,138
Securities available-for-sale: ⁽³⁾						
U.S. Treasury, U.S. Government agencies and sponsored enterprises.....	16,198	11,699	—	27,897	—	27,897
Asset-backed securities:						
Home equity.....	—	42	—	42	—	42
Other.....	—	—	107	107	—	107
Debt securities issued by foreign entities.....	2,362	971	—	3,333	—	3,333
Loans ⁽⁴⁾	—	109	—	109	—	109
Other assets:						
Equity securities ⁽⁵⁾	—	190	—	190	—	190
Equity Securities measured at net asset value ⁽⁵⁾⁽⁶⁾	—	—	—	88	—	88
Other ⁽⁷⁾	—	—	4	4	—	4
Total assets.....	\$ 33,249	\$ 45,392	\$ 2,301	\$ 81,030	\$ (27,192)	\$ 53,838
Liabilities:						
Domestic deposits ⁽⁴⁾	\$ —	\$ 7,229	\$ 925	\$ 8,154	\$ —	\$ 8,154
Trading liabilities, excluding derivatives.....	738	215	—	953	—	953
Derivatives: ⁽¹⁾						
Interest rate contracts.....	45	11,140	—	11,185	—	11,185
Foreign exchange contracts.....	15	15,715	3	15,733	—	15,733
Equity contracts.....	—	2,717	149	2,866	—	2,866
Precious metals contracts.....	274	626	—	900	—	900
Credit contracts.....	—	926	21	947	—	947
Other contracts ⁽²⁾	—	—	40	40	—	40
Derivatives netting.....	—	—	—	—	(28,847)	(28,847)
Total derivatives.....	334	31,124	213	31,671	(28,847)	2,824
Short-term borrowings ⁽⁴⁾	—	560	—	560	—	560
Long-term debt ⁽⁴⁾	—	10,837	412	11,249	—	11,249
Total liabilities.....	\$ 1,072	\$ 49,965	\$ 1,550	\$ 52,587	\$ (28,847)	\$ 23,740

December 31, 2017	Fair Value Measurements on a Recurring Basis					
	Level 1	Level 2	Level 3	Gross Balance	Netting ⁽⁸⁾	Net Balance
	(in millions)					
Assets:						
Securities purchased under agreements to resell ⁽⁴⁾	\$ —	\$ 80	\$ —	\$ 80	\$ —	\$ 80
Trading assets, excluding derivatives:						
U.S. Treasury, U.S. Government agencies and sponsored enterprises.....	3,391	332	—	3,723	—	3,723
Asset-backed securities:						
Collateralized debt obligations	—	—	129	129	—	129
Residential mortgages	—	16	—	16	—	16
Student loans	—	91	—	91	—	91
Corporate and other domestic debt securities.....	—	—	1,803	1,803	—	1,803
Debt securities issued by foreign entities	4,167	210	—	4,377	—	4,377
Equity securities ⁽⁵⁾	—	12	—	12	—	12
Precious metals trading	—	2,274	—	2,274	—	2,274
Derivatives: ⁽¹⁾						
Interest rate contracts.....	6	24,231	—	24,237	—	24,237
Foreign exchange contracts	4	15,754	2	15,760	—	15,760
Equity contracts	—	3,911	173	4,084	—	4,084
Precious metals contracts	52	502	—	554	—	554
Credit contracts.....	—	536	120	656	—	656
Other contracts ⁽²⁾	—	—	6	6	—	6
Derivatives netting	—	—	—	—	(40,874)	(40,874)
Total derivatives	62	44,934	301	45,297	(40,874)	4,423
Securities available-for-sale: ⁽³⁾						
U.S. Treasury, U.S. Government agencies and sponsored enterprises.....	19,056	10,004	—	29,060	—	29,060
Asset-backed securities:						
Home equity	—	51	—	51	—	51
Other	—	399	111	510	—	510
Debt securities issued by foreign entities	850	52	—	902	—	902
Equity securities ⁽⁵⁾	—	177	—	177	—	177
Loans ⁽⁴⁾	—	471	—	471	—	471
Other assets ⁽⁷⁾	—	—	15	15	—	15
Total assets.....	\$ 27,526	\$ 59,103	\$ 2,359	\$ 88,988	\$ (40,874)	\$ 48,114
Liabilities:						
Domestic deposits ⁽⁴⁾	\$ —	\$ 6,796	\$ 897	\$ 7,693	\$ —	\$ 7,693
Trading liabilities, excluding derivatives	1,722	524	—	2,246	—	2,246
Derivatives: ⁽¹⁾						
Interest rate contracts.....	59	24,379	—	24,438	—	24,438
Foreign exchange contracts	—	14,664	2	14,666	—	14,666
Equity contracts	—	2,859	92	2,951	—	2,951
Precious metals contracts	108	614	—	722	—	722
Credit contracts.....	—	578	6	584	—	584
Other contracts ⁽²⁾	—	—	52	52	—	52
Derivatives netting	—	—	—	—	(40,217)	(40,217)
Total derivatives	167	43,094	152	43,413	(40,217)	3,196
Short-term borrowings ⁽⁴⁾	—	2,032	—	2,032	—	2,032
Long-term debt ⁽⁴⁾	—	12,245	641	12,886	—	12,886
Total liabilities.....	\$ 1,889	\$ 64,691	\$ 1,690	\$ 68,270	\$ (40,217)	\$ 28,053

⁽¹⁾ Includes trading derivative assets of \$3,048 million and \$3,725 million and trading derivative liabilities of \$2,690 million and \$2,633 million at December 31, 2018 and 2017, respectively, as well as derivatives held for hedging and commitments accounted for as derivatives. See Note 14, "Derivative Financial Instruments," for additional information. Excluding changes in fair value of a derivative instrument associated with the effective portion of a qualifying cash flow hedge, which is recognized initially in other comprehensive income (loss), derivative assets and liabilities are recorded at fair value through net income (loss).

⁽²⁾ Consists of swap agreements entered into in conjunction with the sales of Visa Class B Shares.

⁽³⁾ Securities available-for-sale are recorded at fair value through other comprehensive income (loss).

- (4) See Note 15, "Fair Value Option," for additional information. Excluding the fair value movement on fair value option liabilities attributable to our own credit spread, which is recorded in other comprehensive income (loss), fair value option assets and liabilities are recorded at fair value through net income (loss).
- (5) See Note 4, "Securities," and Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," for additional information. The adoption of new accounting guidance resulted in a reclassification of certain equity investments to other assets as of January 1, 2018.
- (6) Investments that are measured at fair value using the net asset value per share practical expedient have not been classified in the fair value hierarchy.
- (7) Represents contingent consideration receivable associated with the sale of a portion of our Private Banking business.
- (8) Represents counterparty and cash collateral netting which allow the offsetting of amounts relating to certain contracts if certain conditions are met.

Information on Level 3 assets and liabilities The following table summarizes additional information about changes in the fair value of Level 3 assets and liabilities during 2018 and 2017. As a risk management practice, we may risk manage the Level 3 assets and liabilities, in whole or in part, using securities and derivative positions that are classified as Level 1 or Level 2 measurements within the fair value hierarchy. Since those Level 1 and Level 2 risk management positions are not included in the table below, the information provided does not reflect the effect of such risk management activities related to the Level 3 assets and liabilities.

		Total Realized / Unrealized Gains (Losses) Included in																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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	Total Realized / Unrealized Gains (Losses) Included in										Current Period Unrealized Gains (Losses)	
	Jan. 1, 2017	Earnings	Other Compre- hensive Income (Loss)	Purch- ases	Issu- ances	Settle- ments	Transfers Into Level 3	Transfers Out of Level 3	Dec. 31, 2017			
(in millions)												
Assets:												
Trading assets, excluding derivatives: ⁽¹⁾												
Collateralized debt obligations	\$ 184	\$ 28	\$ —	\$ —	\$ —	\$ (83)	\$ —	\$ —	\$ 129	\$ 13		
Corporate and other domestic debt securities	2,884	—	—	—	—	(1,081)	—	—	1,803	—		
Derivatives, net: ⁽²⁾												
Interest rate contracts	1	(1)	—	—	—	—	—	—	—	(1)		
Foreign exchange contracts....	—	—	—	—	—	—	—	—	—	—		
Equity contracts	(2)	102	—	—	—	(24)	4	1	81	68		
Credit contracts	193	(7)	—	—	—	(72)	—	—	114	(16)		
Other contracts ⁽³⁾	(9)	(10)	—	—	(35)	8	—	—	(46)	—		
Other asset-backed securities available-for-sale ⁽⁴⁾	105	6	—	—	—	—	—	—	111	6		
Other assets ⁽⁵⁾	—	15	—	—	—	—	—	—	15	15		
Total assets	<u>\$ 3,356</u>	<u>\$ 133</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ (35)</u>	<u>\$ (1,252)</u>	<u>\$ 4</u>	<u>\$ 1</u>	<u>\$ 2,207</u>	<u>\$ 85</u>		
Liabilities:												
Domestic deposits ⁽⁶⁾	\$ (1,407)	\$ (48)	\$ 7	\$ —	\$ (204)	\$ 526	\$ (31)	\$ 260	\$ (897)	\$ (28)		
Long-term debt ⁽⁶⁾	(499)	(85)	(7)	—	(295)	155	(12)	102	(641)	(71)		
Total liabilities	<u>\$ (1,906)</u>	<u>\$ (133)</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ (499)</u>	<u>\$ 681</u>	<u>\$ (43)</u>	<u>\$ 362</u>	<u>\$ (1,538)</u>	<u>\$ (99)</u>		

⁽¹⁾ Gains (losses) on trading assets, excluding derivatives are included in trading revenue in the consolidated statement of income (loss).

⁽²⁾ Level 3 net derivatives included derivative assets of \$179 million and derivative liabilities of \$213 million at December 31, 2018 and derivative assets of \$301 million and derivative liabilities of \$152 million at December 31, 2017. Gains (losses) on derivatives, net are predominantly included in trading revenue in the consolidated statement of income (loss).

⁽³⁾ Consists of swap agreements entered into in conjunction with the sales of Visa Class B Shares.

⁽⁴⁾ Realized gains (losses) on securities available-for-sale are included in other securities gains, net in the consolidated statement of income (loss). Unrealized gains (losses) on securities available-for-sale are included in other comprehensive income (loss).

⁽⁵⁾ Represents contingent consideration receivable associated with the sale of a portion of our Private Banking business. Gains (losses) associated with this transaction are included in other income (loss) in the consolidated statement of income (loss).

⁽⁶⁾ Excluding unrealized gains (losses) on fair value option liabilities attributable to our own credit spread, which are recorded in other comprehensive income (loss), gains (losses) on fair value option liabilities are included in gain (loss) on instruments designated at fair value and related derivatives in the consolidated statement of income (loss).

The following table presents quantitative information about the unobservable inputs used to determine the recurring fair value measurement of assets and liabilities classified as Level 3 fair value measurements at December 31, 2018 and 2017:

December 31, 2018

Financial Instrument Type	Fair Value (in millions)	Valuation Technique(s)	Significant Unobservable Inputs	Range of Inputs
Collateralized debt obligations	\$ 100	Broker quotes or consensus pricing and, where applicable, discounted cash flows	Prepayment rates	0% - 1%
			Conditional default rates	0% - 1%
			Loss severity rates	90% - 95%
Residential mortgage asset-backed securities	\$ 16	Broker quotes or consensus pricing and, where applicable, discounted cash flows	Prepayment rates	0% - 5%
			Conditional default rates	1% - 4%
			Loss severity rates	80% - 85%
			Discount margin	100bps - 250bps
Student loan asset-backed securities	\$ 92	Broker quotes or consensus pricing and, where applicable, discounted cash flows	Prepayment rates	6% - 7%
			Conditional default rates	1% - 2%
			Loss severity rates	25% - 40%
			Discount margin	91bps - 115bps
Corporate and other domestic debt securities	\$ 1,803	Discounted cash flows	Spread volatility on collateral assets	2% - 4%
			Correlation between insurance claim shortfall and collateral value	80%
Interest rate derivative contracts	\$ 2	Market comparable adjusted for probability to fund and, where applicable, discounted cash flows	Probability to fund for rate lock commitments	3% - 99%
			Likelihood of transaction being executed	75% - 100%
Foreign exchange derivative contracts ⁽¹⁾ ..	\$ (1)	Option pricing model	Implied volatility of currency pairs	8% - 12%
Equity derivative contracts ⁽¹⁾	\$ (52)	Option pricing model	Equity / Equity Index volatility	7% - 44%
			Equity / Equity and Equity / Index correlation	42% - 79%
			Equity dividend yields	0% - 7%
Credit derivative contracts	\$ 52	Option pricing model and, where applicable, discounted cash flows	Credit default swap spreads	102bps - 118bps
Other derivative contracts	\$ (35)	Discounted cash flows	Conversion rate	1.6 times
			Expected duration	2 - 3 years
Other asset-backed securities available-for-sale	\$ 107	Discounted cash flows	Market assumptions related to yields for comparable instruments	1% - 3%
Other assets	\$ 4	Discounted cash flows	Client transfer rates based on rating	50% - 95%
Domestic deposits (structured deposits) ⁽¹⁾⁽²⁾	\$ (925)	Option adjusted discounted cash flows	Implied volatility of currency pairs	8% - 12%
			Equity / Equity Index volatility	7% - 37%
			Equity / Equity and Equity / Index correlation	42% - 49%
Long-term debt (structured notes) ⁽¹⁾⁽²⁾	\$ (412)	Option adjusted discounted cash flows	Implied volatility of currency pairs	8% - 12%
			Equity / Equity Index volatility	7% - 42%
			Equity / Equity and Equity / Index correlation	45% - 79%

December 31, 2017

Financial Instrument Type	Fair Value (in millions)	Valuation Technique(s)	Significant Unobservable Inputs	Range of Inputs
Collateralized debt obligations	\$ 129	Broker quotes or consensus pricing and, where applicable, discounted cash flows	Prepayment rates	0% - 6%
			Conditional default rates	4% - 6%
			Loss severity rates	55% - 60%
Corporate and other domestic debt securities	\$ 1,803	Discounted cash flows	Spread volatility on collateral assets	2% - 4%
			Correlation between insurance claim shortfall and collateral value	80%
Interest rate derivative contracts	\$ —	Market comparable adjusted for probability to fund	Probability to fund for rate lock commitments	41% - 100%
Foreign exchange derivative contracts ⁽¹⁾	\$ —	Option pricing model	Implied volatility of currency pairs	6% - 9%
Equity derivative contracts ⁽¹⁾	\$ 81	Option pricing model	Equity / Equity Index volatility	7% - 42%
			Equity / Equity and Equity / Index correlation	42% - 80%
			Equity dividend yields	0% - 8%
Credit derivative contracts	\$ 114	Option pricing model and, where applicable, discounted cash flows	Issuer by issuer correlation of defaults	82% - 83%
			Credit default swap spreads	154bps - 174bps
Other derivative contracts	\$ (46)	Discounted cash flows	Conversion rate	1.6 times
			Expected duration	2 - 4 years
Other asset-backed securities available-for-sale	\$ 111	Discounted cash flows	Market assumptions related to yields for comparable instruments	1% - 3%
Other assets	\$ 15	Discounted cash flows	Client transfer rates based on rating	50% - 95%
Domestic deposits (structured deposits) ⁽¹⁾⁽²⁾	\$ (897)	Option adjusted discounted cash flows	Implied volatility of currency pairs	6% - 9%
			Equity / Equity Index volatility	7% - 42%
			Equity / Equity and Equity / Index correlation	42% - 80%
Long-term debt (structured notes) ⁽¹⁾⁽²⁾	\$ (641)	Option adjusted discounted cash flows	Implied volatility of currency pairs	6% - 9%
			Equity / Equity Index volatility	7% - 42%
			Equity / Equity and Equity / Index correlation	42% - 80%

⁽¹⁾ We are the client-facing entity and we enter into identical but opposite derivatives to transfer the resultant risks to our affiliates. With the exception of counterparty credit risks, we are market neutral. The corresponding intra-group derivatives are presented as equity derivatives and foreign exchange derivatives in the table.

⁽²⁾ Structured deposits and structured notes contain embedded derivative features whose fair value measurements contain significant Level 3 inputs.

Significant Unobservable Inputs for Recurring Fair Value Measurements

Collateralized debt obligations ("CDOs"), residential mortgage asset-backed securities and student loan asset-backed securities

- **Prepayment rate** - The rate at which borrowers pay off the loans early. The prepayment rate is affected by a number of factors including location of the collateral, interest rate type of the loan, borrowers' credit and sensitivity to interest rate movement. The weighted average prepayment rates of our CDOs, residential mortgage asset-backed securities and student loan asset-backed securities was 0.4 percent, 2.5 percent and 6.3 percent, respectively, at December 31, 2018.
- **Default rate** - Annualized percentage of default rate over a group of collateral such as residential or commercial mortgage loans. The default rate and loss severity rate are positively correlated. The weighted average default rates of our CDOs, residential mortgage asset-backed securities and student loan asset-backed securities was 0.9 percent, 2.0 percent and 1.7 percent, respectively, at December 31, 2018.
- **Loss severity rate** - The loss severity rate is the percentage of total lifetime losses (both interest and principal) as a percentage of principal balance measured at default date. The weighted average loss severity rates of our CDOs, residential mortgage asset-backed securities and student loan asset-backed securities was 93.0 percent, 82.5 percent and 36.0 percent, respectively, at December 31, 2018.

- *Discount margin* - An expected return earned in addition to the index underlying (in this case the London Interbank Offered Rate ("LIBOR")) is another input into valuation of securities. The weighted average discount margins of our residential mortgage asset-backed securities and student loan asset-backed securities was 175 basis points and 97 basis points, respectively, at December 31, 2018.

Derivatives

- *Implied volatility* - The implied volatility is a significant pricing input for freestanding or embedded options including equity, foreign currency and interest rate options. The level of volatility is a function of the nature of the underlying risk, the level of strike price and the years to maturity of the option. Depending on the underlying risk and tenure, we determine the implied volatility based on observable input where information is available. However, substantially all of the implied volatilities are derived based on historical information. The implied volatility for different foreign currency pairs is between 8 percent and 12 percent while the implied volatility for equity/equity or equity/equity index is between 7 percent and 44 percent, respectively, at December 31, 2018. Although implied foreign currency volatility and equity volatility appear to be widely distributed at the portfolio level, the deviation of implied volatility on a trade-by-trade basis is narrower. The average deviation of implied volatility for the foreign currency pair and at-the-money equity option are 6 percent and 10 percent, respectively, at December 31, 2018.
- *Correlations of a group of foreign currency or equity* - Correlation measures the relative change in values among two or more variables (i.e., equity or foreign currency pair). Variables can be positively or negatively correlated. Correlation is a key input in determining the fair value of a derivative referenced to a basket of variables such as equities or foreign currencies. A majority of the correlations are not observable, but are derived based on historical data. The correlation between equity/equity and equity/equity index was between 42 percent and 79 percent at December 31, 2018.

Uncertainty of Level 3 Inputs to Fair Value Measurements

CDOs - Probability of default, prepayment speed and loss severity rate are significant unobservable inputs. A significant increase (decrease) in these inputs would have resulted in a lower (higher) fair value measurement of the CDOs. Generally, a change in assumption for default probability would have been accompanied by a directionally similar change in loss severity, and a directionally opposite change in prepayment speed.

Residential mortgage and student loan asset-backed securities - Probability of default, prepayment speed, loss severity rate and discount margin are significant unobservable inputs. A significant increase (decrease) in these inputs would have resulted in a lower (higher) fair value measurement of the securities. Generally, a change in assumption for default probability would have been accompanied by a directionally similar change in loss severity, and a directionally opposite change in prepayment speed.

Corporate and domestic debt securities - The fair value measurement of certain corporate debt securities is affected by the fair value of the underlying portfolios of investments used as collateral and the make-whole guarantee provided by third party guarantors. The probability that the collateral fair value declines below the collateral call threshold concurrent with the guarantors' failure to perform its make whole obligation is unobservable. Generally, an increase (decrease) in the probability the collateral value falls below the collateral call threshold would have been accompanied by a directionally similar change in default probability of the guarantor.

Credit derivatives - Correlation of default among a basket of reference credit names is a significant unobservable input if the credit attributes of the portfolio are not within the parameters of relevant standardized CDS indices. A significant increase (decrease) in the default correlation would have resulted in a lower (higher) fair value measurement of the credit derivative. Generally, a change in assumption for default correlation would have been accompanied by a directionally similar change in default probability and loss rates of other credit names in the basket. For certain credit derivatives, the credit spreads of credit default swap contracts insuring asset backed securities is a significant unobservable input. A significant increase (decrease) in the credit spreads would have resulted in a lower (higher) fair value measurement of the credit derivative.

Equity and foreign exchange derivatives - The fair value measurement of a structured equity or foreign exchange derivative is primarily affected by the implied volatility of the underlying equity price or exchange rate of the paired foreign currencies. The implied volatility is not observable. A significant increase (decrease) in the implied volatility would have resulted in a higher (lower) fair value of a long position in the derivative contract.

Other derivatives - The fair value of the swap agreements we entered into in conjunction with the sales of Visa Class B Shares is dependent upon the final resolution of the related litigation. Significant unobservable inputs used in the fair value measurement include estimated changes in the conversion rate of Visa Class B Shares into Visa Class A Shares and the expected timing of the final resolution. An increase (decrease) in the loss estimate or in the timing of the resolution of the related litigation would have resulted in a higher (lower) fair value measurement of the derivative.

Other asset-backed securities available-for-sale - The fair value measurement of certain asset-backed securities is primarily affected by estimated yields which are determined based on current market yields of comparable instruments adjusted for market liquidity. An increase (decrease) in the yields would have resulted in a decrease (increase) in the fair value measurement of the securities.

Other assets - The fair value of the contingent consideration receivable associated with the sale of a portion of our Private Banking business is dependent upon the clients' decisions to transfer their accounts to UBS, the timing and amounts of client assets transferred and the acceptance of the client assets by UBS which are significant unobservable inputs. An increase (decrease) in the client transfer rate would have resulted in a higher (lower) fair value measurement of the receivable.

Significant Transfers Into and Out of Level 3 Measurements During 2018, we transferred \$206 million of domestic deposits and \$159 million of long-term debt, which we have elected to carry at fair value, from Level 3 to Level 2 as a result of the embedded derivative no longer being unobservable as the derivative option is closer to maturity and there is more observability in short term volatility. During 2018, we transferred \$21 million of equity contracts from Level 3 to Level 2 as the inputs used to value these contracts have become more observable. During 2018, we transferred \$28 million of domestic deposits, which we have elected to carry at fair value, from Level 2 to Level 3 as a result of a change in the observability of underlying instruments that resulted in the embedded derivative being unobservable. Additionally, during 2018, we transferred \$16 million of residential mortgage asset-backed securities and \$92 million of student loan asset-backed securities from Level 2 to Level 3 as the inputs used to value these securities have become less observable.

During 2017, we transferred \$260 million of domestic deposits and \$102 million of long-term debt, which we have elected to carry at fair value, from Level 3 to Level 2 as a result of the embedded derivative no longer being unobservable as the derivative option is closer in maturity and there is more observability in short term volatility. Additionally, during 2017, we transferred \$31 million, respectively, of domestic deposits, which we have elected to carry at fair value, from Level 2 to Level 3 as a result of a change in the observability of underlying instruments that resulted in the embedded derivative being unobservable.

Assets and Liabilities Recorded at Fair Value on a Non-recurring Basis Certain financial and non-financial assets are measured at fair value on a non-recurring basis and therefore, are not included in the tables above. These assets include (a) mortgage and commercial loans classified as held for sale reported at the lower of amortized cost or fair value and (b) impaired loans or assets that are written down to fair value based on the valuation of underlying collateral during the period. These instruments are not measured at fair value on an ongoing basis but are subject to fair value adjustment in certain circumstances (e.g., impairment). The following table presents the fair value hierarchy level within which the fair value of the financial and non-financial assets has been recorded at December 31, 2018 and 2017. The gains (losses) during 2018 and 2017 are also included.

	Non-Recurring Fair Value Measurements at December 31, 2018				Total Gains (Losses) For the Year Ended December 31, 2018
	Level 1	Level 2	Level 3	Total	
	(in millions)				
Residential mortgage loans held for sale ⁽¹⁾	\$ —	\$ —	\$ 1	\$ 1	\$ —
Consumer loans ⁽²⁾	—	15	—	15	(8)
Commercial loans held for sale ⁽³⁾	—	36	—	36	5
Impaired commercial loans ⁽⁴⁾	—	—	37	37	114
Real estate owned ⁽⁵⁾	—	7	—	7	3
Total assets at fair value on a non-recurring basis	<u>\$ —</u>	<u>\$ 58</u>	<u>\$ 38</u>	<u>\$ 96</u>	<u>\$ 114</u>

	Non-Recurring Fair Value Measurements at December 31, 2017				Total Gains (Losses) For the Year Ended December 31, 2017
	Level 1	Level 2	Level 3	Total	
	(in millions)				
Residential mortgage loans held for sale ⁽¹⁾	\$ —	\$ —	\$ 2	\$ 2	\$ 7
Consumer loans ⁽²⁾	—	21	—	21	(11)
Commercial loans held for sale ⁽³⁾	—	62	—	62	5
Impaired commercial loans ⁽⁴⁾	—	—	289	289	132
Real estate owned ⁽⁵⁾	—	6	—	6	7
Total assets at fair value on a non-recurring basis	<u>\$ —</u>	<u>\$ 89</u>	<u>\$ 291</u>	<u>\$ 380</u>	<u>\$ 140</u>

⁽¹⁾ At December 31, 2018 and 2017, the fair value of the loans held for sale was below cost. Certain residential mortgage loans held for sale have been classified as Level 3 fair value measurements within the fair value hierarchy as the underlying real estate properties used to determine fair value are illiquid assets as a result of market conditions. Additionally, the fair value of these properties is affected by, among other things, the location, the payment history and the completeness of the loan documentation.

- (2) Represents residential mortgage loans held for investment whose carrying amount was reduced during the periods presented based on the fair value of the underlying collateral.
- (3) At December 31, 2018 and 2017, the fair value of the loans held for sale was below cost.
- (4) Certain commercial loans have undergone troubled debt restructurings and are considered impaired. As a matter of practical expedient, we measure the credit impairment of a collateral-dependent loan based on the fair value of the collateral asset. The collateral often involves real estate properties that are illiquid due to market conditions. As a result, these loans are classified as a Level 3 fair value measurement within the fair value hierarchy.
- (5) Real estate owned is required to be reported on the balance sheet net of transactions costs. The real estate owned amounts in the table above reflect the fair value unadjusted for transaction costs.

The following tables present quantitative information about non-recurring fair value measurements of assets and liabilities classified with Level 3 of the fair value hierarchy at December 31, 2018 and 2017:

At December 31, 2018

Financial Instrument Type	Fair Value (in millions)	Valuation Technique(s)	Significant Unobservable Inputs	Range of Inputs
Residential mortgage loans held for sale.....	\$ 1	Third party appraisal valuation based on estimated loss severities, including collateral values	Loss severity rates	30% - 100%
Impaired commercial loans	37	Valuation of third party appraisal on underlying collateral	Loss severity rates	13% - 100%

At December 31, 2017

Financial Instrument Type	Fair Value (in millions)	Valuation Technique(s)	Significant Unobservable Inputs	Range of Inputs
Residential mortgage loans held for sale.....	\$ 2	Third party appraisal valuation based on estimated loss severities, including collateral values	Loss severity rates	30% - 100%
Impaired commercial loans	289	Valuation of third party appraisal on underlying collateral	Loss severity rates	9% - 61%

Significant Unobservable Inputs for Non-Recurring Fair Value Measurements

Residential mortgage loans held for sale includes subprime residential mortgage loans which were previously acquired with the intent of securitizing or selling them to third parties. The weighted average loss severity rate for these was approximately 70 percent at December 31, 2018. These severity rates are primarily impacted by the value of the underlying collateral securing the loans.

The weighted average severity rate for impaired commercial loans was approximately 36 percent at December 31, 2018. These severity rates are primarily impacted by the value of the underlying collateral securing the loans.

Valuation Techniques

Following is a description of valuation methodologies used for assets and liabilities recorded at fair value.

Securities purchased and sold under resale and repurchase agreements designated under FVO - We elected to apply FVO accounting to certain securities purchased and sold under resale and repurchase agreements at fair value. The fair value of these resale and repurchase agreements is determined using market rates currently offered on comparable transactions with similar underlying collateral and maturities.

Consumer loans held for sale – Consumer loans held for sale are recorded at the lower of amortized cost or fair value. The fair value estimates of consumer loans held for sale are determined primarily using observed market prices of instruments with similar characteristics. Adjustments are made to reflect differences in collateral location, loan-to-value ratio, FICO scores, vintage year, default rates, the completeness of the loan documentation and other risk characteristics. Where observable market parameters are not available, fair value is determined using the discounted cash flow method using assumptions consistent with those which would be used by market participants in valuing such loans, including estimates of prepayment rates, default rates, loss severities and market rates of return. We also may hold discussions on value directly with potential investors.

Commercial loans held for sale - Commercial loans held for sale (that are not designated under FVO as discussed below) are recorded at the lower of amortized cost or fair value. The fair value estimates of commercial loans held for sale are determined primarily using observable market pricing obtained from independent sources, relevant broker quotes or observed market prices of instruments with similar characteristics. We also may hold discussions on value directly with potential investors.

Commercial loans held for sale designated under FVO – We elected to apply FVO accounting to certain commercial loans held for sale at fair value. Where available, fair value is based on observable market pricing obtained from independent sources, relevant broker quotes or observed market prices of instruments with similar characteristics. Where observable market parameters are not

available, fair value is determined based on contractual cash flows adjusted for estimates of prepayment rates, expected default rates and loss severity discounted at management's estimate of the expected rate of return required by market participants. We also consider loan-specific risk mitigating factors such as collateral arrangements in determining the fair value estimate.

Commercial impaired loans – Generally represents collateral dependent commercial loans with fair value determined based on pricing quotes obtained from an independent third party appraisal.

Precious metals trading - Precious metals trading primarily includes physical inventory which is valued using spot prices.

Securities - Where available, debt and equity securities are valued based on quoted market prices. If a quoted market price for the identical security is not available, the security is valued based on quotes from similar securities, where possible. For certain securities, internally developed valuation models are used to determine fair values or validate quotes obtained from pricing services. The following summarizes the valuation methodology used for our major security classes:

- U.S. Treasury, U.S. Government agency issued or guaranteed and obligations of U.S. state and political subdivisions – As these securities transact in an active market, fair value measurements are based on quoted prices for the identical security or quoted prices for similar securities with adjustments as necessary made using observable inputs which are market corroborated.
- U.S. Government sponsored enterprises – For government sponsored mortgage-backed securities which transact in an active market, fair value measurements are based on quoted prices for the identical security or quoted prices for similar securities with adjustments as necessary made using observable inputs which are market corroborated. For government sponsored mortgage-backed securities which do not transact in an active market, fair value is determined primarily based on pricing information obtained from pricing services and is verified by internal review processes.
- Asset-backed securities, including CDOs – Fair value is primarily determined based on pricing information obtained from independent pricing services adjusted for the characteristics and the performance of the underlying collateral.
- Other domestic debt and foreign debt securities (corporate and government) - For non-callable corporate securities, a credit spread scale is created for each issuer. These spreads are then added to the equivalent maturity U.S. Treasury yield to determine current pricing. Credit spreads are obtained from the new market, secondary trading levels and dealer quotes. For securities with early redemption features, an option adjusted spread model is incorporated to adjust the spreads determined above. Additionally, we survey the broker/dealer community to obtain relevant trade data including benchmark quotes and updated spreads.
- Equity securities – Fair value measurements are determined based on quoted prices for the identical security. Certain equity securities represent investments in private equity funds that help us comply with the Community Reinvestment Act. The fair value of these investments are estimated using the net asset value per share as calculated by the fund managers. Distributions will be received from the funds as the underlying assets are liquidated. While the funds do not allow us to redeem our investments, we are permitted to sell or transfer our investments subject to the approval of the fund manager. Unfunded commitments associated with these investments totaled \$72 million and \$43 million at December 31, 2018 and 2017, respectively.

The following tables provide additional information relating to our asset-backed securities, including certain CDOs, at December 31, 2018:

Trading asset-backed securities:

Rating of Securities: ⁽¹⁾	Collateral Type:	Level 3	Total
(in millions)			
AAA - A	Student loans	\$ 92	\$ 92
BBB - B	Collateralized debt obligations	100	100
CCC - Unrated	Residential mortgages - Subprime	16	16
		<u>\$ 208</u>	<u>\$ 208</u>

Available-for-sale asset-backed securities:

Rating of Securities: ⁽¹⁾	Collateral Type:	Level 2	Level 3	Total
(in millions)				
AAA - A.....	Home equity - Alt A.....	\$ 42	\$ —	\$ 42
	Other	—	49	49
	Total AAA -A.....	\$ 42	\$ 49	\$ 91
BBB -B	Other	—	58	58
		\$ 42	\$ 107	\$ 149

⁽¹⁾ We utilize Standard and Poor's ("S&P") as the primary source of credit ratings in the tables above. If S&P ratings are not available, ratings by Moody's and Fitch are used in that order. Ratings for CDOs represent the ratings associated with the underlying collateral.

Derivatives – Derivatives are recorded at fair value. Asset and liability positions in individual derivatives that are covered by legally enforceable master netting agreements, including receivables (payables) for cash collateral posted (received), are offset and presented net in accordance with accounting principles which allow the offsetting of amounts.

Derivatives traded on an exchange are valued using quoted prices. OTC derivatives, which comprise a majority of derivative contract positions, are valued using valuation techniques. The fair value for the majority of our derivative instruments are determined based on internally developed models that utilize independently corroborated market parameters, including interest rate yield curves, option volatilities, and currency rates. For complex or long-dated derivative products where market data is not available, fair value may be affected by the underlying assumptions about, among other things, the timing of cash flows, expected exposure, probability of default and recovery rates. The fair values of certain structured derivative products are sensitive to unobservable inputs such as default correlations of the referenced credit and volatilities of embedded options. These estimates are susceptible to significant change in future periods as market conditions change.

We use the OIS curves as the base discounting curve for measuring the fair value of all derivatives, both collateralized and uncollateralized, and apply a FFVA to reflect the estimated present value of the future market funding cost or benefit associated with funding uncollateralized derivative exposure at rates other than the OIS rate. The FFVA is calculated by applying future market funding spreads to the expected future funding exposure of any uncollateralized component of the OTC derivative portfolio. The expected future funding exposure is calculated by a simulation methodology, where available, and is adjusted for events that may terminate the exposure, such as the default of HUSI or the counterparty.

Significant inputs related to derivative classes are broken down as follows:

- Credit Derivatives – Use credit default curves and recovery rates which are generally provided by broker quotes and various pricing services. Certain credit derivatives may also use correlation inputs in their model valuation.
- Interest Rate Derivatives – Swaps use interest rate curves based on currency that are actively quoted by brokers and other pricing services. Options will also use volatility inputs which are also quoted in the broker market.
- Foreign Exchange ("FX") Derivatives – FX transactions, to the extent possible, use spot and forward FX rates which are quoted in the broker market. Where applicable, we also use implied volatility of currency pairs as inputs.
- Equity Derivatives – Use listed equity security pricing and implied volatilities from equity traded options position.
- Precious Metal Derivatives – Use spot and forward metal rates which are quoted in the broker market.

As discussed earlier, we make fair value adjustments to model valuations in order to ensure that those values represent appropriate estimates of fair value. These adjustments, which are applied consistently over time, are generally required to reflect factors such as bid-ask spreads and counterparty credit risk that can affect prices in arms-length transactions with unrelated third parties. Such adjustments are based on management judgment and may not be observable.

We estimate the counterparty credit risk for financial assets and our own credit standing for financial liabilities (the "credit valuation adjustments") in determining the fair value measurement. For derivative instruments, we calculate the credit valuation adjustment by applying the probability of default of the counterparty to the expected exposure, and multiplying the result by the expected loss given default. We also take into consideration the risk mitigating factors including collateral agreements and master netting agreements in determining credit valuation adjustments. We estimate the implied probability of default based on the credit spread of the specific counterparty observed in the credit default swap market. Where credit default spread of the counterparty is not available, we use the credit default spread of a specific proxy (e.g., the credit default swap spread of the counterparty's parent) or a proxy based on credit default swaps referencing to credit names of similar credit standing.

Real estate owned - Fair value is determined based on third party appraisals obtained at the time we take title to the property and, if less than the carrying amount of the loan, the carrying amount of the loan is adjusted to the fair value. The carrying amount of

the property is further reduced, if necessary, at least every 90 days to reflect observable local market data, including local area sales data.

Structured notes and deposits designated under FVO – Structured notes and deposits are hybrid instruments containing embedded derivatives and are elected to be measured at fair value in their entirety under FVO accounting principles. The valuation of hybrid instruments is predominantly driven by the derivative features embedded within the instruments and our own credit risk. The valuation of embedded derivatives may include significant unobservable inputs such as correlation of the referenced credit names or volatility of the embedded option. Cash flows of the funded notes and deposits in their entirety, including the embedded derivatives, are discounted at the relevant interest rates for the duration of the instrument adjusted for our own credit spreads. The credit spreads so applied are determined with reference to our own debt issuance rates observed in primary and secondary markets, internal funding rates, and the structured note rates in recent executions.

Long-term debt designated under FVO – We elected to apply FVO accounting to certain of our own debt issuances for which fair value hedge accounting otherwise would have been applied. These own debt issuances elected under FVO are traded in secondary markets and, as such, the fair value is determined based on observed prices for the specific instrument. The observed market price of these instruments reflects the effect of our own credit spreads. The credit spreads applied to these instruments were derived from the spreads at the measurement date.

Additional Disclosures About the Fair Value of Financial Instruments that are Not Carried at Fair Value on the Consolidated Balance Sheet The fair value estimates set forth below are made solely to comply with disclosures required by generally accepted accounting principles in the United States and should be read in conjunction with the financial statements and notes included in this report.

The carrying amount of certain financial instruments recorded at cost on the consolidated balance sheet is considered to approximate fair value because they are short-term in nature, bear interest rates that approximate market rates, and generally have negligible credit risk. These items include cash and due from banks, interest bearing deposits with banks, customer acceptance assets and liabilities, federal funds sold and purchased, certain securities purchased and sold under resale and repurchase agreements, deposits with no stated maturity (e.g., demand, savings and certain money market deposits), short-term borrowings and dividends payable.

The following table summarizes the carrying value and estimated fair value of our financial instruments, excluding financial instruments that are carried at fair value on a recurring basis, at December 31, 2018 and December 31, 2017 and their classification within the fair value hierarchy:

December 31, 2018	Carrying Value	Fair Value	Level 1	Level 2	Level 3
	(in millions)				
Financial assets:					
Short-term financial assets	\$ 17,237	\$ 17,237	\$ 1,514	\$ 15,700	\$ 23
Federal funds sold and securities purchased under agreements to resell	10,168	10,168	—	10,168	—
Securities held-to-maturity	14,670	14,443	—	14,443	—
Commercial loans, net of allowance for credit losses	48,884	50,671	—	—	50,671
Commercial loans held for sale	285	285	—	285	—
Consumer loans, net of allowance for credit losses	19,553	18,878	—	—	18,878
Consumer loans held for sale:					
Residential mortgages	65	65	—	65	—
Other consumer	53	53	—	—	53
Financial liabilities:					
Short-term financial liabilities	\$ 3,643	\$ 3,649	\$ —	\$ 3,626	\$ 23
Deposits:					
Without fixed maturities	91,794	91,794	—	91,794	—
Fixed maturities	10,996	10,933	—	10,933	—
Deposits held for sale	10	10	—	10	—
Long-term debt	19,379	19,688	—	19,688	—

December 31, 2017	Carrying Value	Fair Value	Level 1	Level 2	Level 3
			(in millions)		
Financial assets:					
Short-term financial assets	\$ 12,304	\$ 12,304	\$ 1,115	\$ 11,157	\$ 32
Federal funds sold and securities purchased under agreements to resell	32,538	32,538	—	32,538	—
Securities held-to-maturity	13,977	13,902	—	13,902	—
Commercial loans, net of allowance for credit losses	52,427	54,210	—	—	54,210
Commercial loans held for sale	177	177	—	177	—
Consumer loans, net of allowance for credit losses	19,455	18,598	—	—	18,598
Consumer loans held for sale:					
Residential mortgages	6	6	—	5	1
Other consumer	61	61	—	—	61
Financial liabilities:					
Short-term financial liabilities	\$ 2,650	\$ 2,667	\$ —	\$ 2,635	\$ 32
Deposits:					
Without fixed maturities	100,502	100,502	—	100,502	—
Fixed maturities	9,834	9,782	—	9,782	—
Deposits held for sale	673	673	—	673	—
Long-term debt	22,080	22,717	—	22,717	—

Lending-related commitments - The fair value of loan commitments, revolving credit facilities and standby letters of credit are not included in the table. The majority of the lending-related commitments are not carried at fair value on a recurring basis nor are they actively traded. These instruments generate fees, which approximate those currently charged to originate similar commitments, which are recognized over the term of the commitment period. Deferred fees on loan commitments, revolving credit facilities and standby letters of credit totaled \$165 million and \$158 million at December 31, 2018 and 2017, respectively.

28. *Litigation and Regulatory Matters*

In addition to the matters described below, in the ordinary course of business, we are routinely named as defendants in, or as parties to, various legal actions and proceedings relating to activities of our current and/or former operations. These legal actions and proceedings may include claims for substantial or indeterminate compensatory or punitive damages, or for injunctive relief. In the ordinary course of business, we also are subject to governmental and regulatory examinations, information-gathering requests, investigations and proceedings (both formal and informal), certain of which may result in adverse judgments, settlements, fines, penalties, injunctions or other relief. In connection with formal and informal inquiries by these regulators, we receive numerous requests, subpoenas and orders seeking documents, testimony and other information in connection with various aspects of our regulated activities.

Due to the inherent unpredictability of legal matters, including litigation, governmental and regulatory matters, particularly where the damages sought are substantial or indeterminate or when the proceedings or investigations are in the early stages, we cannot determine with any degree of certainty the timing or ultimate resolution of such matters or the eventual loss, fines, penalties or business impact, if any, that may result. We establish reserves for litigation, governmental and regulatory matters when those matters present loss contingencies that are both probable and can be reasonably estimated. Once established, reserves are adjusted from time to time, as appropriate, in light of additional information. The actual costs of resolving litigation and regulatory matters, however, may be substantially higher than the amounts reserved for those matters. During 2018, we recorded expense of \$522 million related to various legal matters.

For the legal matters disclosed below, including litigation and governmental and regulatory matters, as to which a loss in excess of accrued liability is reasonably possible in future periods and for which there is sufficient currently available information on the basis of which management believes it can make a reliable estimate, we believe a reasonable estimate could be as much as \$350 million for HUSI. The legal matters underlying this estimate of possible loss will change from time to time and actual results may differ significantly from this current estimate.

In addition, based on the facts currently known for each of the ongoing investigations, it is not practicable at this time for us to determine the terms on which these ongoing investigations will be resolved or the timing of such resolution. As matters progress, it is possible that any fines and/or penalties could be significant.

Given the substantial or indeterminate amounts sought in certain of these matters, and the inherent unpredictability of such matters, an adverse outcome in certain of these matters could have a material adverse effect on our consolidated financial statements in any particular quarterly or annual period.

Credit Card Litigation Since 2005, HSBC Bank USA, HSBC Finance, HSBC North America and HSBC, as well as other banks and Visa Inc. ("Visa") and MasterCard Incorporated ("MasterCard"), had been named as defendants in a number of consolidated merchant class actions and individual merchant actions had been filed against Visa and MasterCard, alleging that the imposition of a no-surcharge rule by the associations and/or the establishment of the interchange fee charged for credit card transactions causes the merchant discount fee paid by retailers to be set at supracompetitive levels in violation of the federal antitrust laws. *In re Payment Card Interchange Fee and Merchant Discount Antitrust Litigation*, MDL 1720, E.D.N.Y. ("MDL 1720"). In 2011, MasterCard, Visa, the other defendants, including HSBC Bank USA, and certain affiliates of the defendants entered into settlement and judgment sharing agreements (the "Sharing Agreements") that provide for the apportionment of certain defined costs and liabilities that the defendants, including HSBC Bank USA and our affiliates, may incur, jointly and/or severally, in the event of an adverse judgment or global settlement of one or all of these actions. The district court granted final approval of the class settlement in 2013 and entered the Class Settlement Order and final judgment dismissing the class action shortly thereafter.

In June 2016, the U.S. Court of Appeals for the Second Circuit ("Second Circuit") issued a decision vacating class certification and approval of the class settlement in MDL 1720, concluding the class was inadequately represented by their counsel in violation of the Federal Rule of Civil Procedure governing class actions as well as the Due Process Clause of the U.S. Constitution. Specifically, the Second Circuit held that there was a conflict between two different but overlapping settlement classes: (1) an opt-out class, which permitted individual class members to forgo their share of the monetary relief and pursue individual claims; and (2) a non-opt-out class of merchants, including future merchants that do not currently exist, which provided injunctive relief mainly in the form of a rule change by Visa and MasterCard to allow merchants to surcharge card transactions until July 20, 2021. The U.S. Supreme Court denied the plaintiffs' petition for review of the decision in March 2017.

In June 2018, the defendants, including the HSBC entities, reached an agreement in principle with counsel for the putative Federal Rule of Civil Procedure 23(b)(3) opt-out class, seeking monetary relief, to resolve all claims as filed in a third consolidated amended class action complaint in *In re Payment Card Interchange Fee and Merchant Discount Antitrust Litigation*, MDL 1720, E.D.N.Y. The parties subsequently entered into a settlement agreement. The court granted preliminary approval of the settlement in January 2019 and scheduled the final settlement approval hearing for November 2019. If settlement approval is granted, certain HSBC entities are responsible for a *pro rata* portion of the settlement amount, for which they are reserved, pursuant to the Sharing Agreements entered into by the defendants.

Numerous merchants objected and/or opted out of the settlement during the exclusion period. Various opt-out merchants have filed opt-out suits in either state or federal court, most of which have been transferred to the consolidated multidistrict litigation, MDL 1720. To date, certain groups of opt-out merchants have entered into settlement agreements with the defendants in those actions and certain HSBC entities that, pursuant to the Sharing Agreements, are responsible for a *pro rata* portion of any judgment or settlement amount awarded in actions consolidated into MDL 1720.

DeKalb County, et al. v. HSBC North America Holdings Inc., et al. (N.D. Ga. Case No. 12-CV-03640) In 2012, three of the five counties constituting the metropolitan area of Atlanta, Georgia filed a lawsuit pursuant to the Fair Housing Act against HSBC North America and numerous subsidiaries, including HSBC Finance and HSBC Bank USA, in connection with residential mortgage lending, servicing and financing activities. In the action, the plaintiff counties assert that the defendants' allegedly discriminatory lending and servicing practices led to increased loan delinquencies, foreclosures and vacancies, which in turn caused the plaintiff counties to incur damages in the form of lost property tax revenues and increased municipal services costs, among other damages. In March 2015, the court denied the HSBC defendants' motion for summary judgment. In November 2015, the HSBC defendants' motion for reconsideration of that decision was granted in part, and the court reversed certain aspects of its March 2015 decision.

This matter has been stayed pending U.S. Supreme Court review of the U.S. Court of Appeals for the Eleventh Circuit ("Eleventh Circuit") decision reversing motions to dismiss two similar cases filed against other lenders in *City of Miami v. Bank of America Corp. & Wells Fargo & Co.* In May 2017, the U.S. Supreme Court issued its decision, affirming the Eleventh Circuit's finding that a municipal plaintiff can be within the zone of interest conceivably protected by the Fair Housing Act. The court did not determine whether the injuries alleged by the city met the proximate cause test, but provided guidance for the lower courts in employing that test in further proceedings.

County of Cook v. HSBC North America Holdings Inc., et al. (N.D. Ill. Case No. 1:14-cv-2031). In 2014, Cook County, Illinois (the county in which the city of Chicago is located) filed an action pursuant to the Fair Housing Act against HSBC North America and certain subsidiaries that is substantially similar to the lawsuit filed by the counties of DeKalb, Fulton and Cobb in Georgia. In this action, as in *DeKalb County, et al. v. HSBC North America Holdings Inc., et al.*, the plaintiff asserts that the defendants' allegedly discriminatory lending and servicing practices led to increased loan delinquencies, foreclosures and vacancies, which in turn caused the plaintiff to incur damages in the form of lost property tax revenues and increased municipal services costs, among other damages. An amended complaint was filed in 2014, and the court denied the HSBC defendants' motion to dismiss the amended complaint in September 2015.

This matter had been stayed pending U.S. Supreme Court review of the Eleventh Circuit decision reversing motions to dismiss two similar cases filed against other lenders in *City of Miami v. Bank of America Corp. & Wells Fargo & Co.* In May 2017, the U.S. Supreme Court issued its decision, affirming the Eleventh Circuit's finding that a municipal plaintiff can be within the zone of interest conceivably protected by the Fair Housing Act. The court did not determine whether the injuries alleged by the city met the proximate cause test, but provided guidance for the lower courts in employing that test in further proceedings. Following the Supreme Court decision, the stay was lifted and an amended complaint was filed in July 2017.

In May 2018, the court granted in part and denied in part defendants' motion to dismiss the amended complaint. The court's ruling on the motion to dismiss allows Cook County's case to proceed, but significantly narrows the categories of damages available for potential recovery. Discovery is proceeding.

Credit Default Swap Matters

In June 2017, an action was filed by TeraExchange, LLC ("Tera"), a swaps execution facility, as well as its affiliates, against more than two dozen financial institutions, including HSBC, HSBC Bank plc, HSBC Bank USA and HSI, alleging violations of federal and state antitrust laws, and breaches of common law, arising out of an alleged conspiracy among the defendants to boycott Tera from the credit default swap trading market. Defendants filed a motion to dismiss in September 2017 and we await a decision.

Foreign Exchange ("FX") Matters

U.S. Litigation In 2014, HSBC, HSBC Bank plc, HSBC North America and HSBC Bank USA were named as defendants, among others, in an amended consolidated complaint that alleged, among other things, that defendants had conspired to manipulate the WM/Reuters foreign currency rates by sharing customers' confidential order flow information, thereby injuring plaintiffs and others by forcing them to pay artificial and non-competitive prices for products based off these foreign currency rates (the "Consolidated Action") (*In re Foreign Exchange Benchmark Rates Antitrust Litigation*; Case No. 13-CV-7789(LGS)). The HSBC defendants settled the Consolidated Action in September 2015 for a total payment of \$285 million. HSBC Bank USA's portion of the settlement was \$14.25 million. The court granted final approval of the settlement in August 2018. This matter will no longer be updated in this report in the future.

In November 2018, a complaint making similar allegations was filed in the U.S. District Court for the Southern District of New York by several institutions that opted out of the Consolidated Action settlement naming, among other institutions, the same HSBC defendants that had been named in the Consolidated Action. (*Allianz Global Investors GMBH, et al. v Bank of America Corporation,*

et al. (the "FX Opt Out Litigation")). The plaintiffs will be filing an amended complaint on or before March 1, 2019, and the defendants will be permitted to seek dismissal thereafter.

In addition to the Consolidated Action, other putative class actions making similar allegations are pending against HSBC defendants, as well as other defendants, in the U.S. District Court for the Southern District of New York on behalf of: (1) retail customers (*Nypl v. JPMorgan Chase, et al.*; Case No. 1:15-CV-9300); and (2) "indirect purchasers" of FX (*Contant v. Bank of America Corporation, et al.*; Case No. 1:17-CV-03139). The *Nypl* defendants have answered the complaint and discovery is underway. In January 2019, the court in *Nypl* granted the plaintiffs leave to file a motion for leave to amend their complaint. In October 2018, the court in *Contant* granted in part and denied in part plaintiffs' motion to amend the complaint, allowing plaintiffs to amend their state law antitrust and unfair trade practices claims but denying their request to amend their federal law antitrust claims.

It is possible that additional actions will be initiated against the HSBC entities, including HSBC Bank USA, in relation to their historical foreign exchange activities.

Investigations HSBC and certain of its affiliates, including HSBC Bank USA, along with a number of other firms, are being investigated by regulatory agencies in relation to trading on the foreign exchange market. We are cooperating with the investigations. HSBC has reached settlements with the U.K. Financial Conduct Authority ("FCA"), the U.S. Commodity Futures Trading Commission ("CFTC"), the FRB and U.S. Department of Justice ("DOJ"). HSBC Bank USA was not a party to those settlements. The investigations involving HSBC Bank USA continue.

In January 2018, HSBC entered into a three-year deferred prosecution agreement with the Criminal Division of the DOJ (the "FX DPA"), which resolved the DOJ's investigation into HSBC's historical foreign exchange activities. Under the terms of the FX DPA, HSBC is required to further enhance its internal controls and procedures relating to its Global Markets business.

In September 2017, HSBC and HSBC North America entered into a consent order with the FRB in connection with its investigation into HSBC Group's historical FX exchange activities, which required HSBC and HSBC North America to undertake certain remedial steps.

In August 2016, the DOJ indicted two now-former HSBC employees and charged them with wire fraud and conspiracy relating to a 2011 foreign exchange transaction. One of the former employees was found guilty in October 2017, and has appealed his conviction.

In February 2017, the Competition Commission of South Africa referred a complaint for proceedings before the South African Competition Tribunal against 18 financial institutions, including HSBC Bank plc, for alleged misconduct related to the foreign exchange market in violation of South African antitrust laws. In April 2017, HSBC Bank plc filed an exception to the complaint, based on a lack of jurisdiction and statute of limitations. In January 2018, the South African Competition Tribunal approved the provisional referral of additional financial institutions, including HSBC Bank USA to the proceedings. These proceedings remain at an early stage.

Precious Metals Fix Matters

In re Commodity Exchange Inc., Gold Futures and Options Trading Litigation (Gold Fix Litigation) Since 2014, numerous putative class actions have been filed in the U.S. District Court for the Southern District of New York and the Northern District of California naming as defendants HSBC USA, HSI, HSBC and HSBC Bank plc, in addition to other members of the London Gold Fix. The complaints allege that from January 2004 through June 2013, defendants conspired to manipulate the price of gold and gold derivatives during the afternoon London Gold Fix in order to reap profits on proprietary trades. The actions have been transferred to and centralized in the U.S. District Court for the Southern District of New York. The parties are proceeding under a third amended complaint. Discovery is proceeding.

In re London Silver Fixing, Ltd. Antitrust Litigation (Silver Fix Litigation) In 2014, putative class actions were filed in the U.S. District Court for the Southern and Eastern Districts of New York naming HSBC, HSBC Bank plc, HSBC Bank USA and the other members of The London Silver Market Fixing Ltd as defendants. The complaints allege that, from January 2007 through December 2013, defendants conspired to manipulate the price of physical silver and silver derivatives for their collective benefit in violation of the U.S. Commodity Exchange Act and U.S. antitrust laws. The actions have been transferred to and centralized in the U.S. District Court for the Southern District of New York. The parties are proceeding under a third amended complaint. Discovery is proceeding.

Platinum and Palladium Fix Litigation Since 2014, several putative class actions have been filed in the U.S. District Court for the Southern District of New York naming as defendants members of The London Platinum and Palladium Fixing Company (the "Platinum Group Metals or PGM Fixing"), including HSBC Bank USA, BASF Metals Limited, Goldman Sachs International and Standard Bank, plc. The complaints allege that, from January 2008 through November 2014, defendants conspired to manipulate the benchmark prices for physical Platinum Group Metals ("PGM") and PGM-based financial products. Plaintiffs have filed a third amended complaint and the defendants filed a joint motion to dismiss. We await a ruling.

Canada Litigation Beginning in December 2015, HSBC, HSBC Bank plc, HSBC USA, HSI, HSBC Bank Canada and HSBC Securities Canada have been named, along with other institutions, in several putative class actions filed in the Superior Courts of Justice in the Provinces of Ontario and Quebec, Canada. These suits allege, among other things, that the defendants conspired to manipulate the prices of gold and silver derivatives. These claims include: (1) *DiFilippo and Caron v. The Bank of Nova Scotia, et al.* (Superior Court of Justice, Ontario Province) (Gold Fix); (2) *DiFilippo and Caron v. The Bank of Nova Scotia, et al.* (Superior Court of Justice, Ontario Province) (Silver Fix); (3) *Benoit v. Bank of Nova Scotia, et al.* (Superior Court of Justice, Quebec Province); and (4) *Ayas v. La Banque de Nouvelle-Ecosse, et al.* (Superior Court of Justice, Quebec Province). These actions are at an early stage.

Investigations In 2014, the Antitrust Division and Criminal Fraud Section of the DOJ issued a document request to HSBC, seeking the voluntary production of certain documents in connection with a criminal investigation that the DOJ is conducting of alleged anti-competitive and manipulative conduct in precious metals trading. As of January 2019, the DOJ has closed its investigation without taking any action against HSBC, including HSBC Bank USA.

Madoff Litigation

In 2008, Bernard L. Madoff ("Madoff") was arrested and ultimately pleaded guilty to running a Ponzi scheme and a trustee was appointed for the liquidation of his firm, Bernard L. Madoff Investment Securities LLC ("Madoff Securities"), an SEC-registered broker-dealer and investment adviser. Various non-U.S. HSBC companies provided custodial, administration and similar services to a number of funds incorporated outside the United States whose assets were invested with Madoff Securities. Plaintiffs (including funds, funds investors and the Madoff Securities trustee ("Trustee"), as described below) have commenced Madoff-related proceedings against numerous defendants arising out of Madoff Securities' fraud.

In 2010, the Trustee commenced suits against various HSBC companies in the U.S. Bankruptcy Court for the Southern District of New York ("U.S. Bankruptcy Court") and in the English High Court. The Trustee filed a suit in the U.S. captioned *Picard v. HSBC et al* (Bankr S.D.N.Y. Case No. 09-01364), which also names certain funds, investment managers, and other entities and individuals, against HSBC Bank USA and certain of our foreign affiliates. The Trustee's claims seek recovery of prepetition transfers pursuant to U.S. bankruptcy law. The amount of these claims has not been pleaded or determined as against the HSBC entities. In November 2016, the U.S. Bankruptcy Court granted the motion to dismiss with respect to certain of the Trustee's claims filed by numerous defendants, including a number of foreign affiliates of HSBC Bank USA. In September 2017, the Second Circuit granted the parties' request to review the U.S. Bankruptcy Court's decision. The Second Circuit heard oral argument on the appeal in November 2018 and a decision remains pending.

The Trustee's English action, which names HSBC Bank USA and other HSBC entities as defendants, seeks recovery of unspecified transfers of money from Madoff Securities to or through the HSBC entities. The Trustee's deadline for serving the claims has been extended through September 2019 for the U.K.-based defendants and November 2019 for all other defendants.

SPV Optimal SUS Ltd. ("SPV Optimal"), the purported assignee of Madoff Securities-invested Optimal Strategic U.S. Equity Ltd. filed an action against various HSBC entities, including HSBC Bank USA, in 2014 in New York state court asserting common law claims for aiding and abetting breach of fiduciary duty, aiding and abetting conversion, aiding and abetting fraud and knowing participation in a breach of trust and seeks to recover damages lost to Madoff's fraud. (*SPV OSUS Ltd. v. HSBC Bank plc, et al.*, Case No. 162259/2014). The HSBC defendants removed the case to the federal district court in New York in April 2018 and filed an amended motion to dismiss in September 2018 in response to the most recently amended complaint. In February 2019, SPV OSUS agreed to withdraw its action with prejudice against the HSBC entities.

Beginning in 2009, Fairfield Sentry Limited, Fairfield Sigma Limited and Fairfield Lambda Limited (together "Fairfield"), funds whose assets were directly or indirectly invested with Madoff Securities, commenced multiple suits in the British Virgin Islands ("BVI") and the United States against numerous fund shareholders, including various HSBC companies that acted as nominees for clients of HSBC's private banking business and other clients who invested in the Fairfield funds, seeking restitution of payments made in connection with share redemptions. The Fairfield liquidators voluntarily discontinued their actions against the HSBC defendants in BVI. In October 2016, the Fairfield liquidators filed a motion seeking leave to amend their complaints in the U.S. Bankruptcy Court. In January 2017, defendants filed a consolidated motion to dismiss and oppose the Fairfield liquidators' motion. In December 2018, the U.S. Bankruptcy Court issued a decision that partially granted defendants' motion to dismiss claims by the Fairfield liquidators and granted a motion by the liquidators to file amended complaints.

There are many factors that may affect the range of possible outcomes, and the resulting financial impact, of the various Madoff-related proceedings including, but not limited to, the circumstances of the fraud, the multiple jurisdictions in which proceedings have been brought and the number of different plaintiffs and defendants in such proceedings. The timing and resolution of these matters remains uncertain. It is possible that any liabilities that may arise as a result could be significant. In any event, we consider that we have good defenses to these claims and will continue to defend them vigorously.

Supranational, Sovereign and Agency ("SSA") Bonds.

Beginning in November 2017, HSBC, HSBC Bank plc, HSBC Bank USA, HSBC Bank Canada, HSBC USA, HSBC North America and HSI, among others, were named as defendants in actions filed in the Superior Court and Federal Court of Ontario Province. The actions allege that the defendants conspired to manipulate the market for SSA bonds between January 2005 and December 2015 in violation of Canadian civil anti-trust law. The Superior Court action has now lapsed and will not proceed unless a motion to extend the time for service is successfully filed. The Federal Court action will proceed.

Mexican Government Bond Litigation HSBC, HSBC Bank plc, HSBC North America, HSBC Bank USA, HSI, HMUS, as well as non-U.S. HSBC affiliates, have been named as defendants, among others, in a putative class action brought in the U.S. District Court for the Southern District of New York in March 2018 relating to the Mexican government bond ("MGB") market (*Oklahoma Firefighters Pension & Retirement System, et al. v. Banco Santander S.A., et al.*). The action alleges that defendants conspired to fix MGB prices between January 2006 and April 2017 in violation of federal antitrust laws. In July 2018, plaintiffs filed an amended consolidated complaint. Defendants filed motions to dismiss in September 2018.

Benchmark Rate Litigation

USD LIBOR: HSBC, HSBC Bank plc, HSBC USA and/or HSBC Bank USA are among several defendants in lawsuits filed by the following plaintiffs seeking unspecified damages arising from the alleged artificial suppression of U.S. dollar LIBOR rates: (1) the Federal Home Loan Mortgage Corporation; (2) two mutual funds managed by Prudential Investment Portfolios; (3) the FDIC, in its role as receiver for several failed banks; and (4) the National Credit Union Administration Board, in its capacity as liquidator for several failed credit unions. The other defendants are members of the U.S. dollar LIBOR panel of banks and their affiliates. These actions are part of the U.S. dollar LIBOR Multi-District Litigation proceeding pending in the U.S. District Court for the Southern District of New York (*In re LIBOR-Based Financial Instruments Antitrust Litigation*). These matters are at early stages.

CDOR: HSBC Bank USA, HSBC, HSBC USA, HSBC Bank plc, HSBC North America, HSI and HSBC Canada have been named as defendants, among others, in a putative class action brought in the U.S. District Court for the Southern District of New York on behalf of persons who transacted in products tied to the Canadian Dealer Offered Rate ("CDOR") between August 2007 and December 2014. The complaint, encaptioned *Fire & Police Pension Association of Colorado, et al. v Bank of Montreal, et al.* (Case No. 18-cv-00342), alleges that the defendant banks conspired to suppress CDOR by making artificially lower submissions and entering into collusive transactions in the swaps market, thereby fixing the prices of CDOR-based derivatives for their collective financial benefit. The defendants are accused of illegal restraint of trade in violation of the Sherman Antitrust Act, violation of the Racketeer Influenced Corrupt Organization Act and Commodity Exchange Act. In July 2018, defendants filed a motion to dismiss and we await a decision.

Intercontinental Exchange ("ICE") LIBOR: In January 2019, a putative class action complaint was filed in the U.S. District Court for the Southern District of New York on behalf of persons who purchased over the counter instruments paying interest indexed to ICE LIBOR from a panel bank against HSBC Bank plc, HSBC Bank USA, HSBC North America, HSBC USA and HSI, as well as other panel banks, alleging a conspiracy to depress USD ICE LIBOR from February 2014 (when ICE began administration of LIBOR) to the present. The complaint alleges, among other things, misconduct related to the suppression of the benchmark rate in violation of US antitrust and state law. (*Putnam Bank v. Intercontinental Exchange, Inc., et al.* (Case No. 19-cv-00439)).

Mortgage Securitization Matters

In addition to the repurchase risk described in Note 26, "Guarantee Arrangements, Pledged Assets and Repurchase Agreements," HSBC Bank USA has also been involved as a sponsor/seller of loans used to facilitate whole loan securitizations underwritten by HSI. During 2005-2007, HSBC Bank USA purchased and sold \$24 billion of whole loans to HSI which were subsequently securitized and sold by HSI to third parties. The outstanding principal balance on these loans was approximately \$3.8 billion and \$4.1 billion at December 31, 2018 and 2017, respectively.

Participants in the U.S. mortgage securitization market that purchased and repackaged whole loans have been the subject of lawsuits and governmental and regulatory investigations and inquiries, which have been directed at groups within the U.S. mortgage market, such as servicers, originators, underwriters, trustees or sponsors of securitizations, and at particular participants within these groups. We expect activity in this area to continue. As the industry's residential mortgage foreclosure issues continue, HSBC Bank USA has taken title to a number of foreclosed homes as trustee on behalf of various securitization trusts. As nominal record owner of these properties, HSBC Bank USA has been sued by municipalities and tenants alleging various violations of law, including laws regarding property upkeep and tenants' rights. While we believe and continue to maintain that the obligations at issue and any related liability are properly those of the servicer of each trust, we continue to receive significant and adverse publicity in connection with these and similar matters, including foreclosures that are serviced by others in the name of "HSBC, as trustee."

In 2013, Deutsche Bank National Trust Company ("DBNTC"), as trustee of HASCO 2007-NC1, filed a complaint in New York County Supreme Court, State of New York, naming HSBC Bank USA as the sole defendant. The complaint alleges that DBNTC brought the action at the direction of certificateholders of the trust, seeking specific performance and/or damages of at least \$508

million arising out of the alleged breach of various representations and warranties made by HSBC Bank USA in the applicable pooling and servicing agreement regarding certain characteristics of the mortgage loans contained in the trust. In 2014, the court granted HSBC Bank USA's motion to dismiss, without prejudice, and with leave to replead. Plaintiff filed an amended complaint which HSBC Bank USA moved to dismiss, and that motion was denied in November 2015. HSBC Bank USA appealed the decision. In December 2017, the appeals court issued a decision dismissing the complaint. Plaintiff filed a motion for leave to appeal the dismissal of the action with the New York Court of Appeals, which was granted in September 2018.

As previously disclosed, in October 2018, HSBC North America reached a definitive agreement to resolve the DOJ's investigation of its legacy securitization, issuance and underwriting of residential mortgage-backed securities ("RMBS") issued between 2005 and 2007. Under the terms of the agreement, HSBC North America paid a \$765 million civil monetary penalty to resolve the investigation, of which \$492 million was paid by HUSI.

Mortgage Securitization Trust Litigation Since 2014, Plaintiff-Investors in 280 RMBS trusts (the "Trusts") have sued HSBC Bank USA, as mortgage securitization trustee, in a number of cases: BlackRock et al., Royal Park Investments SA/NV ("RPI"), Phoenix Light SF Limited, the National Credit Union Administration Board, as Liquidating Agent, Commerzbank AG, and Triaxx, IKB Bank AG ("IKB"), RMBS Recovery Holdings I, LLC, et al. ("Fir Tree"), VRS Holdings 2 LLC ("VRS") and Reliance Standard Life Insurance Company ("Reliance"). All the cases, with the exception of the IKB, Fir Tree, VRS and Reliance cases, have been deemed related and are assigned to the same judge in the U.S. District Court for the Southern District of New York. The IKB, VRS and Reliance cases are pending in New York State court and Fir Tree filed cases in both New York and Virginia state courts. The lawsuits were brought derivatively on behalf of the Trusts, but some also seek class relief. The complaints allege generally that the Trusts have collectively sustained losses in collateral value of approximately \$38 billion and seek to recover unspecified damages as a result of alleged breach of contract; breach of the federal Trust Indenture Act and New York's Streit Act; tort claims such as negligence, negligent misrepresentation, conflict of interest and breach of fiduciary duty. Similar lawsuits were filed simultaneously against other non-HSBC financial institutions that similarly served as mortgage securitization trustees. HSBC Bank USA's motions to dismiss these cases have largely been denied. In February 2018, the Virginia state court dismissed the Fir Tree case on procedural grounds, and Fir Tree has appealed the decision. The New York state court action is stayed pending the appeal. BlackRock's and RPI's motion for class certification has been denied, and the U.S. Court of Appeals for the Second Circuit denied a request for review of the decision. Discovery is underway in a number of the actions.

Shareholder Derivative Action In 2014, a shareholder of HSBC (who is not a shareholder of HSBC Bank USA, HSBC North America or HSBC USA) filed a shareholder derivative action, captioned *Michael Mason-Mahon v. Douglas J. Flint, et al.* (New York State Supreme Court, Nassau County, Index No. 602052/2014), purportedly on behalf of HSBC, HSBC Bank USA, HSBC North America and HSBC USA (the "Nominal Corporate Defendants") in New York State Supreme Court against the directors, certain officers and certain former officers directors of those HSBC companies (the "Individual Defendants") alleging that the Individual Defendants breached their fiduciary duties to the companies and caused a waste of corporate assets by allegedly permitting and/or causing the conduct underlying the five-year deferred prosecution agreement with the DOJ. Plaintiffs filed an amended complaint in February 2015. The Nominal Corporate Defendants moved to dismiss the original and amended complaints. Individual Defendants who have been served also responded to the complaints. In November 2015, the court granted the Nominal Corporate Defendants' motion to dismiss. In November 2018, the appellate court reversed the New York state court's dismissal of the action, which was based on plaintiff's standing to assert claims. The Nominal Corporate Defendants filed a motion for reargument or, in the alternative, for leave to appeal to the New York Court of Appeals in December 2018. In February 2019, the Nominal Corporate Defendants and most of the Individual Defendants filed a motion to dismiss in New York State Supreme Court, where the matter is pending.

Anti-Terrorism Act Cases

Charlotte Freeman, et al. v. HSBC Holdings plc, et al. In 2014, a complaint was filed in the U.S. District Court for the Eastern District of New York on behalf of representatives of U.S. persons killed and/or injured in Iraq between April 2004 and November 2011. The complaint was filed against HSBC, HSBC Bank USA, HSBC Bank plc and HSBC Bank Middle East Limited, as well as other non-HSBC banks, and alleges that the defendants conspired to violate the federal Anti-Terrorism Act., (18 U.S.C. §2331 et seq.) ("ATA"), by altering or falsifying payment messages involving Iran, Iranian parties and Iranian banks for transactions processed through the U.S. Defendants filed a motion to dismiss in March 2015. Plaintiffs filed amended complaints thereafter, which defendants moved to dismiss in September 2016. In July 2018, the magistrate judge issued a recommendation that the court deny the defendants', including HSBC Bank USA's, motion to dismiss. In August 2018, defendants submitted objections to the magistrate judge's report and recommendation to deny defendants' motion to dismiss, and plaintiffs submitted a response in October 2018. We await a decision from the district court.

In December 2018, a new action encaptioned *Charlotte Freeman, et al. v. HSBC Holdings plc, et al.* was filed in the U.S. District Court for the Eastern District of New York on behalf of representatives of U.S. persons killed and/or injured in Iraq between 2004 and 2011 ("*Freeman II*"). *Freeman II* is substantially similar to the original *Freeman* action and has been designated as related to that action but includes additional plaintiffs and claims not asserted in the original *Freeman* action. This action is at a very early stage.

Jeffrey Siegel, et al. v. HSBC Holdings plc, et al. In November 2015, an action was filed against HSBC, HSBC North America, HSBC Bank USA and HSBC Bank Middle East Limited (among other HSBC entities that subsequently were dismissed from the action), as well as unaffiliated Al Rajhi Bank, in the U.S. District Court for the Northern District of Illinois. Plaintiffs, four U.S. nationals injured or killed in a 2005 terrorist attack on a hotel in Amman, Jordan and their families and heirs, allege violations of the ATA. The complaint includes one count against the HSBC defendants for violation of the ATA's civil provision, alleging a failure to enforce due diligence methods to prevent its financial services from being used to support the terrorist attack. In August 2017, the court granted HSBC's and HSBC Bank Middle East Limited's motion to dismiss for lack of personal jurisdiction and transferred the action as to HSBC Bank USA and HSBC North America to the U.S. District Court for the Southern District of New York. In January 2018, the court denied plaintiffs' motion to amend the complaint to add allegations against HSBC. Plaintiffs filed an amended complaint in March 2018 against the remaining defendants, HSBC Bank USA and HSBC North America. In July 2018, the court granted defendants' motion to dismiss the amended complaint. Plaintiff appealed the dismissal, and a decision remains pending.

Mary Zapata, et al. v. HSBC Holdings plc, et al. In February 2016, a group of plaintiffs claiming to be survivors and heirs of American nationals alleged to have been killed or injured in Mexico by Mexican drug cartels, filed a complaint in the U.S. District Court for the Southern District of Texas, Brownsville Division naming HSBC, HSBC Bank USA, HSBC México S.A., Institución de Banca Múltiple, Grupo Financiero HSBC and Grupo Financiero HSBC, S.A. de C.V. as defendants. Plaintiffs allege that the HSBC defendants violated the ATA by providing financial services to individuals and entities associated with the drug cartels. Plaintiffs seek unspecified, treble damages. In September and October 2017, the court dismissed claims against HSBC, HSBC Mexico S.A., Institucion de Banca Multiple, Grupo Financiero HSBC and Grupo Financiero HSBC, S.A. de C.V. for lack of personal jurisdiction while denying HSBC Bank USA's motion to transfer the case to the U.S. District Court for the Southern District of New York. Plaintiffs thereafter voluntarily dismissed the Texas action.

In November 2017, the plaintiffs filed an action in the U.S. District Court for the Eastern District of New York naming HSBC, HSBC Bank USA, HSBC México S.A., Institución de Banca Múltiple, Grupo Financiero HSBC and Grupo Financiero HSBC, S.A. de C.V. as defendants. The complaint is substantially similar to the prior pending action alleging on behalf of a group of survivors and heirs of American nationals alleged to have been killed or injured in Mexico by Mexican drug cartels that the HSBC defendants violated the ATA by providing financial services to individuals and entities associated with the drug cartels. Defendants moved to dismiss the action in February 2018. We await a decision.

Timothy O'Sullivan, et al. v. Deutsche Bank AG, et al. In November 2017, a complaint was filed in the U.S. District Court for the Southern District of New York on behalf of representatives of U.S. persons killed and/or injured in Iraq between 2003 and 2011. The complaint was filed against HSBC, HSBC Bank plc, HSBC Bank USA, HSBC North America and HSBC Bank Middle East Limited, as well as other non-HSBC defendants, and alleges that the defendants conspired to violate the ATA by altering or falsifying payment messages involving Iran, Iranian parties and Iranian banks for transactions processed through the U.S. The defendants moved to dismiss the complaint in March 2018. We await a decision.

In December 2018, a new action encaptioned *Timothy O'Sullivan, et al. v. Deutsche Bank AG, et al.* was filed in the U.S. District Court for the Southern District of New York on behalf of representatives of U.S. persons killed and/or injured in Iraq between 2003 and 2011 ("*O'Sullivan II*"). *O'Sullivan II* is substantially similar to the original *O'Sullivan* action and has been designated as related to that action but includes additional plaintiffs and claims not asserted in the original *O'Sullivan* action. This action is at a very early stage.

Joel Tavera, et al. v. Deutsche Bank AG, et al. In December 2018, a complaint was filed in the U.S. District Court for the Eastern District of New York on behalf of representatives of U.S. persons killed and/or injured in Iraq between 2003 and 2011. The complaint was filed against HSBC, HSBC Bank plc, HSBC Bank USA, HSBC North America and HSBC Bank Middle East Limited, as well as other non-HSBC bank defendants, and alleges that the defendants conspired to violate the ATA by altering or falsifying payment messages involving Iran, Iranian parties and Iranian banks for transactions processed through the U.S. and that they aided and abetted primary violators of the ATA. This action is at a very early stage.

James Donaldson v. HSBC Holdings plc, et al. In December 2018, a complaint was filed in the U.S. District Court for the Eastern District of New York on behalf of representatives of U.S. persons killed and/or injured in Iraq between 2005 and 2009. The complaint was filed against HSBC, HSBC Bank plc, HSBC Bank USA, and HSBC Bank Middle East Limited, as well as other non-HSBC bank defendants, and alleges that the defendants conspired to violate the ATA by altering or falsifying payment messages involving Iran, Iranian parties and Iranian banks for transactions processed through the U.S. and that they aided and abetted primary violators of the ATA. This action has been filed as related to the original *Freeman* action and is at a very early stage.

Kathleen Stephens v. HSBC Holdings plc, et al. In December 2018, a complaint was filed in the U.S. District Court for the Eastern District of New York on behalf of representatives of U.S. persons killed and/or injured in Iraq in 2007. The complaint was filed against HSBC, HSBC Bank plc, HSBC Bank USA, and HSBC Bank Middle East Limited, as well as other non-HSBC bank defendants, and alleges that the defendants conspired to violate the ATA by altering or falsifying payment messages involving Iran,

Iranian parties and Iranian banks for transactions processed through the U.S. and that they aided and abetted primary violators of the ATA. This action has been filed as related to the newly filed *Freeman* action and is at a very early stage.

Rigoberto Vasquez and Eva Garcia et al v. Hong Kong and Shanghai Banking Corporation Ltd., HSBC Bank USA, N.A., et al. This putative class action was filed in the U.S. District Court for the Southern District of New York in March 2018 against HSBC Bank USA and the Hong Kong and Shanghai Bank Corporation. Plaintiffs purport to represent those that invested in a Ponzi scheme allegedly orchestrated by Phil Ming Xu and certain companies he allegedly controlled, such as WCM777. Hong Kong and Shanghai Banking Corporation is alleged to have accepted wire transfers from plaintiffs to WCM777 from investors in furtherance of the Ponzi scheme. HSBC Bank USA is alleged to have acted as Hong Kong and Shanghai Banking Corporation's correspondent bank for certain wire transfers to WCM777. The purported class period is from June 2013 to May 2014. Plaintiffs allege claims for Racketeer Influenced and Corrupt Organizations Act violations, aiding and abetting fraud, aiding and abetting breach of fiduciary duty, and aiding and abetting conversion. Plaintiffs seek compensatory damages in the amount of \$37 million plus punitive damages, interest and attorneys' fees and costs.

In August 2018, the HSBC defendants filed a motion to dismiss. In response, plaintiffs requested and received leave from the court to file an amended complaint, which was filed in October 2018. The HSBC defendants moved to dismiss the amended complaint in December 2018. We await a decision.

Telephone Consumer Protection Act Litigation

In March 2017, plaintiff filed a consolidated and amended putative class action in the U.S. District Court for the Central District of California. *Ahmed and Monteleone v. HSBC Bank USA, National Association* (Case No. 5:16-cv-02057). The consolidated action alleges that the defendants contacted plaintiffs, or the members of the class that they seek to represent, on their cellular telephones using an automatic telephone dialing system or an artificial or prerecorded voice, without prior express consent or despite revocation of prior consent, in violation of the Telephone Consumer Protection Act, 47 U.S.C. §227 et seq. Plaintiffs seek statutory damages of up to \$1,500 for each violation. HSBC Mortgage Corporation responded to the complaint, and discovery proceeded. In December 2018, the parties agreed to settle the action. Plaintiffs filed for court approval of the settlement in January 2019.

Other Regulatory and Law Enforcement Investigations

We continue to cooperate in ongoing investigations by the DOJ and the Internal Revenue Service regarding whether certain HSBC Group companies and employees acted appropriately in relation to certain customers who had U.S. tax reporting requirements.

In 2014, the Argentine tax authority filed a complaint against several individuals, including some current and former HSBC employees, alleging tax evasion and an unlawful tax association between HSBC Private Bank Suisse SA, HSBC Bank Argentina and HSBC Bank USA and certain HSBC officers, which allegedly enabled HSBC customers to evade Argentine tax obligations.

We and certain other HSBC entities have received requests for information from various regulatory or law enforcement authorities around the world concerning persons and entities believed to be linked to Mossack Fonseca & Co, a service provider of personal investment companies. HSBC is cooperating with the relevant authorities.

Based on the facts currently known, in respect of each of the above investigations, it is not practicable at this time for us to determine the terms on which these ongoing investigations will be resolved or the timing of such resolution or for us to estimate reliably the amounts, or range of possible amounts, of any fines and/or penalties. As matters progress, it is possible that any fines and/or penalties could be significant.

29. Financial Statements of HSBC USA Inc. (Parent)

Condensed parent company financial statements follow:

Balance Sheet At December 31,	2018	2017
	(in millions)	
Assets:		
Interest bearing deposits with banks	\$ 2	\$ 1
Securities held-to-maturity (fair value of \$2 million and \$3 million at December 31, 2018 and 2017, respectively)	2	2
Receivables and balances due from subsidiaries	15,593	14,536
Receivables from other HSBC affiliates	2,510	6,722
Investment in subsidiaries:		
Banking	23,765	23,316
Other	1	1
Other assets	179	148
Total assets	<u>\$ 42,052</u>	<u>\$ 44,726</u>
Liabilities:		
Interest, taxes and other liabilities	\$ 127	\$ 137
Payables due to subsidiaries	12	3
Payables due to other HSBC affiliates	12	22
Short-term borrowings	2,532	1,154
Long-term debt ⁽¹⁾	16,017	22,474
Long-term debt due to other HSBC affiliates ⁽¹⁾	2,846	842
Total liabilities	<u>21,546</u>	<u>24,632</u>
Total equity	<u>20,506</u>	<u>20,094</u>
Total liabilities and equity	<u>\$ 42,052</u>	<u>\$ 44,726</u>

⁽¹⁾ Contractual scheduled maturities for the debt over the next five years are as follows: 2019 – \$4.1 billion; 2020 – \$5.8 billion; 2021 – \$2.0 billion; 2022 – \$1.3 billion; 2023 – \$1.0 billion; and thereafter – \$4.7 billion.

Statement of Income (Loss)
Year Ended December 31,

	2018	2017	2016
	(in millions)		
Income:			
Dividends from banking subsidiaries	\$ 137	\$ 136	\$ 136
Dividends from other subsidiaries	—	—	17
Interest from subsidiaries	367	309	268
Interest from other HSBC affiliates	55	37	115
Other interest income	—	5	2
Other securities gains, net	—	—	7
Other income (loss) from subsidiaries	(2)	(1)	1
Other income (loss) from other HSBC Affiliates	(829)	1,093	418
Other income (loss)	792	(772)	(321)
Total income	<u>520</u>	<u>807</u>	<u>643</u>
Expenses:			
Interest to other HSBC Affiliates	62	40	43
Other interest expense	574	541	475
Other expenses with subsidiaries	8	15	27
Other expenses	2	3	3
Total expenses	<u>646</u>	<u>599</u>	<u>548</u>
Income (loss) before taxes and equity in undistributed income (loss) of subsidiaries	(126)	208	95
Income tax expense (benefit)	(66)	18	(27)
Income (loss) before equity in undistributed income (loss) of subsidiaries	(60)	190	122
Equity in undistributed income (loss) of subsidiaries	380	(369)	7
Net income (loss)	<u>\$ 320</u>	<u>\$ (179)</u>	<u>\$ 129</u>

Statement of Comprehensive Income (Loss)
Year Ended December 31,

	2018	2017	2016
	(in millions)		
Net income (loss)	\$ 320	\$ (179)	\$ 129
Net change in unrealized gains (losses), net of tax:			
Investment securities	(220)	211	(227)
Fair value option liabilities attributable to our own credit spread	324	(193)	—
Derivatives designated as cash flow hedges	40	(7)	13
Pension and post-retirement benefit plans	8	2	3
Total other comprehensive income (loss)	152	13	(211)
Comprehensive income (loss)	\$ 472	\$ (166)	\$ (82)

Statement of Cash Flows
Year Ended December 31,

	2018	2017	2016
	(in millions)		
Cash flows from operating activities:			
Net income (loss).....	\$ 320	\$ (179)	\$ 129
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization.....	8	12	14
Net change in other assets and liabilities.....	(1,277)	481	271
Undistributed (income) loss of subsidiaries	(380)	369	(7)
Other, net	16	5	(4)
Cash provided by (used in) operating activities	(1,313)	688	403
Cash flows from investing activities:			
Sales and maturities of securities.....	—	1	254
Net change in investments in and receivables due from subsidiaries.....	(1,045)	2,843	(496)
Net change in receivables from other HSBC affiliates.....	4,211	(2,882)	887
Other, net	10	403	(24)
Cash provided by investing activities.....	3,176	365	621
Cash flows from financing activities:			
Net change in payables to other HSBC affiliates	(19)	(2)	19
Net change in short-term borrowings	1,378	(97)	(727)
Issuance of long-term debt.....	5,571	4,826	3,587
Repayment of long-term debt	(8,722)	(5,684)	(3,815)
Preferred stock issuance	—	—	1,265
Preferred stock redemption.....	—	—	(1,265)
Other increases (decreases) in capital surplus	6	(18)	(21)
Dividends paid	(76)	(77)	(67)
Cash used in financing activities	(1,862)	(1,052)	(1,024)
Net change in cash and due from banks and interest bearing deposits with banks ⁽¹⁾	1	1	—
Cash and due from banks and interest bearing deposits with banks at beginning of year ⁽¹⁾ ...	1	—	—
Cash and due from banks and interest bearing deposits with banks at end of year⁽¹⁾	\$ 2	\$ 1	\$ —
Cash paid for:			
Interest	\$ 649	\$ 584	\$ 517

⁽¹⁾ As a result of adopting new accounting guidance in 2018, we changed our presentation of cash and cash equivalents to include cash and due from banks as well as interest bearing deposits with banks. See Note 2, "Summary of Significant Accounting Policies and New Accounting Pronouncements," for further discussion.

HSBC Bank USA is subject to legal restrictions on certain transactions with its non-bank affiliates in addition to the restrictions on the payment of dividends to us. See Note 24, "Retained Earnings and Regulatory Capital Requirements," for further discussion.

30. Subsequent Event

In February 2019, our Board of Directors approved a distribution on our common stock of \$2.4 billion from surplus capital to be paid to HSBC North America during the first quarter of 2019.

SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)

The following table presents a quarterly summary of selected financial information for HUSI:

	2018				2017			
	Fourth	Third	Second	First	Fourth	Third	Second	First
	(in millions)							
Net interest income	\$ 586	\$ 559	\$ 555	\$ 552	\$ 534	\$ 560	\$ 582	\$ 597
Provision for credit losses	23	20	(45)	(71)	(45)	(22)	(21)	(77)
Net interest income after provision for credit losses	563	539	600	623	579	582	603	674
Other revenues	363	486	537	513	458	393	558	593
Operating expenses	780	790	786	1,282	903	820	849	819
Income (loss) before income tax	146	235	351	(146)	134	155	312	448
Income tax expense	34	58	82	92	907	61	108	152
Net income (loss) ⁽¹⁾	<u>\$ 112</u>	<u>\$ 177</u>	<u>\$ 269</u>	<u>\$ (238)</u>	<u>\$ (773)</u>	<u>\$ 94</u>	<u>\$ 204</u>	<u>\$ 296</u>

⁽¹⁾ Fourth quarter 2018 reflects out of period adjustments which reduced net income by \$56 million, \$33 million of which relates to prior year periods. We concluded these adjustments were not material to the current and prior year periods.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

During the years ended December 31, 2018, 2017 and 2016, there were no disagreements on accounting and financial disclosure matters between us and PricewaterhouseCoopers LLP ("PwC") on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, which, if not resolved to the satisfaction of PwC, would have caused PwC to make reference to the matter in its reports on our financial statements.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures We maintain a system of disclosure controls and procedures designed to ensure that information required to be disclosed by HSBC USA in the reports we file or submit under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), is recorded, processed, summarized and reported on a timely basis. Our Board of Directors, operating through its Audit Committee, which is composed entirely of independent non-executive directors, provides oversight to our financial reporting process.

We conducted an evaluation, with the participation of the Chief Executive Officer and Chief Financial Officer, of the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. Based upon that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report so as to alert them in a timely fashion to material information required to be disclosed in reports we file under the Exchange Act.

Changes in Internal Control over Financial Reporting There has been no change in our internal control over financial reporting that occurred during the quarter ended December 31, 2018 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Management's Assessment of Internal Control over Financial Reporting Management is responsible for establishing and maintaining an adequate internal control structure and procedures over financial reporting as defined in Rule 13a-15(f) of the Exchange Act, and has completed an assessment of the effectiveness of HSBC USA's internal control over financial reporting as of December 31, 2018. In making this assessment, management used the criteria related to internal control over financial reporting established by the Committee of Sponsoring Organizations of the Treadway Commission in "Internal Control-Integrated Framework (2013)."

Based on the assessment performed, management concluded that as of December 31, 2018, HSBC USA's internal control over financial reporting was effective.

Item 9B. Other Information

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 U.S. sanctions programs relating to Iran, terrorism, or the proliferation of weapons of mass destruction, even if those activities are not prohibited by U.S. law and are conducted outside the U.S. by non-U.S. affiliates in compliance with local laws and regulations.

To comply with this requirement, HSBC has requested relevant information from its affiliates globally. During the period covered by this Form 10-Q, HUSI did not engage in activities or transactions requiring disclosure pursuant to Section 13(r) other than those activities related to frozen accounts and transactions permitted under relevant U.S. sanction programs described under "Frozen Accounts and Transactions" below. The following activities conducted by our affiliates are disclosed in response to Section 13(r):

Loans in repayment Between 2001 and 2005, the Project and Export Finance division of the HSBC Group 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. The HSBC Group continued to seek repayment in accordance with its 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 United Kingdom, South Korea and Japan. The HSBC Group does not currently intend to extend any new loans. The HSBC Group 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, the HSBC Group provided guarantees to a number of its non-Iranian customers in Europe and the Middle East for various business activities in Iran. In a number of cases, the HSBC Group 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 the HSBC Group 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. The HSBC Group does not allocate direct costs to fees and commissions and, therefore, has not disclosed a separate net profit measure. The HSBC Group is seeking to cancel all relevant guarantees and counter indemnities and does 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 U.S.-sanctioned Iranian banks not covered elsewhere in this disclosure includes the following:

- The HSBC Group maintained an account in the United Kingdom for an Iranian-owned, U.K.-regulated financial institution during 2018. The account was generally no longer restricted under U.K. law, though the HSBC Group maintained restrictions on the account as a matter of policy. The HSBC Group exited this account in 2018. Estimated gross revenue in 2018 on this account, which includes fees and/or commissions, was approximately \$106,300.
- The HSBC Group acts as the trustee and administrator for a pension scheme involving eight employees of a U.S.-sanctioned Iranian bank in Hong Kong, two of whom joined the scheme during 2018. Under the rules of this scheme, the HSBC Group accepts contributions from the Iranian bank each month and allocates the funds into the pension accounts of the Iranian bank's employees. The HSBC Group runs and operates 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, the HSBC Group does not allocate direct costs to fees and commissions and, therefore, has not disclosed a separate net profit measure.

The HSBC Group has 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.

The HSBC Group currently intends 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 U.S. Executive Order 13382 The HSBC Group 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 The HSBC Group has 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. HSBC processed all these payments to the hospital made by its customer.

The HSBC Group maintains accounts for certain customers in the United Arab Emirates that, during 2018, received check payments from two entities owned by the Government of Iran.

The HSBC Group maintains accounts for certain customers in Europe and Asia that made payments to an Iranian-owned airline during 2018.

The HSBC Group maintains accounts for certain individual customers in Asia that have used HSBC credit cards to make travel-related payments to Iranian embassies during 2018.

The HSBC Group maintains 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 the HSBC Group during 2018.

Frozen accounts and transactions The HSBC Group and HSBC Bank USA (a subsidiary of HUSI) maintain several accounts that are frozen as a result of relevant sanctions programs, and safekeeping boxes and other similar custodial relationships, for which no activity, except as licensed or otherwise authorized, took place during 2018. There was no measurable gross revenue or net profit to the HSBC Group during 2018 relating to these frozen accounts.

PART III**Item 10. Directors, Executive Officers and Corporate Governance**

Omitted.

Item 11. Executive Compensation

Omitted.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Omitted.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Omitted.

Item 14. Principal Accounting Fees and Services

Audit Fees The aggregate amount billed by our principal accountant, PricewaterhouseCoopers LLP ("PwC"), for audit services performed during the fiscal years ended December 31, 2018 and 2017 was \$6,944,530 and \$5,973,138, respectively. Audit services include the auditing of financial statements, quarterly reviews, statutory audits, and the preparation of comfort letters, consents and review of registration statements.

Audit Related Fees The aggregate amount billed by PwC in connection with audit related services performed during the fiscal years ended December 31, 2018 and 2017 was \$2,369,000 and \$2,543,000, respectively. Audit related services include employee benefit plan audits, and audit or attestation services not required by statute or regulation.

Tax Fees The aggregate amount billed by PwC for tax related services performed during the fiscal years ended December 31, 2018 and 2017 was \$14,000 and \$14,000, respectively. These services include tax related research, general tax services in connection with transactions and legislation and tax services for review of Federal tax accounts in relation to the computation of associated interest.

All Other Fees The aggregate amount billed by PwC for other services performed during the fiscal years ended December 31, 2018 and 2017 was nil and nil, respectively.

All of the fees described above were approved by HSBC USA's Audit Committee.

The Audit Committee has a written policy that requires pre-approval of all services to be provided by PwC, including audit, audit-related, tax and all other services. Pursuant to the policy, the Audit Committee annually pre-approves the audit fee and terms of the audit services engagement. The Audit Committee also approves a specified list of audit, audit-related, tax and permissible non-audit services deemed to be routine and recurring services. Any service not included on this list must be submitted to the Audit Committee for pre-approval. On an interim basis, any proposed engagement that does not fit within the definition of a pre-approved service may be presented to the Chair of the Audit Committee for approval and to the full Audit Committee at its next regular meeting.

PART IV**Item 15. Exhibits and Financial Statements Schedules****(a)(1) Financial Statements**

The consolidated financial statements listed below, together with an opinion of PWC dated February 19, 2019 with respect thereto, are included in this Form 10-K pursuant to Item 8. Financial Statements and Supplementary Data of this Form 10-K.

HSBC USA Inc. and Subsidiaries:

Report of Independent Registered Public Accounting Firm

Consolidated Statement of Income (Loss)

Consolidated Statement of Comprehensive Income (Loss)

Consolidated Balance Sheet

Consolidated Statement of Changes in Equity

Consolidated Statement of Cash Flows

Notes to Financial Statements

Selected Quarterly Financial Data (Unaudited)

(a)(2) Not applicable.**(a)(3) Exhibits**

- 3(i) Articles of Incorporation and amendments and supplements thereto (incorporated by reference to Exhibit 3(a) to HSBC USA Inc.'s Annual Report on Form 10-K for the year ended December 31, 1999, Exhibit 3 to HSBC USA Inc.'s Quarterly Report on Form 10-Q for the quarter ended September 30, 2000, Exhibit 3.2 to HSBC USA Inc.'s Current Report on Form 8-K filed April 4, 2005, Exhibit 3.3 to HSBC USA Inc.'s Current Report on Form 8-K filed April 4, 2005, Exhibit 3.2 to HSBC USA Inc.'s Current Report on Form 8-K filed October 14, 2005, Exhibit 3.2 to HSBC USA Inc.'s Current Report on Form 8-K filed May 22, 2006 and Exhibit 3.2 to HSBC USA Inc.'s Current Report on Form 8-K filed on May 31, 2016).
- 3(ii) Bylaws of HSBC USA Inc., as Amended and Restated effective July 24, 2018 (incorporated by reference to Exhibit 3.2 to HSBC USA Inc.'s Current Report on Form 8-K filed July 26, 2018).
- 4.1 Senior Indenture, dated as of March 31, 2009, by and between HSBC USA Inc. and Wells Fargo Bank, National Association, as trustee, as amended and supplemented (incorporated by reference to Exhibit 4.1 to HSBC USA Inc.'s Registration Statement on Form S-3, Registration No. 333-158358, Exhibit 4.2 to HSBC USA Inc.'s Registration Statement on Form S-3, Registration No. 333-180289 and Exhibit 4.3 to HSBC USA Inc.'s Registration Statement on Form S-3, Registration No. 333-202524).
- 4.2 Subordinated Indenture, dated as of October 24, 1996, by and between HSBC USA Inc. and Deutsche Bank Trust Companies Americas (as successor in interest to Bankers Trust Company), as trustee, as amended and supplemented (incorporated by reference to Exhibits 4.3, 4.4, 4.5 and 4.6 to Post-Effective Amendment No. 1 to HSBC USA Inc.'s Registration Statement on Form S-3, Registration No. 333-42421 and Exhibit 4.1 to HSBC USA Inc.'s Current Report on Form 8-K filed September 27, 2010).
- 4.3 Warrant Indenture, dated as of May 16, 2016, by and between HSBC USA Inc. and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.31 to Post-Effective Amendment No. 1 to HSBC USA Inc.'s Registration Statement on Form S-3, Registration No. 333-202524).
- 4.4 Other instruments defining the rights of holders of long-term debt of HSBC USA Inc. and its consolidated subsidiaries are not being filed herewith since the total amount of securities authorized under each such instrument does not exceed 10 percent of the total assets of HSBC USA Inc. and its subsidiaries on a consolidated basis. HSBC USA Inc. agrees that it will furnish a copy of any such instrument to the Securities and Exchange Commission upon request.
- 23 Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm.
- 24 Power of Attorney (included on the signature page of this Form 10-K).
- 31 Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
- 32 Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

101.INS XBRL Instance Document⁽¹⁾

101.SCH XBRL Taxonomy Extension Schema Document⁽¹⁾
101.CAL XBRL Taxonomy Extension Calculation Linkbase Document⁽¹⁾
101.DEF XBRL Taxonomy Extension Definition Linkbase Document⁽¹⁾
101.LAB XBRL Taxonomy Extension Label Linkbase Document⁽¹⁾
101.PRE XBRL Taxonomy Extension Presentation Linkbase Document⁽¹⁾

⁽¹⁾ Pursuant to Rule 405 of Regulation S-T, includes the following financial information included in our Annual Report on Form 10-K for the year ended December 31, 2018, formatted in eXtensible Business Reporting Language ("XBRL") interactive data files: (i) the Consolidated Statement of Income (Loss) for the years ended December 31, 2018, 2017 and 2016, (ii) the Consolidated Statement of Comprehensive Income (Loss) for the years ended December 31, 2018, 2017 and 2016, (iii) the Consolidated Balance Sheet at December 31, 2018 and 2017, (iv) the Consolidated Statement of Changes in Equity for the years ended December 31, 2018, 2017 and 2016, (v) the Consolidated Statement of Cash Flows for the years ended December 31, 2018, 2017 and 2016, and (vi) the Notes to Consolidated Financial Statements.

Item 16. Form 10-K Summary

Omitted.

Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, HSBC USA Inc. has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized on this the 19th day of February 2019.

HSBC USA INC.

By: /s/ PATRICK J. BURKE

Patrick J. Burke

President and Chief Executive Officer

Each person whose signature appears below constitutes and appoints L. P. Zielinski as his/her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him/her in his/her name, place and stead, in any and all capacities, to sign and file, with the Securities and Exchange Commission, this Form 10-K and any and all amendments and exhibits thereto, and all documents in connection therewith, granting unto each such attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as he/she might or could do in person, hereby ratifying and confirming all that such attorneys-in-fact and agents or their substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of HSBC USA Inc. and in the capacities indicated on this the 19th day of February 2019.

Signature	Title
<u>/s/ P. J. BURKE</u> (P. J. Burke)	President, Chief Executive Officer, Chairman and Director (as Principal Executive Officer)
<u>/s/ P. D. AMEEN</u> (P. D. Ameen)	Director
<u>/s/ K. M. BLAKELY</u> (K. M. Blakely)	Director
<u>/s/ R. H. COX</u> (R. H. Cox)	Executive Director
<u>/s/ B. F. KROEGER</u> (B. F. Kroeger)	Director
<u>/s/ N. G. MISTRETTA</u> (N. G. Mistretta)	Director
<u>/s/ B. ROBERTSON</u> (B. Robertson)	Director
<u>/s/ J. C. SHERBURNE</u> (J. C. Sherburne)	Director
<u>/s/ T. K. WHITFORD</u> (T. K. Whitford)	Director
<u>/s/ M. A. ZAESKE</u> (M. A. Zaeske)	Senior Executive Vice President and Chief Financial Officer (as Principal Financial Officer)
<u>/s/ W. TABAKA</u> (W. Tabaka)	Executive Vice President and Chief Accounting Officer (as Principal Accounting Officer)

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statement on Form S-3 (No. 333-223208) of HSBC USA Inc. of our report dated February 19, 2019 relating to the financial statements, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
New York, New York
February 19, 2019

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

Certification of Chief Executive Officer

I, Patrick J. Burke, certify that:

1. I have reviewed this report on Form 10-K of HSBC USA Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 19, 2019

/s/ PATRICK J. BURKE

Patrick J. Burke

Chairman of the Board, President
and Chief Executive Officer

Certification of Chief Financial Officer

I, Mark A. Zaeske, certify that:

1. I have reviewed this report on Form 10-K of HSBC USA Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 19, 2019

/s/ MARK A. ZAESKE

Mark A. Zaeske

Senior Executive Vice President and
Chief Financial Officer

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

**Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002**

The certification set forth below is being submitted in connection with the HSBC USA Inc. (the “Company”) Annual Report on Form 10-K for the period ending December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the “Report”) for the purpose of complying with Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934 (the “Exchange Act”) and Section 1350 of Chapter 63 of Title 18 of the United States Code.

I, Patrick J. Burke, certify that:

1. the Report fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act; and
2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of HSBC USA Inc.

Date: February 19, 2019

/s/ PATRICK J. BURKE

Patrick J. Burke

Chairman of the Board, President
and Chief Executive Officer

This certification accompanies each Report pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not, except to the extent required by the Sarbanes-Oxley Act of 2002, be deemed filed by HSBC USA Inc. for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

The signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to HSBC USA Inc. and will be retained by HSBC USA Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

**Certification pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002**

The certification set forth below is being submitted in connection with the HSBC USA Inc. (the "Company") Annual Report on Form 10-K for the period ending December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the "Report") for the purpose of complying with Rule 13a-14(b) or Rule 15d-14(b) of the Securities Exchange Act of 1934 (the "Exchange Act") and Section 1350 of Chapter 63 of Title 18 of the United States Code.

I, Mark A. Zaeske, certify that:

1. the Report fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act; and
2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of HSBC USA Inc.

Date: February 19, 2019

/s/ MARK A. ZAESKE

Mark A. Zaeske

Senior Executive Vice President and
Chief Financial Officer

This certification accompanies each Report pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not, except to the extent required by the Sarbanes-Oxley Act of 2002, be deemed filed by HSBC USA Inc. for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

The signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to HSBC USA Inc. and will be retained by HSBC USA Inc. and furnished to the Securities and Exchange Commission or its staff upon request.