| 会社名 | バンク・オブ・アメリカ・コーポレーション <br> （Bank of America Corporation） |
| :---: | :---: |
| 代表者名 | ブライアン・T・モイニハン |
|  | （Brian T．Moynihan） |
|  | 取締役会会長兼最高経営責任者 |
|  | （Chairman of the Board and Chief Executive Officer） |
| （コード番号 | 8648 東証第一部外国株） |
| 問合せ先 | 東京都港区元赤坂一丁目 2 番 7 号 |
|  | 赤坂Kタワー |
|  | アンダーソン・毛利•友常法律事務所 |
|  | 弁護士 田中 収／弁護士 吉井 一浩 |
|  | TEL 03－6888－1000 |

## 米国証券取引委員会への Form 8－K の提出

バンク・オブ・アメリカ・コーポレーションは，2016年8月1日付で，米国証券取引委員会に事業 セグメントの組替えに係る Form 8－K を提出いたしました。内容については，添付をご参照ください。

# UNITED STATES SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549 

## FORM 8-K

CURRENT REPORT
PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Date of Report (Date of earliest event reported):
August 1, 2016

# BANK OF AMERICA CORPORATION <br> (Exact name of registrant as specified in its charter) 

Delaware
(State or Other Jurisdiction of Incorporation)

1-6523
(Commission File Number)

56-0906609
(IRS Employer Identification No.)

100 North Tryon Street
Charlotte, North Carolina 28255
(Address of principal executive offices)
(704) 386-5681
(Registrant's telephone number, including area code)
Not Applicable
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
$\square \quad$ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

## ITEM 8.01. OTHER EVENTS.

From time to time, Bank of America Corporation (the Corporation) has indicated that it may reclassify its business segment results based on, among other things, changes in its organizational alignment. In the Corporation's Annual Report on Form 10K for the year ended December 31, 2015, the Corporation reported its results of operations through five business segments: Consumer Banking, Global Wealth \& Investment Management, Global Banking, Global Markets and Legacy Assets \& Servicing, with the remaining operations recorded in All Other. Effective April 1, 2016, to align the segments with how the Corporation manages the businesses, the Corporation changed its basis of presentation to eliminate the Legacy Assets \& Servicing segment, and following such change, the Corporation reports its results of operations through the following four business segments: Consumer Banking, Global Wealth \& Investment Management, Global Banking and Global Markets, with the remaining operations recorded in All Other.

The Corporation, in connection with the aforementioned realignment of its business segments, completed a review of all consumer real estate-secured lending and servicing activities within Legacy Assets \& Servicing, Consumer Banking, Global Wealth \& Investment Management and All Other with a view to strategically align the business activities and loans, including loans serviced for others, into core and non-core categories, with core loans reflected on the balance sheet of the appropriate business segment and non-core loans, which are principally run-off portfolios, exclusively on the balance sheet of All Other. The analysis was performed on the basis of loan and customer characteristics such as origination date, product type, loan-tovalue, FICO score and delinquency status consistent with our current consumer and mortgage servicing strategy. Generally, loans that were originated after January 1, 2010, qualified under government-sponsored enterprise underwriting guidelines, or otherwise met our underwriting guidelines in place in 2015 are characterized as core loans. Loans held in legacy private-label securitizations, government insured loans originated prior to 2010, loan products no longer originated, and loans originated prior to 2010 and classified as nonperforming or modified in a troubled debt restructuring prior to 2016 are generally characterized as non-core loans. The segment realignment resulted in a net $\$ 23$ billion and $\$ 1$ billion increase in consumer real estate loans held on the balance sheet of Consumer Banking and All Other, respectively, as of April 1, 2016. In addition, the revenue, credit costs and expenses related to the core and non-core loans, both owned and serviced for others, have been realigned to the appropriate business segment or All Other. Certain other normal, recurring adjustments were also made to the segment presentation; such amounts were not significant. Prior period balances and related metrics have been reclassified to conform to these revised classifications.

This Current Report on Form 8-K and the exhibits hereto update the business segment information presented in the Annual Report to the extent this information is impacted by the revised business segment reporting methodology. Additionally, this Current Report on Form 8-K and the exhibits hereto update the Annual Report to reflect the classification of certain leases into other assets. Portions of the following items from the Annual Report have been updated to reflect the revised presentation:

- Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations (filed as Exhibit 99.1 and incorporated herein by reference).
- Part II, Item 8. Financial Statements and Supplementary Data (filed as Exhibit 99.2 and incorporated herein by reference).


## ITEM 9.01. FINANCIAL STATEMENTS AND EXHIBITS.

(d) Exhibits.

EXHIBIT NO. DESCRIPTION OF EXHIBIT

| 23 | Consent of PricewaterhouseCoopers LLP |
| :---: | :--- |
| 99.1 | Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations |
| 99.2 | Part II, Item 8. Financial Statements and Supplementary Data |
| 101.INS | XBRL Instance Document |
| 101.SCH | XBRL Taxonomy Extension Schema Document |
| 101.CAL | XBRL Taxonomy Extension Calculation Linkbase Document |
| 101.LAB | XBRL Taxonomy Extension Label Linkbase Document |
| 101.PRE | XBRL Taxonomy Extension Presentation Linkbase Document |
| 101.DEF | XBRL Taxonomy Extension Definitions Linkbase Document |

## SIGNATURES

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

## BANK OF AMERICA CORPORATION

By: $\quad$ /s/ Rudolf A. Bless
Name: Rudolf A. Bless
Title: Chief Accounting Officer
Dated: August 1, 2016

## INDEX TO EXHIBITS

EXHIBIT NO. DESCRIPTION OF EXHIBIT

| 23 | Consent of PricewaterhouseCoopers LLP |
| :---: | :--- |
| 99.1 | Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations |
| 99.2 | Part II, Item 8. Financial Statements and Supplementary Data |
| 101.INS | XBRL Instance Document |
| 101.SCH | XBRL Taxonomy Extension Schema Document |
| 101.CAL | XBRL Taxonomy Extension Calculation Linkbase Document |
| 101.LAB | XBRL Taxonomy Extension Label Linkbase Document |
| 101.PRE | XBRL Taxonomy Extension Presentation Linkbase Document |
| 101.DEF | XBRL Taxonomy Extension Definitions Linkbase Document |

## CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in:

- the Registration Statement on Form S-3 (No. 333-202354);
- the Registration Statements on Form S-8 (Nos. 333-212376; 333-204453; 333-198405; 333-157085; 333-133566; 333-121513; 333-102043; 333-02875; 333-167797; 333-153771; 333-149204; and 333-60553)
of Bank of America Corporation of our report dated February 24, 2016, except with respect to our opinion on the Consolidated Financial Statements insofar as it relates to the effects of changes in segments discussed in Note 1, for which the date is August 1, 2016, relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Current Report on Form 8-K.


Charlotte, North Carolina
August 1, 2016

## Table of Contents

|  | Page |
| :--- | ---: |
| Executive Summary | 3 |
| Recent Events | 4 |
| Financial Highlights | 6 |
| Balance Sheet Overview | 9 |
| Supplemental Financial Data | 12 |
| Business Segment Operations | 14 |
| Consumer Banking | 16 |
| Global Wealth \& Investment Management | 20 |
| Global Banking | 22 |
| Global Markets | 24 |
| All Other | 24 |
| Off-Balance Sheet Arrangements and Contractual Obligations | 26 |
| Managing Risk | 27 |
| Strategic Risk Management | 30 |
| Capital Management | 34 |
| Liquidity Risk | 34 |
| Credit Risk Management | 41 |
| Consumer Portfolio Credit Risk Management | 46 |
| Commercial Portfolio Credit Risk Management | 47 |
| Non-U.S. Portfolio | 58 |
| Provision for Credit Losses | 67 |
| Allowance for Credit Losses | 69 |
| Market Risk Management | 69 |
| Trading Risk Management | 69 |
| Interest Rate Risk Management for Non-trading Activities | 73 |
| Mortgage Banking Risk Management | 74 |
| Compliance Risk Management | $\mathbf{7 8}$ |
| Operational Risk Management | 80 |
| Reputational Risk Management | 80 |
| Complex Accounting Estimates | 80 |
| 2014 Compared to 2013 | 81 |
| Overview | 86 |
| Business Segment Operations | 86 |
| Statistical Tables | 89 |

## Management's Discussion and Analysis of Financial Condition and Results of Operations

This report, the documents that it incorporates by reference and the documents into which it may be incorporated by reference may contain, and from time to time Bank of America Corporation (collectively with its subsidiaries, the Corporation) and its management may make certain statements that constitute forwardlooking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements can be identified by the fact that they do not relate strictly to historical or current facts. Forward-looking statements often use words such as "anticipates,""targets," "expects," "hopes,""estimates,""intends," "plans," "goals," "believes," "continue," "suggests" and other similar expressions or future or conditional verbs such as "will," "may," "might," "should," "would" and "could." Forward-looking statements represent the Corporation's current expectations, plans or forecasts of its future results and revenues, and future business and economic conditions more generally, and other future matters. These statements are not guarantees of future results or performance and involve certain known and unknown risks, uncertainties and assumptions that are difficult to predict and are often beyond the Corporation's control. Actual outcomes and results may differ materially from those expressed in, or implied by, any of these forward-looking statements.

You should not place undue reliance on any forward-looking statement and should consider the following uncertainties and risks, as well as the risks and uncertainties more fully discussed elsewhere in this report, including under Item 1A. Risk Factors of the Corporation's 2015 Annual Report on Form 10-K and in any of the Corporation's subsequent Securities and Exchange Commission filings: the Corporation's ability to resolve representations and warranties repurchase and related claims, including claims brought by investors or trustees seeking to distinguish certain aspects of the ACE Securities Corp. v. DB Structured Products, Inc. (ACE) decision or to assert other claims seeking to avoid the impact of the ACE decision; the possibility that the Corporation could face servicing, securities, fraud, indemnity, contribution or other claims from one or more counterparties, including trustees, purchasers of loans, underwriters, issuers, other parties involved in securitizations, monolines or private-label and other investors; the possibility that future representations and warranties losses may occur in excess of the Corporation's recorded liability and estimated range of possible loss for its representations and warranties exposures; the possibility that the Corporation may not collect mortgage insurance claims; potential claims, damages, penalties, fines and reputational damage resulting from pending or future litigation and regulatory
proceedings, including the possibility that amounts may be in excess of the Corporation's recorded liability and estimated range of possible losses for litigation exposures; the possible outcome of LIBOR, other reference rate and foreign exchange inquiries and investigations; uncertainties about the financial stability and growth rates of non-U.S. jurisdictions, the risk that those jurisdictions may face difficulties servicing their sovereign debt, and related stresses on financial markets, currencies and trade, and the Corporation's exposures to such risks, including direct, indirect and operational; the impact of U.S. and global interest rates, currency exchange rates and economic conditions; the possibility that future credit losses may be higher than currently expected due to changes in economic assumptions, customer behavior and other uncertainties; the impact on the Corporation's business, financial condition and results of operations of a potential higher interest rate environment; the impact on the Corporation's business, financial condition and results of operations from a protracted period of lower oil prices; adverse changes to the Corporation's credit ratings from the major credit rating agencies; estimates of the fair value of certain of the Corporation's assets and liabilities; uncertainty regarding the content, timing and impact of regulatory capital and liquidity requirements, including the potential adoption of total lossabsorbing capacity requirements; the potential for payment protection insurance exposure to increase as a result of Financial Conduct Authority actions; the possible impact of Federal Reserve actions on the Corporation's capital plans; the impact of implementation and compliance with new and evolving U.S. and international regulations, including, but not limited to, recovery and resolution planning requirements, the Volcker Rule, and derivatives regulations; a failure in or breach of the Corporation's operational or security systems or infrastructure, or those of third parties, including as a result of cyber attacks and other similar matters

Forward-looking statements speak only as of the date they are made, and the Corporation undertakes no obligation to update any forward-looking statement to reflect the impact of circumstances or events that arise after the date the forward-looking statement was made.

Notes to the Consolidated Financial Statements referred to in the Management's Discussion and Analysis of Financial Condition and Results of Operations (MD\&A) are incorporated by reference into the MD\&A. Certain prior-year amounts have been reclassified to conform to current-year presentation. Throughout the MD\&A, the Corporation uses certain acronyms and abbreviations which are defined in the Glossary.

## Executive Summary

## Business Overview

The Corporation is a Delaware corporation, a bank holding company (BHC) and a financial holding company. When used in this report, "the Corporation" may refer to Bank of America Corporation individually, Bank of America Corporation and its subsidiaries, or certain of Bank of America Corporation's subsidiaries or affiliates. Our principal executive offices are located in Charlotte, North Carolina. Through our banking and various nonbank subsidiaries throughout the U.S. and in international markets, we provide a diversified range of banking and nonbank financial services and products. We operate our banking activities primarily under the Bank of America, National Association (Bank of America, N.A. or BANA) charter. At December 31, 2015, the Corporation had approximately $\$ 2.1$ trillion in assets and approximately 213,000 full-time equivalent employees.

In the Annual Report on Form 10-K for the year ended December 31, 2015, we reported our results of operations through five business segments: Consumer Banking, Global Wealth \& Investment Management (GWIM), Global Banking, Global Markets and Legacy Assets \& Servicing (LAS), with the remaining operations recorded in All Other. Effective April 1, 2016, to align the segments with how we manage our businesses, we changed our basis of presentation to eliminate the LAS segment, and following such change, we report our results of operations through the following four business segments: Consumer Banking, GWIM, Global Banking and Global Markets, with the remaining operations recorded in All Other. Consumer real estate loans, including loans previously held in or serviced by LAS, have been designated as either core or non-core based on criteria described in Business Segment Operations on page 14. Following the realignment, core loans owned by the Corporation, which include all loans originated after the realignment, are held in the Consumer Banking and GWIM segments. Non-core loans owned by the Corporation, which are principally run-off portfolios, as well as loans held for asset and liability management (ALM) activities, are held in All Other. Mortgage servicing rights (MSRs) pertaining to core and non-core loans serviced for others are held in Consumer Banking and All Other, respectively. Prior periods have been reclassified to conform to current period presentation.

As of December 31, 2015, we operated in all 50 states, the District of Columbia, the U.S. Virgin Islands, Puerto Rico and more than 35 countries. Our retail banking footprint covers approximately 80 percent of the U.S. population, and we serve approximately 47 million consumer and small business relationships with approximately 4,700 retail financial centers, approximately 16,000 ATMs, nationwide call centers, and leading online and mobile banking platforms (www.bankofamerica.com). We offer industry-leading support to approximately three million small business owners. Our wealth management businesses, with client balances of nearly $\$ 2.5$ trillion, provide tailored solutions to meet client needs through a full set of investment management, brokerage, banking, trust and retirement products. We are a global leader in corporate and investment banking and trading across a broad range of asset classes serving corporations, governments, institutions and individuals around the world.

## 2015 Economic and Business Environment

In the U.S., the economy grew in 2015 for the seventh consecutive year. Following a soft start to the year partly reflecting severe winter weather and other temporary factors, economic growth picked up mid-year before a mild deceleration near year end. While economic growth struggled to reach two percent in the year, the labor market continued to improve. Payroll gains were solid, while the unemployment rate fell to five percent late in the year. With steady employment gains and continued low oil prices, consumer spending increased at a strong pace for most of the year and residential construction gained momentum. Core inflation (which excludes certain items which may be subject to frequent volatile price changes, like food and energy) remained relatively unchanged in 2015, more than half a percentage point below the Board of Governors of the Federal Reserve System's (Federal Reserve) longer-term target of two percent. Inflation was suppressed by falling energy costs.
U.S. household net worth rose for a seventh consecutive year, but at a slower pace in 2015. After a modest first half of the year, home prices rebounded in the second half of 2015 and rose more than five percent in 2015, while equity markets registered little net change. With energy costs continuing to decline in 2015, the consumer spending outlook remained positive, although the negative impacts on energy-related investments hurt the manufacturing economy and continued to impact financial markets. With the sharp U.S. Dollar appreciation in late 2014 and 2015, export gains slowed, further weakening manufacturing, while import growth was steady, resulting in a decline in net exports and a negative impact on 2015 gross domestic product growth.
U.S. Treasury yields were unstable, but rose modestly over the course of the year, as a rate hike from the Federal Reserve neared. At its final meeting of the year, the Federal Open Market Committee (FOMC) raised its target range for the Federal funds rate by 25 basis points (bps), its first rate increase in over nine years. At the same time, the Federal Reserve repeated its expectation that policy would be normalized gradually, and would remain accommodative for the foreseeable future. Amid the contrast between U.S. tightening of monetary policy versus the easing of monetary policy in much of the world, the U.S. Dollar appreciated significantly over the year, especially against emerging market and commodity-oriented currencies.

Internationally, the eurozone continued to grow modestly in 2015, as the European Central Bank (ECB) began a program of significant purchases of sovereign debt, helping to keep bond yields low and to maintain stability in southern European markets. Core inflation in the eurozone stabilized early and then edged higher over the year. The Euro/U.S. Dollar exchange rate continued to decline early in the year driven by the differing directions of U.S. and eurozone monetary policies, further boosting European competitiveness. However, the eurozone remains vulnerable to economic slowing in emerging markets. Late in the year, the ECB extended its horizon for bond purchases, but failed to increase their size.

Economic growth was slow and uncertain in Japan, while the 2014 gains in core inflation were reversed. Declining energy costs continued to hurt Russia's economy, which remained in recession for 2015. Brazil's recession also continued, aggravated by extreme policy uncertainty. Amid continued gradual economic moderation, China eased monetary policy during the year, but continued its focus on longer-run issues including increasing its focus on rebalancing the economy and encouraging consumer spending.

## Recent Events

## Settlement with Bank of New York Mellon

The final conditions of the settlement with the Bank of New York Mellon (BNY Mellon) have been satisfied and, accordingly, the Corporation made the settlement payment of $\$ 8.5$ billion in February 2016. The settlement payment was previously fully reserved. Pursuant to the settlement agreement, allocation and distribution of the $\$ 8.5$ billion settlement payment is the responsibility of the residential mortgage-backed securities (RMBS) trustee, BNY Mellon. On February 5, 2016, BNY Mellon filed an Article 77 proceeding in the New York County Supreme Court asking the court for instruction with respect to certain issues concerning the distribution of each trust's allocable share of the settlement payment and asking that the settlement payment be ordered to be held in escrow pending the outcome of this Article 77 proceeding. The Corporation is not a party to this proceeding. For additional information, see Off-Balance Sheet Arrangements and Contractual Obligations on page 27.

## Capital Management

During 2015, we repurchased approximately $\$ 2.4$ billion of common stock, with an average price of $\$ 16.92$ per share, in connection with our 2015 Comprehensive Capital Analysis and Review (CCAR) capital plan, which included a request to repurchase $\$ 4.0$ billion of common stock over five quarters beginning in the second quarter of 2015, and to maintain the quarterly common stock dividend at the current rate of $\$ 0.05$ per share.

Based on the conditional non-objection we received from the Federal Reserve on our 2015 CCAR submission, we were required to resubmit our CCAR capital plan by September 30, 2015 and address certain weaknesses the Federal Reserve identified in our capital planning process. We have established plans and taken actions which addressed the identified weaknesses, and we resubmitted our CCAR capital plan on September 30, 2015. The Federal Reserve announced that it did not object to our resubmitted CCAR capital plan on December 10, 2015.

As an Advanced approaches institution, under Basel 3, we were required to complete a qualification period (parallel run) to demonstrate compliance with the Basel 3 Advanced approaches capital framework to the satisfaction of U.S. banking regulators. We received approval to begin using the Advanced approaches capital framework to determine risk-based capital requirements beginning in the fourth quarter of 2015. As previously disclosed, with the approval to exit parallel run, U.S. banking regulators requested modifications to certain internal analytical models including the wholesale (e.g., commercial) credit models. All
requested modifications were incorporated, which increased our risk-weighted assets, and are reflected in the risk-based ratios in the fourth quarter of 2015. Having exited parallel run on October 1, 2015, we are required to report regulatory risk-based capital ratios and risk-weighted assets under both the Standardized and Advanced approaches. The approach that yields the lower ratio is used to assess capital adequacy including under the Prompt Corrective Action (PCA) framework and was the Advanced approaches in the fourth quarter of 2015. For additional information, see Capital Management on page 34.

## Trust Preferred Securities

On December 29, 2015, the Corporation provided notice of the redemption on January 29, 2016 of all trust preferred securities of Merrill Lynch Preferred Capital Trust III, Merrill Lynch Preferred Capital Trust IV and Merrill Lynch Preferred Capital Trust V (the Trust Preferred Securities). In connection with the Corporation's acquisition of Merrill Lynch \& Co., Inc. in 2009, the Corporation recorded a discount to par value as purchase accounting adjustments associated with the Trust Preferred Securities. The Corporation recorded a $\$ 612$ million charge to net interest income related to the discount on these securities.

## New Accounting Guidance on Recognition and Measurement of Financial Instruments

In January 2016, the Financial Accounting Standards Board (FASB) issued new accounting guidance on recognition and measurement of financial instruments. The Corporation has early adopted, retrospective to January 1, 2015, the provision that requires the Corporation to present unrealized gains and losses resulting from changes in the Corporation's own credit spreads on liabilities accounted for under the fair value option (referred to as debit valuation adjustments, or DVA) in accumulated other comprehensive income ( OCl ). The impact of the adoption was to reclassify, as of January 1, 2015, unrealized DVA losses of \$2.0 billion pretax ( $\$ 1.2$ billion after tax) from retained earnings to accumulated OCI. Further, pretax unrealized DVA gains of \$301 million, $\$ 301$ million and $\$ 420$ million were reclassified from other income to accumulated OCI for the third, second and first quarters of 2015, respectively. This had the effect of reducing net income as previously reported for the aforementioned quarters by $\$ 187$ million, $\$ 186$ million and $\$ 260$ million, or approximately $\$ 0.02$ per share in each quarter. This change is reflected in consolidated results and the Global Markets segment results. Results for 2014 were not subject to restatement under the provisions of the new accounting guidance.

## Selected Financial Data

Table 1 provides selected consolidated financial data for 2015 and 2014.

Table 1 Selected Financial Data

| (Dollars in millions, except per share information) |  | 2015 |  | 2014 |
| :---: | :---: | :---: | :---: | :---: |
| Income statement |  |  |  |  |
| Revenue, net of interest expense (FTE basis) ${ }^{(1)}$ |  | 83,940 | \$ | 85,637 |
| Net income |  | 15,888 |  | 4,833 |
| Diluted earnings per common share |  | 1.31 |  | 0.36 |
| Dividends paid per common share |  | 0.20 |  | 0.12 |
| Performance ratios |  |  |  |  |
| Return on average assets |  | 0.74\% |  | 0.23\% |
| Return on average tangible common shareholders' equity (1) |  | 9.11 |  | 2.52 |
| Efficiency ratio (FTE basis) ${ }^{(1)}$ |  | 68.78 |  | 88.35 |
| Balance sheet at year end |  |  |  |  |
| Total loans and leases ${ }^{(2)}$ |  | 896,983 |  | 876,104 |
| Total assets |  | 2,144,316 |  | ,104,534 |
| Total deposits |  | 1,197,259 |  | ,118,936 |
| Total common shareholders' equity |  | 233,932 |  | 224,162 |
| Total shareholders' equity |  | 256,205 |  | 243,471 |

 measures differently. For additional information, see Supplemental Financial Data on page 12, and for corresponding reconciliations to GAAP financial measures, see Statistical Table XIII.
${ }^{(2)}$ The Corporation classifies certain leases in other assets. Previously these leases were classified in loans and leases. For December 31,2015 and 2014 , $\$ 6.0$ billion and $\$ 5.3$ billion of these leases were reclassified from loans and leases to other assets to conform to this presentation.

## Financial Highlights

Net income was $\$ 15.9$ billion, or $\$ 1.31$ per diluted share in 2015 compared to $\$ 4.8$ billion, or $\$ 0.36$ per diluted share in 2014 . The results for 2015 compared to 2014 were primarily driven by a decrease of $\$ 15.2$ billion in litigation expense, as well as decreases in all other noninterest expense categories, partially offset by a decline in net interest income on a fully taxableequivalent (FTE) basis, higher provision for credit losses and lower revenue. Included in net interest income on an FTE basis was a charge related to the discount on certain trust preferred securities of $\$ 612$ million in 2015, as well as a negative market-related adjustment on debt securities of $\$ 296$ million compared to a negative market-related adjustment of $\$ 1.1$ billion in 2014.

Total assets increased $\$ 39.8$ billion from December 31, 2014 to $\$ 2.1$ trillion at December 31, 2015 primarily driven by an increase in debt securities due to the deployment of deposit inflows, an increase in loans driven by strong demand for commercial loans outpacing consumer loan sales and run-off, and higher cash and cash equivalents from strong deposit inflows. Total liabilities increased $\$ 27.0$ billion from December 31, 2014 to $\$ 1.9$ trillion at December 31, 2015 primarily driven by an increase in deposits, partially offset by declines in securities loaned or sold under agreements to repurchase, trading account liabilities and long-term debt. During 2015, we returned $\$ 5.9$ billion in capital to shareholders through common and preferred stock dividends and share repurchases. For more information on the balance sheet, see Executive Summary - Balance Sheet Overview on page 9.

From a capital management perspective, during 2015, we maintained our strong capital position with Common equity tier 1 capital of $\$ 163.0$ billion, risk-weighted assets of $\$ 1,602$ billion and a Common equity tier 1 capital ratio of 10.2 percent at December 31, 2015 as measured under the Basel 3 Advanced Transition. On September 3, 2015, we received approval to exit parallel run and begin using the Basel 3 Advanced approaches capital framework to determine risk-based capital requirements in the fourth quarter of 2015. The Corporation's transitional supplementary leverage ratio (SLR) was 6.6 percent and 6.2 percent at December 31, 2015 and 2014, both above the 5.0 percent required minimum. Our Global Excess Liquidity Sources were $\$ 504$ billion with time-to-required funding at 39 months at December 31, 2015 compared to $\$ 439$ billion and 39 months at December 31, 2014. For additional information, see Capital Management on page 34 and Liquidity Risk on page 41.

Table 2 Summary Income Statement

| (Dollars in millions) | 2015 |  | 2014 |  |
| :---: | :---: | :---: | :---: | :---: |
| Net interest income (FTE basis) ${ }^{(1)}$ | \$ | 39,989 | \$ | 40,640 |
| Noninterest income |  | 43,951 |  | 44,997 |
| Total revenue, net of interest expense (FTE basis) ${ }^{(1)}$ |  | 83,940 |  | 85,637 |
| Provision for credit losses |  | 3,161 |  | 2,275 |
| Noninterest expense |  | 57,735 |  | 75,657 |
| Income before income taxes (FTE basis) ${ }^{(1)}$ |  | 23,044 |  | 7,705 |
| Income tax expense (FTE basis) ${ }^{(1)}$ |  | 7,156 |  | 2,872 |
| Net income |  | 15,888 |  | 4,833 |
| Preferred stock dividends |  | 1,483 |  | 1,044 |
| Net income applicable to common shareholders | \$ | 14,405 | \$ | 3,789 |

Per common share information

| Earnings | $\$$ | 1.38 | $\$$ | 0.36 |
| :--- | :--- | :--- | :--- | :--- |
| Diluted |  | 1.31 |  | 0.36 |

1) FTE basis is a non-GAAP financial measure. For more information on this measure, see Supplemental Financial Data on page 12, and for a corresponding reconciliation to GAAP financial measures, see Statistical Table XIII.

## Net Interest Income

Net interest income on an FTE basis decreased $\$ 651$ million to $\$ 40.0$ billion in 2015 compared to 2014 . The net interest yield on an FTE basis decreased five bps to 2.19 percent for 2015. These declines were primarily driven by lower loan yields and consumer loan balances, as well as a charge of $\$ 612$ million in 2015 related to the discount on certain trust preferred securities, partially offset by a $\$ 785$ million improvement in market-related adjustments on debt securities, lower funding costs, higher tradingrelated net interest income, lower rates paid on deposits and commercial loan growth. Market-related adjustments on debt securities resulted in an expense of $\$ 296$ million in 2015 compared to an expense of $\$ 1.1$ billion in 2014. Negative marketrelated adjustments on debt securities were primarily due to the acceleration of premium amortization on debt securities as the decline in long-term interest rates shortened the estimated lives of mortgage-related debt securities. Also included in marketrelated adjustments is hedge ineffectiveness that impacted net interest income. For additional information, see Note 1 - Summary of Significant Accounting Principles to the Consolidated Financial Statements.

## Noninterest Income

Table 3 Noninterest Income

| (Dollars in millions) | $\mathbf{2 0 1 5}$ |  | 2014 |
| :--- | ---: | ---: | ---: |
| Card income | $\$ 5,959$ | $\$$ | 5,944 |
| Service charges | $\mathbf{7 , 3 8 1}$ | 7,443 |  |
| Investment and brokerage services | $\mathbf{1 3 , 3 3 7}$ | 13,284 |  |
| Investment banking income | $\mathbf{5 , 5 7 2}$ | 6,065 |  |
| Equity investment income | $\mathbf{2 6 1}$ | 1,130 |  |
| Trading account profits | $\mathbf{6 , 4 7 3}$ | 6,309 |  |
| Mortgage banking income | $\mathbf{2 , 3 6 4}$ | 1,563 |  |
| Gains on sales of debt securities | $\mathbf{1 , 0 9 1}$ | 1,354 |  |
| Other income | $\mathbf{1 , 5 1 3}$ | 1,905 |  |
| Total noninterest income | $\mathbf{4 3 , 9 5 1}$ | $\$$ | $\mathbf{4 4 , 9 9 7}$ |

Noninterest income decreased $\$ 1.0$ billion to $\$ 44.0$ billion for 2015 compared to 2014. The following highlights the significant changes.

- Investment banking income decreased $\$ 493$ million driven by lower debt and equity issuance fees, partially offset by higher advisory fees.
- Equity investment income decreased $\$ 869$ million as 2014 included a gain on the sale of a portion of an equity investment and gains from an initial public offering (IPO) of an equity investment in Global Markets.
- Trading account profits increased $\$ 164$ million. Excluding DVA, trading account profits decreased $\$ 330$ million driven by declines in credit-related products reflecting lower client activity, partially offset by strong performance in equity derivatives, increased client activity in equities in the Asia-Pacific region, improvement in currencies on higher client flows and increased volatility. For more information on trading account profits, see Global Markets on page 24.
- Mortgage banking income increased $\$ 801$ million primarily due to lower provision for representations and warranties in 2015 compared to 2014, and to a lesser extent, improved MSR net-of-hedge performance and an increase in core production revenue, partially offset by a decline in servicing fees.
- Other income decreased $\$ 392$ million primarily due to DVA gains of $\$ 407$ million in 2014 compared to DVA losses of $\$ 633$ million in 2015, partially offset by higher gains on asset sales and lower U.K. consumer payment protection insurance (PPI) costs in 2015. For more information on the accounting change related to DVA, see Executive Summary - Recent Events on page 4.


## Provision for Credit Losses

Table 4 Credit Quality Data

| (Dollars in millions) |  | 2015 |  | 2014 |
| :---: | :---: | :---: | :---: | :---: |
| Provision for credit losses |  |  |  |  |
| Consumer | \$ | 2,208 | \$ | 1,482 |
| Commercial |  | 953 |  | 793 |
| Total provision for credit losses | \$ | 3,161 | \$ | 2,275 |
| Net charge-offs (1) | \$ | 4,338 | \$ | 4,383 |
| Net charge-off ratio ${ }^{(2)}$ |  | 0.50\% |  | 0.49\% |

The provision for credit losses increased $\$ 886$ million to $\$ 3.2$ billion for 2015 compared to 2014. The provision for credit losses was $\$ 1.2$ billion lower than net charge-offs for 2015, resulting in a reduction in the allowance for credit losses. The provision for credit losses in 2014 included $\$ 400$ million of additional costs associated with the consumer relief portion of the settlement with the U.S. Department of Justice (DoJ). Excluding these additional costs, the provision for credit losses in the consumer portfolio increased $\$ 1.1$ billion compared to 2014 due to a slower pace of portfolio improvement than in 2014, and also due to a lower level of recoveries on nonperforming loan sales and other recoveries in 2015. The provision for credit losses for the commercial portfolio increased $\$ 160$ million in 2015 compared to 2014 driven by energy sector exposure and higher unfunded balances. The decrease in net charge-offs was primarily due to credit quality improvement in the consumer portfolio, partially offset by higher net charge-offs in the commercial portfolio primarily due to lower net recoveries in commercial real estate and higher energy-related net charge-offs.

As we look at 2016, reserve releases are expected to decrease from 2015 levels. All else equal, this would result in increased provision expense, assuming sustained stability in underlying asset quality. For more information on the provision for credit losses, see Provision for Credit Losses on page 69.

## Noninterest Expense

Table 5 Noninterest Expense

| (Dollars in millions) | $\mathbf{2 0 1 5}$ | 2014 |  |
| :--- | ---: | ---: | ---: |
| Personnel | $\$ \mathbf{3 2 , 8 6 8}$ | $\$$ | 33,787 |
| Occupancy | $\mathbf{4 , 0 9 3}$ | 4,260 |  |
| Equipment | $\mathbf{2 , 0 3 9}$ | 2,125 |  |
| Marketing | $\mathbf{1 , 8 1 1}$ | 1,829 |  |
| Professional fees | $\mathbf{2 , 2 6 4}$ | 2,472 |  |
| Amortization of intangibles | $\mathbf{8 3 4}$ | 936 |  |
| Data processing | $\mathbf{3 , 1 1 5}$ | 3,144 |  |
| Telecommunications | $\mathbf{8 2 3}$ | 1,259 |  |
| Other general operating | $\mathbf{9 , 8 8 8}$ | 25,845 |  |
| Total noninterest expense | $\mathbf{5 7 , 7 3 5}$ | $\$$ | $\mathbf{7 5 , 6 5 7}$ |

Noninterest expense decreased $\$ 17.9$ billion to $\$ 57.7$ billion for 2015 compared to 2014. The following highlights the significant changes.

- Personnel expense decreased $\$ 919$ million as we continue to streamline processes, reduce headcount and achieve cost savings.
- Occupancy decreased $\$ 167$ million primarily due to our focus on reducing our rental footprint.
- Professional fees decreased $\$ 208$ million due to lower defaultrelated servicing expenses and legal fees.
- Telecommunications expense decreased $\$ 436$ million due to efficiencies gained as we have simplified our operating model, including in-sourcing certain functions.
- Other general operating expense decreased $\$ 16.0$ billion primarily due to a decrease of $\$ 15.2$ billion in litigation expense which was primarily related to previously disclosed legacy mortgage-related matters and other litigation charges in 2014.


## Income Tax Expense

Table 6 Income Tax Expense

| (Dollars in millions) | $\mathbf{2 0 1 5}$ |  |
| :--- | ---: | :---: |
| Income before income taxes | $\mathbf{2 2 , 1 5 4}$ | $\mathbf{2 0 1 4}$ |
| Income tax expense | $\mathbf{6 , 2 6 6}$ | 2,022 |
| Effective tax rate | $\mathbf{2 8 . 3 \%}$ | $\mathbf{2 9 . 5 \%}$ |

The effective tax rate for 2015 was driven by our recurring tax preference benefits and tax benefits related to certain non-U.S. restructurings, partially offset by a charge for the impact of the U.K. tax law changes discussed below. The effective tax rate for 2014 was driven by our recurring tax preference benefits, the resolution of several tax examinations and tax benefits from nonU.S. restructurings, partially offset by the non-deductible treatment of certain litigation charges. We expect an effective tax rate in the low 30 percent range, absent unusual items, for 2016.

On November 18, 2015, the U.K. Finance (No. 2) Act 2015 (the Act) was enacted, reducing the U.K. corporate income tax rate by two percent to 18 percent. The first one percent reduction will be effective on April 1, 2017 and the second on April 1, 2020. The Act also included a tax surcharge on banking companies of eight percent, effective on January 1, 2016, and provided that existing net operating loss carryforwards may not reduce the additional eight percent income tax liability. Lastly, the Act provided that expenses for certain compensation payments, such as PPI, are not deductible to the extent attributable to July 8, 2015 or later. These provisions resulted in a charge of approximately $\$ 290$ million in 2015, primarily from remeasuring our U.K. deferred tax assets.

Table 7 Selected Balance Sheet Data

| (Dollars in millions) | December 31 |  |  | \% Change |
| :---: | :---: | :---: | :---: | :---: |
|  |  | 2015 | 2014 |  |
| Assets |  |  |  |  |
| Cash and cash equivalents | \$ | 159,353 | \$ 138,589 | 15\% |
| Federal funds sold and securities borrowed or purchased under agreements to resell |  | 192,482 | 191,823 | - |
| Trading account assets |  | 176,527 | 191,785 | (8) |
| Debt securities |  | 407,005 | 380,461 | 7 |
| Loans and leases |  | 896,983 | 876,104 | 2 |
| Allowance for loan and lease losses |  | $(12,234)$ | $(14,419)$ | (15) |
| All other assets |  | 324,200 | 340,191 | (5) |
| Total assets |  | 2,144,316 | \$ 2,104,534 | 2 |
| Liabilities |  |  |  |  |
| Deposits | \$ | 1,197,259 | \$ 1,118,936 | 7 |
| Federal funds purchased and securities loaned or sold under agreements to repurchase |  | 174,291 | 201,277 | (13) |
| Trading account liabilities |  | 66,963 | 74,192 | (10) |
| Short-term borrowings |  | 28,098 | 31,172 | (10) |
| Long-term debt |  | 236,764 | 243,139 | (3) |
| All other liabilities |  | 184,736 | 192,347 | (4) |
| Total liabilities |  | 1,888,111 | 1,861,063 | 1 |
| Shareholders' equity |  | 256,205 | 243,471 | 5 |
| Total liabilities and shareholders' equity | \$ | 2,144,316 | \$ 2,104,534 | 2 |

## Assets

At December 31, 2015, total assets were approximately $\$ 2.1$ trillion, up $\$ 39.8$ billion from December 31, 2014. The increase in assets was primarily driven by an increase in debt securities due to the deployment of deposit inflows, an increase in loans and leases driven by strong demand for commercial loans outpacing consumer loan sales and run-off, and higher cash and cash equivalents from strong deposit inflows. These increases were partially offset by a decrease in trading account assets due to repositioning activity on the balance sheet, and a decrease in all other assets.

The Corporation took certain actions in 2015 to further strengthen liquidity in response to the Basel 3 Liquidity Coverage Ratio (LCR) requirements. Most notably, we exchanged residential mortgage loans supported by long-term standby agreements with Fannie Mae (FNMA) and Freddie Mac (FHLMC) into debt securities guaranteed by FNMA and FHLMC, which further improved liquidity in the ALM portfolio.

## Cash and Cash Equivalents

Cash and cash equivalents increased $\$ 20.8$ billion primarily due to strong deposit inflows driven by growth in customer and client activity, partially offset by commercial loan growth.

## Federal Funds Sold and Securities Borrowed or Purchased Under Agreements to Resell

Federal funds transactions involve lending reserve balances on a short-term basis. Securities borrowed or purchased under agreements to resell are collateralized lending transactions utilized to accommodate customer transactions, earn interest rate spreads, and obtain securities for settlement and for collateral. Federal funds sold and securities borrowed or purchased under agreements to resell remained relatively unchanged compared to December 31, 2014, as an increase in securities borrowed of $\$ 3.3$ billion was offset by a decrease in reverse repurchase agreements of $\$ 2.6$ billion.

## Trading Account Assets

Trading account assets consist primarily of long positions in equity and fixed-income securities including U.S. government and agency securities, corporate securities and non-U.S. sovereign debt. Trading account assets decreased $\$ 15.3$ billion primarily due to balance sheet repositioning activity driven by client demand within Global Markets.

## Debt Securities

Debt securities primarily include U.S. Treasury and agency securities, mortgage-backed securities (MBS), principally agency MBS, non-U.S. bonds, corporate bonds and municipal debt. We use the debt securities portfolio primarily to manage interest rate and liquidity risk and to take advantage of market conditions that create economically attractive returns on these investments. Debt securities increased $\$ 26.5$ billion primarily driven by the deployment of deposit inflows and the exchange of certain loans into debt securities. For more information on debt securities, see Note 3 - Securities to the Consolidated Financial Statements.

## Loans and Leases

Loans and leases increased $\$ 20.9$ billion driven by strong demand for commercial loans, outpacing consumer loan sales and run-off. For more information on the loan portfolio, see Credit Risk Management on page 46.

## Allowance for Loan and Lease Losses

Allowance for loan and lease losses decreased $\$ 2.2$ billion primarily due to the impact of improvements in credit quality from the improving economy. For additional information, see Allowance for Credit Losses on page 69.

## All Other Assets

All other assets decreased $\$ 16.0$ billion driven by a decrease in other noninterest receivables, loans held-for-sale (LHFS) and derivative assets.

## Liabilities

At December 31, 2015, total liabilities were approximately \$1.9 trillion, up $\$ 27.0$ billion from December 31, 2014, primarily driven by an increase in deposits, partially offset by declines in securities loaned or sold under agreements to repurchase, trading account liabilities and long-term debt.

## Deposits

Deposits increased $\$ 78.3$ billion due to an increase in retail deposits.

## Federal Funds Purchased and Securities Loaned or Sold

 Under Agreements to RepurchaseFederal funds transactions involve borrowing reserve balances on a short-term basis. Securities loaned or sold under agreements to repurchase are collateralized borrowing transactions utilized to accommodate customer transactions, earn interest rate spreads and finance assets on the balance sheet. Federal funds purchased and securities loaned or sold under agreements to repurchase decreased $\$ 27.0$ billion due to a decrease in repurchase agreements.

## Trading Account Liabilities

Trading account liabilities consist primarily of short positions in equity and fixed-income securities including U.S. Treasury and agency securities, corporate securities, and non-U.S. sovereign debt. Trading account liabilities decreased $\$ 7.2$ billion primarily due to lower levels of short U.S. Treasury positions due to balance sheet repositioning activity driven by client demand within Global Markets.

## Short-term Borrowings

Short-term borrowings provide an additional funding source and primarily consist of Federal Home Loan Bank (FHLB) short-term borrowings, notes payable and various other borrowings that
generally have maturities of one year or less. Short-term borrowings decreased $\$ 3.1$ billion due to planned reductions in FHLB borrowings. For more information on short-term borrowings, see Note 10 - Federal Funds Sold or Purchased, Securities Financing Agreements and Short-term Borrowings to the Consolidated Financial Statements.

## Long-term Debt

Long-term debt decreased $\$ 6.4$ billion primarily due to the impact of revaluation of non-U.S. Dollar debt and changes in fair value for debt accounted for under the fair value option. These impacts were substantially offset through derivative hedge transactions. Excluding these two factors, total long-term debt remained relatively unchanged in 2015. For more information on long-term debt, see Note 11 - Long-term Debt to the Consolidated Financial Statements.

## All Other Liabilities

All other liabilities decreased $\$ 7.6$ billion due to a decrease in derivative liabilities.

## Shareholders' Equity

Shareholders' equity increased $\$ 12.7$ billion driven by earnings and preferred stock issuances, partially offset by returns of capital to shareholders of $\$ 5.9$ billion through common and preferred stock dividends and share repurchases, as well as a decrease in accumulated OCI due primarily to an increase in unrealized losses on available-for-sale (AFS) debt securities as a result of the increase in interest rates.

## Cash Flows Overview

The Corporation's operating assets and liabilities support our global markets and lending activities. We believe that cash flows from operations, available cash balances and our ability to generate cash through short- and long-term debt are sufficient to fund our operating liquidity needs. Our investing activities primarily include the debt securities portfolio and loans and leases. Our financing activities reflect cash flows primarily related to customer deposits, securities financing agreements and long-term debt. For additional information on liquidity, see Liquidity Risk on page 41.

Table 8 Five-year Summary of Selected Financial Data ${ }^{(1)}$

| (In millions, except per share information) | 2015 |  | 2014 |  | 2013 |  | 2012 |  | 2011 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Income statement |  |  |  |  |  |  |  |  |  |  |
| Net interest income | \$ | 39,099 | \$ | 39,790 | \$ | 42,265 | \$ | 40,656 | \$ | 44,616 |
| Noninterest income |  | 43,951 |  | 44,997 |  | 46,677 |  | 42,678 |  | 48,838 |
| Total revenue, net of interest expense |  | 83,050 |  | 84,787 |  | 88,942 |  | 83,334 |  | 93,454 |
| Provision for credit losses |  | 3,161 |  | 2,275 |  | 3,556 |  | 8,169 |  | 13,410 |
| Goodwill impairment |  | - |  | - |  | - |  | - |  | 3,184 |
| Merger and restructuring charges |  | - |  | - |  | - |  | - |  | 638 |
| All other noninterest expense |  | 57,735 |  | 75,657 |  | 69,214 |  | 72,093 |  | 76,452 |
| Income (loss) before income taxes |  | 22,154 |  | 6,855 |  | 16,172 |  | 3,072 |  | (230) |
| Income tax expense (benefit) |  | 6,266 |  | 2,022 |  | 4,741 |  | $(1,116)$ |  | $(1,676)$ |
| Net income |  | 15,888 |  | 4,833 |  | 11,431 |  | 4,188 |  | 1,446 |
| Net income applicable to common shareholders |  | 14,405 |  | 3,789 |  | 10,082 |  | 2,760 |  | 85 |
| Average common shares issued and outstanding |  | 10,462 |  | 10,528 |  | 10,731 |  | 10,746 |  | 10,143 |
| Average diluted common shares issued and outstanding |  | 11,214 |  | 10,585 |  | 11,491 |  | 10,841 |  | 10,255 |
| Performance ratios |  |  |  |  |  |  |  |  |  |  |
| Return on average assets |  | 0.74\% |  | 0.23\% |  | 0.53\% |  | 0.19\% |  | 0.06\% |
| Return on average common shareholders' equity |  | 6.26 |  | 1.70 |  | 4.62 |  | 1.27 |  | 0.04 |
| Return on average tangible common shareholders' equity (2) |  | 9.11 |  | 2.52 |  | 6.97 |  | 1.94 |  | 0.06 |
| Return on average tangible shareholders' equity ${ }^{(2)}$ |  | 8.83 |  | 2.92 |  | 7.13 |  | 2.60 |  | 0.96 |
| Total ending equity to total ending assets |  | 11.95 |  | 11.57 |  | 11.07 |  | 10.72 |  | 10.81 |
| Total average equity to total average assets |  | 11.67 |  | 11.11 |  | 10.81 |  | 10.75 |  | 9.98 |
| Dividend payout |  | 14.51 |  | 33.31 |  | 4.25 |  | 15.86 |  | $\mathrm{n} / \mathrm{m}$ |
| Per common share data |  |  |  |  |  |  |  |  |  |  |
| Earnings | \$ | 1.38 | \$ | 0.36 | \$ | 0.94 | \$ | 0.26 | \$ | 0.01 |
| Diluted earnings |  | 1.31 |  | 0.36 |  | 0.90 |  | 0.25 |  | 0.01 |
| Dividends paid |  | 0.20 |  | 0.12 |  | 0.04 |  | 0.04 |  | 0.04 |
| Book value |  | 22.54 |  | 21.32 |  | 20.71 |  | 20.24 |  | 20.09 |
| Tangible book value ${ }^{(2)}$ |  | 15.62 |  | 14.43 |  | 13.79 |  | 13.36 |  | 12.95 |
| Market price per share of common stock |  |  |  |  |  |  |  |  |  |  |
| Closing | \$ | 16.83 | \$ | 17.89 | \$ | 15.57 | \$ | 11.61 | \$ | 5.56 |
| High closing |  | 18.45 |  | 18.13 |  | 15.88 |  | 11.61 |  | 15.25 |
| Low closing |  | 15.15 |  | 14.51 |  | 11.03 |  | 5.80 |  | 4.99 |
| Market capitalization | \$ | 174,700 | \$ | 188,141 | \$ | 164,914 | \$ | 125,136 | \$ | 58,580 |

 - Recent Events on page 4.
 on these ratios, see Supplemental Financial Data on page 12, and for corresponding reconciliations to GAAP financial measures, see Statistical Table XIII on page 105.
${ }^{3}$ ) For more information on the impact of the purchased credit-impaired ( PCI ) loan portfolio on asset quality, see Consumer Portfolio Credit Risk Management on page 47.
${ }^{(4)}$ Includes the allowance for loan and lease losses and the reserve for unfunded lending commitments.
${ }^{(5)}$ Balances and ratios do not include loans accounted for under the fair value option. For additional exclusions from nonperforming loans, leases and foreclosed properties, see Consumer Portfolio Credit Risk Management - Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity on page 56 and corresponding Table 35, and Commercial Portfolio Credit Risk Management Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity on page 63 and corresponding Table 44.
${ }^{(6)}$ Primarily includes amounts allocated to the U.S. credit card and unsecured consumer lending portfolios in Consumer Banking, PCI loans and the non-U.S. credit card portfolio in All Other.
${ }^{(7)}$ Net charge-offs exclude $\$ 808$ million, $\$ 810$ million and $\$ 2.3$ billion of write-offs in the PCI loan portfolio for 2015, 2014 and 2013 , respectively. For more information on PCI write-offs, see Consumer Portfolio Credit Risk Management - Purchased Credit-impaired Loan Portfolio on page 54.
(8) There were no write-offs of PCI loans in 2011.
 information, see Capital Management on page 34.
$\mathrm{n} / \mathrm{a}=$ not applicable
$\mathrm{n} / \mathrm{m}=$ not meaningful

Table 8 Five-year Summary of Selected Financial Data ${ }^{(1)}$ (continued)

| (Dollars in millions) |  | 2015 |  | 2014 |  | 2013 |  | 2012 |  | 2011 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Average balance sheet |  |  |  |  |  |  |  |  |  |  |
| Total loans and leases | \$ | 876,787 |  | 898,703 |  | 918,641 |  | 898,768 | \$ | 938,096 |
| Total assets |  | ,160,141 |  | ,145,590 |  | 2,163,513 |  | 2,191,356 |  | ,296,322 |
| Total deposits |  | ,155,860 |  | ,124,207 |  | ,089,735 |  | 1,047,782 |  | ,035,802 |
| Long-term debt |  | 240,059 |  | 253,607 |  | 263,417 |  | 316,393 |  | 421,229 |
| Common shareholders' equity |  | 230,182 |  | 223,072 |  | 218,468 |  | 216,996 |  | 211,709 |
| Total shareholders' equity |  | 251,990 |  | 238,482 |  | 233,951 |  | 235,677 |  | 229,095 |
| Asset quality ${ }^{(3)}$ |  |  |  |  |  |  |  |  |  |  |
| Allowance for credit losses (4) | \$ | 12,880 | \$ | 14,947 |  | 17,912 |  | 24,692 | \$ | 34,497 |
| Nonperforming loans, leases and foreclosed properties (5) |  | 9,836 |  | 12,629 |  | 17,772 |  | 23,555 |  | 27,708 |
| Allowance for loan and lease losses as a percentage of total loans and leases outstanding (5) |  | 1.37\% |  | 1.66\% |  | 1.90\% |  | 2.69\% |  | 3.68\% |
| Allowance for loan and lease losses as a percentage of total nonperforming loans and leases (5) | 130 |  | 121 |  | 102 |  | 107 |  | 135 |  |
| Allowance for loan and lease losses as a percentage of total nonperforming loans and leases, excluding the PCI loan portfolio (5) | 122 |  | 107 |  | 87 |  | 82 |  | 101 |  |
| Amounts included in allowance for loan and lease losses for loans and leases that are excluded from nonperforming loans and leases (6) | \$ | 4,518 | \$ | 5,944 | \$ | 7,680 | \$ | 12,021 | \$ | 17,490 |
| Allowance for loan and lease losses as a percentage of total nonperforming loans and leases, excluding the allowance for loan and lease losses for loans and leases that are excluded from nonperforming loans and leases ${ }^{(5,6)}$ | 82\% |  | 71\% |  | 57\% |  | 54\% |  | 65\% |  |
| Net charge-offs ${ }^{(7)}$ | \$ | 4,338 | \$ | 4,383 | \$ | 7,897 | \$ | 14,908 | \$ | 20,833 |
| Net charge-offs as a percentage of average loans and leases outstanding ( 5,7$)$ | 0.50\% |  | 0.49\% |  | 0.87\% |  | 1.67\% |  | 2.24\% |  |
| Net charge-offs as a percentage of average loans and leases outstanding, excluding the PCI loan portfolio (5) | 0.51 |  | 0.50 |  | 0.90 |  | 1.73 |  | 2.32 |  |
| Net charge-offs and PCI write-offs as a percentage of average loans and leases outstanding (5,8) | 0.59 |  | 0.58 |  | 1.13 |  | 1.99 |  | 2.24 |  |
| Nonperforming loans and leases as a percentage of total loans and leases outstanding (5) | 1.05 |  | 1.38 |  | 1.87 |  | 2.52 |  | 2.74 |  |
| Nonperforming loans, leases and foreclosed properties as a percentage of total loans, leases and foreclosed properties ${ }^{(5)}$ |  | 1.10 |  | 1.45 |  | 1.93 |  | 2.62 |  | 3.01 |
| Ratio of the allowance for loan and lease losses at December 31 to net charge-offs ${ }^{(7)}$ | 2.82 |  | 3.29 |  | 2.21 |  | 1.62 |  | 1.62 |  |
| Ratio of the allowance for loan and lease losses at December 31 to net charge-offs, excluding the PCI loan portfolio | 2.64 |  | 2.91 |  | 1.89 |  | 1.25 |  | 1.22 |  |
| Ratio of the allowance for loan and lease losses at December 31 to net charge-offs and PCl write-offs (8) | 2.38 |  | 2.78 |  | 1.70 |  | 1.36 |  | 1.62 |  |
| Capital ratios at year end ${ }^{(9)}$ |  |  |  |  |  |  |  |  |  |  |
| Risk-based capital: |  |  |  |  |  |  |  |  |  |  |
| Common equity tier 1 capital | 10.2\% |  | 12.3\% |  | n/a |  | n/a |  | n/a |  |
| Tier 1 common capital | n/a |  | n/a |  | 10.9\% |  | 10.8\% |  | 9.7\% |  |
| Tier 1 capital | 11.3 |  | 13.4 |  | 12.2 |  | 12.7 |  | 12.2 |  |
| Total capital | 13.2 |  | 16.5 |  | 15.1 |  | 16.1 |  | 16.6 |  |
| Tier 1 leverage | 8.6 |  | 8.2 |  | 7.7 |  | 7.2 |  | 7.4 |  |
| Tangible equity ${ }^{(2)}$ | 8.9 |  | 8.4 |  | 7.9 |  | 7.6 |  | 7.5 |  |
| Tangible common equity ${ }^{(2)}$ | 7.8 |  | 7.5 |  | 7.2 |  | 6.7 |  | 6.6 |  |

[^0]
## Supplemental Financial Data

We view net interest income and related ratios and analyses on an FTE basis, which when presented on a consolidated basis, are non-GAAP financial measures. We believe managing the business with net interest income on an FTE basis provides a more accurate picture of the interest margin for comparative purposes. To derive the FTE basis, net interest income is adjusted to reflect tax-exempt income on an equivalent before-tax basis with a corresponding increase in income tax expense. For purposes of this calculation, we use the federal statutory tax rate of 35 percent. This measure ensures comparability of net interest income arising from taxable and tax-exempt sources.

Certain performance measures including the efficiency ratio and net interest yield utilize net interest income (and thus total revenue) on an FTE basis. The efficiency ratio measures the costs expended to generate a dollar of revenue, and net interest yield measures the bps we earn over the cost of funds.

We also evaluate our business based on certain ratios that utilize tangible equity, a non-GAAP financial measure. Tangible equity represents an adjusted shareholders' equity or common shareholders' equity amount which has been reduced by goodwill and intangible assets (excluding MSRs), net of related deferred tax liabilities. These measures are used to evaluate our use of equity. In addition, profitability, relationship and investment models use both return on average tangible common shareholders' equity and return on average tangible shareholders' equity as key
measures to support our overall growth goals. These ratios are as follows:

- Return on average tangible common shareholders' equity measures our earnings contribution as a percentage of adjusted common shareholders' equity. The tangible common equity ratio represents adjusted ending common shareholders' equity divided by total assets less goodwill and intangible assets (excluding MSRs), net of related deferred tax liabilities.
- Return on average tangible shareholders' equity measures our earnings contribution as a percentage of adjusted average total shareholders' equity. The tangible equity ratio represents adjusted ending shareholders' equity divided by total assets less goodwill and intangible assets (excluding MSRs), net of related deferred tax liabilities.
- Tangible book value per common share represents adjusted ending common shareholders' equity divided by ending common shares outstanding.

The aforementioned supplemental data and performance measures are presented in Table 8 and Statistical Table X.

We evaluate our business segment results based on measures that utilize average allocated capital. Return on average allocated capital is calculated as net income adjusted for cost of funds and earnings credits and certain expenses related to intangibles, divided by average allocated capital. Allocated capital and the related return both represent non-GAAP financial measures.

Statistical Tables XIII, XIV and XV on pages 105, 106 and 107 provide reconciliations of these non-GAAP financial measures to GAAP financial measures. We believe the use of these non-GAAP financial measures provides additional clarity in assessing the results of the Corporation and our segments. Other companies may define or calculate these measures and ratios differently.

Table 9 Five-year Supplemental Financial Data
(Dollars in millions, except per share information)
Fully taxable-equivalent basis data
Net interest income
Total revenue, net of interest expense (1)
Net interest yield
Efficiency ratio ${ }^{(1)}$

| 2015 |  | 2014 |  | 2013 |  | 2012 |  | 2011 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ | 39,989 | \$ | 40,640 | \$ | 43,124 | \$ | 41,557 | \$ | 45,588 |
|  | 83,940 |  | 85,637 |  | 89,801 |  | 84,235 |  | 94,426 |
|  | 2.19\% |  | 2.24\% |  | 2.37\% |  | 2.24\% |  | 2.38\% |
|  | 68.78 |  | 88.35 |  | 77.07 |  | 85.59 |  | 85.01 |

(1) The results for 2015 were impacted by the early adoption of new accounting guidance on recognition and measurement of financial instruments. For additional information, see Executive Summary

- Recent Events on page 4.


## Net Interest Income Excluding Trading-related Net Interest Income

We manage net interest income on an FTE basis and excluding the impact of trading-related activities. We evaluate our sales and trading results and strategies on a total market-based revenue approach by combining net interest income and noninterest income for Global Markets. An analysis of net interest income, average earning assets and net interest yield on earning assets, all of which adjust for the impact of trading-related net interest income from reported net interest income on an FTE basis, is shown below. We believe the use of this non-GAAP presentation in Table 10 provides additional clarity in assessing our results.

Table 10 Net Interest Income Excluding Trading-related Net Interest Income

| (Dollars in millions) | 2015 | 2014 |
| :---: | :---: | :---: |
| Net interest income (FTE basis) |  |  |
| As reported | \$ 39,989 | \$ 40,640 |
| Impact of trading-related net interest income | $(3,777)$ | $(3,455)$ |
| Net interest income excluding trading-related net interest income (FTE basis) ${ }^{(1)}$ | \$ 36,212 | \$ 37,185 |
| Average earning assets |  |  |
| As reported | \$ 1,824,946 | \$1,809,733 |
| Impact of trading-related earning assets | $(412,754)$ | $(442,442)$ |
| Average earning assets excluding tradingrelated earning assets ${ }^{(1)}$ | \$ 1,412,192 | \$1,367,291 |
| Net interest yield contribution (FTE basis) |  |  |
| As reported | 2.19\% | 2.24\% |
| Impact of trading-related activities | 0.38 | 0.48 |
| Net interest yield on earning assets excluding trading-related activities (FTE basis) ${ }^{(1)}$ | 2.57\% | 2.72\% |

(1) Represents a non-GAAP financial measure.

Net interest income excluding trading-related net interest income decreased $\$ 973$ million to $\$ 36.2$ billion for 2015 compared to 2014. The decline was primarily driven by lower loan yields and consumer loan balances, as well as a charge of $\$ 612$ million in 2015 related to the discount on certain trust preferred securities. This was partially offset by a $\$ 785$ million improvement in market-related adjustments on debt securities, lower funding costs, lower rates paid on deposits and commercial loan growth. Market-related adjustments on debt securities resulted in an expense of $\$ 296$ million in 2015 compared to an expense of $\$ 1.1$ billion in 2014. For more information on market-related and other adjustments, see Executive Summary - Financial Highlights on page 6 . For more information on the impact of interest rates, see Interest Rate Risk Management for Non-trading Activities on page 78.

Average earning assets excluding trading-related earning assets increased $\$ 44.9$ billion to $\$ 1,412.2$ billion for 2015 compared to 2014. The increase was primarily in debt securities, commercial loans and cash held at central banks, partially offset by a decline in consumer loans.

Net interest yield on earning assets excluding trading-related activities decreased 15 bps to 2.57 percent for 2015 compared to 2014 due to the same factors as described above.

## Business Segment Operations

## Segment Description and Basis of Presentation

In the Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, we reported our results of operations through five business segments: Consumer Banking, GWIM, Global Banking, Global Markets and LAS, with the remaining operations recorded in All Other. Effective April 1, 2016, to align the segments with how we manage the businesses, we changed our basis of presentation to eliminate the LAS segment, and following such change, we report our results of operations through the following four business segments: Consumer Banking, GWIM, Global Banking and Global Markets, with the remaining operations recorded in All Other.


The Corporation periodically reviews capital allocated to its businesses and allocates capital annually during the strategic and capital planning processes. We utilize a methodology that considers the effect of regulatory capital requirements in addition to internal risk-based capital models. The Corporation's internal risk-based capital models use a risk-adjusted methodology incorporating each segment's credit, market, interest rate, business and operational risk components. For more information on the nature of these risks, see Managing Risk on page 30. The capital allocated to the business segments is referred to as allocated capital, which represents a non-GAAP financial measure. For purposes of goodwill impairment testing, the Corporation utilizes allocated equity as a proxy for the carrying value of its reporting units. Allocated equity in the reporting units is comprised of allocated capital plus capital for the portion of goodwill and intangibles specifically assigned to the reporting unit. For additional information, see Note 8 - Goodwill and Intangible Assets to the Consolidated Financial Statements.

The Corporation, in connection with the aforementioned realignment of our business segments, completed a review of all consumer real estate-secured lending and servicing activities within LAS, Consumer Banking, GWIM and All Other with a view to strategically align the business activities and loans, including loans serviced for others, into core and non-core categories, with core loans reflected on the balance sheet of the appropriate business segment and non-core loans, which are principally runoff portfolios, exclusively on the balance sheet of All Other. The analysis was performed on the basis of loan and customer characteristics such as origination date, product type, loan-to-value (LTV), Fair Isaac Corporation (FICO) score and delinquency status consistent with our current consumer and mortgage servicing strategy. Generally, loans that were originated after January 1, 2010, qualified under government-sponsored enterprise underwriting guidelines, or otherwise met our underwriting guidelines in place in 2015 are characterized as core loans. Loans held in legacy private-label securitizations, government insured

Ioans originated prior to 2010, loan products no longer originated, and loans originated prior to 2010 and classified as nonperforming or modified in a troubled debt restructuring (TDR) prior to 2016 are generally characterized as non-core loans. MSRs pertaining to core and non-core loans serviced for others are held in Consumer Banking and All Other, respectively. Prior period balances and related metrics have been reclassified to conform to these revised classifications.

During 2015, we made refinements to the amount of capital allocated to each of our businesses based on multiple considerations that included, but were not limited to, risk-weighted assets measured under Basel 3 Standardized and Advanced approaches, business segment exposures and risk profile, and
strategic plans. As a result of this process, effective January 1, 2015, we adjusted the amount of capital being allocated to our business segments. For more information on Basel 3 risk-weighted assets measured under the Standardized and Advanced approaches, see Capital Management on page 34.

For more information on the basis of presentation for business segments, including the allocation of market-related adjustments to net interest income, and reconciliations to consolidated total revenue, net income and year-end total assets, see Note 24 Business Segment Information to the Consolidated Financial Statements.

Consumer Banking


Consumer Banking, which is comprised of Deposits and Consumer Lending, offers a diversified range of credit, banking and investment products and services to consumers and small businesses. Our customers and clients have access to a franchise network that stretches coast to coast through 33 states and the District of Columbia. The franchise network includes approximately 4,700 financial centers, 16,000 ATMs, nationwide call centers, and online and mobile platforms.

## Consumer Banking Results

Net income for Consumer Banking increased \$368 million to \$6.6 billion in 2015 compared to 2014 primarily driven by lower noninterest expense, lower provision for credit losses and higher noninterest income, partially offset by lower net interest income. Net interest income decreased $\$ 411$ million to $\$ 20.3$ billion as the beneficial impact of an increase in investable assets as a result of higher deposits was more than offset by the impact of
the allocation of ALM activities, higher funding costs, lower card yields and lower average card loan balances. Noninterest income increased $\$ 58$ million to $\$ 11.1$ billion driven by higher card income and the impact on revenue of certain divestitures, partially offset by lower mortgage banking income and service charges.

The provision for credit losses decreased $\$ 124$ million to $\$ 2.3$ billion in 2015 driven by continued improvement in credit quality primarily related to our small business and credit card portfolios. Noninterest expense decreased $\$ 676$ million to $\$ 18.7$ billion primarily driven by lower operating and personnel expenses, partially offset by higher fraud costs in advance of Europay, MasterCard and Visa (EMV) chip implementation.

The return on average allocated capital was 20 percent, up from 18 percent, reflecting higher net income and a decrease in allocated capital. For more information on capital allocations, see Business Segment Operations on page 14.

## Deposits

Deposits includes the results of consumer deposit activities which consist of a comprehensive range of products provided to consumers and small businesses. Our deposit products include traditional savings accounts, money market savings accounts, CDs and IRAs, noninterest- and interest-bearing checking accounts, as well as investment accounts and products. The revenue is allocated to the deposit products using our funds transfer pricing process that matches assets and liabilities with similar interest rate sensitivity and maturity characteristics. Deposits generates fees such as account service fees, non-sufficient funds fees, overdraft charges and ATM fees, as well as investment and brokerage fees from Merrill Edge accounts. Merrill Edge is an integrated investing and banking service targeted at customers with less than $\$ 250,000$ in investable assets. Merrill Edge provides investment advice and guidance, client brokerage asset services, a self-directed online investing platform and key banking capabilities including access to the Corporation's network of financial centers and ATMs.

Deposits includes the net impact of migrating customers and their related deposit and brokerage asset balances between Deposits and GWIM as well as other client-managed businesses. For more information on the migration of customer balances to or from GWIM, see GWIM on page 20.

Net income for Deposits increased $\$ 311$ million to $\$ 2.6$ billion in 2015 driven by higher net interest income, and lower noninterest expense and provision for credit losses. Net interest income increased $\$ 194$ million to $\$ 9.6$ billion primarily due to the beneficial impact of an increase in investable assets as a result of higher deposits, partially offset by the impact of the allocation of ALM activities. Noninterest income of $\$ 4.6$ billion remained relatively unchanged.

The provision for credit losses decreased $\$ 68$ million to $\$ 200$ million driven by continued improvement in credit quality. Noninterest expense decreased $\$ 171$ million to $\$ 9.9$ billion due to lower operating expenses.

Average deposits increased $\$ 32.8$ billion to $\$ 544.7$ billion in 2015 driven by a continuing customer shift to more liquid products in the low rate environment. Growth in checking, traditional savings and money market savings of $\$ 43.5$ billion was partially offset by a decline in time deposits of $\$ 10.7$ billion. As a result of our continued pricing discipline and the shift in the mix of deposits, the rate paid on average deposits declined by one bp to five bps.

Key Statistics - Deposits

|  | 2015 | 2014 |
| :--- | ---: | ---: |
| Total deposit spreads (excludes noninterest costs) ${ }^{(1)}$ | $\mathbf{1 . 6 2 \%}$ | $1.59 \%$ |
|  |  |  |
| Year end |  |  |
| Client brokerage assets (in millions) | $\$ 122,721$ | $\$ 113,763$ |
| Online banking active accounts (units in thousands) | $\mathbf{3 1 , 6 7 4}$ | 30,904 |
| Mobile banking active users (units in thousands) | 18,705 | 16,539 |
| Financial centers | 4,726 | 4,855 |
| ATMs | 16,038 | 15,834 |

${ }^{(1)}$ Includes deposits held in Consumer Lending.

Client brokerage assets increased $\$ 9.0$ billion in 2015 driven by strong account flows, partially offset by lower market valuations. Mobile banking active users increased 2.2 million reflecting continuing changes in our customers' banking preferences. The number of financial centers declined 129 driven by changes in customer preferences to self-service options and as we continue to optimize our consumer banking network and improve our cost-to-serve.

## Consumer Lending

Consumer Lending offers products to consumers and small businesses across the U.S. The products offered include credit and debit cards, residential mortgages and home equity loans, and direct and indirect loans such as automotive, marine, aircraft, recreational vehicle and consumer personal loans. In addition to earning net interest spread revenue on its lending activities, Consumer Lending generates interchange revenue from credit and debit card transactions, late fees, cash advance fees, annual credit card fees, mortgage banking fee income and other miscellaneous fees. Consumer Lending products are available to our customers through our retail network, direct telephone, and online and mobile channels. Consumer Lending results also include the impact of servicing residential mortgages and home equity loans in the core portfolio, including loans held on the balance sheet of Consumer Lending and loans serviced for others.

The Corporation classifies consumer real estate loans as core or non-core based on loan and customer characteristics such as origination date, product type, LTV, FICO score and delinquency status. Total owned loans in the core portfolio held in Consumer Lending increased $\$ 2.4$ billion in 2015 to $\$ 90.6$ billion at December 31, 2015 largely due to higher residential mortgage balances, partially offset by a decline in home equity balances. For more information on the core and non-core portfolios, see Consumer Portfolio Credit Risk Management on page 47.

Consumer Lending includes the net impact of migrating customers and their related loan balances between Consumer Lending and GWIM. For more information on the migration of customer balances to or from GWIM, see GWIM on page 20.

Net income for Consumer Lending remained relatively unchanged at $\$ 4.0$ billion in 2015 as lower noninterest expense, lower provision for credit losses and higher noninterest income largely offset the decline in net interest income. Net interest income decreased $\$ 605$ million to $\$ 10.8$ billion driven by higher funding costs, lower card yields and average card loan balances, and the impact of the allocation of ALM activities. Noninterest income increased $\$ 50$ million to $\$ 6.5$ billion due to higher card income, partially offset by lower mortgage banking income.

The provision for credit losses decreased $\$ 56$ million to $\$ 2.1$ billion in 2015 driven by continued credit quality improvement within the small business and credit card portfolios. Noninterest expense decreased $\$ 505$ million to $\$ 8.9$ billion primarily driven by lower operating expense and personnel expense, partially offset by higher fraud costs in advance of EMV chip implementation.

Average loans decreased $\$ 642$ million to $\$ 227.7$ billion in 2015 primarily driven by lower home equity loans and continued decline of unsecured lending portfolios, partially offset by increases in consumer vehicle loans and residential mortgages.

|  |  |  |
| :--- | ---: | ---: | ---: |
| Key Statistics - Consumer Lending |  |  |
| (Dollars in millions) | 2015 | 2014 |
| Total U.S. credit card (1) | $9.16 \%$ | $9.34 \%$ |
| Gross interest yield | 9.31 | 9.39 |
| Risk-adjusted margin | 4,973 | 4,541 |
| New accounts (in thousands) | $\$ 221,378$ | $\$ 212,088$ |
| Purchase volumes | $\$ 277,695$ | $\$ 272,576$ |
| Debit card purchase volumes |  |  |
| (1) In addition to the U.S. credit card portfolio in Consumer Banking, the remaining U.S. credit card |  |  |
| portfolio is in GWIM. |  |  |

During 2015, the total U.S. credit card risk-adjusted margin decreased 8 bps due to a decrease in net interest margin and the net impact of gains on asset sales, partially offset by an improvement in credit quality in the U.S. Card portfolio. Total U.S. credit card purchase volumes increased $\$ 9.3$ billion to $\$ 221.4$ billion and debit card purchase volumes increased $\$ 5.1$ billion to $\$ 277.7$ billion, reflecting higher levels of consumer spending.

## Mortgage Banking Income

Mortgage banking income is earned primarily in Consumer Banking and All Other. Total production income within mortgage banking income is comprised primarily of revenue from the fair value gains and losses recognized on our interest rate lock commitments (IRLCs) and LHFS, the related secondary market execution, and costs related to representations and warranties in the sales transactions along with other obligations incurred in the sales of mortgage loans. Servicing income within mortgage banking income includes income earned in connection with servicing activities and MSR valuation adjustments, net of results from risk management activities used to hedge certain market risks of the MSRs. Servicing income for the core portfolio is recorded in Consumer Banking. Servicing income for the non-core portfolio, including hedge ineffectiveness on MSR hedges, is recorded in All Other. The costs associated with our servicing activities are included in noninterest expense.

The table below summarizes the components of mortgage banking income. Amounts for other mortgage banking income are included in this Consumer Banking table to show the components of consolidated mortgage banking income.

## Mortgage Banking Income

| (Dollars in millions) | 2015 | 2014 |
| :---: | :---: | :---: |
| Mortgage banking income |  |  |
| Consumer Banking mortgage banking income |  |  |
| Total production income | \$ 950 | \$ 888 |
| Net servicing income |  |  |
| Servicing fees | 855 | 1,045 |
| Amortization of expected cash flows ${ }^{(1)}$ | (661) | (761) |
| Fair value changes of MSRs, net of risk management activities used to hedge certain market risks ${ }^{(2)}$ | 188 | 222 |
| Total net servicing income | 382 | 506 |
| Total Consumer Banking mortgage banking income | 1,332 | 1,394 |
| Other mortgage banking income |  |  |
| Other production income | 107 | 74 |
| Representations and warranties provision | 28 | (694) |
| Net servicing income |  |  |
| Servicing fees | 538 | 764 |
| Amortization of expected cash flows ${ }^{(1)}$ | (77) | (57) |
| Fair value changes of MSRs, net of risk management activities used to hedge certain market risks ${ }^{(2)}$ | 328 | 72 |
| Total net servicing income | 789 | 779 |
| Eliminations ${ }^{(3)}$ | 108 | 10 |
| Total other mortgage banking income | 1,032 | 169 |
| Total consolidated mortgage banking income | \$ 2,364 | \$ 1,563 |
| Represents the net change in fair value of the MSR asset due to the recognition of modeled cash flows. |  |  |
| ${ }^{(3)}$ Includes the effect of transfers of mortgage loans from Consumer B included in All Other and net gains or losses on intercompany tract management. | nking to the rades related | M portfolio o MSR risk |

Total production income for Consumer Banking increased \$62 million to $\$ 950$ million in 2015 primarily due to an increase in margins.

## Servicing

The costs associated with servicing activities related to the residential mortgage and home equity loan portfolios, including owned loans and loans serviced for others (collectively, the mortgage serviced portfolio) are allocated to the business segment that owns the loans or MSRs, or All Other.

Servicing activities include collecting cash for principal, interest and escrow payments from borrowers, disbursing customer draws for lines of credit, accounting for and remitting principal and interest payments to investors and escrow payments to third parties, and responding to customer inquiries. Our home retention efforts, including single point of contact resources, are also part of our servicing activities, along with supervision of foreclosures and property dispositions. Prior to foreclosure, we evaluate various workout options in an effort to help our customers avoid foreclosure.

Consumer Banking servicing income decreased $\$ 124$ million to $\$ 382$ million in 2015 primarily driven by lower servicing fees due to a smaller servicing portfolio, partially offset by improved MSR net-of-hedge performance. Servicing fees declined 18 percent to $\$ 855$ million in 2015 as the size of the servicing portfolio continued to decline.

## Mortgage Servicing Rights

At December 31, 2015, the balance of consumer MSRs managed within Consumer Lending and All Other, which excludes \$407 million of certain non-U.S. residential mortgage MSRs recorded in Global Markets, was $\$ 2.7$ billion compared to $\$ 3.3$ billion at December 31, 2014. The decrease was primarily driven by the recognition of modeled cash flows and sales of MSRs, partially offset by new loan originations. The core MSR portfolio, held in Consumer Banking, totaled $\$ 2.3$ billion and $\$ 2.9$ billion and the non-core MSR portfolio, held in All Other, totaled $\$ 401$ million and $\$ 414$ million at December 31, 2015 and 2014. For more information on MSRs, see Note 23 - Mortgage Servicing Rights to the Consolidated Financial Statements.

## Key Statistics

| (Dollars in millions) |  | 2015 |  | 2014 |
| :---: | :---: | :---: | :---: | :---: |
| Loan production (1): |  |  |  |  |
| Total (2): |  |  |  |  |
| First mortgage | \$ | 56,930 | \$ | 43,290 |
| Home equity |  | 13,060 |  | 11,233 |
| Consumer Banking: |  |  |  |  |
| First mortgage | \$ | 40,878 | \$ | 32,339 |
| Home equity |  | 11,988 |  | 10,286 |

(1) The above loan production amounts represent the unpaid principal balance of loans and in the case of home equity, the principal amount of the total line of credit
${ }^{(2)}$ In addition to loan production in Consumer Banking, there is also first mortgage and home equity loan production in GWIM.

First mortgage loan originations in Consumer Banking and for the total Corporation increased $\$ 8.5$ billion and $\$ 13.6$ billion in 2015 compared to 2014 reflecting growth in the overall mortgage market as lower interest rates beginning in late 2014 drove an increase in refinances.

During 2015, 63 percent of the total Corporation first mortgage production volume was for refinance originations and 37 percent was for purchase originations compared to 60 percent and 40 percent in 2014. Home Affordable Refinance Program (HARP) originations were two percent of all refinance originations compared to six percent in 2014. Making Home Affordable nonHARP originations were eight percent of all refinance originations compared to 17 percent in 2014. The remaining 90 percent of refinance originations were conventional refinances compared to 77 percent in 2014.

Home equity production for the total Corporation was $\$ 13.1$ billion for 2015 compared to $\$ 11.2$ billion for 2014, with the increase due to a higher demand in the market based on improving housing trends, and increased market share driven by improved financial center engagement with customers and more competitive pricing.

Global Wealth \& Investment Management


GWIM consists of two primary businesses: Merrill Lynch Global Wealth Management (MLGWM) and U.S. Trust, Bank of America Private Wealth Management (U.S. Trust).

MLGWM's advisory business provides a high-touch client experience through a network of financial advisors focused on clients with over $\$ 250,000$ in total investable assets. MLGWM provides tailored solutions to meet our clients' needs through a full set of investment management, brokerage, banking and retirement products.
U.S. Trust, together with MLGWM's Private Banking \& Investments Group, provides comprehensive wealth management solutions targeted to high net worth and ultra high net worth clients, as well as customized solutions to meet clients' wealth structuring, investment management, trust and banking needs, including specialty asset management services.

Client assets managed under advisory and/or discretion of GWIM are assets under management (AUM) and are typically held in diversified portfolios. The majority of client AUM have an investment strategy with a duration of greater than one year and are, therefore, considered long-term AUM. Fees earned on longterm AUM are calculated as a percentage of total AUM. The asset management fees charged to clients per year are dependent on various factors, but are generally driven by the breadth of the client's relationship and generally range from 50 to 150 bps on their total AUM. The net client long-term AUM flows represent the net change in clients' long-term AUM balances over a specified
period of time, excluding market appreciation/depreciation and other adjustments.

Client assets under advisory and/or discretion of GWIM in which the investment strategy seeks current income, while maintaining liquidity and capital preservation, are considered liquidity AUM. The duration of these strategies is primarily less than one year. The change in AUM balances from the prior year is primarily the net client flows for liquidity AUM.

Net income for GWIM decreased $\$ 304$ million to $\$ 2.5$ billion in 2015 compared to 2014 driven by a decrease in revenue and increases in noninterest expense and the provision for credit losses.

Net interest income decreased $\$ 327$ million to $\$ 5.5$ billion due to the impact of the allocation of ALM activities, partially offset by the impact of loan and deposit growth. Noninterest income, which primarily includes investment and brokerage services income, decreased $\$ 67$ million to $\$ 12.5$ billion driven by lower transactional revenue, partially offset by increased asset management fees due to the impact of long-term AUM flows and higher average market levels. Noninterest expense increased $\$ 108$ million to $\$ 13.9$ billion primarily due to higher amortization of previously issued stock awards and investments in client-facing professionals, partially offset by lower revenue-related expenses.

Return on average allocated capital was 21 percent, down from 24 percent due to a decrease in net income.

## Key Indicators and Metrics

| (Dollars in millions, except as noted) | 2015 |  | 2014 |  |
| :---: | :---: | :---: | :---: | :---: |
| Revenue by Business |  |  |  |  |
| Merrill Lynch Global Wealth Management | \$ | 14,893 | \$ | 15,243 |
| U.S. Trust |  | 3,023 |  | 3,079 |
| Other ${ }^{(1)}$ |  | 76 |  | 64 |
| Total revenue, net of interest expense (FTE basis) | \$ | 17,992 | \$ | 18,386 |
| Client Balances by Business, at year end |  |  |  |  |
| Merrill Lynch Global Wealth Management |  | 1,986,502 |  | 2,034,802 |
| U.S. Trust |  | 388,604 |  | 387,491 |
| Other ${ }^{(1)}$ |  | 82,929 |  | 76,705 |
| Total client balances |  | 2,458,035 |  | 2,498,998 |
| Client Balances by Type, at year end |  |  |  |  |
| Long-term assets under management | \$ | 817,938 | \$ | 826,171 |
| Liquidity assets under management |  | 82,925 |  | 76,701 |
| Assets under management |  | 900,863 |  | 902,872 |
| Brokerage assets |  | 1,040,938 |  | 1,081,434 |
| Assets in custody |  | 113,239 |  | 139,555 |
| Deposits |  | 260,893 |  | 245,391 |
| Loans and leases ${ }^{(2)}$ |  | 142,102 |  | 129,746 |
| Total client balances |  | 2,458,035 |  | 2,498,998 |
| Assets Under Management Rollforward |  |  |  |  |
| Assets under management, beginning of year | \$ | 902,872 | \$ | 821,449 |
| Net long-term client flows |  | 34,441 |  | 49,800 |
| Net liquidity client flows |  | 6,133 |  | 3,361 |
| Market valuation/other |  | $(42,583)$ |  | 28,262 |
| Total assets under management, end of year | \$ | 900,863 | \$ | 902,872 |
| Associates, at year end ${ }^{(3,4)}$ |  |  |  |  |
| Number of financial advisors |  | 16,687 |  | 16,147 |
| Total wealth advisors, including financial advisors |  | 18,131 |  | 17,561 |
| Total client-facing professionals, including financial advisors and wealth advisors |  | 20,605 |  | 20,085 |
| Merrill Lynch Global Wealth Management Metric ${ }^{(4)}$ |  |  |  |  |
| Financial advisor productivity ${ }^{(5)}$ (in thousands) | \$ | 1,024 | \$ | 1,059 |
| U.S. Trust Metric, at year end (4) |  |  |  |  |
| Client-facing professionals |  | 2,186 |  | 2,181 |

(1) Includes the results of BofA Global Capital Management, the cash management division of Bank of America, and certain administrative items.
${ }^{(2)}$ Includes margin receivables which are classified in customer and other receivables on the Consolidated Balance Sheet.
${ }^{(3)}$ Includes financial advisors in the Consumer Banking segment of 2,187 and 1,978 at December 31, 2015 and 2014.
(4) Headcount computation is based upon full-time equivalents.
${ }^{(5)}$ Financial advisor productivity is defined as Merrill Lynch Global Wealth Management total revenue, excluding the allocation of certain ALM activities, divided by the total number of financial advisors (excluding financial advisors in the Consumer Banking segment).

Client balances decreased $\$ 41.0$ billion, or two percent, to nearly $\$ 2.5$ trillion driven by market declines, partially offset by client balance flows.

The number of wealth advisors increased three percent, due to continued investment in the advisor development programs, improved competitive recruiting and near historically low advisor attrition levels.

In 2015, revenue from MLGWM of $\$ 14.9$ billion and U.S. Trust of $\$ 3.0$ billion were each down two percent primarily driven by lower net interest income due to the impact of the allocation of ALM activities. Additionally, noninterest income was down in MLGWM driven by lower transactional revenue, partially offset by the impact of long-term AUM flows.

## Net Migration Summary

GWIM results are impacted by the net migration of clients and their corresponding deposit, loan and brokerage balances primarily to or from Consumer Banking, as presented in the table below. Migrations result from the movement of clients between business segments to better align with client needs.

## Net Migration Summary ${ }^{(1)}$

(Dollars in millions)
Total deposits, net - to (from) GWIM
Total loans, net - to (from) GWIM
Total brokerage, net - to (from) GWIM
${ }^{(1)}$ Migration occurs primarily between GWIM and Consumer Banking

| 2015 |  | 2014 |  |
| ---: | ---: | ---: | ---: |
| $\$$ | $(218)$ | $\$$ | 1,350 |
|  | $(97)$ |  | $(61)$ |
|  | $(2,416)$ |  | $(2,710)$ |
|  |  |  |  |

Global Banking

| (Dollars in millions) | 2015 |  | 2014 |  | \% Change |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Net interest income (FTE basis) | \$ | 9,050 | \$ | 9,586 | (6)\% |
| Noninterest income: |  |  |  |  |  |
| Service charges |  | 2,914 |  | 2,901 | - |
| Investment banking fees |  | 3,110 |  | 3,213 | (3) |
| All other income |  | 2,353 |  | 2,400 | (2) |
| Total noninterest income |  | 8,377 |  | 8,514 | (2) |
| Total revenue, net of interest expense (FTE basis) |  | 17,427 |  | 18,100 | (4) |
| Provision for credit losses |  | 685 |  | 322 | 113 |
| Noninterest expense |  | 8,481 |  | 8,807 | (4) |
| Income before income taxes (FTE basis) |  | 8,261 |  | 8,971 | (8) |
| Income tax expense (FTE basis) |  | 3,041 |  | 3,292 | (8) |
| Net income | \$ | 5,220 | \$ | 5,679 | (8) |
| Net interest yield (FTE basis) |  | 2.84\% |  | 3.08\% |  |
| Return on average allocated capital |  | 15 |  | 17 |  |
| Efficiency ratio (FTE basis) |  | 48.67 |  | 48.66 |  |
| Balance Sheet |  |  |  |  |  |
| Average |  |  |  |  |  |
| Total loans and leases | \$ | 299,824 | \$ | 281,304 | 7 |
| Total earning assets |  | 319,005 |  | 311,682 | 2 |
| Total assets |  | 369,001 |  | 362,273 | 2 |
| Total deposits |  | 294,733 |  | 288,010 | 2 |
| Allocated capital |  | 35,000 |  | 33,500 | 4 |
| Year end |  |  |  |  |  |
| Total loans and leases | \$ | 319,580 | \$ | 283,584 | 13 |
| Total earning assets |  | 330,658 |  | 303,132 | 9 |
| Total assets |  | 381,975 |  | 353,637 | 8 |
| Total deposits |  | 296,162 |  | 279,792 | 6 |

Global Banking, which includes Global Corporate Banking, Global Commercial Banking, Business Banking and Global Investment Banking, provides a wide range of lending-related products and services, integrated working capital management and treasury solutions to clients, and underwriting and advisory services through our network of offices and client relationship teams. Our lending products and services include commercial loans, leases, commitment facilities, trade finance, real estate lending and asset-based lending. Our treasury solutions business includes treasury management, foreign exchange and short-term investing options. We also provide investment banking products to our clients such as debt and equity underwriting and distribution, and merger-related and other advisory services. Underwriting debt and equity issuances, fixed-income and equity research, and certain market-based activities are executed through our global broker-dealer affiliates which are our primary dealers in several countries. Within Global Banking, Global Commercial Banking clients generally include middle-market companies, commercial real estate firms and not-for-profit companies. Global Corporate Banking clients generally include large global corporations, financial institutions and leasing clients. Business Banking clients include mid-sized U.S.-based businesses requiring customized and integrated financial advice and solutions.

Net income for Global Banking decreased $\$ 459$ million to $\$ 5.2$ billion in 2015 compared to 2014 primarily driven by lower revenue and higher provision for credit losses, partially offset by lower noninterest expense.

Revenue decreased $\$ 673$ million to $\$ 17.4$ billion in 2015 primarily due to lower net interest income. The decline in net interest income reflects the impact of the allocation of ALM activities, including liquidity costs as well as loan spread compression, partially offset by loan growth. Noninterest income of $\$ 8.4$ billion remained relatively unchanged in 2015.

The provision for credit losses increased $\$ 363$ million to $\$ 685$ million in 2015 primarily driven by energy exposure and loan growth. For additional information, see Commercial Portfolio Credit Risk Management - Industry Concentrations on page 64. Noninterest expense decreased $\$ 326$ million to $\$ 8.5$ billion in 2015 primarily due to lower litigation expense and technology initiative costs.

The return on average allocated capital was 15 percent in 2015, down from 17 percent in 2014, due to increased capital allocations and lower net income. For more information on capital allocated to the business segments, see Business Segment Operations on page 14.

## Global Corporate, Global Commercial and Business Banking

Global Corporate, Global Commercial and Business Banking each include Business Lending and Global Transaction Services activities. Business Lending includes various lending-related products and services, and related hedging activities, including
commercial loans, leases, commitment facilities, trade finance, real estate lending and asset-based lending. Global Transaction Services includes deposits, treasury management, credit card, foreign exchange and short-term investment products.

The table below presents a summary of the results, which exclude certain capital markets activity in Global Banking.

Global Corporate, Global Commercial and Business Banking

| (Dollars in millions) | Global Corporate Banking |  |  |  | Global Commercial Banking |  |  |  | Business Banking |  |  |  | Total |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 015 |  | 2014 |  | 2015 |  | 2014 |
| Revenue |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Business Lending | \$ | 3,830 | \$ | 3,968 | \$ | 3,960 | \$ | 3,928 | \$ | 351 | \$ | 372 | \$ | 8,141 | \$ | 8,268 |
| Global Transaction Services |  | 2,781 |  | 2,953 |  | 2,632 |  | 2,848 |  | 698 |  | 710 |  | 6,111 |  | 6,511 |
| Total revenue, net of interest expense | \$ | 6,611 | \$ | 6,921 | \$ | 6,592 | \$ | 6,776 | \$ | 1,049 | \$ | 1,082 | \$ | 14,252 | \$ | 14,779 |


| Balance Shee |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Average |  |  |  |  |  |  |  |  |  |  |
| Total loans and leases | \$ 133,941 | \$124,404 | \$ 148,735 | \$140,096 | \$ | 17,072 | \$ | 16,790 | \$ 299,748 | \$281,290 |
| Total deposits | 138,142 | 140,526 | 123,007 | 117,389 |  | 33,588 |  | 30,096 | 294,737 | 288,011 |
| Year end |  |  |  |  |  |  |  |  |  |  |
| Total loans and leases | \$ 142,696 | \$125,732 | \$ 159,720 | \$141,051 | \$ | 17,165 | \$ | 16,803 | \$ 319,581 | \$283,586 |
| Total deposits | 133,742 | 127,823 | 128,656 | 120,079 |  | 33,767 |  | 31,890 | 296,165 | 279,792 |

Business Lending revenue of $\$ 8.1$ billion remained relatively unchanged in 2015 compared to 2014 as loan spread compression was offset by the benefit of loan growth.

Global Transaction Services revenue decreased $\$ 400$ million in 2015 primarily due to lower net interest income as a result of the impact of the allocation of ALM activities, including liquidity costs.

Average loans and leases increased seven percent in 2015 compared to 2014 due to strong origination volumes and increased revolver utilization. Average deposits remained relatively unchanged in 2015.

## Global Investment Banking

Client teams and product specialists underwrite and distribute debt, equity and loan products, and provide advisory services and tailored risk management solutions. The economics of most investment banking and underwriting activities are shared primarily between Global Banking and Global Markets under an internal revenue-sharing arrangement. To provide a complete discussion of our consolidated investment banking fees, the following table presents total Corporation investment banking fees and the portion attributable to Global Banking.

## Investment Banking Fees

| (Dollars in millions) | Global Banking |  |  |  | Total Corporation |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| Products |  |  |  |  |  |  |  |  |
| Advisory | \$ | 1,354 | \$ | 1,098 | \$ | 1,503 | \$ | 1,205 |
| Debt issuance |  | 1,296 |  | 1,532 |  | 3,033 |  | 3,583 |
| Equity issuance |  | 460 |  | 583 |  | 1,236 |  | 1,490 |
| Gross investment banking fees |  | 3,110 |  | 3,213 |  | 5,772 |  | 6,278 |
| Self-led deals |  | (57) |  | (91) |  | (200) |  | (213) |
| Total investment banking fees | \$ | 3,053 | \$ | 3,122 | \$ | 5,572 | \$ | 6,065 |

Total Corporation investment banking fees of $\$ 5.6$ billion, excluding self-led deals, included within Global Banking and Global Markets, decreased eight percent in 2015 compared to 2014 driven by lower debt and equity issuance fees, partially offset by higher advisory fees. Underwriting fees for debt products declined primarily as a result of lower debt issuance volumes mainly in leveraged finance transactions.

| (Dollars in millions) | 2015 |  | 2014 |  | \% Change |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Net interest income (FTE basis) | \$ | 4,183 | \$ | 3,848 | 9\% |
| Noninterest income: |  |  |  |  |  |
| Investment and brokerage services |  | 2,221 |  | 2,205 | 1 |
| Investment banking fees |  | 2,401 |  | 2,743 | (12) |
| Trading account profits |  | 6,109 |  | 6,027 | 1 |
| All other income |  | 92 |  | 1,304 | (93) |
| Total noninterest income |  | 10,823 |  | 12,279 | (12) |
| Total revenue, net of interest expense (FTE basis) |  | 15,006 |  | 16,127 | (7) |
| Provision for credit losses |  | 99 |  | 110 | (10) |
| Noninterest expense |  | 11,373 |  | 11,989 | (5) |
| Income before income taxes (FTE basis) |  | 3,534 |  | 4,028 | (12) |
| Income tax expense (FTE basis) |  | 1,115 |  | 1,440 | (23) |
| Net income | \$ | 2,419 | \$ | 2,588 | (7) |
| Return on average allocated capital |  | 7\% |  | 8\% |  |
| Efficiency ratio (FTE basis) |  | 75.79 |  | 74.34 |  |
| Balance Sheet |  |  |  |  |  |
| Average |  |  |  |  |  |
| Trading-related assets: |  |  |  |  |  |
| Trading account securities | \$ | 195,650 | \$ | 201,951 | (3) |
| Reverse repurchases |  | 103,506 |  | 115,897 | (11) |
| Securities borrowed |  | 79,494 |  | 85,098 | (7) |
| Derivative assets |  | 54,519 |  | 46,677 | 17 |
| Total trading-related assets ${ }^{(1)}$ |  | 433,169 |  | 449,623 | (4) |
| Total loans and leases |  | 63,443 |  | 61,750 | 3 |
| Total earning assets ${ }^{(1)}$ |  | 430,468 |  | 457,871 | (6) |
| Total assets |  | 594,057 |  | 604,198 | (2) |
| Total deposits |  | 38,074 |  | 40,221 | (5) |
| Allocated capital |  | 35,000 |  | 34,000 | 3 |
| Year end |  |  |  |  |  |
| Total trading-related assets ${ }^{(1)}$ | \$ | 373,926 | \$ | 418,847 | (11) |
| Total loans and leases |  | 73,208 |  | 58,996 | 24 |
| Total earning assets ${ }^{(1)}$ |  | 384,046 |  | 418,849 | (8) |
| Total assets |  | 548,790 |  | 576,552 | (5) |
| Total deposits |  | 37,038 |  | 40,665 | (9) |

(1) Trading-related assets include derivative assets, which are considered non-earning assets.

Global Markets offers sales and trading services, including research, to institutional clients across fixed-income, credit, currency, commodity and equity businesses. Global Markets product coverage includes securities and derivative products in both the primary and secondary markets. Global Markets provides market-making, financing, securities clearing, settlement and custody services globally to our institutional investor clients in support of their investing and trading activities. We also work with our commercial and corporate clients to provide risk management products using interest rate, equity, credit, currency and commodity derivatives, foreign exchange, fixed-income and mortgage-related products. As a result of our market-making activities in these products, we may be required to manage risk in a broad range of financial products including government securities, equity and equity-linked securities, high-grade and high-yield corporate debt securities, syndicated loans, MBS, commodities and asset-backed securities (ABS). The economics of most investment banking and underwriting activities are shared primarily between Global Markets and Global Banking based on the activities performed by each segment. Global Banking originates certain deal-related
transactions with our corporate and commercial clients that are executed and distributed by Global Markets. For information on investment banking fees on a consolidated basis, see page 23.

Retrospective to January 1, 2015, we early adopted new accounting guidance that requires the Corporation to present unrealized DVA gains and losses on certain liabilities accounted for under the fair value option in accumulated OCI. This change, which is reflected entirely in Global Markets, resulted in a reclassification of pretax unrealized DVA gains of $\$ 1.0$ billion from other income to accumulated OCI for 2015. Results for 2014 were not subject to restatement under the provisions of the new accounting guidance. Net DVA on derivatives is still reported in Global Markets segment results. For additional information, see Executive Summary - Recent Events on page 4. In 2014, we implemented a funding valuation adjustment (FVA) into our valuation estimates primarily to include funding costs on uncollateralized derivatives and derivatives where we are not permitted to use the collateral we receive. This change in estimate resulted in a net FVA pretax charge of $\$ 497$ million in 2014, which is included in net DVA.

Net income for Global Markets decreased $\$ 169$ million to $\$ 2.4$ billion in 2015 compared to 2014. Excluding net DVA, net income increased $\$ 168$ million to $\$ 2.9$ billion in 2015 compared to 2014, primarily driven by lower noninterest expense and lower tax expense, partially offset by lower revenue. Revenue, excluding net DVA, decreased due to lower trading account profits due to declines in credit-related businesses, lower investment banking fees and lower equity investment gains (not included in sales and trading revenue) as 2014 included gains related to the IPO of an equity investment, partially offset by an increase in net interest income. Net DVA losses were $\$ 786$ million compared to losses of $\$ 240$ million in 2014. Sales and trading revenue, excluding net DVA, decreased $\$ 144$ million due to lower fixed-income, currencies and commodities (FICC) revenue, partially offset by increased Equities revenue. Noninterest expense decreased $\$ 616$ million to $\$ 11.4$ billion largely due to lower litigation expense and, to a lesser extent, lower revenue-related incentive compensation and support costs. The effective tax rate for 2014 reflected the impact of nondeductible litigation expense.

Average earning assets decreased $\$ 27.4$ billion to $\$ 430.5$ billion in 2015 largely driven by a decrease in reverse repurchases, securities borrowed and trading securities primarily due to a reduction in client financing activity and continuing balance sheet optimization efforts across Global Markets.

Year-end loans and leases increased $\$ 14.2$ billion in 2015 primarily due to growth in mortgage and securitization finance.

The return on average allocated capital was seven percent, down from eight percent, reflecting a decrease in net income and an increase in allocated capital.

## Sales and Trading Revenue

Sales and trading revenue includes unrealized and realized gains and losses on trading and other assets, net interest income, and fees primarily from commissions on equity securities. Sales and trading revenue is segregated into fixed-income (government debt obligations, investment and non-investment grade corporate debt obligations, commercial MBS, RMBS, collateralized loan
obligations (CLOs), interest rate and credit derivative contracts), currencies (interest rate and foreign exchange contracts), commodities (primarily futures, forwards, swaps and options) and equities (equity-linked derivatives and cash equity activity). The following table and related discussion present sales and trading revenue, substantially all of which is in Global Markets, with the remainder in Global Banking. In addition, the following table and related discussion present sales and trading revenue excluding the impact of net DVA, which is a non-GAAP financial measure. We believe the use of this non-GAAP financial measure provides clarity in assessing the underlying performance of these businesses.

## Sales and Trading Revenue (1, 2)

| (Dollars in millions) |  | 2015 | 2014 |  |
| :--- | ---: | ---: | ---: | ---: |
| Sales and trading revenue |  |  |  |  |
| Fixed-income, currencies and commodities | $\$$ | 7,865 | $\$$ | 8,696 |
| Equities |  | 4,335 |  | 4,194 |
| $\quad$ Total sales and trading revenue | $\mathbf{1 2 , 2 0 0}$ | $\$$ | 12,890 |  |

Sales and trading revenue, excluding net DVA (3)

| Fixed-income, currencies and commodities | $\$$ | 8,629 | $\$$ | 9,002 |
| :--- | :--- | :--- | :--- | :--- |
| Equities |  | 4,357 |  | 4,128 |

Total sales and trading revenue, excluding net DVA $\$ 12,986$ \$ 13,130
${ }^{(1)}$ Includes FTE adjustments of $\$ 182$ million for both 2015 and 2014. For more information on sales and trading revenue, see Note 2 - Derivatives to the Consolidated Financial Statements.
(2) Includes Global Banking sales and trading revenue of $\$ 422$ million and $\$ 383$ million for 2015 and 2014
3) FICC and Equities sales and trading revenue, excluding the impact of net DVA, is a non-GAAP financial measure. FICC net DVA losses were $\$ 764$ million for 2015 compared to net DVA losses of $\$ 306$ million in 2014. Equities net DVA losses were $\$ 22$ million for 2015 compared to net DVA gains of $\$ 66$ million in 2014.

FICC revenue, excluding net DVA, decreased $\$ 373$ million to $\$ 8.6$ billion primarily driven by declines in credit-related businesses due to lower client activity, partially offset by stronger results in rates, currencies and commodities products. Equities revenue, excluding net DVA, increased $\$ 229$ million to $\$ 4.4$ billion primarily driven by strong performance in derivatives and increased client activity in the Asia-Pacific region.

| (Dollars in millions) | 2015 |  | 2014 |  | \% Change |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Net interest income (FTE basis) | \$ | 939 | \$ | 651 | 44\% |
| Noninterest income: |  |  |  |  |  |
| Card income |  | 260 |  | 357 | (27) |
| Mortgage banking income |  | 1,022 |  | 160 | n/m |
| Gains on sales of debt securities |  | 1,079 |  | 1,341 | (20) |
| All other loss |  | $(1,212)$ |  | $(1,265)$ | (4) |
| Total noninterest income |  | 1,149 |  | 593 | 94 |
| Total revenue, net of interest expense (FTE basis) |  | 2,088 |  | 1,244 | 68 |
| Provision for credit losses |  | (20) |  | (641) | (97) |
| Noninterest expense |  | 5,227 |  | 21,639 | (76) |
| Loss before income taxes (FTE basis) |  | $(3,119)$ |  | $(19,754)$ | (84) |
| Income tax benefit (FTE basis) |  | $(2,236)$ |  | $(7,252)$ | (69) |
| Net loss | \$ | (883) | \$ | $(12,502)$ | (93) |
| Balance Sheet |  |  |  |  |  |
| Average |  |  |  |  |  |
| Total loans and leases | \$ | 148,589 | \$ | 201,454 | (26) |
| Total assets ${ }^{(1)}$ |  | 300,941 |  | 323,131 | (7) |
| Total deposits |  | 25,452 |  | 35,548 | (28) |
| Year end |  |  |  |  |  |
| Total loans and leases | \$ | 126,305 | \$ | 172,849 | (27) |
| Total assets ${ }^{(1)}$ |  | 271,853 |  | 300,325 | (9) |
| Total deposits |  | 25,334 |  | 22,447 | 13 |

1) In segments where the total of liabilities and equity exceeds assets, which are generally deposit-taking segments, we allocate assets from All Other to those segments to match liabilities (i.e., deposits) and allocated shareholders' equity. Such allocated assets were $\$ 467.6$ billion and $\$ 449.5$ billion for 2015 and 2014 , and $\$ 489.0$ billion and $\$ 447.6$ billion at December 31,2015 and 2014.
$\mathrm{n} / \mathrm{m}=$ not meaningful

All Other consists of ALM activities, equity investments, the international consumer card business, non-core mortgage loans and servicing activities, liquidating businesses, residual expense allocations and other. ALM activities encompass certain residential mortgages, debt securities, interest rate and foreign currency risk management activities including the residual net interest income allocation, the impact of certain allocation methodologies and accounting hedge ineffectiveness. The results of certain ALM activities are allocated to our business segments. Beginning with new originations in 2014, we retain certain residential mortgages in Consumer Banking, consistent with where the overall relationship is managed; previously such mortgages were in All Other. For more information on our ALM activities, see Interest Rate Risk Management for Non-trading Activities on page 78 and Note 24 - Business Segment Information to the Consolidated Financial Statements. Equity investments include our merchant services joint venture as well as Global Principal Investments (GPI) which is comprised of a portfolio of equity, real estate and other alternative investments. For more information on our merchant services joint venture, see Note 12 - Commitments and Contingencies to the Consolidated Financial Statements.

The Corporation classifies consumer real estate loans as core or non-core based on loan and customer characteristics such as origination date, product type, LTV, FICO score and delinquency status. Residential mortgage loans that are held for interest rate or liquidity risk management purposes are presented on the balance sheet of All Other. For more information on our interest rate and liquidity risk management activities, see Liquidity Risk on page 41 and Interest Rate Risk Management for Non-trading Activities on page 78. During 2015, residential mortgage loans
held for ALM activities decreased $\$ 26.5$ billion to $\$ 43.1$ billion at December 31, 2015 primarily as a result of sales, payoffs and paydowns. Non-core residential mortgage and home equity loans, which are principally run-off portfolios, including certain loans accounted for under the fair value option and MSRs pertaining to non-core loans serviced for others, are also held in All Other. During 2015 , total non-core loans decreased $\$ 18.7$ billion to $\$ 68.8$ billion at December 31, 2015 due largely to payoffs and paydowns, as well as loan sales.

The net loss for All Other decreased $\$ 11.6$ billion to a loss of $\$ 883$ million in 2015 primarily driven by significantly lower litigation expense, which is included in noninterest expense, an increase in mortgage banking income, higher net interest income, an increase in gains on sales of consumer real estate loans and lower U.K. PPI costs. These were partially offset by a decrease in equity investment income, a decrease in the benefit in the provision for credit losses and lower gains on sales of debt securities.

Net interest income increased $\$ 288$ million primarily driven by a lower impact from negative market-related adjustments on debt securities, partially offset by a $\$ 612$ million charge in 2015 related to the discount on certain trust preferred securities. Negative market-related adjustments on debt securities were $\$ 296$ million compared to $\$ 1.1$ billion in 2014. Mortgage banking income increased $\$ 862$ million primarily due to a lower representations and warranties provision compared to 2014. Equity investment income decreased $\$ 727$ million as the prior year included a gain on the sale of a portion of an equity investment. Gains on the sales of loans, including nonperforming and other delinquent loans, net of hedges, were $\$ 1.0$ billion compared to gains of $\$ 672$ million in 2014. Also included in all other loss were U.K. PPI costs
of $\$ 319$ million compared to $\$ 621$ million, and negative FTE adjustments of $\$ 1.6$ billion compared to $\$ 1.3$ billion to eliminate the FTE treatment of certain tax credits recorded in Global Banking. The benefit in the provision for credit losses decreased \$621 million to a benefit of $\$ 20$ million in 2015 primarily driven by lower recoveries, including those recorded in connection with residential mortgage loan sales.

Noninterest expense decreased $\$ 16.4$ billion to $\$ 5.2$ billion reflecting a decrease in litigation expense and lower personnel, infrastructure and support costs, partially offset by higher professional fees related in part to our CCAR resubmission.

The income tax benefit was $\$ 2.2$ billion on a pretax loss of $\$ 3.1$ billion in 2015 compared to a benefit of $\$ 7.3$ billion on a pretax loss of $\$ 19.8$ billion in 2014. The decrease in the income tax benefit is attributable to the decline in the pretax loss which in 2014 included the settlement with the DoJ, a portion of which was non-deductible. In addition, 2014 included tax benefits from the resolution of several tax examinations, and 2015 included the charge of approximately $\$ 290$ million related to the U.K. tax law change. Both periods include income tax benefit adjustments to eliminate the FTE treatment of certain tax credits recorded in Global Banking.

## Off-Balance Sheet Arrangements and Contractual Obligations

We have contractual obligations to make future payments on debt and lease agreements. Additionally, in the normal course of business, we enter into contractual arrangements whereby we commit to future purchases of products or services from
unaffiliated parties. Purchase obligations are defined as obligations that are legally binding agreements whereby we agree to purchase products or services with a specific minimum quantity at a fixed, minimum or variable price over a specified period of time. Included in purchase obligations are vendor contracts, the most significant of which include communication services, processing services and software contracts. Other long-term liabilities include our contractual funding obligations related to the Qualified Pension Plans, Non-U.S. Pension Plans, Nonqualified and Other Pension Plans, and Postretirement Health and Life Plans (collectively, the Plans). Obligations to the Plans are based on the current and projected obligations of the Plans, performance of the Plans' assets and any participant contributions, if applicable. During 2015 and 2014, we contributed $\$ 234$ million each year to the Plans, and we expect to make $\$ 261$ million of contributions during 2016. The Plans are more fully discussed in Note 17 Employee Benefit Plans to the Consolidated Financial Statements.

Debt, lease, equity and other obligations are more fully discussed in Note 11 - Long-term Debt and Note 12 - Commitments and Contingencies to the Consolidated Financial Statements.

We enter into commitments to extend credit such as loan commitments, standby letters of credit (SBLCs) and commercial letters of credit to meet the financing needs of our customers. For a summary of the total unfunded, or off-balance sheet, credit extension commitment amounts by expiration date, see Credit Extension Commitments in Note 12 - Commitments and Contingencies to the Consolidated Financial Statements.

Table 11 includes certain contractual obligations at December 31, 2015 and 2014.

Table 11 Contractual Obligations

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |  |  | $\begin{gathered} \text { December } 31 \\ 2014 \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Due in One Year or Less |  | Due After One Year Through Three Years |  | Due After Three Years Through Five Years |  | Due After Five Years |  | Total |  | Total |  |
| Long-term debt | \$ | 43,334 | \$ | 75,377 | \$ | 36,513 | \$ | 81,540 | \$ | 236,764 | \$ | 243,139 |
| Operating lease obligations |  | 2,456 |  | 3,846 |  | 2,798 |  | 4,581 |  | 13,681 |  | 14,406 |
| Purchase obligations |  | 2,007 |  | 1,905 |  | 629 |  | 809 |  | 5,350 |  | 5,544 |
| Time deposits |  | 65,567 |  | 5,207 |  | 2,517 |  | 683 |  | 73,974 |  | 84,843 |
| Other long-term liabilities |  | 1,663 |  | 870 |  | 668 |  | 1,110 |  | 4,311 |  | 4,232 |
| Estimated interest expense on long-term debt and time deposits ${ }^{(1)}$ |  | 4,753 |  | 7,124 |  | 5,064 |  | 26,957 |  | 43,898 |  | 45,462 |
| Total contractual obligations | \$ | 119,780 | \$ | 94,329 | \$ | 48,189 | \$ | 115,680 | \$ | 377,978 | \$ | 397,626 |

liability, and are net of derivative hedges, where applicable.

## Representations and Warranties

We securitize first-lien residential mortgage loans generally in the form of RMBS guaranteed by the government-sponsored enterprises (GSEs), which include FHLMC and FNMA, or by the Government National Mortgage Association (GNMA) in the case of Federal Housing Administration (FHA)-insured, U.S. Department of Veterans Affairs (VA)-guaranteed and Rural Housing Serviceguaranteed mortgage loans, and sell pools of first-lien residential mortgage loans in the form of whole loans. In addition, in prior years, legacy companies and certain subsidiaries sold pools of first-lien residential mortgage loans and home equity loans as private-label securitizations (in certain of these securitizations,
monoline insurers or other financial guarantee providers insured all or some of the securities) or in the form of whole loans. In connection with these transactions, we or certain of our subsidiaries or legacy companies made various representations and warranties. Breaches of these representations and warranties have resulted in and may continue to result in the requirement to repurchase mortgage loans or to otherwise make whole or provide other remedies to the GSEs, U.S. Department of Housing and Urban Development with respect to FHA-insured loans, VA, wholeloan investors, securitization trusts, monoline insurers or other financial guarantors as applicable (collectively, repurchases). In all such cases, subsequent to repurchasing the loan, we would be
exposed to any credit loss on the repurchased mortgage loans after accounting for any mortgage insurance (MI) or mortgage guarantee payments that we may receive.

We have vigorously contested any request for repurchase where we have concluded that a valid basis for repurchase does not exist and will continue to do so in the future. However, in an effort to resolve legacy mortgage-related issues, we have reached settlements, certain of which have been for significant amounts, in lieu of a loan-by-loan review process, including with the GSEs, four monoline insurers and BNY Mellon, as trustee for certain securitization trusts.

For more information on accounting for representations and warranties, repurchase claims and exposures, see Note 7 Representations and Warranties Obligations and Corporate Guarantees and Note 12 - Commitments and Contingencies to the Consolidated Financial Statements and Item 1A. Risk Factors of the Corporation's 2015 Annual Report on Form 10-K.

Settlement with the Bank of New York Mellon, as Trustee On April 22, 2015, the New York County Supreme Court entered final judgment approving the BNY Mellon Settlement. In October 2015, BNY Mellon obtained certain state tax opinions and an IRS private letter ruling confirming that the settlement will not impact the real estate mortgage investment conduit tax status of the trusts. The final conditions of the settlement have been satisfied and, accordingly, the Corporation made the settlement payment to BNY Mellon of $\$ 8.5$ billion in February 2016. Pursuant to the settlement agreement, allocation and distribution of the $\$ 8.5$ billion settlement payment is the responsibility of the RMBS trustee, BNY Mellon. On February 5, 2016, BNY Mellon filed an Article 77 proceeding in the New York County Supreme Court asking the court for instruction with respect to certain issues concerning the distribution of each trust's allocable share of the settlement payment and asking that the settlement payment be ordered to be held in escrow pending the outcome of this Article 77 proceeding. The Corporation is not a party to this proceeding.

## New York Court Decision on Statute of Limitations

On June 11, 2015, the New York Court of Appeals, New York's highest appellate court, issued its opinion on the statute of limitations applicable to representations and warranties claims in ACE Securities Corp. v. DB Structured Products, Inc. (ACE). The Court of Appeals held that, under New York law, a claim for breach of contractual representations and warranties begins to run at the time the representations and warranties are made, and rejected the argument that the six-year statute of limitations does not begin to run until the time repurchase is refused. The Court of Appeals also held that compliance with the contractual notice and cure period was a pre-condition to filing suit, and claims that did not comply with such contractual requirements prior to the expiration of the statute of limitations period were invalid. While no entity affiliated with the Corporation was a party to this litigation, the vast majority of the private-label RMBS trusts into which entities affiliated with the Corporation sold loans and made representations and warranties are governed by New York law. While the Corporation treats claims where the statute of limitations has expired, as determined in accordance with the ACE decision, as time-barred and therefore resolved and no longer outstanding, investors or trustees have sought to distinguish certain aspects of the ACE decision or to assert other claims against RMBS counterparties seeking to avoid or circumvent the impact of the

ACE decision. For example, a recent ruling by a New York intermediate appellate court allowed a counterparty to pursue litigation on loans in the entire trust even though only some of the loans complied with the condition precedent of timely pre-suit notice and opportunity to cure or repurchase. The potential impact on the Corporation, if any, of judicial limitations on the ACE decision, or claims seeking to distinguish or avoid the ACE decision is unclear at this time. For additional information, see Note 7 Representations and Warranties Obligations and Corporate Guarantees to the Consolidated Financial Statements.

## Unresolved Repurchase Claims

Unresolved representations and warranties repurchase claims represent the notional amount of repurchase claims made by counterparties, typically the outstanding principal balance or the unpaid principal balance at the time of default. In the case of firstlien mortgages, the claim amount is often significantly greater than the expected loss amount due to the benefit of collateral and, in some cases, Ml or mortgage guarantee payments. Claims received from a counterparty remain outstanding until the underlying loan is repurchased, the claim is rescinded by the counterparty, we determine that the applicable statute of limitations has expired, or representations and warranties claims with respect to the applicable trust are settled, and fully and finally released. When a claim is denied and we do not receive a response from the counterparty, the claim remains in the unresolved repurchase claims balance until resolution in one of the ways described above.

At December 31, 2015, we had $\$ 18.4$ billion of unresolved repurchase claims, net of duplicate claims, compared to $\$ 22.8$ billion at December 31, 2014. These repurchase claims primarily relate to private-label securitizations and exclude claims in the amount of $\$ 7.4$ billion at December 31, 2015 where the statute of limitations has expired without litigation being commenced. At December 31, 2014, time-barred claims of $\$ 5.2$ billion were included in unresolved repurchase claims. The notional amount of unresolved repurchase claims at both December 31, 2015 and 2014 includes $\$ 3.5$ billion of claims related to loans in specific private-label securitization groups or tranches where we own substantially all of the outstanding securities. For additional information, see Note 7 - Representations and Warranties Obligations and Corporate Guarantees to the Consolidated Financial Statements.

The overall decrease in the notional amount of outstanding unresolved repurchase claims in 2015 is primarily due to the impact of time-barred claims under the ACE decision, partially offset by new claims from private-label securitization trustees. Outstanding repurchase claims remain unresolved primarily due to (1) the level of detail, support and analysis accompanying such claims, which impact overall claim quality and, therefore, claims resolution and (2) the lack of an established process to resolve disputes related to these claims.

As a result of various bulk settlements with the GSEs, we have resolved substantially all outstanding and potential representations and warranties repurchase claims on whole loans sold by legacy Bank of America and Countrywide Financial Corporation (Countrywide) to FNMA and FHLMC through June 30, 2012 and December 31, 2009, respectively. At December 31, 2015, the notional amount of unresolved repurchase claims submitted by the GSEs was $\$ 14$ million for loans originated prior to 2009. For more information on the monolines and experience
with the GSEs, see Note 7 - Representations and Warranties Obligations and Corporate Guarantees to the Consolidated Financial Statements.

During 2015 and 2014, we had limited loan-level representations and warranties repurchase claims experience with the monoline insurers due to bulk settlements in prior years and ongoing litigation with a single monoline insurer. For additional information, see Note 12 - Commitments and Contingencies to the Consolidated Financial Statements.

In addition to unresolved repurchase claims, we have received notifications from sponsors of third-party securitizations with whom we engaged in whole-loan transactions indicating that we may have indemnity obligations with respect to loans for which we have not received a repurchase request. These outstanding notifications totaled $\$ 1.4$ billion and $\$ 2.0$ billion at December 31, 2015 and 2014.

We also from time to time receive correspondence purporting to raise representations and warranties breach issues from entities that do not have contractual standing or ability to bring such claims. We believe such communications to be procedurally and/or substantively invalid, and generally do not respond.

The presence of repurchase claims on a given trust, receipt of notices of indemnification obligations and receipt of other communications, as discussed above, are all factors that inform our liability for representations and warranties and the corresponding estimated range of possible loss.

## Representations and Warranties Liability

The liability for representations and warranties and corporate guarantees is included in accrued expenses and other liabilities on the Consolidated Balance Sheet and the related provision is included in mortgage banking income in the Consolidated Statement of Income. For more information on the representations and warranties liability and the corresponding estimated range of possible loss, see Off-Balance Sheet Arrangements and Contractual Obligations - Estimated Range of Possible Loss on page 30 and Note 7 - Representations and Warranties Obligations and Corporate Guarantees to the Consolidated Financial Statements.

At December 31, 2015 and 2014, the liability for representations and warranties was $\$ 11.3$ billion and $\$ 12.1$ billion, which included $\$ 8.5$ billion related to the BNY Mellon Settlement. The representations and warranties benefit was $\$ 39$ million for 2015 compared to a provision of $\$ 683$ million for 2014. The benefit in the provision for representations and warranties for 2015 compared to a provision in 2014 was primarily driven by the impact of the ACE decision.

Our liability for representations and warranties is necessarily dependent on, and limited by, a number of factors including for private-label securitizations the implied repurchase experience based on the BNY Mellon Settlement, as well as certain other assumptions and judgmental factors. Where relevant, we also consider more recent experience, such as claim activity, notification of potential indemnification obligations, our experience with various counterparties, the ACE decision, other recent court decisions related to the statute of limitations, and other facts and circumstances, such as bulk settlements, as we believe appropriate. Accordingly, future provisions associated with obligations under representations and warranties may be materially impacted if future experiences are different from historical experience or our understandings, interpretations or assumptions.

## Experience with Investors Other than Governmentsponsored Enterprises

Prior to 2009, legacy companies and certain subsidiaries sold pools of first-lien residential mortgage loans and home equity loans as private-label securitizations or in the form of whole loans to investors other than the GSEs (although the GSEs are investors in certain private-label securitizations). The majority of the loans sold were included in private-label securitizations, including thirdparty sponsored transactions. We provided representations and warranties to the whole-loan investors and these investors may retain those rights even when the whole loans were aggregated with other collateral into private-label securitizations sponsored by the whole-loan investors. Such loans originated from 2004 through 2008 had an original principal balance of $\$ 970$ billion, including $\$ 786$ billion sold to private-label and whole-loan investors without monoline insurance. Taking into account settlements and the application of the statute of limitations for repurchase claims for these trusts, we believe the remaining open exposure for repurchase claims exists on loans with an original principal balance of $\$ 102$ billion. Of the $\$ 102$ billion, $\$ 45$ billion has been paid in full and $\$ 42$ billion has defaulted or was severely delinquent at December 31, 2015. At least 25 payments have been made on approximately 62 percent of these defaulted and severely delinquent loans. These remaining loans with open exposure predominantly relate to legacy Countrywide and First Franklin Financial Corporation originations of pay option and subprime first mortgages.

As it relates to private-label securitizations, a contractual liability to repurchase mortgage loans generally arises if there is a breach of representations and warranties that materially and adversely affects the interest of the investor or all the investors in a securitization trust or of the monoline insurer or other financial guarantor (as applicable).

We have received approximately $\$ 32.7$ billion of representations and warranties repurchase claims related to loans originated between 2004 and 2008 including $\$ 23.7$ billion from private-label securitization trustees and a financial guarantee provider, $\$ 8.2$ billion from whole-loan investors and $\$ 816$ million from one private-label securitization counterparty. New privatelabel claims are primarily related to repurchase requests received from trustees for private-label securitization transactions not included in the BNY Mellon Settlement. Of the $\$ 32.7$ billion in claims, we have resolved $\$ 16.0$ billion of these claims with losses of $\$ 1.9$ billion. Approximately $\$ 3.6$ billion of these claims were resolved through repurchase or indemnification, $\$ 4.7$ billion were rescinded by the investor, $\$ 325$ million were resolved through settlements and $\$ 7.4$ billion are time-barred under the applicable statute of limitations and are therefore considered resolved.

At December 31, 2015, for these vintages, the notional amount of unresolved repurchase claims submitted by private-label securitization trustees, whole-loan investors, including third-party securitization sponsors and others was $\$ 16.7$ billion. We have performed an initial review with respect to substantially all of these claims and although we do not believe a valid basis for repurchase has been established by the claimant, we consider such claims activity in the computation of our liability for representations and warranties. Until we receive a repurchase claim, we generally do not review loan files related to private-label securitizations and believe we are not required by the governing documents to do so, unless particular facts suggest we should review an individual loan file.

## Estimated Range of Possible Loss

We currently estimate that the range of possible loss for representations and warranties exposures could be up to $\$ 2$ billion over existing accruals at December 31,2015. We treat claims that are time-barred as resolved and do not consider such claims in the estimated range of possible loss. The estimated range of possible loss reflects principally exposures related to loans in private-label securitization trusts. It represents a reasonably possible loss, but does not represent a probable loss, and is based on currently available information, significant judgment and a number of assumptions that are subject to change.

For more information on the methodology used to estimate the representations and warranties liability, the corresponding estimated range of possible loss and the types of losses not considered in such estimates, see Item 1A. Risk Factors of the Corporation's 2015 Annual Report on Form 10-K and Note 7 Representations and Warranties Obligations and Corporate Guarantees to the Consolidated Financial Statements and, for more information related to the sensitivity of the assumptions used to estimate our liability for representations and warranties, see Complex Accounting Estimates - Representations and Warranties Liability on page 85.

## Department of Justice Settlement

On August 20, 2014, we reached a comprehensive settlement with the DoJ and certain federal and state agencies (DoJ Settlement). As part of the DoJ Settlement, we paid civil monetary penalties and compensatory remediation payments in 2014. In 2014 and 2015, we provided creditable consumer relief activities primarily in the form of mortgage modifications, including first-lien principal forgiveness and forbearance modifications and second- and juniorlien extinguishments, low- to moderate-income mortgage originations, and community reinvestment and neighborhood stabilization efforts, with initiatives focused on communities experiencing, or at risk of, blight. Also, we have provided support for the expansion of available affordable rental housing. Our actions are well ahead of the DoJ agreement calling for us to complete delivery of the consumer relief by no later than August 31, 2018. The consumer relief requirements are subject to oversight by an independent monitor.

## Other Mortgage-related Matters

We continue to be subject to additional borrower and non-borrower litigation and governmental and regulatory scrutiny and investigations related to our past and current origination, servicing, transfer of servicing and servicing rights, servicing compliance obligations, foreclosure activities, and MI and captive reinsurance practices with mortgage insurers. The ongoing environment of additional regulation, increased regulatory compliance obligations, and enhanced regulatory enforcement, combined with ongoing uncertainty related to the continuing evolution of the regulatory environment, has resulted in increased operational and compliance costs and may limit our ability to continue providing certain products and services. For more information on management's estimate of the aggregate range of possible loss and on regulatory investigations, see Note 12 - Commitments and Contingencies to the Consolidated Financial Statements.

## Managing Risk

## Overview

Risk is inherent in all our business activities. Sound risk management enables us to serve our customers and deliver for our shareholders. If not managed well, risks can result in financial loss, regulatory sanctions and penalties, and damage to our reputation, each of which may adversely impact our ability to execute our business strategies. The Corporation takes a comprehensive approach to risk management with a defined Risk Framework and an articulated Risk Appetite Statement which are approved annually by the Enterprise Risk Committee (ERC) and the Corporation's Board of Directors (the Board).

The seven types of risk faced by the Corporation are strategic, credit, market, liquidity, compliance, operational and reputational risks.

- Strategic risk is the risk resulting from incorrect assumptions about external or internal factors, inappropriate business plans, ineffective business strategy execution, or failure to respond in a timely manner to changes in the regulatory, macroeconomic or competitive environments.
- Credit risk is the risk of loss arising from the inability or failure of a borrower or counterparty to meet its obligations.
- Market risk is the risk that changes in market conditions may adversely impact the value of assets or liabilities, or otherwise negatively impact earnings.
- Liquidity risk is the potential inability to meet expected or unexpected cash flow and collateral needs while continuing to support our business and customer needs under a range of economic conditions.
- Compliance risk is the risk of legal or regulatory sanctions, material financial loss or damage to the reputation of the Corporation arising from the failure of the Corporation to comply with the requirements of applicable laws, rules, regulations and related self-regulatory organizations' standards and codes of conduct.
- Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events.
- Reputational risk is the risk that negative perceptions of the Corporation's conduct or business practices will adversely affect its profitability or operations through an inability to establish or maintain existing customer/client relationships.
The following sections address in more detail the specific procedures, measures and analyses of the major categories of risk. This discussion of managing risk focuses on the 2016 Risk Framework (Risk Framework) that, as part of its annual review process, was approved by the ERC and the Board in December 2015. The key enhancements from the 2015 Risk Framework include further increasing the focus on our strong risk culture and emphasizing our risk identification practices and the involvement and input of Front Line Units (FLUs) and control functions. It continues to recognize the same seven key risk types as discussed above and our risk management approach as outlined below.

A strong risk culture is fundamental to our values and operating principles. It requires us to focus on risk in all activities and encourages the necessary mindset and behavior to enable effective risk management, and promotes sound risk-taking within our risk appetite. Sustaining a strong risk culture throughout the organization is critical to the success of the Corporation and is a clear expectation of our executive management team and the Board.

Our Risk Framework is the foundation for comprehensive management of the risks facing the Corporation. The Risk Framework sets forth clear roles, responsibilities and accountability for the management of risk and provides a blueprint for how the Board, through delegation of authority to committees and executive officers, establishes risk appetite and associated limits for our activities.

Executive management assesses, with Board oversight, the risk-adjusted returns of each business. Management reviews and approves the strategic and financial operating plans, as well as the capital plan and risk appetite statement, and recommends them annually to the Board for approval. Our strategic plan takes into consideration return objectives and financial resources, which must align with risk capacity and risk appetite. Management sets financial objectives for each business by allocating capital and setting a target for return on capital for each business. Capital allocations and operating limits are regularly evaluated as part of our overall governance processes as the businesses and the economic environment in which we operate continue to evolve. For more information regarding capital allocations, see Business Segment Operations on page 14.

Our Risk Appetite Statement is intended to ensure that the Corporation maintains an acceptable risk profile by providing a common framework and a comparable set of measures for senior management and the Board to clearly indicate the level of risk the Corporation is willing to accept. Risk appetite is set at least annually in conjunction with the strategic, capital and financial operating plans to align risk appetite with the Corporation's strategy and financial resources. Our line of business strategies and risk appetite are also similarly aligned. For a more detailed discussion of our risk management activities, see the discussion below and pages 34 through 81

Our overall capacity to take risk is limited; therefore, we prioritize the risks we take in order to maintain a strong and flexible financial position so we can withstand challenging economic conditions and take advantage of organic growth opportunities. Therefore, we set objectives and targets for capital and liquidity that are intended to permit the Corporation to continue to operate in a safe and sound manner at all times, including during periods of stress.

Our lines of business operate with risk limits (which may include credit, market and/or operational limits, as applicable) that are based on the amount of capital, earnings or liquidity we are willing to put at risk to achieve our strategic objectives and business plans. Executive management is responsible for tracking and reporting performance measurements as well as any exceptions to guidelines or limits. The Board, and its committees when appropriate, oversees financial performance, execution of the strategic and financial operating plans, adherence to risk appetite limits and the adequacy of internal controls.

## Risk Management Governance

The Risk Framework describes delegations of authority whereby the Board and its committees may delegate authority to management-level committees or executive officers. Such delegations may authorize certain decision-making and approval functions, which may be evidenced in, for example, committee charters, job descriptions, meeting minutes and resolutions.

The chart below illustrates the inter-relationship among the Board, Board committees and management committees that have the majority of risk oversight responsibilities for the Corporation. This chart reflects the current Risk Framework as approved by the Board in December 2015.

${ }^{(1)}$ This presentation does not include committees for other legal entities.
${ }^{(2)}$ Reports to the CEO and CFO with oversight by the Audit Committee.

## Board of Directors and Board Committees

The Board, which consists of a substantial majority of independent directors, authorizes management to maintain an effective Risk Framework, and oversees compliance with safe and sound banking practices. In addition, the Board or its committees conduct appropriate inquiries of, and receive reports from management on risk-related matters to determine whether there are scope or resource limitations that impede the ability of independent risk management and/or Corporate Audit to execute its
responsibilities. The following Board committees have the principal responsibility for enterprise-wide oversight of our risk management activities. These committees and other Board committees, as applicable, regularly report to the Board on risk-related matters. Through these activities, the Board and applicable committees are provided with thorough information on the Corporation's risk profile, and challenge executive management to appropriately address key risks facing the Corporation. Other Board committees as described below provide additional oversight of specific risks.

Each of the committees shown on the above chart regularly reports to the Board on risk-related matters within the committee's responsibilities, which is intended to collectively provide the Board with integrated, thorough insight about our management of enterprise-wide risks.

## Enterprise Risk Committee

The Enterprise Risk Committee (ERC) has primary responsibility for oversight of the Risk Framework and material risks facing the Corporation. It approves the Risk Framework and the Risk Appetite Statement and further recommends these documents to the Board for approval. The ERC oversees senior management's responsibilities for the identification, measurement, monitoring and control of all key risks facing the Corporation. The ERC may consult with other Board committees on risk-related matters.

## Audit Committee

The Audit Committee oversees the qualifications, performance and independence of the Independent Registered Public Accounting Firm, the performance of the Corporation's corporate audit function, the integrity of the Corporation's consolidated financial statements, compliance by the Corporation with legal and regulatory requirements, and makes inquiries of management or the Corporate General Auditor (CGA) to determine whether there are scope or resource limitations that impede the ability of Corporate Audit to execute its responsibilities. The Audit Committee is also responsible for overseeing compliance risk pursuant to the New York Stock Exchange listing standards.

## Credit Committee

The Credit Committee provides additional oversight of senior management's responsibilities for the identification and management of Corporation-wide credit exposures. Our Credit Committee oversees, among other things, the identification and management of our credit exposures on an enterprise-wide basis, our responses to trends affecting those exposures, the adequacy of the allowance for credit losses and our credit-related policies.

## Other Board Committees

Our Corporate Governance Committee oversees our Board's governance processes, identifies and reviews the qualifications of potential Board members, recommends nominees for election to our Board, recommends committee appointments for Board approval and reviews our stockholder engagement activities.

Our Compensation and Benefits Committee oversees establishing, maintaining and administering our compensation programs and employee benefit plans, including approving and recommending our Chief Executive Officer's (CEO) compensation to our Board for further approval by all independent directors, and reviewing and approving all of our executive officers' compensation.

## Management Committees

Management committees may receive their authority from the Board, a Board committee, another management committee or from one or more executive officers. The primary managementlevel risk committee for the Corporation is the Management Risk Committee (MRC). Subject to Board oversight, the MRC is responsible for management oversight of all key risks facing the Corporation. The MRC provides management oversight of the

Corporation's compliance and operational risk programs, balance sheet and capital management, funding activities and other liquidity activities, stress testing, trading activities, recovery and resolution planning, model risk, subsidiary governance and activities between member banks and their nonbank affiliates pursuant to Federal Reserve rules and regulations. The MRC is responsible for holistic risk management, including an integrated evaluation of risk, earnings, capital and liquidity, and it reports on these matters to the Board or Board committees.

## Lines of Defense

In addition to the role of Executive Officers in managing risk, we have clear ownership and accountability across the three lines of defense: FLUs, independent risk management and Corporate Audit. The Corporation also has control functions outside of FLUs and independent risk management (e.g., Legal and Global Human Resources). The three lines of defense are integrated into our management-level governance structure. Each of these is described in more detail below.

## Executive Officers

Executive officers lead various functions representing the functional roles. Authority for functional roles may be delegated to executive officers from the Board, Board committees or management-level committees. Executive officers, in turn, may further delegate responsibilities, as appropriate, to managementlevel committees, management routines or individuals. Executive officers review the Corporation's activities for consistency with our Risk Framework, Risk Appetite Statement, and applicable strategic, capital and financial operating plans, as well as applicable policies, standards, procedures and processes. Executive officers and other employees make decisions individually on a day-to-day basis, consistent with the authority they have been delegated. Executive officers and other employees may also serve on committees and participate in committee decisions.

## Front Line Units

FLUs include the lines of business and an organizational unit, the Global Technology and Operations Group. FLUs are held accountable by the CEO and the Board for appropriately assessing and effectively managing all of the risks associated with their activities.

Three organizational units that include FLU and control function activities, but are not part of independent risk management are the Chief Financial Officer (CFO) Group, Global Marketing and Corporate Affairs (GM\&CA) and the Chief Administrative Officer (CAO) Group.

## Independent Risk Management

Independent risk management (IRM) is part of our control functions and includes Global Risk Management and Global Compliance. We have other control functions that are not part of IRM (other control functions may also provide oversight to FLU activities), including Legal, Global Human Resources and certain activities within the CFO Group, GM\&CA and the CAO Group. IRM, led by the Chief Risk Officer (CRO), is responsible for independently assessing and overseeing risks within FLUs and other control functions. IRM establishes written enterprise policies and procedures that include concentration risk limits where appropriate. Such policies and procedures outline how aggregate risks are identified, measured, monitored and controlled.

The CRO has the authority and independence to develop and implement a meaningful risk management framework. The CRO has unrestricted access to the Board and reports directly to both the ERC and to the CEO. Global Risk Management is organized into enterprise risk teams and FLU risk teams that work collaboratively in executing their respective duties.

Within IRM, Global Compliance independently assesses compliance risk, and evaluates adherence to applicable laws, rules and regulations, including identifying compliance issues and risks, performing monitoring and testing, and reporting on the state of compliance activities across the Corporation. Additionally, Global Compliance works with FLUs and control functions so that day-today activities operate in a compliant manner.

## Corporate Audit

Corporate Audit and the CGA maintain their independence from the FLUs, IRM and other control functions by reporting directly to the Audit Committee or the Board. The CGA administratively reports to the CEO. Corporate Audit provides independent assessment and validation through testing of key processes and controls across the Corporation. Corporate Audit includes Credit Review which periodically tests and examines credit portfolios and processes.

## Risk Management Processes

The Risk Framework requires that strong risk management practices are integrated in key strategic, capital and financial planning processes and day-to-day business processes across the Corporation, with a goal of ensuring risks are appropriately considered, evaluated and responded to in a timely manner.

We employ a risk management process, referred to as Identify, Measure, Monitor and Control (IMMC) as part of our daily activities.

Identify - To be effectively managed, risks must be clearly defined and proactively identified. Proper risk identification focuses on recognizing and understanding all key risks inherent in our business activities or key risks that may arise from external factors. Each employee is expected to identify and escalate risks promptly. Risk identification is an ongoing process, incorporating input from FLUs and control functions, designed to be forward looking and capture relevant risk factors across all of our lines of business.
Measure - Once a risk is identified, it must be prioritized and accurately measured through a systematic risk quantification process including quantitative and qualitative components. Risk is measured at various levels including, but not limited to, risk type, FLU, legal entity and on an aggregate basis. This risk quantification process helps to capture changes in our risk profile due to changes in strategic direction, concentrations, portfolio quality and the overall economic environment. Senior management considers how risk exposures might evolve under a variety of stress scenarios.
Monitor - We monitor risk levels regularly to track adherence to risk appetite, policies, standards, procedures and processes. We also regularly update risk assessments and review risk exposures. Through our monitoring, we can determine our level of risk relative to limits and can take action in a timely manner. We also can determine when risk limits are breached and have processes to appropriately report and escalate exceptions. This includes immediate requests for approval to managers and alerts to executive management, management-level
committees or the Board (directly or through an appropriate committee).
Control - We establish and communicate risk limits and controls through policies, standards, procedures and processes that define the responsibilities and authority for risk-taking. The limits and controls can be adjusted by the Board or management when conditions or risk tolerances warrant. These limits may be absolute (e.g., loan amount, trading volume) or relative (e.g., percentage of loan book in higher-risk categories). Our lines of business are held accountable to perform within the established limits.

Among the key tools in the risk management process are the Risk and Control Self Assessments (RCSAs). The RCSA process, consistent with IMMC, is one of our primary methods for capturing the identification and assessment of operational risk exposures, including inherent and residual operational risk ratings, and control effectiveness ratings. The end-to-end RCSA process incorporates risk identification and assessment of the control environment; monitoring, reporting and escalating risk; quality assurance and data validation; and integration with the risk appetite. This results in a comprehensive risk management view that enables understanding of and action on operational risks and controls for our processes, products, activities and systems.

The formal processes used to manage risk represent a part of our overall risk management process. Corporate culture and the actions of our employees are also critical to effective risk management. Through our Code of Conduct, we set a high standard for our employees. The Code of Conduct provides a framework for all of our employees to conduct themselves with the highest integrity. We instill a strong and comprehensive risk management culture through communications, training, policies, procedures, and organizational roles and responsibilities. Additionally, we continue to strengthen the link between the employee performance management process and individual compensation to encourage employees to work toward enterprise-wide risk goals.

## Corporation-wide Stress Testing

Integral to the Corporation's Capital Planning, Financial Planning and Strategic Planning processes is stress testing, which the Corporation conducts on a periodic basis to better understand balance sheet, earnings, capital and liquidity sensitivities to certain economic and business scenarios, including economic and market conditions that are more severe than anticipated. These stress tests provide an understanding of the potential impacts from the Corporation's risk profile on the balance sheet, earnings, capital and liquidity, and serve as a key component of the Corporation's capital and risk management. The intent of stress testing is to develop a comprehensive understanding of potential impacts of on- and off-balance sheet risks at the Corporation and how they impact financial resiliency.

## Contingency Planning Routines

We have developed and maintain contingency plans that are designed to prepare us in advance to respond in the event of potential adverse outcomes and scenarios. These contingency planning routines include capital contingency planning, liquidity contingency funding plans, recovery planning and enterprise resiliency, and provide monitoring, escalation routines and response plans. Contingency response plans are designed to enable us to increase capital, access funding sources and reduce
risk through consideration of potential actions that include asset sales, business sales, capital or debt issuances, and other derisking strategies. We also maintain contingency plans as part of our resolution plan to limit adverse systemic impacts that could be associated with a potential resolution.

## Strategic Risk Management

Strategic risk is embedded in every business and is one of the major risk categories along with credit, market, liquidity, compliance, operational and reputational risks. It is the risk that results from incorrect assumptions, inappropriate business plans, ineffective business strategy execution, or failure to respond in a timely manner to changes in the regulatory, macroeconomic or competitive environments, in the geographic locations in which we operate, such as competitor actions, changing customer preferences, product obsolescence and technology developments. Our strategic plan is consistent with our risk appetite and specifically addresses strategic risks.

The strategic plan is reviewed and approved annually by the Board, as is the capital plan, financial operating plan and risk appetite statement. With oversight by the Board, executive management ensures that consistency is applied while executing the Corporation's strategic plan, core operating principles and risk appetite. The executive management team continuously monitors business performance throughout the year to assess strategic risk and find early warning signals so that risks can be proactively managed. Executive management regularly reviews performance versus the plan, updates the Board via quarterly reporting routines (and more frequently as relevant) and implements changes as deemed appropriate. The following are assessed in the regular executive reviews: forecasted earnings and returns on capital, the current risk profile, current capital and liquidity requirements, staffing levels and changes required to support the plan, stress testing results, and other qualitative factors such as market growth rates and peer analysis.

Significant strategic actions, such as capital actions, material acquisitions or divestitures, and recovery and resolution plans are reviewed and approved by the Board as required. At the business level, as we introduce new products, we monitor their performance relative to expectations (e.g., for earnings and returns on capital). With oversight by the Board and the ERC, executive management performs similar analyses throughout the year, and evaluates changes to the financial forecast or the risk, capital or liquidity positions as deemed appropriate to balance and optimize achieving the targeted risk appetite, shareholder returns and maintaining the targeted financial strength.

We use proprietary models to measure the capital requirements for credit, country, market, operational and strategic risks. The allocated capital assigned to each business is based on its unique risk exposures. With oversight by the Board, executive management assesses the risk-adjusted returns of each business in approving strategic and financial operating plans. The businesses use allocated capital to define business strategies, and price products and transactions. For more information on how this measure is calculated, see Supplemental Financial Data on page 12.

## Capital Management

The Corporation manages its capital position to maintain sufficient capital to support its business activities and to maintain capital, risk and risk appetite commensurate with one another. Additionally, we seek to maintain safety and soundness at all times, even under adverse scenarios, take advantage of organic growth opportunities, maintain ready access to financial markets, continue to serve as a credit intermediary, remain a source of strength for our subsidiaries, and satisfy current and future regulatory capital requirements. Capital management is integrated into our risk and governance processes, as capital is a key consideration in the development of our strategic plan, risk appetite and risk limits.

We conduct an Internal Capital Adequacy Assessment Process (ICAAP) on a periodic basis. The ICAAP is a forward-looking assessment of our projected capital needs and resources, incorporating earnings, balance sheet and risk forecasts under baseline and adverse economic and market conditions. We utilize periodic stress tests to assess the potential impacts to our balance sheet, earnings, regulatory capital and liquidity under a variety of stress scenarios. We perform qualitative risk assessments to identify and assess material risks not fully captured in our forecasts or stress tests. We assess the potential capital impacts of proposed changes to regulatory capital requirements. Management assesses ICAAP results and provides documented quarterly assessments of the adequacy of our capital guidelines and capital position to the Board or its committees.

The Corporation periodically reviews capital allocated to its businesses and allocates capital annually during the strategic and capital planning processes. For additional information, see Business Segment Operations on page 14.

## CCAR and Capital Planning

The Federal Reserve requires BHCs to submit a capital plan and requests for capital actions on an annual basis, consistent with the rules governing the CCAR capital plan.

In January 2015, we submitted our 2015 CCAR capital plan and related supervisory stress tests. The requested capital actions included a request to repurchase $\$ 4.0$ billion of common stock over five quarters beginning in the second quarter of 2015, and to maintain the quarterly common stock dividend at the current rate of $\$ 0.05$ per share. On March 11, 2015, the Federal Reserve advised that it did not object to our 2015 capital plan but gave a conditional non-objection under which we were required to resubmit our CCAR capital plan and address certain weaknesses the Federal Reserve identified in our capital planning process. We have established plans and taken actions which addressed the identified weaknesses, and we resubmitted our CCAR capital plan on September 30, 2015. The Federal Reserve announced on December 10, 2015 that it did not object to our resubmitted CCAR capital plan.

As of December 31, 2015, in connection with our 2015 CCAR capital plan, we have repurchased approximately $\$ 2.4$ billion of common stock. The timing and amount of additional common stock repurchases and common stock dividends will continue to be consistent with our 2015 CCAR capital plan. In addition, the timing and amount of common stock repurchases will be subject to various factors, including the Corporation's capital position, liquidity, financial performance and alternative uses of capital, stock trading price, and general market conditions, and may be suspended at any time. The common stock repurchases may be
effected through open market purchases or privately negotiated transactions, including repurchase plans that satisfy the conditions of Rule 10b5-1 of the Securities Exchange Act of 1934.

## Regulatory Capital

As a financial services holding company, we are subject to regulatory capital rules issued by U.S. banking regulators. On January 1, 2014, we became subject to Basel 3, which includes certain transition provisions through January 1, 2019. The Corporation and its primary affiliated banking entity, BANA, are Advanced approaches institutions under Basel 3.

## Basel 3 Overview

Basel 3 updated the composition of capital and established a Common equity tier 1 capital ratio. Common equity tier 1 capital primarily includes common stock, retained earnings and accumulated OCI. Basel 3 revised minimum capital ratios and buffer requirements, added a SLR, and addressed the adequately capitalized minimum requirements under the PCA framework. Finally, Basel 3 established two methods of calculating riskweighted assets, the Standardized approach and the Advanced approaches. For additional information, see Capital Management - Standardized Approach and Capital Management - Advanced Approaches on page 36.

As an Advanced approaches institution, under Basel 3, we were required to complete a qualification period (parallel run) to demonstrate compliance with the Basel 3 Advanced approaches to the satisfaction of U.S. banking regulators. We received approval to begin using the Advanced approaches capital framework to determine risk-based capital requirements in the fourth quarter of 2015. As previously disclosed, with the approval to exit parallel run, U.S. banking regulators requested modifications to certain
internal analytical models including the wholesale (e.g., commercial) credit models. All requested modifications were incorporated, which increased our risk-weighted assets, and are reflected in the risk-based ratios in the fourth quarter of 2015. Having exited parallel run on October 1, 2015, we are required to report regulatory risk-based capital ratios and risk-weighted assets under both the Standardized and Advanced approaches. The approach that yields the lower ratio is used to assess capital adequacy including under the PCA framework, and was the Advanced approaches in the fourth quarter of 2015. Prior to the fourth quarter of 2015, we were required to report our capital adequacy under the Standardized approach only.

## Regulatory Capital Composition

Basel 3 requires certain deductions from and adjustments to capital, which are primarily those related to MSRs, deferred tax assets and defined benefit pension assets. Also, any assets that are a direct deduction from the computation of capital are excluded from risk-weighted assets and adjusted average total assets. Basel 3 also provides for the inclusion in capital of net unrealized gains and losses on AFS debt and certain marketable equity securities recorded in accumulated OCI. These changes are impacted by, among other factors, fluctuations in interest rates, earnings performance and corporate actions. Under Basel 3 regulatory capital transition provisions, changes to the composition of regulatory capital are generally recognized in 20 percent annual increments, and will be fully recognized as of January 1, 2018.

Table 12 summarizes how certain regulatory capital deductions and adjustments have been or will be transitioned from 2014 through 2018 for Common equity tier 1 and Tier 1 capital.

Table 12 Summary of Certain Basel 3 Regulatory Capital Transition Provisions

| Beginning on January 1 of each year | 2014 | 2015 | 2016 |
| :--- | :--- | :--- | :--- |
| Common equity tier 1 capital <br> Percent of total amount deducted from Common equity tier 1 capital includes: | 2017 |  |  |

Deferred tax assets arising from net operating loss and tax credit carryforwards; intangibles, other than mortgage servicing rights and goodwill; defined benefit pension fund net assets; net unrealized cumulative gains (losses) related to changes in own credit risk on liabilities, including derivatives, measured at fair value; direct and indirect investments in our own Common equity tier 1 capital instruments; certain amounts exceeding the threshold by 10 percent individually and 15 percent in aggregate
Percent of total amount used to adjust Common equity tier 1 capital includes ${ }^{(1)}$ : 80\% $\quad$ 60\% $\quad$ 40\% Net unrealized gains (losses) on AFS debt and certain marketable equity securities recorded in accumulated OCI; employee benefit plan adjustments recorded in accumulated OCI
Tier 1 capital
$\begin{array}{lll}\text { Percent of total amount deducted from Tier } 1 \text { capital includes: } & 80 \% \quad 60 \% \quad 40 \% ~ 20 \% ~\end{array}$ Deferred tax assets arising from net operating loss and tax credit carryforwards; defined benefit pension fund net assets; net unrealized cumulative gains (losses) related to changes in own credit risk on liabilities, including derivatives, measured at fair value
${ }^{(1)}$ Represents the phase-out percentage of the exclusion by year (e.g., 40 percent of net unrealized gains (losses) on AFS debt and certain marketable equity securities recorded in accumulated OCI was included in 2015).

Additionally, Basel 3 revised the regulatory capital treatment for Trust Securities, requiring them to be transitioned from Tier 1 capital into Tier 2 capital in 2014 and 2015, until fully excluded from Tier 1 capital in 2016, and transitioned from Tier 2 capital beginning in 2016 with the full exclusion in 2022. As of December 31, 2015, our qualifying Trust Securities were \$1.4 billion, approximately nine bps of the Tier 1 capital ratio.

## Minimum Capital Requirements

Minimum capital requirements and related buffers are being phased in from January 1, 2014 through January 1, 2019. Effective January 1, 2015, the PCA framework was also amended to reflect the requirements of Basel 3. The PCA framework establishes categories of capitalization, including "well capitalized," based on regulatory ratio requirements. U.S. banking regulators are required to take certain mandatory actions depending on the category of capitalization, with no mandatory actions required for "wellcapitalized" banking organizations, which included BANA at

December 31, 2015. Also effective January 1, 2015, Common equity tier 1 capital is included in the measurement of "wellcapitalized" for depository institutions.

Beginning January 1, 2016, we are subject to a capital conservation buffer, a countercyclical capital buffer and a global systemically important bank (G-SIB) surcharge which will be phased in over a three-year period ending January 1, 2019. Once fully phased in, the Corporation's risk-based capital ratio requirements will include a capital conservation buffer greater than 2.5 percent, plus any applicable countercyclical capital buffer and G-SIB surcharge in order to avoid certain restrictions on capital distributions and discretionary bonus payments. The buffers and surcharge must be composed solely of Common equity tier 1 capital. The countercyclical capital buffer is currently set at zero. U.S. banking regulators must jointly decide on any increase in the countercyclical buffer, after which time institutions will have up to one year for implementation. Based on the Federal Reserve final rule published in July 2015, we estimate that our G-SIB surcharge will increase our risk-based capital ratio requirements by 3.0 percent once fully phased in. The G-SIB surcharge is calculated annually and may differ from this estimate over time. For more information on our G-SIB surcharge, see Capital Management Regulatory Developments on page 40.

## Standardized Approach

Total risk-weighted assets under the Basel 3 Standardized approach consist of credit risk and market risk measures. Credit risk-weighted assets are measured by applying fixed risk weights to on- and off-balance sheet exposures (excluding securitizations), determined based on the characteristics of the exposure, such as type of obligor, Organization for Economic Cooperation and Development country risk code and maturity, among others. Offbalance sheet exposures primarily include financial guarantees, unfunded lending commitments, letters of credit and potential future derivative exposures. Market risk applies to covered positions which include trading assets and liabilities, foreign exchange exposures and commodity exposures. Market risk capital is modeled for general market risk and specific risk for products where specific risk regulatory approval has been granted; in the absence of specific risk model approval, standard specific risk charges apply. For securitization exposures, risk-weighted assets are determined using the Simplified Supervisory Formula Approach (SSFA). Under the Standardized approach, no distinction is made for variations in credit quality for corporate exposures, and the economic benefit of collateral is restricted to a limited list of eligible securities and cash.

## Advanced Approaches

In addition to the credit risk and market risk measures, Basel 3 Advanced approaches include measures of operational risk and risks related to the credit valuation adjustment (CVA) for over-thecounter (OTC) derivative exposures. The Advanced approaches rely on internal analytical models to measure risk weights for credit risk exposures and allow the use of models to estimate the exposure at default (EAD) for certain exposure types. Market risk
capital measurements are consistent with the Standardized approach, except for securitization exposures. For both trading and non-trading securitization exposures, institutions are permitted to use the Supervisory Formula Approach (SFA) and would use the SSFA if the SFA is unavailable for a particular exposure. Nonsecuritization credit risk exposures are measured using internal ratings-based models to determine the applicable risk weight by estimating the probability of default, loss given default (LGD) and, in certain instances, EAD. The internal analytical models primarily rely on internal historical default and loss experience. Operational risk is measured using internal analytical models which rely on both internal and external operational loss experience and data. The calculations require management to make estimates, assumptions and interpretations, including with respect to the probability of future events based on historical experience. Actual results could differ from those estimates and assumptions. Under the Federal Reserve's reservation of authority, they may require us to hold an amount of capital greater than otherwise required under the capital rules if they determine that our risk-based capital requirement using our internal analytical models is not commensurate with our credit, market, operational or other risks.

## Supplementary Leverage Ratio

Basel 3 also requires Advanced approaches institutions to disclose a SLR. The numerator of the SLR is quarter-end Basel 3 Tier 1 capital reflective of Basel 3 numerator transition provisions. The denominator is total leverage exposure based on the daily average of the sum of on-balance sheet exposures less permitted Tier 1 deductions, as well as the simple average of certain offbalance sheet exposures, as of the end of each month in a quarter. Off-balance sheet exposures primarily include undrawn lending commitments, letters of credit, potential future derivative exposures and repo-style transactions. Total leverage exposure includes the effective notional principal amount of credit derivatives and similar instruments through which credit protection is sold. The credit conversion factors (CCFs) applied to certain offbalance sheet exposures conform to the graduated CCF utilized under the Basel 3 Standardized approach, but are subject to a minimum 10 percent CCF. Effective January 1, 2018, the Corporation will be required to maintain a minimum SLR of 3.0 percent, plus a supplementary leverage buffer of 2.0 percent, in order to avoid certain restrictions on capital distributions and discretionary bonuses. Insured depository institution subsidiaries of BHCs, including BANA, will be required to maintain a minimum 6.0 percent SLR to be considered "well capitalized" under the PCA framework.

## Capital Composition and Ratios

Table 13 presents Bank of America Corporation's transition and fully phased-in capital ratios and related information in accordance with Basel 3 Standardized and Advanced approaches as measured at December 31, 2015 and 2014. As of December 31, 2015 and 2014, the Corporation meets the definition of "well capitalized" under current regulatory requirements.

Table 13 Bank of America Corporation Regulatory Capital under Basel $3^{(1)}$

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Transition |  |  |  |  |  | Fully Phased-in |  |  |  |  |
|  | Standardized Approach |  | Advanced Approaches |  | Regulatory Minimum | Wellcapitalized ${ }^{(2)}$ | Standardized Approach |  | Advanced Approaches ${ }^{(3)}$ |  | Regulatory Minimum ${ }^{(4)}$ |
| Risk-based capital metrics: |  |  |  |  |  |  |  |  |  |  |  |
| Common equity tier 1 capital | \$ | 163,026 |  | 163,026 |  |  | \$ | 154,084 | \$ | 154,084 |  |
| Tier 1 capital |  | 180,778 |  | 180,778 |  |  |  | 175,814 |  | 175,814 |  |
| Total capital (5) |  | 220,676 |  | 210,912 |  |  |  | 211,167 |  | 201,403 |  |
| Risk-weighted assets (in billions) |  | 1,403 |  | 1,602 |  |  |  | 1,427 |  | 1,575 |  |
| Common equity tier 1 capital ratio |  | 11.6\% |  | 10.2\% | 4.5\% | n/a |  | 10.8\% |  | 9.8\% | 10.0\% |
| Tier 1 capital ratio |  | 12.9 |  | 11.3 | 6.0 | 6.0\% |  | 12.3 |  | 11.2 | 11.5 |
| Total capital ratio |  | 15.7 |  | 13.2 | 8.0 | 10.0 |  | 14.8 |  | 12.8 | 13.5 |
| Leverage-based metrics: |  |  |  |  |  |  |  |  |  |  |  |
| Adjusted quarterly average assets (in billions) ${ }^{(6)}$ | \$ | 2,103 | \$ | 2,103 |  |  | \$ | 2,102 | \$ | 2,102 |  |
| Tier 1 leverage ratio |  | 8.6\% |  | 8.6\% | 4.0 | n/a |  | 8.4\% |  | 8.4\% | 4.0 |
| SLR leverage exposure (in billions) | \$ | 2,728 | \$ | 2,728 |  |  | \$ | 2,727 | \$ | 2,727 |  |
| SLR |  | 6.6\% |  | 6.6\% | 5.0 | n/a |  | 6.4\% |  | 6.4\% | 5.0 |


|  | December 31, 2014 |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Risk-based capital metrics: $\quad$ lola |  |  |  |  |  |  |  |  |  |  |  |
| Common equity tier 1 capital | \$ | 155,361 |  | n/a |  |  | \$ | 141,217 |  | 41,217 |  |
| Tier 1 capital |  | 168,973 |  | n/a |  |  |  | 160,480 |  | 60,480 |  |
| Total capital (5) |  | 208,670 |  | n/a |  |  |  | 196,115 |  | 185,986 |  |
| Risk-weighted assets (in billions) ${ }^{(7)}$ |  | 1,262 |  | n/a |  |  |  | 1,415 |  | 1,465 |  |
| Common equity tier 1 capital ratio |  | 12.3\% |  | n/a | 4.0\% | n/a |  | 10.0\% |  | 9.6\% | 10.0\% |
| Tier 1 capital ratio |  | 13.4 |  | n/a | 5.5 | 6.0\% |  | 11.3 |  | 11.0 | 11.5 |
| Total capital ratio |  | 16.5 |  | n/a | 8.0 | 10.0 |  | 13.9 |  | 12.7 | 13.5 |
| Leverage-based metrics: |  |  |  |  |  |  |  |  |  |  |  |
| Adjusted quarterly average assets (in billions) (6) | \$ | 2,060 | \$ | 2,060 |  |  | \$ | 2,057 | \$ | 2,057 |  |
| Tier 1 leverage ratio |  | 8.2\% |  | 8.2\% | 4.0 | n/a |  | 7.8\% |  | 7.8\% | 4.0 |
| SLR leverage exposure (in billions) | \$ | 2,732 | \$ | 2,732 |  |  | \$ | 2,728 | \$ | 2,728 |  |
| SLR |  | 6.2\% |  | 6.2\% | 5.0 | n/a |  | 5.9\% |  | 5.9\% | 5.0 |

(1) We received approval to begin using the Advanced approaches capital framework to determine risk-based capital requirements in the fourth quarter of 2015 . With the approval to exit parallel run, we are required to report regulatory capital risk-weighted assets and ratios under both the Standardized and Advanced approaches. The approach that yields the lower ratio is to be used to assess capital adequacy and was the Advanced approaches at December 31, 2015. Prior to exiting parallel run, we were required to report regulatory capital risk-weighted assets and ratios under the Standardized approach only. As previously disclosed, with the approval to exit parallel run, U.S. banking regulators requested modifications to certain internal analytical models including the wholesale (e.g., commercial) credit models which increased our risk-weighted assets in the fourth quarter of 2015.
${ }^{(2)}$ To be "well capitalized" under the current U.S. banking regulatory agency definitions, a bank holding company must maintain these or higher ratios and not be subject to a Federal Reserve order or directive to maintain higher capital levels.
3) Basel 3 fully phased-in Advanced approaches estimates assume approval by U.S. banking regulators of our internal analytical models, including approval of the internal models methodology (IMM).

As of December 31, 2015, we had not received IMM approval.
 is zero. We will be subject to fully phased-in regulatory minimums on January 1, 2019.
${ }^{(5)}$ Total capital under the Advanced approaches differs from the Standardized approach due to differences in the amount permitted in Tier 2 capital related to the qualifying allowance for credit losses.
${ }^{(6)}$ Reflects adjusted average total assets for the three months ended December 31, 2015 and 2014.
${ }^{(7)}$ On a pro-forma basis, under Basel 3 Standardized - Transition as measured at January 1, 2015, the December 31, 2014 risk-weighted assets would have been $\$ 1,392$ billion.
$\mathrm{n} / \mathrm{a}=$ not applicable

Common equity tier 1 capital under Basel 3 Advanced Transition was $\$ 163.0$ billion at December 31, 2015, an increase of $\$ 7.7$ billion compared to December 31, 2014 driven by earnings, partially offset by dividends, common stock repurchases and the impact of certain transition provisions under Basel 3 rules. For more information on Basel 3 transition provisions, see Table 12. During 2015, Total capital increased $\$ 2.2$ billion primarily driven by the same factors that drove the increase in Common equity tier 1 capital as well as issuances of preferred stock and subordinated debt, partially offset by lower eligible credit reserves included in additional Tier 2 capital. The decrease in eligible credit
reserves included in additional Tier 2 capital is due to the change in the calculation of eligible credit reserves under the Advanced approaches. The Corporation began using the Advanced approaches capital framework to determine risk-based capital requirements in the fourth quarter of 2015. For additional information, see Table 14.

Risk-weighted assets increased $\$ 341$ billion during 2015 to $\$ 1,602$ billion primarily due to the change in the calculation of risk-weighted assets from the general risk-based approach at December 31, 2014 to the Basel 3 Advanced approaches.

Table 14 presents the capital composition as measured under Basel 3 - Transition at December 31, 2015 and 2014.

Table 14 Capital Composition under Basel 3 - Transition ${ }^{(1)}$

| (Dollars in millions) | December 31 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  |
| Total common shareholders' equity | \$ | 233,932 | \$ | 224,162 |
| Goodwill |  | $(69,215)$ |  | $(69,234)$ |
| Deferred tax assets arising from net operating loss and tax credit carryforwards |  | $(3,434)$ |  | $(2,226)$ |
| Unamortized net periodic benefit costs recorded in accumulated OCI, net-of-tax |  | 1,774 |  | 2,680 |
| Net unrealized (gains) losses on AFS debt and equity securities and net (gains) losses on derivatives recorded in accumulated OCI, net-of-tax |  | 1,220 |  | 573 |
| Intangibles, other than mortgage servicing rights and goodwill |  | $(1,039)$ |  | (639) |
| DVA related to liabilities and derivatives |  | 204 |  | 231 |
| Other |  | (416) |  | (186) |
| Common equity tier 1 capital |  | 163,026 |  | 155,361 |
| Qualifying preferred stock, net of issuance cost |  | 22,273 |  | 19,308 |
| Deferred tax assets arising from net operating loss and tax credit carryforwards |  | $(5,151)$ |  | $(8,905)$ |
| Trust preferred securities |  | 1,430 |  | 2,893 |
| Defined benefit pension fund assets |  | (568) |  | (599) |
| DVA related to liabilities and derivatives under transition |  | 307 |  | 925 |
| Other |  | (539) |  | (10) |
| Total Tier 1 capital |  | 180,778 |  | 168,973 |
| Long-term debt qualifying as Tier 2 capital |  | 22,579 |  | 21,186 |
| Allowance for loan and lease losses included in Tier 2 capital |  | n/a |  | 14,634 |
| Eligible credit reserves included in Tier 2 capital |  | 3,116 |  | n/a |
| Nonqualifying capital instruments subject to phase out from Tier 2 capital |  | 4,448 |  | 3,881 |
| Other |  | (9) |  | (4) |
| Total Basel 3 Capital | \$ | 210,912 | \$ | 208,670 |
| (1) See Table 13, footnote 1. $\mathrm{n} / \mathrm{a}=$ not applicable |  |  |  |  |

Table 15 presents the components of our risk-weighted assets as measured under Basel 3 - Transition at December 31, 2015 and 2014.

Table 15 Risk-weighted assets under Basel 3 - Transition

|  | December 31 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  |  |  | 2014 |  |  |
|  | Standardized Approach |  | Advanced Approaches |  | Standardized Approach |  | Advanced Approaches |
| Credit risk | \$ | 1,314 | \$ | 940 | \$ | 1,169 | n/a |
| Market risk |  | 89 |  | 86 |  | 93 | n/a |
| Operational risk |  | n/a |  | 500 |  | n/a | n/a |
| Risks related to CVA |  | n/a |  | 76 |  | n/a | n/a |
| Total risk-weighted assets | \$ | 1,403 | \$ | 1,602 | \$ | 1,262 | n/a |

n/a = not applicable

Table 16 presents a reconciliation of regulatory capital in accordance with Basel 3 Standardized - Transition to the Basel 3 Standardized approach fully phased-in estimates and Basel 3 Advanced approaches fully phased-in estimates at December 31, 2015 and 2014.

Table 16 Regulatory Capital Reconciliations between Basel 3 Transition to Fully Phased-in (1)

| (Dollars in millions) | December 31 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  |
| Common equity tier 1 capital (transition) | \$ | 163,026 | \$ | 155,361 |
| Deferred tax assets arising from net operating loss and tax credit carryforwards phased in during transition |  | $(5,151)$ |  | $(8,905)$ |
| Accumulated OCI phased in during transition |  | $(1,917)$ |  | $(1,592)$ |
| Intangibles phased in during transition |  | $(1,559)$ |  | $(2,556)$ |
| Defined benefit pension fund assets phased in during transition |  | (568) |  | (599) |
| DVA related to liabilities and derivatives phased in during transition |  | 307 |  | 925 |
| Other adjustments and deductions phased in during transition |  | (54) |  | $(1,417)$ |
| Common equity tier 1 capital (fully phased-in) |  | 154,084 |  | 141,217 |
| Additional Tier 1 capital (transition) |  | 17,752 |  | 13,612 |
| Deferred tax assets arising from net operating loss and tax credit carryforwards phased out during transition |  | 5,151 |  | 8,905 |
| Trust preferred securities phased out during transition |  | $(1,430)$ |  | $(2,893)$ |
| Defined benefit pension fund assets phased out during transition |  | 568 |  | 599 |
| DVA related to liabilities and derivatives phased out during transition |  | (307) |  | (925) |
| Other transition adjustments to additional Tier 1 capital |  | (4) |  | (35) |
| Additional Tier 1 capital (fully phased-in) |  | 21,730 |  | 19,263 |
| Tier 1 capital (fully phased-in) |  | 175,814 |  | 160,480 |
| Tier 2 capital (transition) |  | 30,134 |  | 39,697 |
| Nonqualifying capital instruments phased out during transition |  | $(4,448)$ |  | $(3,881)$ |
| Changes in Tier 2 qualifying allowance for credit losses and others |  | 9,667 |  | (181) |
| Tier 2 capital (fully phased-in) |  | 35,353 |  | 35,635 |
| Basel 3 Standardized approach Total capital (fully phased-in) |  | 211,167 |  | 196,115 |
| Change in Tier 2 qualifying allowance for credit losses |  | $(9,764)$ |  | $(10,129)$ |
| Basel 3 Advanced approaches Total capital (fully phased-in) | \$ | 201,403 | \$ | 185,986 |
| Risk-weighted assets - As reported to Basel 3 (fully phased-in) |  |  |  |  |
| Basel 3 Standardized approach risk-weighted assets as reported | \$ | 1,403,293 | \$ | 1,261,544 |
| Changes in risk-weighted assets from reported to fully phased-in |  | 24,089 |  | 153,722 |
| Basel 3 Standardized approach risk-weighted assets (fully phased-in) | \$ | 1,427,382 | \$ | 1,415,266 |
| Basel 3 Advanced approaches risk-weighted assets as reported | \$ | 1,602,373 |  | n/a |
| Changes in risk-weighted assets from reported to fully phased-in |  | $(27,690)$ |  | n/a |
| Basel 3 Advanced approaches risk-weighted assets (fully phased-in) ${ }^{(2)}$ | \$ | 1,574,683 | \$ | 1,465,479 |
| (1) See Table 13, footnote 1. <br> ${ }^{(2)}$ Basel 3 fully phased-in Advanced approaches estimates assume approval by U.S. banking regulators of our internal analytical As of December 31, 2015, we had not received IMM approval. $\mathrm{n} / \mathrm{a}=$ not applicable | the | internal models |  | odology (IMM). |

Bank of America, N.A. Regulatory Capital
Table 17 presents transition regulatory information for BANA in accordance with Basel 3 Standardized and Advanced Approaches as measured at December 31, 2015 and 2014.

Table 17 Bank of America, N.A. Regulatory Capital under Basel 3


1) Percent required to meet guidelines to be considered "well capitalized" under the Prompt Corrective Action framework, except for the December 31, 2014 Common equity tier 1 capital which reflects capital adequacy minimum requirements as an Advanced approaches bank under Basel 3 during a transition period that ended in 2014.
$\mathrm{n} / \mathrm{a}=$ not applicable

## Regulatory Developments

## Global Systemically Important Bank Surcharge

We have been designated as a G-SIB and as such, are subject to a risk-based capital surcharge (G-SIB surcharge) that must be satisfied with Common equity tier 1 capital. The surcharge assessment methodology published by the Basel Committee on Banking Supervision (Basel Committee) relies on an indicatorbased measurement approach (e.g., size, complexity, crossjurisdictional activity, inter-connectedness and substitutability/ financial institution infrastructure) to determine a score relative to the global banking industry. Institutions with the highest scores are designated as G-SIBs and are assigned to one of four loss absorbency buckets from 1.0 percent to 2.5 percent, in 0.5 percent increments based on each institution's relative score and supervisory judgment. A fifth loss absorbency bucket of 3.5 percent serves to discourage banks from becoming more systemically important.

In July 2015, the Federal Reserve finalized a regulation that will implement G-SIB surcharge requirements for the largest U.S. BHCs. Under the final rule, assignment to loss absorbency buckets will be determined by the higher score as calculated according to two methods. Method 1 is consistent with the Basel Committee's methodology, whereas method 2 replaces the substitutability/ financial institution infrastructure indicator with a measure of short-term wholesale funding and then determines the overall score by applying a fixed multiplier for each of the other systemic indicators. Under the final U.S. rules, the G-SIB surcharge is being phased in beginning on January 1, 2016, becoming fully effective on January 1, 2019. Once fully phased in, we estimate that our GSIB surcharge will increase our risk-based capital ratio requirements by 3.0 percent under method 2 and 1.5 percent under method 1.

For more information on regulatory capital, see Note 16 Regulatory Requirements and Restrictions to the Consolidated Financial Statements.

## Minimum Total Loss-Absorbing Capacity

On October 30, 2015, the Federal Reserve issued a notice of proposed rulemaking to establish external total loss-absorbing capacity (TLAC) requirements to improve the resolvability and resiliency of large, interconnected BHCs. Under the proposal, U.S. G-SIBs would be required to maintain a minimum external TLAC of the greater of (1) 16 percent of risk-weighted assets in 2019, increasing to 18 percent of risk-weighted assets in 2022 (plus additional TLAC equal to enough Common equity tier 1 capital as a percentage of risk-weighted assets to cover the capital conservation buffer, any applicable countercyclical capital buffer plus the applicable method 1 G -SIB surcharge), or (2) 9.5 percent of the denominator of the SLR. In addition, U.S. G-SIBs must meet a minimum long-term debt requirement equal to the greater of (1) 6.0 percent of risk-weighted assets plus the applicable method 2 G-SIB surcharge, or (2) 4.5 percent of the denominator of the SLR.

## Revisions to Approaches for Measuring Risk-Weighted Assets

The Basel Committee has several open proposals to revise key methodologies for measuring risk-weighted assets. The proposals include a standardized approach for credit risk, standardized approaches for operational risk, revisions to the securitization framework and revisions to the CVA risk framework. In January 2016, the Basel Committee finalized its fundamental review of the trading book, which updates both modeled and standardized approaches for market risk measurement. A revised standardized model for counterparty credit risk has also previously been finalized. These revisions would be coupled with a proposed capital floor framework to limit the extent to which banks can reduce risk-weighted asset levels through the use of internal models. The Basel Committee expects to finalize the outstanding proposals by the end of 2016 . Once the proposals are finalized, U.S. banking regulators may update the U.S. Basel 3 rules to incorporate the Basel Committee revisions.

## Broker-dealer Regulatory Capital and Securities Regulation

The Corporation's principal U.S. broker-dealer subsidiaries are Merrill Lynch, Pierce, Fenner \& Smith (MLPF\&S) and Merrill Lynch Professional Clearing Corp (MLPCC). MLPCC is a fully-guaranteed subsidiary of MLPF\&S and provides clearing and settlement services. Both entities are subject to the net capital requirements of SEC Rule 15c3-1. Both entities are also registered as futures commission merchants and are subject to the Commodity Futures Trading Commission Regulation 1.17.

MLPF\&S has elected to compute the minimum capital requirement in accordance with the Alternative Net Capital Requirement as permitted by SEC Rule 15c3-1. At December 31, 2015, MLPF\&S's regulatory net capital as defined by Rule 15c3-1 was $\$ 11.4$ billion and exceeded the minimum requirement of $\$ 1.5$ billion by $\$ 9.9$ billion. MLPCC's net capital of $\$ 3.3$ billion exceeded the minimum requirement of $\$ 473$ million by $\$ 2.8$ billion.

In accordance with the Alternative Net Capital Requirements, MLPF\&S is required to maintain tentative net capital in excess of $\$ 1.0$ billion, net capital in excess of $\$ 500$ million and notify the SEC in the event its tentative net capital is less than $\$ 5.0$ billion. At December 31, 2015, MLPF\&S had tentative net capital and net capital in excess of the minimum and notification requirements.

Merrill Lynch International (MLI), a U.K. investment firm, is regulated by the Prudential Regulation Authority and the Financial Conduct Authority, and is subject to certain regulatory capital requirements. At December 31, 2015, MLI's capital resources were $\$ 34.4$ billion which exceeded the minimum requirement of $\$ 16.6$ billion.

## Common Stock Dividends

For a summary of our declared quarterly cash dividends on common stock during 2015 and through February 24, 2016, see Note 13 - Shareholders' Equity to the Consolidated Financial Statements.

## Liquidity Risk

## Funding and Liquidity Risk Management

Liquidity risk is the potential inability to meet expected or unexpected cash flow and collateral needs while continuing to support our business and customer needs under a range of economic conditions. Our primary liquidity risk management objective is to meet all contractual and contingent financial obligations at all times, including during periods of stress. To achieve that objective, we analyze and monitor our liquidity risk under expected and stressed conditions, maintain excess liquidity and access to diverse funding sources, including our stable deposit base, and seek to align liquidity-related incentives and risks.

We define excess liquidity as readily available assets, limited to cash and high-quality, liquid, unencumbered securities that we can use to meet our contractual and contingent financial obligations as those obligations arise. We manage our liquidity position through line of business and ALM activities, as well as
through our legal entity funding strategy, on both a forward and current (including intraday) basis under both expected and stressed conditions. We believe that a centralized approach to funding and liquidity risk management within Corporate Treasury enhances our ability to monitor liquidity requirements, maximizes access to funding sources, minimizes borrowing costs and facilitates timely responses to liquidity events.

The Board approves the Corporation's liquidity policy and the ERC approves the contingency funding plan, including establishing liquidity risk tolerance levels. The MRC monitors our liquidity position and reviews the impact of strategic decisions on our liquidity. The MRC is responsible for overseeing liquidity risks and maintaining exposures within the established tolerance levels. MRC reviews and monitors our liquidity position, cash flow forecasts, stress testing scenarios and results, and implements our liquidity limits and guidelines. For additional information, see Managing Risk on page 30. Under this governance framework, we have developed certain funding and liquidity risk management practices which include: maintaining excess liquidity at the parent company and selected subsidiaries, including our bank subsidiaries and other regulated entities; determining what amounts of excess liquidity are appropriate for these entities based on analysis of debt maturities and other potential cash outflows, including those that we may experience during stressed market conditions; diversifying funding sources, considering our asset profile and legal entity structure; and performing contingency planning.

## Global Excess Liquidity Sources and Other Unencumbered Assets

We maintain excess liquidity available to Bank of America Corporation, including the parent company and selected subsidiaries, in the form of cash and high-quality, liquid, unencumbered securities. Our liquidity buffer, or Global Excess Liquidity Sources (GELS), is comprised of assets that are readily available to the parent company and selected subsidiaries, including bank and broker-dealer subsidiaries, even during stressed market conditions. Our cash is primarily on deposit with the Federal Reserve and, to a lesser extent, central banks outside of the U.S. We limit the composition of high-quality, liquid, unencumbered securities to U.S. government securities, U.S. agency securities, U.S. agency MBS and a select group of nonU.S. government and supranational securities. We believe we can quickly obtain cash for these securities, even in stressed conditions, through repurchase agreements or outright sales. We hold our GELS in legal entities that allow us to meet the liquidity requirements of our global businesses, and we consider the impact of potential regulatory, tax, legal and other restrictions that could limit the transferability of funds among entities. Our GELS are substantially the same in composition to what qualifies as High Quality Liquid Assets (HQLA) under the final U.S. LCR rules. For more information on the final rules, see Liquidity Risk - Basel 3 Liquidity Standards on page 43.

Our GELS were $\$ 504$ billion and $\$ 439$ billion at December 31, 2015 and 2014, and were maintained as presented in Table 18.

Table 18 Global Excess Liquidity Sources

| (Dollars in billions) | December 31 |  |  |  | Average for Three Months Ended December 31 2015 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  |  |  |
| Parent company | \$ | 96 | \$ | 98 | \$ | 96 |
| Bank subsidiaries |  | 361 |  | 306 |  | 369 |
| Other regulated entities |  | 47 |  | 35 |  | 45 |
| Total Global Excess Liquidity Sources | \$ | 504 | \$ | 439 | \$ | 510 |

As shown in Table 18, parent company GELS totaled $\$ 96$ billion and $\$ 98$ billion at December 31, 2015 and 2014. The decrease in parent company liquidity was primarily due to derivative cash collateral outflows, common stock buy-backs and dividends, partially offset by net subsidiary inflows. Typically, parent company excess liquidity is in the form of cash deposited with BANA.

GELS available to our bank subsidiaries totaled $\$ 361$ billion and $\$ 306$ billion at December 31, 2015 and 2014. The increase in bank subsidiaries' liquidity was primarily due to deposit inflows, partially offset by loan growth. GELS at bank subsidiaries exclude the cash deposited by the parent company. Our bank subsidiaries can also generate incremental liquidity by pledging a range of other unencumbered loans and securities to certain Federal Home Loan Banks (FHLBs) and the Federal Reserve Discount Window. The cash we could have obtained by borrowing against this pool of specifically-identified eligible assets was $\$ 252$ billion and $\$ 214$ billion at December 31, 2015 and 2014. We have established operational procedures to enable us to borrow against these assets, including regularly monitoring our total pool of eligible loans and securities collateral. Eligibility is defined in guidelines from the FHLBs and the Federal Reserve and is subject to change at their discretion. Due to regulatory restrictions, liquidity generated by the bank subsidiaries can generally be used only to fund obligations within the bank subsidiaries and can only be transferred to the parent company or nonbank subsidiaries with prior regulatory approval.

GELS available to our other regulated entities, comprised primarily of broker-dealer subsidiaries, totaled $\$ 47$ billion and $\$ 35$ billion at December 31, 2015 and 2014. The increase in liquidity in other regulated entities is largely driven by parent company liquidity contributions to the Corporation's primary U.S. brokerdealer. Our other regulated entities also held other unencumbered investment-grade securities and equities that we believe could be used to generate additional liquidity. Liquidity held in an other regulated entity is primarily available to meet the obligations of that entity and transfers to the parent company or to any other subsidiary may be subject to prior regulatory approval due to regulatory restrictions and minimum requirements.

Table 19 presents the composition of GELS at December 31, 2015 and 2014.

Table 19 Global Excess Liquidity Sources Composition

|  | December 31 |  |  |
| :--- | ---: | ---: | ---: |
| (Dollars in billions) | 2015 |  | 2014 |
| Cash on deposit | $\$ 119$ | $\$$ | 97 |
| U.S. Treasury securities | 38 | 74 |  |
| U.S. agency securities and mortgage-backed securities | 327 | 252 |  |
| Non-U.S. government and supranational securities | 20 | 16 |  |
| Total Global Excess Liquidity Sources | $\$$ | 504 | $\$$ |

## Time-to-required Funding and Stress Modeling

We use a variety of metrics to determine the appropriate amounts of excess liquidity to maintain at the parent company, our bank subsidiaries and other regulated entities. One metric we use to evaluate the appropriate level of excess liquidity at the parent company is "time-to-required funding." This debt coverage measure indicates the number of months that the parent company can continue to meet its unsecured contractual obligations as they come due using only the parent company's liquidity sources without issuing any new debt or accessing any additional liquidity sources. We define unsecured contractual obligations for purposes of this metric as maturities of senior or subordinated debt issued or guaranteed by Bank of America Corporation. These include certain unsecured debt instruments, primarily structured liabilities, which we may be required to settle for cash prior to maturity. Our time-to-required funding was 39 months at December 31, 2015. For purposes of calculating time-to-required funding, at December 31, 2015, we have included in the amount of unsecured contractual obligations $\$ 8.5$ billion related to the BNY Mellon Settlement. The final conditions of the settlement have been satisfied and, accordingly, the Corporation made the settlement payment in February 2016. For more information on the BNY Mellon Settlement, see Note 7 - Representations and Warranties Obligations and Corporate Guarantees to the Consolidated Financial Statements.

We also utilize liquidity stress analysis to assist us in determining the appropriate amounts of excess liquidity to maintain at the parent company, our bank subsidiaries and other regulated entities. The liquidity stress testing process is an integral part of analyzing our potential contractual and contingent cash outflows beyond the outflows considered in the time-to-required funding analysis. We evaluate the liquidity requirements under a range of scenarios with varying levels of severity and time horizons. The scenarios we consider and utilize incorporate market-wide and Corporation-specific events, including potential credit rating downgrades for the parent company and our subsidiaries, and are based on historical experience, regulatory guidance, and both expected and unexpected future events.

The types of potential contractual and contingent cash outflows we consider in our scenarios may include, but are not limited to, upcoming contractual maturities of unsecured debt and reductions in new debt issuance; diminished access to secured financing markets; potential deposit withdrawals; increased draws on loan commitments, liquidity facilities and letters of credit; additional collateral that counterparties could call if our credit ratings were downgraded; collateral and margin requirements arising from market value changes; and potential liquidity required to maintain businesses and finance customer activities. Changes in certain market factors, including, but not limited to, credit rating downgrades, could negatively impact potential contractual and contingent outflows and the related financial instruments, and in some cases these impacts could be material to our financial results.

We consider all sources of funds that we could access during each stress scenario and focus particularly on matching available sources with corresponding liquidity requirements by legal entity. We also use the stress modeling results to manage our assetliability profile and establish limits and guidelines on certain funding sources and businesses.

## Basel 3 Liquidity Standards

The Basel Committee has issued two liquidity risk-related standards that are considered part of the Basel 3 liquidity standards: the LCR and the Net Stable Funding Ratio (NSFR).

In 2014, U.S. banking regulators finalized LCR requirements for the largest U.S. financial institutions on a consolidated basis and for their subsidiary depository institutions with total assets greater than $\$ 10$ billion. The LCR is calculated as the amount of a financial institution's unencumbered HQLA relative to the estimated net cash outflows the institution could encounter over a 30-day period of significant liquidity stress, expressed as a percentage. Under the final rule, an initial minimum LCR of 80 percent was required as of January 2015, increased to 90 percent as of January 2016 and will increase to 100 percent in January 2017. These minimum requirements are applicable to the Corporation on a consolidated basis and to our insured depository institutions. As of December 31, 2015, we estimate that the consolidated Corporation was above the 2017 LCR requirements. The Corporation's LCR may fluctuate from period to period due to normal business flows from customer activity.

In 2014, the Basel Committee issued a final standard for the NSFR, the standard that is intended to reduce funding risk over a longer time horizon. The NSFR is designed to ensure an appropriate amount of stable funding, generally capital and liabilities maturing beyond one year, given the mix of assets and off-balance sheet items. The final standard aligns the NSFR to the LCR and gives more credit to a wider range of funding. The final standard also includes adjustments to the stable funding required for certain types of assets, some of which reduce the stable funding requirement and some of which increase it. Basel Committee standards generally do not apply directly to U.S. financial institutions, but require adoption by U.S. banking regulators. U.S. banking regulators are expected to propose a similar NSFR regulation applicable to U.S. financial institutions in the near future. We expect to meet the NSFR requirement within the regulatory timeline.

Diversified Funding Sources
We fund our assets primarily with a mix of deposits and secured and unsecured liabilities through a centralized, globally coordinated funding strategy. We diversify our funding globally across products, programs, markets, currencies and investor groups.

The primary benefits of our centralized funding strategy include greater control, reduced funding costs, wider name recognition by investors and greater flexibility to meet the variable funding requirements of subsidiaries. Where regulations, time zone differences or other business considerations make parent company funding impractical, certain other subsidiaries may issue their own debt.

We fund a substantial portion of our lending activities through our deposits, which were $\$ 1.20$ trillion and $\$ 1.12$ trillion at December 31, 2015 and 2014. Deposits are primarily generated by our Consumer Banking, GWIM and Global Banking segments. These deposits are diversified by clients, product type and geography, and the majority of our U.S. deposits are insured by the Federal Deposit Insurance Corporation (FDIC). We consider a substantial portion of our deposits to be a stable, low-cost and consistent source of funding. We believe this deposit funding is generally less sensitive to interest rate changes, market volatility or changes in our credit ratings than wholesale funding sources. Our lending activities may also be financed through secured borrowings, including credit card securitizations and securitizations with GSEs, the FHA and private-label investors, as well as FHLBs loans.

Our trading activities in other regulated entities are primarily funded on a secured basis through securities lending and repurchase agreements and these amounts will vary based on customer activity and market conditions. We believe funding these activities in the secured financing markets is more cost-efficient and less sensitive to changes in our credit ratings than unsecured financing. Repurchase agreements are generally short-term and often overnight. Disruptions in secured financing markets for financial institutions have occurred in prior market cycles which resulted in adverse changes in terms or significant reductions in the availability of such financing. We manage the liquidity risks arising from secured funding by sourcing funding globally from a diverse group of counterparties, providing a range of securities collateral and pursuing longer durations, when appropriate. For more information on secured financing agreements, see Note 10 - Federal Funds Sold or Purchased, Securities Financing Agreements and Short-term Borrowings to the Consolidated Financial Statements.

We issue long-term unsecured debt in a variety of maturities and currencies to achieve cost-efficient funding and to maintain an appropriate maturity profile. While the cost and availability of unsecured funding may be negatively impacted by general market conditions or by matters specific to the financial services industry or the Corporation, we seek to mitigate refinancing risk by actively managing the amount of our borrowings that we anticipate will mature within any month or quarter.

During 2015, we issued $\$ 43.7$ billion of long-term debt, consisting of $\$ 26.4$ billion for Bank of America Corporation, $\$ 10.0$ billion for Bank of America, N.A. and $\$ 7.3$ billion of other debt.

Table 20 presents our long-term debt by major currency at December 31, 2015 and 2014.

Table 20 Long-term Debt by Major Currency

| (Dollars in millions) | December 31 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  |
| U.S. Dollar | \$ | 190,381 | \$ | 191,264 |
| Euro |  | 29,797 |  | 30,687 |
| British Pound |  | 7,080 |  | 7,881 |
| Japanese Yen |  | 3,099 |  | 6,058 |
| Australian Dollar |  | 2,534 |  | 2,135 |
| Canadian Dollar |  | 1,428 |  | 1,779 |
| Swiss Franc |  | 872 |  | 897 |
| Other |  | 1,573 |  | 2,438 |
| Total long-term debt | \$ | 236,764 | \$ | 243,139 |

Total long-term debt decreased $\$ 6.4$ billion, or three percent, in 2015 , primarily due to the impact of revaluation of non-U.S. Dollar debt and changes in fair value for debt accounted for under the fair value option. These impacts were substantially offset through derivative hedge transactions. Excluding these two factors, total long-term debt remained relatively unchanged in 2015. We may, from time to time, purchase outstanding debt instruments in various transactions, depending on prevailing market conditions, liquidity and other factors. In addition, our other regulated entities may make markets in our debt instruments to provide liquidity for investors. For more information on long-term debt funding, see Note 11 - Long-term Debt to the Consolidated Financial Statements.

We use derivative transactions to manage the duration, interest rate and currency risks of our borrowings, considering the characteristics of the assets they are funding. For further details on our ALM activities, see Interest Rate Risk Management for Nontrading Activities on page 78.

We may also issue unsecured debt in the form of structured notes for client purposes. During 2015, we issued $\$ 7.2$ billion of structured notes, a majority of which was issued by Bank of America Corporation. Structured notes are debt obligations that pay investors returns linked to other debt or equity securities, indices, currencies or commodities. We typically hedge the returns we are obligated to pay on these liabilities with derivatives and/or investments in the underlying instruments, so that from a funding perspective, the cost is similar to our other unsecured long-term debt. We could be required to settle certain structured liability obligations for cash or other securities prior to maturity under certain circumstances, which we consider for liquidity planning purposes. We believe, however, that a portion of such borrowings will remain outstanding beyond the earliest put or redemption date. We had outstanding structured liabilities with a carrying value of $\$ 32.6$ billion and $\$ 38.8$ billion at December 31, 2015 and 2014.

Substantially all of our senior and subordinated debt obligations contain no provisions that could trigger a requirement for an early repayment, require additional collateral support, result in changes to terms, accelerate maturity or create additional financial obligations upon an adverse change in our credit ratings, financial ratios, earnings, cash flows or stock price.

## Contingency Planning

We maintain contingency funding plans that outline our potential responses to liquidity stress events at various levels of severity. These policies and plans are based on stress scenarios and
include potential funding strategies and communication and notification procedures that we would implement in the event we experienced stressed liquidity conditions. We periodically review and test the contingency funding plans to validate efficacy and assess readiness.

Our U.S. bank subsidiaries can access contingency funding through the Federal Reserve Discount Window. Certain non-U.S. subsidiaries have access to central bank facilities in the jurisdictions in which they operate. While we do not rely on these sources in our liquidity modeling, we maintain the policies, procedures and governance processes that would enable us to access these sources if necessary.

## Credit Ratings

Our borrowing costs and ability to raise funds are impacted by our credit ratings. In addition, credit ratings may be important to customers or counterparties when we compete in certain markets and when we seek to engage in certain transactions, including OTC derivatives. Thus, it is our objective to maintain high-quality credit ratings, and management maintains an active dialogue with the major rating agencies.

Credit ratings and outlooks are opinions expressed by rating agencies on our creditworthiness and that of our obligations or securities, including long-term debt, short-term borrowings, preferred stock and other securities, including asset securitizations. Our credit ratings are subject to ongoing review by the rating agencies and they consider a number of factors, including our own financial strength, performance, prospects and operations as well as factors not under our control. The rating agencies could make adjustments to our ratings at any time and they provide no assurances that they will maintain our ratings at current levels.

Other factors that influence our credit ratings include changes to the rating agencies' methodologies for our industry or certain security types; the rating agencies' assessment of the general operating environment for financial services companies; our relative positions in the markets in which we compete; our various risk exposures and risk management policies and activities; pending litigation and other contingencies or potential tail risks; our reputation; our liquidity position, diversity of funding sources and funding costs; the current and expected level and volatility of our earnings; our capital position and capital management practices; our corporate governance; the sovereign credit ratings of the U.S. government; current or future regulatory and legislative initiatives; and the agencies' views on whether the U.S. government would provide meaningful support to the Corporation or its subsidiaries in a crisis.

On December 8, 2015, Fitch Ratings (Fitch) completed its latest semi-annual review of 12 large, complex securities trading and universal banks, including Bank of America. The agency affirmed all of our ratings and maintained the outlooks it established upon completion of its prior review on May 19, 2015. Following that review, Fitch revised the support rating floors for the U.S. G-SIBs to No Floor from A, effectively removing the implied government support uplift from those institutions' ratings. The rating agency also upgraded Bank of America Corporation's stand-alone rating, or Viability Rating, to 'a' from 'a-', while affirming its long-term and short-term senior debt ratings at A and F1. Fitch concurrently upgraded Bank of America, N.A.'s long-term senior debt rating to A+ from A, and its long-term deposit rating to AA- from A+. Fitch set the outlook on those ratings at stable. Fitch also revised the
outlook to positive on the ratings of Bank of America's material international operating subsidiaries, including MLI.

On December 2, 2015, Standard \& Poor's Ratings Services (S\&P) concluded its review of the ratings of eight U.S. G-SIBs, including Bank of America. Consistent with prior guidance, S\&P downgraded our holding company long-term senior debt rating to BBB+ from A-due to the removal of the remaining notch of uplift for U.S. government support and revised the outlook to Stable from CreditWatch Negative. The Corporation's short-term ratings were not affected. This action reflected S\&P's view that extraordinary U.S. government support of the banking system is less likely under the current U.S. resolution framework. S\&P concurrently left the long-term and short-term senior debt ratings of Bank of America's core rated operating subsidiaries, including Bank of America, N.A., MLPF\&S, MLI, and Bank of America Merrill Lynch International Limited, unchanged at A and A-1, respectively. S\&P eliminated the remaining notch of uplift for potential government support from those entities' senior long-term debt ratings, but the agency subsequently added a notch of uplift upon implementing its new framework for incorporating loss-absorbing
holding company debt and equity capital buffers into operating subsidiary credit ratings. Those ratings remain on CreditWatch positive pending further clarity on what debt instruments will count toward TLAC requirements. Additionally, S\&P concluded its CreditWatch Developing on the subordinated debt rating of Bank of America, N.A., which the agency downgraded to BBB+ from A-.

On May 28, 2015, Moody's Investors Service, Inc. (Moody's) concluded its previously announced review of several global investment banking groups, including Bank of America, which followed the publication of the agency's new bank rating methodology. Moody's upgraded Bank of America Corporation's long-term senior debt rating to Baa1 from Baa2, and the preferred stock rating to Ba 2 from Ba 3 . Moody's also upgraded the longterm senior debt and long-term deposit ratings of Bank of America, N.A. to A1 from A2. Moody's affirmed the short-term ratings at P-2 for Bank of America Corporation and P-1 for Bank of America, N.A. Moody's now has a stable outlook on all of our ratings.

Table 21 presents the Corporation's current long-term/shortterm senior debt ratings and outlooks expressed by the rating agencies.

Table 21 Senior Debt Ratings

|  | Moody's Investors Service |  |  | Standard \& Poor's |  |  | Fitch Ratings |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Long-term | Short-term | Outlook | Long-term | Short-term ${ }^{(1)}$ | Outlook | Long-term | Short-term | Outlook |
| Bank of America Corporation | Baa1 | P-2 | Stable | BBB+ | A-2 | Stable | A | F1 | Stable |
| Bank of America, N.A. | A1 | P-1 | Stable | A | A-1 | CreditWatch Positive | A+ | F1 | Stable |
| Merrill Lynch, Pierce, Fenner \& Smith | NR | NR | NR | A | A-1 | CreditWatch Positive | A+ | F1 | Stable |
| Merrill Lynch International | NR | NR | NR | A | A-1 | CreditWatch Positive | A | F1 | Positive |

${ }^{(1)}$ S\&P short-term ratings are not on CreditWatch.
NR $=$ not rated

A reduction in certain of our credit ratings or the ratings of certain asset-backed securitizations may have a material adverse effect on our liquidity, potential loss of access to credit markets, the related cost of funds, our businesses and on certain trading revenues, particularly in those businesses where counterparty creditworthiness is critical. In addition, under the terms of certain OTC derivative contracts and other trading agreements, in the event of downgrades of our or our rated subsidiaries' credit ratings, the counterparties to those agreements may require us to provide additional collateral, or to terminate these contracts or agreements, which could cause us to sustain losses and/or adversely impact our liquidity. If the short-term credit ratings of our parent company, bank or broker-dealer subsidiaries were downgraded by one or more levels, the potential loss of access to short-term funding sources such as repo financing and the effect on our incremental cost of funds could be material.

While certain potential impacts are contractual and quantifiable, the full scope of the consequences of a credit rating downgrade to a financial institution is inherently uncertain, as it depends upon numerous dynamic, complex and inter-related factors and assumptions, including whether any downgrade of a company's long-term credit ratings precipitates downgrades to its short-term credit ratings, and assumptions about the potential behaviors of various customers, investors and counterparties. For more information on potential impacts of credit rating downgrades, see Liquidity Risk - Time-to-required Funding and Stress Modeling on page 42.

For more information on the additional collateral and termination payments that could be required in connection with certain OTC derivative contracts and other trading agreements as a result of such a credit rating downgrade, see Note 2 - Derivatives to the Consolidated Financial Statements.

## Credit Risk Management

Credit quality remained stable during 2015 driven by lower U.S. unemployment and improving home prices as well as our proactive credit risk management activities positively impacting our credit portfolio as nonperforming loans and delinquencies continued to improve. For additional information, see Executive Summary 2015 Economic and Business Environment on page 3.

Credit risk is the risk of loss arising from the inability or failure of a borrower or counterparty to meet its obligations. Credit risk can also arise from operational failures that result in an erroneous advance, commitment or investment of funds. We define the credit exposure to a borrower or counterparty as the loss potential arising from all product classifications including loans and leases, deposit overdrafts, derivatives, assets held-for-sale and unfunded lending commitments which include loan commitments, letters of credit and financial guarantees. Derivative positions are recorded at fair value and assets held-for-sale are recorded at either fair value or the lower of cost or fair value. Certain loans and unfunded commitments are accounted for under the fair value option. Credit risk for categories of assets carried at fair value is not accounted for as part of the allowance for credit losses but as part of the fair value adjustments recorded in earnings. For derivative positions, our credit risk is measured as the net cost in the event the counterparties with contracts in which we are in a gain position fail to perform under the terms of those contracts. We use the current fair value to represent credit exposure without giving consideration to future mark-to-market changes. The credit risk amounts take into consideration the effects of legally enforceable master netting agreements and cash collateral. Our consumer and commercial credit extension and review procedures encompass funded and unfunded credit exposures. For more information on derivatives and credit extension commitments, see Note 2 Derivatives and Note 12 - Commitments and Contingencies to the Consolidated Financial Statements.

We manage credit risk based on the risk profile of the borrower or counterparty, repayment sources, the nature of underlying collateral, and other support given current events, conditions and expectations. We classify our portfolios as either consumer or commercial and monitor credit risk in each as discussed below.

We refine our underwriting and credit risk management practices as well as credit standards to meet the changing economic environment. To mitigate losses and enhance customer support in our consumer businesses, we have in place collection programs and loan modification and customer assistance infrastructures. We utilize a number of actions to mitigate losses in the commercial businesses including increasing the frequency and intensity of portfolio monitoring, hedging activity and our practice of transferring management of deteriorating commercial exposures to independent special asset officers as credits enter criticized categories.

We have non-U.S. exposure largely in Europe and Asia Pacific. For more information on our exposures and related risks in nonU.S. countries, see Non-U.S. Portfolio on page 67 and Item 1A. Risk Factors of the Corporation's 2015 Annual Report on Form 10-K.

Utilized energy exposure represents approximately two percent of total loans and leases. For more information on our exposures and related risks in the energy industry, see Commercial Portfolio Credit Risk Management - Industry Concentrations on page 64 and Table 46.

For more information on our credit risk management activities, see Consumer Portfolio Credit Risk Management on page 47, Commercial Portfolio Credit Risk Management on page 58, NonU.S. Portfolio on page 67, Provision for Credit Losses on page 69 and Allowance for Credit Losses on page 69, Note 1 - Summary of Significant Accounting Principles, Note 4 - Outstanding Loans and Leases and Note 5 - Allowance for Credit Losses to the Consolidated Financial Statements.

## Consumer Portfolio Credit Risk Management

Credit risk management for the consumer portfolio begins with initial underwriting and continues throughout a borrower's credit cycle. Statistical techniques in conjunction with experiential judgment are used in all aspects of portfolio management including underwriting, product pricing, risk appetite, setting credit limits, and establishing operating processes and metrics to quantify and balance risks and returns. Statistical models are built using detailed behavioral information from external sources such as credit bureaus and/or internal historical experience. These models are a component of our consumer credit risk management process and are used in part to assist in making both new and ongoing credit decisions, as well as portfolio management strategies, including authorizations and line management, collection practices and strategies, and determination of the allowance for loan and lease losses and allocated capital for credit risk.

During 2015, we completed approximately 51,300 customer loan modifications with a total unpaid principal balance of $\$ 8.4$ billion, including approximately 21,200 permanent modifications, under the U.S. government's Making Home Affordable Program. Of the loan modifications completed in 2015, in terms of both the volume of modifications and the unpaid principal balance associated with the underlying loans, more than half were in the Corporation's held-for-investment (HFI) portfolio. For modified loans on our balance sheet, these modification types are generally considered TDRs. For more information on TDRs and portfolio impacts, see Consumer Portfolio Credit Risk Management Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity on page 56 and Note 4 - Outstanding Loans and Leases to the Consolidated Financial Statements.

## Consumer Credit Portfolio

Improvement in the U.S. unemployment rate and home prices continued during 2015 resulting in improved credit quality and lower credit losses across most major consumer portfolios compared to 2014. Nearly all consumer loan portfolios 30 and 90 days or more past due declined during 2015 as a result of improved delinquency trends.

Improved credit quality, continued loan balance run-off and sales across the consumer portfolio drove a $\$ 2.6$ billion decrease in the consumer allowance for loan and lease losses in 2015 to $\$ 7.4$ billion at December 31, 2015. For additional information, see Allowance for Credit Losses on page 69.

For more information on our accounting policies regarding delinquencies, nonperforming status, charge-offs and TDRs for the consumer portfolio, see Note 1 - Summary of Significant Accounting Principles to the Consolidated Financial Statements. For more information on representations and warranties related to our residential mortgage and home equity portfolios, see OffBalance Sheet Arrangements and Contractual Obligations Representations and Warranties on page 27 and Note 7 Representations and Warranties Obligations and Corporate Guarantees to the Consolidated Financial Statements.

Table 22 presents our outstanding consumer loans and leases, and the PCI loan portfolio. In addition to being included in the "Outstandings" columns in Table 22, PCI loans are also shown separately in the "Purchased Credit-impaired Loan Portfolio" columns. The impact of the PCI loan portfolio on certain credit statistics is reported where appropriate. For more information on PCI loans, see Consumer Portfolio Credit Risk Management Purchased Credit-impaired Loan Portfolio on page 54 and Note 4 - Outstanding Loans and Leases to the Consolidated Financial Statements.

## Table 22 Consumer Loans and Leases

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Outstandings |  |  |  | Purchased Credit-impaired Loan Portfolio |  |  |  |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| Residential mortgage ${ }^{(1)}$ | \$ | 187,911 | \$ | 216,197 | \$ | 12,066 | \$ | 15,152 |
| Home equity |  | 75,948 |  | 85,725 |  | 4,619 |  | 5,617 |
| U.S. credit card |  | 89,602 |  | 91,879 |  | n/a |  | n/a |
| Non-U.S. credit card |  | 9,975 |  | 10,465 |  | n/a |  | n/a |
| Direct/Indirect consumer ${ }^{(2)}$ |  | 88,795 |  | 80,381 |  | n/a |  | $n / \mathrm{a}$ |
| Other consumer ${ }^{(3)}$ |  | 2,067 |  | 1,846 |  | n/a |  | n/a |
| Consumer loans excluding loans accounted for under the fair value option |  | 454,298 |  | 486,493 |  | 16,685 |  | 20,769 |
| Loans accounted for under the fair value option (4) |  | 1,871 |  | 2,077 |  | n/a |  | n/a |
| Total consumer loans and leases | \$ | 456,169 | \$ | 488,570 | \$ | 16,685 | \$ | 20,769 |

[^1]${ }^{(2)}$ Outstandings include auto and specialty lending loans of $\$ 42.6$ billion and $\$ 37.7$ billion, unsecured consumer lending loans of $\$ 886$ million and $\$ 1.5$ billion, U.S. securities-based lending loans of $\$ 39.8$ billion and $\$ 35.8$ billion, non-U.S. consumer loans of $\$ 3.9$ billion and $\$ 4.0$ billion, student loans of $\$ 564$ million and $\$ 632$ million and other consumer loans of $\$ 1.0$ billion and $\$ 761$ million at December 31, 2015 and 2014.
${ }^{(3)}$ Outstandings include consumer finance loans of $\$ 564$ million and $\$ 676$ million, consumer leases of $\$ 1.4$ billion and $\$ 1.0$ billion and consumer overdrafts of $\$ 146$ million and $\$ 162$ million at December 31, 2015 and 2014.
${ }^{(4)}$ Consumer loans accounted for under the fair value option include residential mortgage loans of $\$ 1.6$ billion and $\$ 1.9$ billion and home equity loans of $\$ 250$ million and $\$ 196$ million at December 31, 2015 and 2014. For more information on the fair value option, see Note 21 - Fair Value Option to the Consolidated Financial Statements.
$\mathrm{n} / \mathrm{a}=$ not applicable

Table 23 presents consumer nonperforming loans and accruing consumer loans past due 90 days or more. Nonperforming loans do not include past due consumer credit card loans, other unsecured loans and in general, consumer non-real estate-secured loans (loans discharged in Chapter 7 bankruptcy are included) as these loans are typically charged off no later than the end of the month in which the loan becomes 180 days past due. Real estatesecured past due consumer loans that are insured by the FHA or individually insured under long-term standby agreements with

FNMA and FHLMC (collectively, the fully-insured loan portfolio) are reported as accruing as opposed to nonperforming since the principal repayment is insured. Fully-insured loans included in accruing past due 90 days or more are primarily from our repurchases of delinquent FHA loans pursuant to our servicing agreements with GNMA. Additionally, nonperforming loans and accruing balances past due 90 days or more do not include the PCl loan portfolio or loans accounted for under the fair value option even though the customer may be contractually past due.

Table 23 Consumer Credit Quality

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Nonperforming |  |  |  | Accruing Past Due 90 Days or More |  |  |  |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| Residential mortgage ${ }^{(1)}$ | \$ | 4,803 | \$ | 6,889 | \$ | 7,150 | \$ | 11,407 |
| Home equity |  | 3,337 |  | 3,901 |  | - |  | - |
| U.S. credit card |  | n/a |  | n/a |  | 789 |  | 866 |
| Non-U.S. credit card |  | n/a |  | n/a |  | 76 |  | 95 |
| Direct/Indirect consumer |  | 24 |  | 28 |  | 39 |  | 64 |
| Other consumer |  | 1 |  | 1 |  | 3 |  | 1 |
| Total (2) | \$ | 8,165 | \$ | 10,819 | \$ | 8,057 | \$ | 12,433 |
| Consumer loans and leases as a percentage of outstanding consumer loans and leases ${ }^{(2)}$ |  | 1.80\% |  | 2.22\% |  | 1.77\% |  | 2.56\% |
| Consumer loans and leases as a percentage of outstanding loans and leases, excluding PCI and fullyinsured loan portfolios ${ }^{(2)}$ |  | 2.04 |  | 2.70 |  | 0.23 |  | 0.26 |
| (1) Residential mortgage loans accruing past due 90 days or more are fully-insured loans. At December 31, 2015 and 201 interest has been curtailed by the FHA, and therefore are no longer accruing interest, although principal is still insured, <br> ${ }^{(2)}$ Balances exclude consumer loans accounted for under the fair value option. At December 31, 2015 and 2014, \$293 m past due 90 days or more and not accruing interest. <br> $\mathrm{n} / \mathrm{a}=$ not applicable |  | tial mortga billion an \$392 mill |  | uded $\$ 4.3$ b billion of loa bans accoun |  | $\$ 7.3$ billion ch interest der the fair |  | ns on which till accruing. option were |

Table 24 presents net charge-offs and related ratios for consumer loans and leases.

Table 24 Consumer Net Charge-offs and Related Ratios

| (Dollars in millions) | Net Charge-offs (1) |  |  |  | Net Charge-o | tios ${ }^{(1,2)}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  | $2015 \quad 2014$ |  |
| Residential mortgage | \$ | 473 | \$ | (114) | 0.24\% | (0.05)\% |
| Home equity |  | 636 |  | 907 | 0.79 | 1.01 |
| U.S. credit card |  | 2,314 |  | 2,638 | 2.62 | 2.96 |
| Non-U.S. credit card |  | 188 |  | 242 | 1.86 | 2.10 |
| Direct/Indirect consumer |  | 112 |  | 169 | 0.13 | 0.20 |
| Other consumer |  | 193 |  | 229 | 9.96 | 11.27 |
| Total | \$ | 3,916 | \$ | 4,071 | 0.84 | 0.80 |
| (1) Net charge-offs exclude writ page 54. |  | it Risk M |  | - Purch | Credit-impai | Portfolio on |

Net charge-off ratios, excluding the PCl and fully-insured loan portfolios, were 0.35 percent and ( 0.08 ) percent for residential mortgage, 0.84 percent and 1.09 percent for home equity and 0.54 percent and 1.00 percent for the total consumer portfolio for 2015 and 2014, respectively. These are the only product classifications that include PCI and fully-insured loans.

Net charge-offs, as shown in Tables 24 and 25, exclude writeoffs in the PCI loan portfolio of $\$ 634$ million and $\$ 545$ million in
residential mortgage and $\$ 174$ million and $\$ 265$ million in home equity for 2015 and 2014. Net charge-off ratios including the PCI write-offs were 0.56 percent and 0.18 percent for residential mortgage and 1.00 percent and 1.31 percent for home equity in 2015 and 2014. For more information on PCI write-offs, see Consumer Portfolio Credit Risk Management - Purchased Creditimpaired Loan Portfolio on page 54.

Table 25 presents outstandings, nonperforming balances, net charge-offs, allowance for loan and lease losses and provision for loan and lease losses for the core portfolio and the non-core portfolio within the consumer real estate portfolio. Following the realignment of our business segments effective April 1, 2016, we categorize consumer real estate loans as core and non-core on the basis of loan and customer characteristics such as origination date, product type, LTV, FICO score and delinquency status consistent with our current consumer and mortgage servicing strategy. Generally, loans that were originated after January 1, 2010, qualified under government-sponsored enterprise underwriting guidelines, or otherwise met our underwriting
guidelines in place in 2015 are characterized as core loans. Loans held in legacy private-label securitizations, government-insured loans originated prior to 2010, loan products no longer originated, and loans originated prior to 2010 and classified as nonperforming or modified in a troubled debt restructuring prior to 2016 are generally characterized as non-core loans, and are principally runoff portfolios. Core loans as reported within Table 25 include loans held in the Consumer Banking and GWIM segments, as well as loans held for ALM activities in All Other. For more information on core and non-core loans, see Note 1 - Summary of Significant Accounting Principles and Note 4 - Outstanding Loans and Leases to the Consolidated Financial Statements.

Table 25 Consumer Real Estate Portfolio (1)

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  | Net Charge-offs ${ }^{(2)}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Outstandings |  |  |  | Nonperforming |  |  |  |  |  |  |  |
|  |  | 2015 |  | 2014 |  | 15 |  | 2014 | 2015 |  | 2014 |  |
| Core portfolio |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage | \$ | 141,795 | \$ | 156,643 | \$ | 1,825 | \$ | 2,329 | \$ | 101 | \$ | 28 |
| Home equity |  | 54,917 |  | 59,606 |  | 974 |  | 1,247 |  | 163 |  | 216 |
| Total core portfolio |  | 196,712 |  | 216,249 |  | 2,799 |  | 3,576 |  | 264 |  | 244 |
| Non-core portfolio |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage |  | 46,116 |  | 59,554 |  | 2,978 |  | 4,560 |  | 372 |  | (142) |
| Home equity |  | 21,031 |  | 26,119 |  | 2,363 |  | 2,654 |  | 473 |  | 691 |
| Total non-core portfolio |  | 67,147 |  | 85,673 |  | 5,341 |  | 7,214 |  | 845 |  | 549 |
| Consumer real estate portfolio |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage |  | 187,911 |  | 216,197 |  | 4,803 |  | 6,889 |  | 473 |  | (114) |
| Home equity |  | 75,948 |  | 85,725 |  | 3,337 |  | 3,901 |  | 636 |  | 907 |
| Total consumer real estate portfolio | \$ | 263,859 | \$ | 301,922 | \$ | 8,140 | \$ | 10,790 | \$ | 1,109 | \$ | 793 |


|  | December 31 |  |  |  | Provision for Loan and Lease Losses |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Allowance for Loan and Lease Losses |  |  |  |  |  |  |  |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| Core portfolio |  |  |  |  |  |  |  |  |
| Residential mortgage | \$ | 319 | \$ | 437 | \$ | (17) | \$ | (147) |
| Home equity |  | 664 |  | 859 |  | (33) |  | (138) |
| Total core portfolio |  | 983 |  | 1,296 |  | (50) |  | (285) |
| Non-core portfolio |  |  |  |  |  |  |  |  |
| Residential mortgage |  | 1,181 |  | 2,463 |  | (277) |  | (596) |
| Home equity |  | 1,750 |  | 2,176 |  | 257 |  | (95) |
| Total non-core portfolio |  | 2,931 |  | 4,639 |  | (20) |  | (691) |
| Consumer real estate portfolio |  |  |  |  |  |  |  |  |
| Residential mortgage |  | 1,500 |  | 2,900 |  | (294) |  | (743) |
| Home equity |  | 2,414 |  | 3,035 |  | 224 |  | (233) |
| Total consumer real estate portfolio | \$ | 3,914 | \$ | 5,935 | \$ | (70) | \$ | (976) |

${ }^{(1)}$ Outstandings and nonperforming loans exclude loans accounted for under the fair value option. Consumer loans accounted for under the fair value option include residential mortgage loans of $\$ 1.6$ billion and $\$ 1.9$ billion and home equity loans of $\$ 250$ million and $\$ 196$ million at December 31, 2015 and 2014. For more information on the fair value option, see Note 21 - Fair Value Option to the Consolidated Financial Statements.
${ }^{(2)}$ Net charge-offs exclude write-offs in the PCI loan portfolio. For more information on PCI write-offs, see Consumer Portfolio Credit Risk Management - Purchased Credit-impaired Loan Portfolio on page 54 .

We believe that the presentation of information adjusted to exclude the impact of the PCl loan portfolio, the fully-insured loan portfolio and loans accounted for under the fair value option is more representative of the ongoing operations and credit quality of the business. As a result, in the following discussions of the residential mortgage and home equity portfolios, we provide information that excludes the impact of the PCl loan portfolio, the fully-insured loan portfolio and loans accounted for under the fair value option in certain credit quality statistics. We separately disclose information on the PCI loan portfolio on page 54.

## Residential Mortgage

The residential mortgage portfolio makes up the largest percentage of our consumer loan portfolio at 41 percent of consumer loans and leases at December 31, 2015. Approximately 47 percent of the residential mortgage portfolio is in All Other and is comprised of originated loans, purchased loans used in our overall ALM activities, delinquent FHA loans repurchased pursuant to our servicing agreements with GNMA as well as loans repurchased related to our representations and warranties. Approximately 30 percent of the residential mortgage portfolio is in GWIM and represents residential mortgages originated for the home purchase and refinancing needs of our wealth management
clients and the remaining portion of the portfolio is primarily in Consumer Banking.

Outstanding balances in the residential mortgage portfolio, excluding loans accounted for under the fair value option, decreased $\$ 28.3$ billion during 2015 due to loan sales of $\$ 24.2$ billion and runoff outpacing the retention of new originations. Loan sales primarily included $\$ 16.4$ billion of loans with standby insurance agreements, $\$ 3.1$ billion of nonperforming and other delinquent loans and $\$ 4.5$ billion of loans in consolidated agency residential mortgage securitization vehicles.

At December 31, 2015 and 2014, the residential mortgage portfolio included $\$ 37.1$ billion and $\$ 65.0$ billion of outstanding fully-insured loans. On this portion of the residential mortgage portfolio, we are protected against principal loss as a result of either FHA insurance or long-term standby agreements that provide for the transfer of credit risk to FNMA and FHLMC. At December 31, 2015 and 2014, $\$ 33.4$ billion and $\$ 47.8$ billion had FHA insurance with the remainder protected by long-term standby
agreements. At December 31, 2015 and 2014, $\$ 11.2$ billion and $\$ 15.9$ billion of the FHA-insured loan population were repurchases of delinquent FHA loans pursuant to our servicing agreements with GNMA.

Table 26 presents certain residential mortgage key credit statistics on both a reported basis excluding loans accounted for under the fair value option, and excluding the PCI loan portfolio, our fully-insured loan portfolio and loans accounted for under the fair value option. Additionally, in the "Reported Basis" columns in the table below, accruing balances past due and nonperforming loans do not include the PCI loan portfolio, in accordance with our accounting policies, even though the customer may be contractually past due. As such, the following discussion presents the residential mortgage portfolio excluding the PCl loan portfolio, the fully-insured loan portfolio and loans accounted for under the fair value option. For more information on the PCI Ioan portfolio, see page 54.

Table 26 Residential Mortgage - Key Credit Statistics

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Reported Basis ${ }^{(1)}$ |  |  |  | Excluding Purchased Credit-impaired and Fully-insured Loans |  |  |  |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| Outstandings | \$ | 187,911 | \$ | 216,197 | \$ | 138,768 | \$ | 136,075 |
| Accruing past due 30 days or more |  | 11,423 |  | 16,485 |  | 1,568 |  | 1,868 |
| Accruing past due 90 days or more |  | 7,150 |  | 11,407 |  | - |  | - |
| Nonperforming loans |  | 4,803 |  | 6,889 |  | 4,803 |  | 6,889 |
| Percent of portfolio |  |  |  |  |  |  |  |  |
| Refreshed LTV greater than 90 but less than or equal to 100 |  | 7\% |  | 9\% |  | 5\% |  | 6\% |
| Refreshed LTV greater than 100 |  | 8 |  | 12 |  | 4 |  | 7 |
| Refreshed FICO below 620 |  | 13 |  | 16 |  | 6 |  | 8 |
| 2006 and 2007 vintages ${ }^{(2)}$ |  | 17 |  | 19 |  | 17 |  | 22 |
| Net charge-off ratio ${ }^{(3)}$ |  | 0.24 |  | (0.05) |  | 0.35 |  | (0.08) |

(1) Outstandings, accruing past due, nonperforming loans and percentages of portfolio exclude loans accounted for under the fair value option.
 vintages accounted for net charge-offs of $\$ 136$ million to residential mortgage net charge-offs in 2015 and net recoveries of $\$ 233$ million to residential mortgage net recoveries in 2014.
${ }^{(3)}$ Net charge-off ratios are calculated as net charge-offs divided by average outstanding loans excluding loans accounted for under the fair value option.

Nonperforming residential mortgage loans decreased \$2.1 billion in 2015 including sales of $\$ 1.5$ billion, partially offset by a $\$ 261$ million net increase related to the DoJ Settlement for those loans that are no longer fully insured. Excluding these items, nonperforming residential mortgage loans decreased as outflows, including the transfers of certain qualifying borrowers discharged in a Chapter 7 bankruptcy to performing status, outpaced new inflows. Of the nonperforming residential mortgage loans at December 31, 2015, \$1.6 billion, or 34 percent, were current on contractual payments. Nonperforming loans that are contractually current primarily consist of collateral-dependent TDRs, including those that have been discharged in Chapter 7 bankruptcy, as well as loans that have not yet demonstrated a sustained period of payment performance following a TDR. In addition, $\$ 2.0$ billion, or 43 percent of nonperforming residential mortgage loans were 180 days or more past due and had been written down to the estimated fair value of the collateral, less costs to sell. Accruing loans that were 30 days or more past due decreased $\$ 300$ million in 2015.

Net charge-offs increased $\$ 587$ million to $\$ 473$ million in 2015 , or 0.35 percent of total average residential mortgage loans, compared to a net recovery of $\$ 114$ million, or (0.08) percent, in 2014. This increase in net charge-offs was primarily driven by $\$ 402$ million of charge-offs during 2015 related to the consumer relief
portion of the DoJ Settlement. In addition, net charge-offs included recoveries of $\$ 127$ million related to nonperforming loan sales during 2015 compared to $\$ 407$ million in 2014. Excluding these items, net charge-offs declined driven by favorable portfolio trends and decreased write-downs on loans greater than 180 days past due, which were written down to the estimated fair value of the collateral, less costs to sell, due in part to improvement in home prices and the U.S. economy.

Residential mortgage loans with a greater than 90 percent but less than or equal to 100 percent refreshed LTV represented five percent and six percent of the residential mortgage portfolio at December 31, 2015 and 2014. Loans with a refreshed LTV greater than 100 percent represented four percent and seven percent of the residential mortgage loan portfolio at December 31, 2015 and 2014. Of the loans with a refreshed LTV greater than 100 percent, 98 percent and 96 percent were performing at December 31, 2015 and 2014. Loans with a refreshed LTV greater than 100 percent reflect loans where the outstanding carrying value of the loan is greater than the most recent valuation of the property securing the loan. The majority of these loans have a refreshed LTV greater than 100 percent primarily due to home price deterioration since 2006, partially offset by subsequent appreciation. Loans to borrowers with refreshed FICO scores below 620 represented six
percent and eight percent of the residential mortgage portfolio at December 31, 2015 and 2014.

Of the $\$ 138.8$ billion in total residential mortgage loans outstanding at December 31, 2015, as shown in Table 27, 39 percent were originated as interest-only loans. The outstanding balance of interest-only residential mortgage loans that have entered the amortization period was $\$ 12.0$ billion, or 22 percent at December 31, 2015. Residential mortgage loans that have entered the amortization period generally have experienced a higher rate of early stage delinquencies and nonperforming status compared to the residential mortgage portfolio as a whole. At December 31, 2015, $\$ 214$ million, or two percent of outstanding interest-only residential mortgages that had entered the amortization period were accruing past due 30 days or more compared to $\$ 1.6$ billion, or one percent for the entire residential mortgage portfolio. In addition, at December 31, 2015, \$712 million, or six percent of outstanding interest-only residential mortgage loans that had entered the amortization period were nonperforming, of which $\$ 348$ million were contractually current, compared to $\$ 4.8$ billion, or three percent for the entire residential
mortgage portfolio, of which $\$ 1.6$ billion were contractually current. Loans that have yet to enter the amortization period in our interestonly residential mortgage portfolio are primarily well-collateralized loans to our wealth management clients and have an interest-only period of three to ten years. Approximately 75 percent of these loans that have yet to enter the amortization period will not be required to make a fully-amortizing payment until 2019 or later.

Table 27 presents outstandings, nonperforming loans and net charge-offs by certain state concentrations for the residential mortgage portfolio. The Los Angeles-Long Beach-Santa Ana Metropolitan Statistical Area (MSA) within California represented 14 percent and 13 percent of outstandings at December 31, 2015 and 2014. Loans within this MSA contributed net recoveries of $\$ 13$ million and $\$ 81$ million within the residential mortgage portfolio during 2015 and 2014. In the New York area, the New York-Northern New Jersey-Long Island MSA made up 11 percent of outstandings at both December 31, 2015 and 2014. Loans within this MSA contributed net charge-offs of $\$ 101$ million and $\$ 27$ million within the residential mortgage portfolio during 2015 and 2014.

Table 27 Residential Mortgage State Concentrations

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  | Net Charge-offs ${ }^{(2)}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Outstandings ${ }^{(1)}$ |  |  |  | Nonperforming ${ }^{(1)}$ |  |  |  |  |  |  |  |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| California | \$ | 48,865 | \$ | 45,496 | \$ | 977 | \$ | 1,459 | \$ | (49) | \$ | (280) |
| New York (3) |  | 12,696 |  | 11,826 |  | 399 |  | 477 |  | 57 |  | 15 |
| Florida (3) |  | 10,001 |  | 10,116 |  | 534 |  | 858 |  | 53 |  | (43) |
| Texas |  | 6,208 |  | 6,635 |  | 185 |  | 269 |  | 10 |  | 1 |
| Virginia |  | 4,097 |  | 4,402 |  | 164 |  | 244 |  | 20 |  | 4 |
| Other U.S./Non-U.S. |  | 56,901 |  | 57,600 |  | 2,544 |  | 3,582 |  | 382 |  | 189 |
| Residential mortgage loans (4) | \$ | 138,768 | \$ | 136,075 | \$ | 4,803 | \$ | 6,889 | \$ | 473 | \$ | (114) |
| Fully-insured loan portfolio |  | 37,077 |  | 64,970 |  |  |  |  |  |  |  |  |
| Purchased credit-impaired residential mortgage loan portfolio (5) |  | 12,066 |  | 15,152 |  |  |  |  |  |  |  |  |
| Total residential mortgage loan portfolio | \$ | 187,911 | \$ | 216,197 |  |  |  |  |  |  |  |  |

(1) Outstandings and nonperforming loans exclude loans accounted for under the fair value option.
${ }^{(2)}$ Net charge-offs exclude $\$ 634$ million of write-offs in the residential mortgage PCI loan portfolio in 2015 compared to $\$ 545$ million in 2014 . For additional information, see Consumer Portfolio Credit Risk Management - Purchased Credit-impaired Loan Portfolio on page 54.
${ }^{(3)}$ In these states, foreclosure requires a court order following a legal proceeding (judicial states).
(4) Amounts exclude the PCI residential mortgage and fully-insured loan portfolios.
${ }^{(5)}$ Forty-seven percent and 45 percent of PCI residential mortgage loans were in California at December 31, 2015 and 2014. There were no other significant single state concentrations.

The Community Reinvestment Act (CRA) encourages banks to meet the credit needs of their communities for housing and other purposes, particularly in neighborhoods with low or moderate incomes. Our CRA portfolio was $\$ 8.0$ billion and $\$ 9.0$ billion at December 31, 2015 and 2014, or six percent and seven percent of the residential mortgage portfolio. The CRA portfolio included $\$ 552$ million and $\$ 986$ million of nonperforming loans at December 31, 2015 and 2014, representing 11 percent and 14 percent of total nonperforming residential mortgage loans. In 2015, net charge-offs in the CRA portfolio were $\$ 85$ million of the $\$ 473$ million total net charge-offs for the residential mortgage portfolio. In 2014, net charge-offs in the CRA portfolio were $\$ 52$ million compared to net recoveries of $\$ 114$ million for the residential mortgage portfolio.

## Home Equity

At December 31, 2015, the home equity portfolio made up 17 percent of the consumer portfolio and is comprised of home equity lines of credit (HELOCs), home equity loans and reverse mortgages.

At December 31, 2015, our HELOC portfolio had an outstanding balance of $\$ 66.1$ billion, or 87 percent of the total home equity portfolio compared to $\$ 74.2$ billion, or 87 percent, at December 31, 2014. HELOCs generally have an initial draw period of 10 years and the borrowers typically are only required to pay the interest due on the loans on a monthly basis. After the initial draw period ends, the loans generally convert to 15 -year amortizing loans.

At December 31, 2015, our home equity loan portfolio had an outstanding balance of $\$ 7.9$ billion, or 10 percent of the total home equity portfolio compared to $\$ 9.8$ billion, or 11 percent, at December 31, 2014. Home equity loans are almost all fixed-rate loans with amortizing payment terms of 10 to 30 years and of the $\$ 7.9$ billion at December 31, 2015, 54 percent have 25 - to 30 year terms. At December 31, 2015, our reverse mortgage portfolio had an outstanding balance, excluding loans accounted for under the fair value option, of $\$ 2.0$ billion, or three percent of the total home equity portfolio compared to $\$ 1.7$ billion, or two percent, at December 31, 2014. We no longer originate reverse mortgages.

At December 31, 2015, approximately 65 percent of the home equity portfolio was included in Consumer Banking, 28 percent
was included in All Other and the remainder of the portfolio was primarily in GWIM. Outstanding balances in the home equity portfolio, excluding loans accounted for under the fair value option, decreased $\$ 9.8$ billion in 2015 primarily due to paydowns and charge-offs outpacing new originations and draws on existing lines. Of the total home equity portfolio at December 31, 2015 and 2014, $\$ 20.3$ billion and $\$ 20.6$ billion, or 27 percent and 24 percent, were in first-lien positions ( 28 percent and 26 percent excluding the PCI home equity portfolio). At December 31, 2015, outstanding balances in the home equity portfolio that were in a second-lien or more junior-lien position and where we also held the first-lien loan totaled $\$ 12.9$ billion, or 18 percent of our total home equity portfolio excluding the PCl loan portfolio.

Unused HELOCs totaled $\$ 50.3$ billion and $\$ 53.7$ billion at December 31, 2015 and 2014. The decrease was primarily due to customers choosing to close accounts, as well as accounts reaching the end of their draw period, which automatically
eliminates open line exposure. Both of these more than offset customer paydowns of principal balances and the impact of new production. The HELOC utilization rate was 57 percent and 58 percent at December 31, 2015 and 2014.

Table 28 presents certain home equity portfolio key credit statistics on both a reported basis excluding loans accounted for under the fair value option, and excluding the PCI loan portfolio and loans accounted for under the fair value option. Additionally, in the "Reported Basis" columns in the table below, accruing balances past due 30 days or more and nonperforming loans do not include the PCI loan portfolio, in accordance with our accounting policies, even though the customer may be contractually past due. As such, the following discussion presents the home equity portfolio excluding the PCl loan portfolio and loans accounted for under the fair value option. For more information on the PCl loan portfolio, see page 54 .

Table 28 Home Equity - Key Credit Statistics
(Dollars in millions)
Outstandings
Accruing past due 30 days or more (2)
Nonperforming loans ${ }^{(2)}$
Percent of portfolio
Refreshed CLTV greater than 90 but less than or equal to 100
Refreshed CLTV greater than 100

| December 31 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Reported Basis ${ }^{(1)}$ |  |  |  | Excluding Purchased Credit-impaired Loans |  |  |  |
| 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| \$ | 75,948 | \$ | 85,725 | \$ | 71,329 | \$ | 80,108 |
|  | 613 |  | 640 |  | 613 |  | 640 |
|  | 3,337 |  | 3,901 |  | 3,337 |  | 3,901 |
|  | 6\% |  | 8\% |  | 6\% |  | 7\% |
|  | 12 |  | 16 |  | 11 |  | 14 |
|  | 7 |  | 8 |  | 7 |  | 7 |
|  | 43 |  | 46 |  | 41 |  | 43 |
|  | 0.79 |  | 1.01 |  | 0.84 |  | 1.09 |

2006 and 2007 vintages ${ }^{(3)}$
Net charge-off ratio ${ }^{(4)}$
0.79
(1) Outstandings, accruing past due, nonperforming loans and percentages of the portfolio exclude loans accounted for under the fair value option.
(2) Accruing past due 30 days or more includes $\$ 89$ million and $\$ 98$ million and nonperforming loans include $\$ 396$ million and $\$ 505$ million of loans where we serviced the underlying first-lien at December 31, 2015 and 2014.
${ }^{(3)}$ These vintages of loans have higher refreshed combined LTV ratios and accounted for 45 percent and 47 percent of nonperforming home equity loans at December 31,2015 and 2014 , and 54 percent and 59 percent of net charge-offs in 2015 and 2014.
${ }^{(4)}$ Net charge-off ratios are calculated as net charge-offs divided by average outstanding loans excluding loans accounted for under the fair value option.

Nonperforming outstanding balances in the home equity portfolio decreased $\$ 564$ million in 2015 as outflows, including sales of $\$ 154$ million and the transfer of certain qualifying borrowers discharged in a Chapter 7 bankruptcy to performing status, outpaced new inflows. Of the nonperforming home equity portfolio at December 31, 2015, $\$ 1.4$ billion, or 42 percent, were current on contractual payments. Nonperforming loans that are contractually current primarily consist of collateral-dependent TDRs, including those that have been discharged in Chapter 7 bankruptcy, junior-lien loans where the underlying first-lien is 90 days or more past due, as well as loans that have not yet demonstrated a sustained period of payment performance following a TDR. In addition, $\$ 1.3$ billion, or 38 percent of nonperforming home equity loans, were 180 days or more past due and had been written down to the estimated fair value of the collateral, less costs to sell. Accruing loans that were 30 days or more past due decreased $\$ 27$ million in 2015.

In some cases, the junior-lien home equity outstanding balance that we hold is performing, but the underlying first-lien is not. For outstanding balances in the home equity portfolio on which we service the first-lien loan, we are able to track whether the firstlien loan is in default. For loans where the first-lien is serviced by a third party, we utilize credit bureau data to estimate the delinquency status of the first-lien. Given that the credit bureau
database we use does not include a property address for the mortgages, we are unable to identify with certainty whether a reported delinquent first-lien mortgage pertains to the same property for which we hold a junior-lien loan. For certain loans, we utilize a third-party vendor to combine credit bureau and public record data to better link a junior-lien loan with the underlying firstlien mortgage. At December 31, 2015, we estimate that $\$ 1.2$ billion of current and $\$ 157$ million of 30 to 89 days past due juniorlien loans were behind a delinquent first-lien loan. We service the first-lien loans on $\$ 193$ million of these combined amounts, with the remaining $\$ 1.1$ billion serviced by third parties. Of the $\$ 1.3$ billion of current to 89 days past due junior-lien loans, based on available credit bureau data and our own internal servicing data, we estimate that $\$ 484$ million had first-lien loans that were 90 days or more past due.

Net charge-offs decreased $\$ 271$ million to $\$ 636$ million, or 0.84 percent of the total average home equity portfolio in 2015, compared to $\$ 907$ million, or 1.09 percent, in 2014 . The decrease in net charge-offs was primarily driven by favorable portfolio trends due in part to improvement in home prices and the U.S. economy, and lower charge-offs related to the consumer relief portion of the DoJ Settlement, partially offset by lower recoveries.

Outstanding balances in the home equity portfolio with greater than 90 percent but less than or equal to 100 percent refreshed
combined loan-to-value (CLTV) comprised six percent and seven percent of the home equity portfolio at December 31, 2015 and 2014. Outstanding balances with refreshed CLTV greater than 100 percent comprised 11 percent and 14 percent of the home equity portfolio at December 31, 2015 and 2014. Outstanding balances in the home equity portfolio with a refreshed CLTV greater than 100 percent reflect loans where our loan and available line of credit combined with any outstanding senior liens against the property are equal to or greater than the most recent valuation of the property securing the loan. Depending on the value of the property, there may be collateral in excess of the first-lien that is available to reduce the severity of loss on the second-lien. Of those outstanding balances with a refreshed CLTV greater than 100 percent, 96 percent of the customers were current on their home equity loan and 92 percent of second-lien loans with a refreshed CLTV greater than 100 percent were current on both their second-lien and underlying first-lien loans at December 31, 2015. Outstanding balances in the home equity portfolio to borrowers with a refreshed FICO score below 620 represented seven percent of the home equity portfolio at both December 31, 2015 and 2014.

Of the $\$ 71.3$ billion in total home equity portfolio outstandings at December 31, 2015, as shown in Table 29, 66 percent were interest-only loans, almost all of which were HELOCs. The outstanding balance of HELOCs that have entered the amortization period was $\$ 9.7$ billion, or 15 percent of total HELOCs at December 31, 2015. The HELOCs that have entered the amortization period have experienced a higher percentage of early stage delinquencies and nonperforming status when compared to the HELOC portfolio as a whole. At December 31, 2015, \$226 million, or two percent of outstanding HELOCs that had entered the amortization period were accruing past due 30 days or more compared to $\$ 561$ million, or one percent for the entire HELOC portfolio. In addition, at December 31, 2015, \$1.3 billion, or 14
percent of outstanding HELOCs that had entered the amortization period were nonperforming, of which $\$ 507$ million were contractually current, compared to $\$ 3.1$ billion, or five percent for the entire HELOC portfolio, of which $\$ 1.2$ billion were contractually current. Loans in our HELOC portfolio generally have an initial draw period of 10 years and 44 percent of these loans will enter the amortization period in 2016 and 2017 and will be required to make fully-amortizing payments. We communicate to contractually current customers more than a year prior to the end of their draw period to inform them of the potential change to the payment structure before entering the amortization period, and provide payment options to customers prior to the end of the draw period.

Although we do not actively track how many of our home equity customers pay only the minimum amount due on their home equity loans and lines, we can infer some of this information through a review of our HELOC portfolio that we service and that is still in its revolving period (i.e., customers may draw on and repay their line of credit, but are generally only required to pay interest on a monthly basis). During 2015, approximately 39 percent of these customers with an outstanding balance did not pay any principal on their HELOCs.

Table 29 presents outstandings, nonperforming balances and net charge-offs by certain state concentrations for the home equity portfolio. In the New York area, the New York-Northern New JerseyLong Island MSA made up 13 percent and 12 percent of the outstanding home equity portfolio at December 31, 2015 and 2014. Loans within this MSA contributed 13 percent and 14 percent of net charge-offs in 2015 and 2014 within the home equity portfolio. The Los Angeles-Long Beach-Santa Ana MSA within California made up 12 percent of the outstanding home equity portfolio at both December 31, 2015 and 2014. Loans within this MSA contributed two percent and four percent of net charge-offs in 2015 and 2014 within the home equity portfolio.

Table 29 Home Equity State Concentrations

| (Dollars in millions) |  | Out |  |  |  | , |  |  |  | 兂 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| California | \$ | 20,356 | \$ | 23,250 | \$ | 902 | \$ | 1,012 | \$ | 57 | \$ | 118 |
| Florida ${ }^{(3)}$ |  | 8,474 |  | 9,633 |  | 518 |  | 574 |  | 128 |  | 170 |
| New Jersey ${ }^{(3)}$ |  | 5,570 |  | 5,883 |  | 230 |  | 299 |  | 51 |  | 68 |
| New York ${ }^{(3)}$ |  | 5,249 |  | 5,671 |  | 316 |  | 387 |  | 61 |  | 81 |
| Massachusetts |  | 3,378 |  | 3,655 |  | 115 |  | 148 |  | 17 |  | 30 |
| Other U.S./Non-U.S. |  | 28,302 |  | 32,016 |  | 1,256 |  | 1,481 |  | 322 |  | 440 |
| Home equity loans ${ }^{(4)}$ | \$ | 71,329 | \$ | 80,108 | \$ | 3,337 | \$ | 3,901 | \$ | 636 | \$ | 907 |
| Purchased credit-impaired home equity portfolio (5) |  | 4,619 |  | 5,617 |  |  |  |  |  |  |  |  |
| Total home equity loan portfolio | \$ | 75,948 | \$ | 85,725 |  |  |  |  |  |  |  |  |
| ${ }^{(1)}$ Outstandings and nonperforming loans exclude loans acc |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(2)}$ Net charge-offs exclude $\$ 174$ million of write-offs in the home equity PCI loan portfolio in 2015 compared to $\$ 265$ million in 2014. For more information on PCl write-offs, see Consumer Portfolio Credit Risk Management - Purchased Credit-impaired Loan Portfolio on page 54. |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(3)}$ In these states, foreclosure requires a court order following a legal proceeding judicial |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(4)}$ Amount excludes the PCI home equity portfolio. |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(5)}$ Twenty-nine percent of PCI home equity loans were in California at both December 31, 2015 and 2014. There were no other significant single state concentrati |  |  |  |  |  |  |  |  |  |  |  |  |

## Purchased Credit-impaired Loan Portfolio

Loans acquired with evidence of credit quality deterioration since origination and for which it is probable at purchase that we will be unable to collect all contractually required payments are accounted for under the accounting guidance for PCl loans, which addresses accounting for differences between contractual and expected cash flows to be collected from the purchaser's initial investment in loans if those differences are attributable, at least in part, to credit
quality. For more information on PCI loans, see Note 1 - Summary of Significant Accounting Principles to the Consolidated Financial Statements.

Table 30 presents the unpaid principal balance, carrying value, related valuation allowance and the net carrying value as a percentage of the unpaid principal balance for the PCI loan portfolio.

Table 30 Purchased Credit-impaired Loan Portfolio

|  | December 31, 2015 |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (Dollars in millions) | Unpaid Principal Balance |  | Gross Carrying Value |  | Related Valuation Allowance |  | Carrying Value Net of Valuation Allowance |  | Percent of Unpaid Principal Balance |
| Residential mortgage | \$ | 12,350 | \$ | 12,066 | \$ | 338 | \$ | 11,728 | 94.96\% |
| Home equity |  | 4,650 |  | 4,619 |  | 466 |  | 4,153 | 89.31 |
| Total purchased credit-impaired loan portfolio | \$ | 17,000 | \$ | 16,685 | \$ | 804 | \$ | 15,881 | 93.42 |
|  | December 31, 2014 |  |  |  |  |  |  |  |  |
| Residential mortgage | \$ | 15,726 | \$ | 15,152 | \$ | 880 | \$ | 14,272 | 90.75\% |
| Home equity |  | 5,605 |  | 5,617 |  | 772 |  | 4,845 | 86.44 |
| Total purchased credit-impaired loan portfolio | \$ | 21,331 | \$ | 20,769 | \$ | 1,652 | \$ | 19,117 | 89.62 |

The total PCI unpaid principal balance decreased $\$ 4.3$ billion, or 20 percent, in 2015 primarily driven by sales, payoffs, paydowns and write-offs. During 2015, we sold PCI loans with a carrying value of $\$ 1.4$ billion compared to sales of $\$ 1.9$ billion in 2014.

Of the unpaid principal balance of $\$ 17.0$ billion at December 31, 2015, $\$ 14.7$ billion, or 86 percent, was current based on the contractual terms, $\$ 1.2$ billion, or seven percent, was in early stage delinquency, and $\$ 800$ million was 180 days or more past due, including $\$ 707$ million of first-lien mortgages and $\$ 93$ million of home equity loans.

During 2015, we recorded a provision benefit of $\$ 40$ million for the PCl loan portfolio which included an expense of $\$ 92$ million for residential mortgage and a benefit of $\$ 132$ million for home equity. This compared to a total provision benefit of $\$ 31$ million in 2014. The provision benefit in 2015 was primarily driven by lower default estimates.

The PCl valuation allowance declined $\$ 848$ million during 2015 due to write-offs in the PCI loan portfolio of $\$ 634$ million in residential mortgage and $\$ 174$ million in home equity, combined with a provision benefit of $\$ 40$ million.

## Purchased Credit-impaired Residential Mortgage Loan Portfolio

The PCI residential mortgage loan portfolio represented 72 percent of the total PCI loan portfolio at December 31, 2015. Those loans to borrowers with a refreshed FICO score below 620 represented 31 percent of the PCl residential mortgage loan portfolio at December 31, 2015. Loans with a refreshed LTV greater than 90 percent, after consideration of purchase accounting adjustments and the related valuation allowance, represented 28 percent of the PCI residential mortgage loan portfolio and 33 percent based on the unpaid principal balance at December 31, 2015.

Pay option adjustable-rate mortgages, which are included in the PCI residential mortgage portfolio, have interest rates that adjust monthly and minimum required payments that adjust annually. During an initial five- or ten-year period, minimum required
payments may increase by no more than 7.5 percent. If payments are insufficient to pay all of the monthly interest charges, unpaid interest is added to the loan balance (i.e., negative amortization) until the loan balance increases to a specified limit, at which time a new monthly payment amount adequate to repay the loan over its remaining contractual life is established.

At December 31, 2015, the unpaid principal balance of pay option loans was $\$ 2.4$ billion, with a carrying value of $\$ 2.3$ billion. The total unpaid principal balance of pay option loans with accumulated negative amortization was $\$ 503$ million, including $\$ 28$ million of negative amortization. We believe the majority of borrowers that are now making scheduled payments are able to do so primarily because the low rate environment has caused the fully indexed rates to be affordable to more borrowers. We continue to evaluate our exposure to payment resets on the acquired negative-amortizing loans and have taken into consideration several assumptions including prepayment and default rates. Of the loans in the pay option portfolio at December 31, 2015 that have not already experienced a payment reset, 54 percent are expected to reset in 2016 and 22 percent are expected to reset thereafter. In addition, four percent are expected to prepay and approximately 20 percent are expected to default prior to being reset, most of which were severely delinquent as of December 31, 2015. We no longer originate pay option loans.

## Purchased Credit-impaired Home Equity Loan Portfolio

The PCI home equity portfolio represented 28 percent of the total PCI Ioan portfolio at December 31, 2015. Those loans with a refreshed FICO score below 620 represented 16 percent of the PCI home equity portfolio at December 31, 2015. Loans with a refreshed CLTV greater than 90 percent, after consideration of purchase accounting adjustments and the related valuation allowance, represented 57 percent of the PCl home equity portfolio and 60 percent based on the unpaid principal balance at December 31, 2015.

## U.S. Credit Card

At December 31, 2015, 97 percent of the U.S. credit card portfolio was managed in Consumer Banking with the remainder managed in GWIM. Outstandings in the U.S. credit card portfolio decreased $\$ 2.3$ billion in 2015 due to portfolio divestitures. Net charge-offs decreased $\$ 324$ million to $\$ 2.3$ billion in 2015 due to improvements in delinquencies and bankruptcies as a result of an improved economic environment and the impact of higher credit quality originations. U.S. credit card loans 30 days or more past due and still accruing interest decreased $\$ 126$ million while loans 90 days or more past due and still accruing interest decreased $\$ 77$ million in 2015 as a result of the factors mentioned above that contributed to lower net charge-offs.

Unused lines of credit for U.S. credit card totaled $\$ 312.5$ billion and $\$ 305.9$ billion at December 31, 2015 and 2014. The $\$ 6.6$ billion increase was driven by account growth and line of credit increases.

Table 31 presents certain key credit statistics for the U.S. credit card portfolio.

Table 31 U.S. Credit Card - Key Credit Statistics

| (Dollars in millions) | December 31 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  |
| Outstandings | \$ | 89,602 | \$ | 91,879 |
| Accruing past due 30 days or more |  | 1,575 |  | 1,701 |
| Accruing past due 90 days or more |  | 789 |  | 866 |
|  | 2015 |  | 2014 |  |
| Net charge-offs | \$ | 2,314 | \$ | 2,638 |
| Net charge-off ratios ${ }^{(1)}$ |  | 2.62\% |  | 2.96\% |

Table 32 presents certain state concentrations for the U.S. credit card portfolio.

Table 32 U.S. Credit Card State Concentrations

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  | Net Charge-offs |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Outstandings |  |  |  | Accruing Past Due 90 Days or More |  |  |  |  |  |  |  |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| California | \$ | 13,658 | \$ | 13,682 | \$ | 115 | \$ | 127 | \$ | 358 | \$ | 414 |
| Florida |  | 7,420 |  | 7,530 |  | 81 |  | 89 |  | 244 |  | 278 |
| Texas |  | 6,620 |  | 6,586 |  | 58 |  | 58 |  | 157 |  | 177 |
| New York |  | 5,547 |  | 5,655 |  | 57 |  | 59 |  | 162 |  | 174 |
| Washington |  | 3,907 |  | 3,907 |  | 19 |  | 22 |  | 59 |  | 71 |
| Other U.S. |  | 52,450 |  | 54,519 |  | 459 |  | 511 |  | 1,334 |  | 1,524 |
| Total U.S. credit card portfolio | \$ | 89,602 | \$ | 91,879 | \$ | 789 | \$ | 866 | \$ | 2,314 | \$ | 2,638 |

## Non-U.S. Credit Card

Outstandings in the non-U.S. credit card portfolio, which are recorded in All Other, decreased $\$ 490$ million in 2015 due to a weakening of the British Pound against the U.S. Dollar. Net chargeoffs decreased $\$ 54$ million to $\$ 188$ million in 2015 due to improvement in delinquencies as a result of higher credit quality originations and an improved economic environment.

Unused lines of credit for non-U.S. credit card totaled \$27.9 billion and $\$ 28.2$ billion at December 31, 2015 and 2014. The $\$ 271$ million decrease was driven by weakening of the British Pound against the U.S. Dollar, partially offset by account growth and lines of credit increases.

Table 33 presents certain key credit statistics for the non-U.S. credit card portfolio.

Table 33 Non-U.S. Credit Card - Key Credit Statistics

|  | December 31 |  |  |
| :--- | ---: | ---: | ---: |
| (Dollars in millions) | 2015 |  | 2014 |
| Outstandings | $\mathbf{\$}, 975$ | $\$ 10,465$ |  |
| Accruing past due 30 days or more | 146 | 183 |  |
| Accruing past due 90 days or more | 76 | 95 |  |
|  |  |  |  |
|  | 2015 | 2014 |  |
| Net charge-offs | $\$$ | 188 | $\$$ |
| Net charge-off ratios ${ }^{(1)}$ |  | $1.86 \%$ | 242 |

## Direct/Indirect Consumer

At December 31, 2015, approximately 50 percent of the direct/ indirect portfolio was included in GWIM (principally securitiesbased lending loans), 49 percent was included in Consumer Banking (consumer auto and specialty lending - automotive, marine, aircraft, recreational vehicle loans and consumer personal loans) and the remainder was primarily student loans in All Other.

Outstandings in the direct/indirect portfolio increased \$8.4 billion in 2015 as growth in the consumer auto portfolio and growth in securities-based lending were partially offset by lower outstandings in the unsecured consumer lending portfolio.

Net charge-offs decreased $\$ 57$ million to $\$ 112$ million in 2015, or 0.13 percent of total average direct/indirect loans, compared
to $\$ 169$ million, or 0.20 percent, in 2014 . This decrease in net charge-offs was primarily driven by improvements in delinquencies and bankruptcies in the unsecured consumer lending portfolio as a result of an improved economic environment as well as reduced outstandings in this portfolio.

Direct/indirect loans that were past due 90 days or more and still accruing interest declined $\$ 25$ million to $\$ 39$ million in 2015 due to decreases in the unsecured consumer lending, and consumer auto and specialty lending portfolios.

Table 34 presents certain state concentrations for the direct/ indirect consumer loan portfolio.

Table 34 Direct/Indirect State Concentrations

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  | Net Charge-offs |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Outstandings |  |  |  | Accruing Past Due 90 Days or More |  |  |  |  |  |  |  |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| California | \$ | 10,735 | \$ | 9,770 | \$ | 3 | \$ | 5 | \$ | 8 | \$ | 18 |
| Florida |  | 8,835 |  | 7,930 |  | 3 |  | 5 |  | 20 |  | 27 |
| Texas |  | 8,514 |  | 7,741 |  | 4 |  | 5 |  | 17 |  | 19 |
| New York |  | 5,077 |  | 4,458 |  | 1 |  | 2 |  | 3 |  | 9 |
| Illinois |  | 2,906 |  | 2,550 |  | 1 |  | 2 |  | 3 |  | 5 |
| Other U.S./Non-U.S. |  | 52,728 |  | 47,932 |  | 27 |  | 45 |  | 61 |  | 91 |
| Total direct/indirect loan portfolio | \$ | 88,795 | \$ | 80,381 | \$ | 39 | \$ | 64 | \$ | 112 | \$ | 169 |

## Other Consumer

At December 31, 2015, approximately 66 percent of the $\$ 2.1$ billion other consumer portfolio was consumer auto leases included in Consumer Banking. The remainder is primarily associated with certain consumer finance businesses that we previously exited.

## Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity

Table 35 presents nonperforming consumer loans, leases and foreclosed properties activity during 2015 and 2014. Nonperforming LHFS are excluded from nonperforming loans as they are recorded at either fair value or the lower of cost or fair value. Nonperforming loans do not include past due consumer credit card loans, other unsecured loans and in general, consumer non-real estate-secured loans (loans discharged in Chapter 7 bankruptcy are included) as these loans are typically charged off no later than the end of the month in which the loan becomes 180 days past due. The charge-offs on these loans have no impact on nonperforming activity and, accordingly, are excluded from this table. The fully-insured loan portfolio is not reported as nonperforming as principal repayment is insured. Additionally, nonperforming loans do not include the PCI loan portfolio or loans accounted for under the fair value option. For more information on nonperforming loans, see Note 1 - Summary of Significant Accounting Principles to the Consolidated Financial Statements. During 2015, nonperforming consumer loans declined $\$ 2.7$ billion to $\$ 8.2$ billion and included the impact of sales of $\$ 1.7$ billion, partially offset by a net increase of $\$ 186$ million related to the impact of the consumer relief portion of the DoJ Settlement for those loans that are no longer fully insured. Excluding these, nonperforming loans declined as outflows, including the transfer
of certain qualifying borrowers discharged in a Chapter 7 bankruptcy to performing status, outpaced new inflows.

The outstanding balance of a real estate-secured loan that is in excess of the estimated property value less costs to sell is charged off no later than the end of the month in which the loan becomes 180 days past due unless repayment of the loan is fully insured. At December 31, 2015, $\$ 3.8$ billion, or 44 percent of nonperforming consumer real estate loans and foreclosed properties had been written down to their estimated property value less costs to sell, including $\$ 3.3$ billion of nonperforming loans 180 days or more past due and $\$ 444$ million of foreclosed properties. In addition, at December 31, 2015, $\$ 3.0$ billion, or 35 percent of nonperforming consumer loans were modified and are now current after successful trial periods, or are current loans classified as nonperforming loans in accordance with applicable policies.

Foreclosed properties decreased $\$ 186$ million in 2015 as liquidations outpaced additions. PCI loans are excluded from nonperforming loans as these loans were written down to fair value at the acquisition date; however, once the underlying real estate is acquired by the Corporation upon foreclosure of the delinquent PCl loan, it is included in foreclosed properties. PCI-related foreclosed properties increased $\$ 39$ million in 2015. Not included in foreclosed properties at December 31, 2015 was $\$ 1.4$ billion of real estate that was acquired upon foreclosure of certain delinquent government-guaranteed loans (principally FHA-insured loans). We exclude these amounts from our nonperforming loans and foreclosed properties activity as we expect we will be reimbursed once the property is conveyed to the guarantor for principal and, up to certain limits, costs incurred during the foreclosure process and interest incurred during the holding period.

## Restructured Loans

Nonperforming loans also include certain loans that have been modified in TDRs where economic concessions have been granted to borrowers experiencing financial difficulties. These concessions typically result from the Corporation's loss mitigation activities and could include reductions in the interest rate, payment extensions,
forgiveness of principal, forbearance or other actions. Certain TDRs are classified as nonperforming at the time of restructuring and may only be returned to performing status after considering the borrower's sustained repayment performance for a reasonable period, generally six months. Nonperforming TDRs, excluding those modified loans in the PCI loan portfolio, are included in Table 35.

Table 35 Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity (1)

| (Dollars in millions) | 2015 |  | 2014 |  |
| :---: | :---: | :---: | :---: | :---: |
| Nonperforming loans and leases, January 1 | \$ | 10,819 | \$ | 15,840 |
| Additions to nonperforming loans and leases: |  |  |  |  |
| New nonperforming loans and leases |  | 4,949 |  | 7,077 |
| Reductions to nonperforming loans and leases: |  |  |  |  |
| Paydowns and payoffs |  | $(1,018)$ |  | $(1,625)$ |
| Sales |  | $(1,674)$ |  | $(4,129)$ |
| Returns to performing status ${ }^{(2)}$ |  | $(2,710)$ |  | $(3,277)$ |
| Charge-offs |  | $(1,769)$ |  | $(2,187)$ |
| Transfers to foreclosed properties ${ }^{(3)}$ |  | (432) |  | (672) |
| Transfers to loans held-for-sale |  | - |  | (208) |
| Total net reductions to nonperforming loans and leases |  | $(2,654)$ |  | $(5,021)$ |
| Total nonperforming loans and leases, December 31 (4,5) |  | 8,165 |  | 10,819 |
| Foreclosed properties, January 1 |  | 630 |  | 533 |
| Additions to foreclosed properties: |  |  |  |  |
| New foreclosed properties ${ }^{(3)}$ |  | 606 |  | 1,011 |
| Reductions to foreclosed properties: |  |  |  |  |
| Sales |  | (686) |  | (829) |
| Write-downs |  | (106) |  | (85) |
| Total net additions (reductions) to foreclosed properties |  | (186) |  | 97 |
| Total foreclosed properties, December $31{ }^{(6)}$ |  | 444 |  | 630 |
| Nonperforming consumer loans, leases and foreclosed properties, December 31 | \$ | 8,609 | \$ | 11,449 |
| Nonperforming consumer loans and leases as a percentage of outstanding consumer loans and leases ${ }^{(7)}$ |  | 1.80\% |  | 2.22\% |
| Nonperforming consumer loans, leases and foreclosed properties as a percentage of outstanding consumer loans, leases and foreclosed properties ${ }^{(7)}$ |  | 1.89 |  | 2.35 |

${ }^{(1)}$ Balances do not include nonperforming LHFS of $\$ 5$ million and $\$ 7$ million and nonaccruing TDRs removed from the PCI loan portfolio prior to January 1 , 2010 of $\$ 38$ million and $\$ 102$ million at December 31, 2015 and 2014 as well as loans accruing past due 90 days or more as presented in Table 23 and Note 4 - Outstanding Loans and Leases to the Consolidated Financial Statements.
${ }^{(2)}$ Consumer loans may be returned to performing status when all principal and interest is current and full repayment of the remaining contractual principal and interest is expected, or when the loan otherwise becomes well-secured and is in the process of collection.
${ }^{(3)}$ New foreclosed properties represents transfers of nonperforming loans to foreclosed properties net of charge-offs taken during the first 90 days after transfer of a loan to foreclosed properties. New foreclosed properties also includes properties obtained upon foreclosure of delinquent PCI loans, properties repurchased due to representations and warranties exposure and properties acquired with newly consolidated subsidiaries.
${ }^{(4)}$ In 2015, $\$ 1.4$ billion in interest income was estimated to be contractually due on $\$ 8.2$ billion of consumer loans and leases classified as nonperforming, at December 31 , 2015 , as presented in the table above, plus $\$ 16.9$ billion of TDRs classified as performing at December 31, 2015. Approximately $\$ 773$ million of the estimated $\$ 1.4$ billion in contractual interest was received and included in interest income for 2015.
5) At December 31, 2015, 41 percent of nonperforming loans were 180 days or more past due.
${ }^{(6)}$ Foreclosed property balances do not include properties insured by certain government-guaranteed loans, principally FHA-insured loans, of $\$ 1.4$ billion and $\$ 1.1$ billion at December 31,2015 and 2014.
${ }^{(7)}$ Outstanding consumer loans and leases exclude loans accounted for under the fair value option.

Our policy is to record any losses in the value of foreclosed properties as a reduction in the allowance for loan and lease losses during the first 90 days after transfer of a loan to foreclosed properties. Thereafter, further losses in value as well as gains and losses on sale are recorded in noninterest expense. New foreclosed properties included in Table 35 are net of $\$ 162$ million and $\$ 191$ million of charge-offs and write-offs of PCI loans in 2015 and 2014, recorded during the first 90 days after transfer.

We classify junior-lien home equity loans as nonperforming when the first-lien loan becomes 90 days past due even if the junior-lien Ioan is performing. At December 31, 2015 and 2014, $\$ 484$ million and $\$ 800$ million of such junior-lien home equity loans were included in nonperforming loans and leases. This decline was driven by overall portfolio improvement as well as $\$ 75$ million of charge-offs related to the consumer relief portion of the DoJ Settlement.

Table 36 presents TDRs for the consumer real estate portfolio. Performing TDR balances are excluded from nonperforming loans and leases in Table 35.

Table 36 Consumer Real Estate Troubled Debt Restructurings

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  |  |  |  |  | 2014 |  |  |  |  |  |
|  | Total |  | Nonperforming |  | Performing |  | Total |  | Nonperforming |  | Performing |  |
| Residential mortgage ${ }^{(1,2)}$ | \$ | 18,372 | \$ | 3,284 | \$ | 15,088 | \$ | 23,270 | \$ | 4,529 | \$ | 18,741 |
| Home equity ${ }^{(3)}$ |  | 2,686 |  | 1,649 |  | 1,037 |  | 2,358 |  | 1,595 |  | 763 |
| Total consumer real estate troubled debt restructurings | \$ | 21,058 | \$ | 4,933 | \$ | 16,125 | \$ | 25,628 | \$ | 6,124 | \$ | 19,504 |
| (1) Residential mortgage TDRs deemed collateral dependent totaled $\$ 4.9$ billion and $\$ 5.8$ billion, and included $\$ 2.7$ billion and $\$ 3.6$ billion of loans classified as nonperforming and $\$ 2.2$ billion and $\$ 2.2$ billion of loans classified as performing at December 31, 2015 and 2014. |  |  |  |  |  |  |  |  |  |  |  |  |
| (2) Residential mortgage performing TDRs included $\$ 8.7$ billion and <br> ${ }^{(3)}$ Home equity TDRs deemed collateral dependent totaled $\$ 1.6$ bill million of loans classified as performing at December 31, 2015 | . 9 | of loans th | d in | -insured | De | 3 billion of | and | 4. ssified as |  | ng and \$ |  | and \$178 |

In addition to modifying consumer real estate loans, we work with customers who are experiencing financial difficulty by modifying credit card and other consumer loans. Credit card and other consumer loan modifications generally involve a reduction in the customer's interest rate on the account and placing the customer on a fixed payment plan not exceeding 60 months, all of which are considered TDRs (the renegotiated TDR portfolio). In addition, the accounts of non-U.S. credit card customers who do not qualify for a fixed payment plan may have their interest rates reduced, as required by certain local jurisdictions. These modifications, which are also TDRs, tend to experience higher payment default rates given that the borrowers may lack the ability to repay even with the interest rate reduction. In all cases, the customer's available line of credit is canceled.

Modifications of credit card and other consumer loans are primarily made through internal renegotiation programs utilizing direct customer contact, but may also utilize external renegotiation programs. The renegotiated TDR portfolio is excluded in large part from Table 35 as substantially all of the loans remain on accrual status until either charged off or paid in full. At December 31, 2015 and 2014, our renegotiated TDR portfolio was $\$ 779$ million and $\$ 1.1$ billion, of which $\$ 635$ million and $\$ 907$ million were current or less than 30 days past due under the modified terms. The decline in the renegotiated TDR portfolio was primarily driven by paydowns and charge-offs as well as lower program enrollments. For more information on the renegotiated TDR portfolio, see Note 4 - Outstanding Loans and Leases to the Consolidated Financial Statements.

## Commercial Portfolio Credit Risk Management

Credit risk management for the commercial portfolio begins with an assessment of the credit risk profile of the borrower or counterparty based on an analysis of its financial position. As part of the overall credit risk assessment, our commercial credit exposures are assigned a risk rating and are subject to approval based on defined credit approval standards. Subsequent to loan origination, risk ratings are monitored on an ongoing basis, and if necessary, adjusted to reflect changes in the financial condition, cash flow, risk profile or outlook of a borrower or counterparty. In making credit decisions, we consider risk rating, collateral, country, industry and single name concentration limits while also balancing this with the total borrower or counterparty relationship. Our business and risk management personnel use a variety of tools to continuously monitor the ability of a borrower or counterparty to perform under its obligations. We use risk rating aggregations to measure and evaluate concentrations within portfolios. In
addition, risk ratings are a factor in determining the level of allocated capital and the allowance for credit losses.

As part of our ongoing risk mitigation initiatives, we attempt to work with clients experiencing financial difficulty to modify their loans to terms that better align with their current ability to pay. In situations where an economic concession has been granted to a borrower experiencing financial difficulty, we identify these loans as TDRs. For more information on our accounting policies regarding delinquencies, nonperforming status and net charge-offs for the commercial portfolio, see Note 1 - Summary of Significant Accounting Principles to the Consolidated Financial Statements.

## Management of Commercial Credit Risk Concentrations

Commercial credit risk is evaluated and managed with the goal that concentrations of credit exposure do not result in undesirable levels of risk. We review, measure and manage concentrations of credit exposure by industry, product, geography, customer relationship and loan size. We also review, measure and manage commercial real estate loans by geographic location and property type. In addition, within our non-U.S. portfolio, we evaluate exposures by region and by country. Tables 41, 46, 52 and 53 summarize our concentrations. We also utilize syndications of exposure to third parties, loan sales, hedging and other risk mitigation techniques to manage the size and risk profile of the commercial credit portfolio. For more information on our industry concentrations, including our utilized exposure to the energy sector which was two percent of total loans and leases at December 31, 2015, see Commercial Portfolio Credit Risk Management Industry Concentrations on page 64 and Table 46.

We account for certain large corporate loans and loan commitments, including issued but unfunded letters of credit which are considered utilized for credit risk management purposes, that exceed our single name credit risk concentration guidelines under the fair value option. Lending commitments, both funded and unfunded, are actively managed and monitored, and as appropriate, credit risk for these lending relationships may be mitigated through the use of credit derivatives, with the Corporation's credit view and market perspectives determining the size and timing of the hedging activity. In addition, we purchase credit protection to cover the funded portion as well as the unfunded portion of certain other credit exposures. To lessen the cost of obtaining our desired credit protection levels, credit exposure may be added within an industry, borrower or counterparty group by selling protection. These credit derivatives do not meet the requirements for treatment as accounting hedges.

They are carried at fair value with changes in fair value recorded in other income (loss).

In addition, the Corporation is a member of various securities and derivative exchanges and clearinghouses, both in the U.S. and other countries. As a member, the Corporation may be required to pay a pro-rata share of the losses incurred by some of these organizations as a result of another member default and under other loss scenarios. For additional information, see Note 12 Commitments and Contingencies to the Consolidated Financial Statements.

## Commercial Credit Portfolio

During 2015, credit quality among large corporate borrowers remained stable except in the energy sector which experienced some deterioration due to the sustained drop in oil prices. Credit quality of commercial real estate borrowers continued to improve as property valuations increased and vacancy rates remained low.

Outstanding commercial loans and leases increased \$53.3 billion, primarily in U.S. commercial, non-U.S. commercial and
commercial real estate. Nonperforming commercial loans and leases increased $\$ 112$ million during 2015. Nonperforming commercial loans and leases as a percentage of outstanding loans and leases, excluding loans accounted for under the fair value option, decreased during 2015 to 0.28 percent from 0.29 percent at December 31, 2014. Reservable criticized balances increased $\$ 4.7$ billion to $\$ 15.9$ billion during 2015 as a result of downgrades outpacing paydowns and upgrades. The increase in reservable criticized balances was primarily due to our energy exposure as the credit quality of certain borrowers was impacted by the sustained drop in oil prices. The allowance for loan and lease losses for the commercial portfolio increased $\$ 412$ million to $\$ 4.8$ billion at December 31, 2015 compared to December 31, 2014. For additional information, see Allowance for Credit Losses on page 69.

Table 37 presents our commercial loans and leases portfolio, and related credit quality information at December 31, 2015 and 2014.

Table 37 Commercial Loans and Leases

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Outstandings |  | Nonperforming |  |  |  | Accruing Past Due 90 Days or More |  |  |  |
|  | 2015 | 2014 | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| U.S. commercial | \$ 252,771 | \$ 220,293 | \$ | 867 | \$ | 701 | \$ | 113 | \$ | 110 |
| Commercial real estate (1) | 57,199 | 47,682 |  | 93 |  | 321 |  | 3 |  | 3 |
| Commercial lease financing | 21,352 | 19,579 |  | 12 |  | 3 |  | 15 |  | 40 |
| Non-U.S. commercial | 91,549 | 80,083 |  | 158 |  | 1 |  | 1 |  | - |
|  | 422,871 | 367,637 |  | 1,130 |  | 1,026 |  | 132 |  | 153 |
| U.S. small business commercial (2) | 12,876 | 13,293 |  | 82 |  | 87 |  | 61 |  | 67 |
| Commercial loans excluding loans accounted for under the fair value option | 435,747 | 380,930 |  | 1,212 |  | 1,113 |  | 193 |  | 220 |
| Loans accounted for under the fair value option (3) | 5,067 | 6,604 |  | 13 |  | - |  | - |  | - |
| Total commercial loans and leases | \$ 440,814 | \$ 387,534 | \$ | 1,225 | \$ | 1,113 | \$ | 193 | \$ | 220 |

(1) Includes U.S. commercial real estate loans of $\$ 53.6$ billion and $\$ 45.2$ billion and non-U.S. commercial real estate loans of $\$ 3.5$ billion and $\$ 2.5$ billion at December 31 , 2015 and 2014 .
${ }^{(2)}$ Includes card-related products.
(3) Commercial loans accounted for under the fair value option include U.S. commercial loans of $\$ 2.3$ billion and $\$ 1.9$ billion and non-U.S. commercial loans of $\$ 2.8$ billion and $\$ 4.7$ billion at December 31, 2015 and 2014. For more information on the fair value option, see Note 21 - Fair Value Option to the Consolidated Financial Statements.

Table 38 presents net charge-offs and related ratios for our commercial loans and leases for 2015 and 2014. The increase in net charge-offs of $\$ 110$ million in 2015 was primarily related to higher recoveries in commercial real estate in 2014 and higher energy sector related losses in 2015.

Table 38 Commercial Net Charge-offs and Related Ratios

| (Dollars in millions) | Net Charge-offs |  |  |  | Net Charge-off Ratios ${ }^{(1)}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  | 2015 | 2014 |
| U.S. commercial | \$ | 139 | \$ | 88 | 0.06\% | 0.04\% |
| Commercial real estate |  | (5) |  | (83) | (0.01) | (0.18) |
| Commercial lease financing |  | 9 |  | (9) | 0.04 | (0.04) |
| Non-U.S. commercial |  | 54 |  | 34 | 0.06 | 0.04 |
|  |  | 197 |  | 30 | 0.05 | 0.01 |
| U.S. small business commercial |  | 225 |  | 282 | 1.71 | 2.10 |
| Total commercial | \$ | 422 | \$ | 312 | 0.10 | 0.08 |

${ }^{(1)}$ Net charge-off ratios are calculated as net charge-offs divided by average outstanding loans and leases excluding loans accounted for under the fair value option.

Table 39 presents commercial credit exposure by type for utilized, unfunded and total binding committed credit exposure. Commercial utilized credit exposure includes SBLCs and financial guarantees, bankers' acceptances and commercial letters of credit for which we are legally bound to advance funds under prescribed conditions, during a specified time period. Although funds have not yet been advanced, these exposure types are considered utilized for credit risk management purposes.

Total commercial utilized credit exposure increased $\$ 52.9$ billion in 2015 primarily driven by growth in loans and leases. The utilization rate for loans and leases, SBLCs and financial guarantees, commercial letters of credit and bankers acceptances, in the aggregate, was 56 percent and 57 percent at December 31, 2015 and 2014.

Table 39 Commercial Credit Exposure by Type

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Commercial Utilized (1) |  |  |  | Commercial Unfunded (2, 3) |  |  |  | Total Commercial Committed |  |  |  |
|  |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |
| Loans and leases (4) | \$ | 446,832 | \$ | 392,821 | + | 376,478 | \$ | 317,258 | \$ | 823,310 | \$ | 710,079 |
| Derivative assets ${ }^{(5)}$ |  | 49,990 |  | 52,682 |  | - |  | - |  | 49,990 |  | 52,682 |
| Standby letters of credit and financial guarantees |  | 33,236 |  | 33,550 |  | 690 |  | 745 |  | 33,926 |  | 34,295 |
| Debt securities and other investments |  | 21,709 |  | 17,301 |  | 4,173 |  | 5,315 |  | 25,882 |  | 22,616 |
| Loans held-for-sale |  | 5,456 |  | 7,036 |  | 1,203 |  | 2,315 |  | 6,659 |  | 9,351 |
| Commercial letters of credit |  | 1,725 |  | 2,037 |  | 390 |  | 126 |  | 2,115 |  | 2,163 |
| Bankers' acceptances |  | 298 |  | 255 |  | - |  | - |  | 298 |  | 255 |
| Foreclosed properties and other |  | 317 |  | 960 |  | - |  | - |  | 317 |  | 960 |
| Total | \$ | 559,563 |  | 506,642 | \$ | 382,934 | \$ | 325,759 | \$ | 942,497 | \$ | 832,401 |

(1) Total commercial utilized exposure includes loans of $\$ 5.1$ billion and $\$ 6.6$ billion and issued letters of credit with a notional amount of $\$ 290$ million and $\$ 535$ million accounted for under the fair value option at December 31, 2015 and 2014.
(2) Total commercial unfunded exposure includes loan commitments accounted for under the fair value option with a notional amount of $\$ 10.6$ billion and $\$ 9.4$ billion at December 31,2015 and 2014.
${ }^{(3)}$ Excludes unused business card lines which are not legally binding.
${ }^{(4)}$ Includes risk exposure associated with assets under operating lease arrangements of $\$ 6.0$ billion and $\$ 5.3$ billion at December 31 , 2015 and 2014.
${ }^{(5)}$ Derivative assets are carried at fair value, reflect the effects of legally enforceable master netting agreements and have been reduced by cash collateral of $\$ 41.9$ billion and $\$ 47.3$ billion at December 31,2015 and 2014. Not reflected in utilized and committed exposure is additional non-cash derivative collateral held of $\$ 23.3$ billion and $\$ 23.8$ billion which consists primarily of other marketable securities.

Table 40 presents commercial utilized reservable criticized exposure by loan type. Criticized exposure corresponds to the Special Mention, Substandard and Doubtful asset categories as defined by regulatory authorities. Total commercial utilized reservable criticized exposure increased $\$ 4.7$ billion, or 42
percent, in 2015 driven by downgrades primarily related to our energy exposure outpacing paydowns and upgrades. Approximately 78 percent and 87 percent of commercial utilized reservable criticized exposure was secured at December 31, 2015 and 2014.

Table 40 Commercial Utilized Reservable Criticized Exposure

| (Dollars in millions) | December 31 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  |  | 2014 |  |  |
|  | Amount (1) |  | Percent ${ }^{(2)}$ | Amount ${ }^{(1)}$ |  | Percent ${ }^{(2)}$ |
| U.S. commercial | \$ | 9,965 | 3.56\% |  | 7,597 | 3.07\% |
| Commercial real estate |  | 513 | 0.87 |  | 1,108 | 2.24 |
| Commercial lease financing |  | 708 | 3.31 |  | 697 | 3.56 |
| Non-U.S. commercial |  | 3,944 | 4.04 |  | 887 | 1.03 |
|  |  | 15,130 | 3.30 |  | 10,289 | 2.55 |
| U.S. small business commercial |  | 766 | 5.95 |  | 944 | 7.10 |
| Total commercial utilized reservable criticized exposure | \$ | 15,896 | 3.38 | \$ | 11,233 | 2.70 |

 2015 and 2014.
${ }^{(2)}$ Percentages are calculated as commercial utilized reservable criticized exposure divided by total commercial utilized reservable exposure for each exposure category

## U.S. Commercial

At December 31, 2015, 70 percent of the U.S. commercial loan portfolio, excluding small business, was managed in Global Banking, 17 percent in Global Markets, 10 percent in GWIM (generally business-purpose loans for high net worth clients) and the remainder primarily in Consumer Banking. U.S. commercial
loans, excluding loans accounted for under the fair value option, increased $\$ 32.5$ billion, or 15 percent, during 2015 due to growth across all of the commercial businesses. Nonperforming loans and leases increased $\$ 166$ million, or 24 percent, in 2015, largely related to our energy exposure. Net charge-offs increased \$51 million to $\$ 139$ million during 2015.

## Commercial Real Estate

Commercial real estate primarily includes commercial loans and leases secured by non-owner-occupied real estate and is dependent on the sale or lease of the real estate as the primary source of repayment. The portfolio remains diversified across property types and geographic regions. California represented the largest state concentration at 21 percent and 22 percent of the commercial real estate loans and leases portfolio at December 31, 2015 and 2014. The commercial real estate portfolio is predominantly managed in Global Banking and consists of loans made primarily to public and private developers, and commercial real estate firms. Outstanding loans increased \$9.5 billion, or 20 percent, during 2015 due to new originations primarily in major metropolitan markets.

During 2015, we continued to see improvements in credit quality in both the residential and non-residential portfolios. We
use a number of proactive risk mitigation initiatives to reduce adversely rated exposure in the commercial real estate portfolio including transfers of deteriorating exposures to management by independent special asset officers and the pursuit of loan restructurings or asset sales to achieve the best results for our customers and the Corporation.

Nonperforming commercial real estate loans and foreclosed properties decreased $\$ 280$ million, or 72 percent, and reservable criticized balances decreased $\$ 595$ million, or 54 percent, during 2015. The decrease in reservable criticized balances was primarily due to loan resolutions and strong commercial real estate fundamentals throughout the year. Net recoveries were $\$ 5$ million in 2015 compared to net recoveries of $\$ 83$ million in 2014.

Table 41 presents outstanding commercial real estate loans by geographic region, based on the geographic location of the collateral, and by property type.

Table 41 Outstanding Commercial Real Estate Loans

| (Dollars in millions) | December 31 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  |
| By Geographic Region |  |  |  |  |
| California | \$ | 12,063 | \$ | 10,352 |
| Northeast |  | 10,292 |  | 8,781 |
| Southwest |  | 7,789 |  | 6,570 |
| Southeast |  | 6,066 |  | 5,495 |
| Midwest |  | 3,780 |  | 2,867 |
| Florida |  | 3,330 |  | 2,520 |
| Illinois |  | 2,536 |  | 2,785 |
| Midsouth |  | 2,435 |  | 1,724 |
| Northwest |  | 2,327 |  | 2,151 |
| Non-U.S. |  | 3,549 |  | 2,494 |
| Other ${ }^{(1)}$ |  | 3,032 |  | 1,943 |
| Total outstanding commercial real estate loans | \$ | 57,199 | \$ | 47,682 |
| By Property Type |  |  |  |  |
| Non-residential |  |  |  |  |
| Office | \$ | 15,246 | \$ | 13,306 |
| Multi-family rental |  | 8,956 |  | 8,382 |
| Shopping centers/retail |  | 8,594 |  | 7,969 |
| Industrial/warehouse |  | 5,501 |  | 4,550 |
| Hotels/motels |  | 5,415 |  | 3,578 |
| Multi-use |  | 3,003 |  | 1,943 |
| Unsecured |  | 2,056 |  | 1,194 |
| Land and land development |  | 539 |  | 490 |
| Other |  | 5,791 |  | 4,560 |
| Total non-residential |  | 55,101 |  | 45,972 |
| Residential |  | 2,098 |  | 1,710 |
| Total outstanding commercial real estate loans | \$ | 57,199 | \$ | 47,682 |

Tables 42 and 43 present commercial real estate credit quality data by non-residential and residential property types. The residential portfolio presented in Tables 41, 42 and 43 includes
condominiums and other residential real estate. Other property types in Tables 41, 42 and 43 primarily include special purpose, nursing/retirement homes, medical facilities and restaurants.

Table 42 Commercial Real Estate Credit Quality Data

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Nonperforming Loans and Foreclosed Properties(1) |  |  |  | Utilized Reservable Criticized Exposure ${ }^{(2)}$ |  |  |  |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| Non-residential |  |  |  |  |  |  |  |  |
| Office | \$ | 14 | \$ | 177 | \$ | 110 | \$ | 235 |
| Multi-family rental |  | 18 |  | 21 |  | 69 |  | 125 |
| Shopping centers/retail |  | 12 |  | 46 |  | 183 |  | 350 |
| Industrial/warehouse |  | 6 |  | 42 |  | 16 |  | 67 |
| Hotels/motels |  | 18 |  | 3 |  | 16 |  | 26 |
| Multi-use |  | 15 |  | 11 |  | 42 |  | 55 |
| Unsecured |  | 1 |  | 1 |  | 4 |  | 14 |
| Land and land development |  | 2 |  | 51 |  | 3 |  | 63 |
| Other |  | 8 |  | 14 |  | 59 |  | 145 |
| Total non-residential |  | 94 |  | 366 |  | 502 |  | 1,080 |
| Residential |  | 14 |  | 22 |  | 11 |  | 28 |
| Total commercial real estate | \$ | 108 | \$ | 388 | \$ | 513 | \$ | 1,108 |

${ }^{1)}$ Includes commercial foreclosed properties of \$15 million and \$67 million at December 31, 2015 and 2014.
${ }^{(2)}$ Includes loans, SBLCs and bankers' acceptances and excludes loans accounted for under the fair value option.

## Table 43 Commercial Real Estate Net Charge-offs and Related Ratios

| (Dollars in millions) | Net Charge-offs |  |  |  | Net Charge-off Ratios ${ }^{(1)}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  | 2015 | 2014 |
| Non-residential |  |  |  |  |  |  |
| Office | \$ | 3 | \$ | (4) | 0.02\% | (0.04)\% |
| Multi-family rental |  | 1 |  | (22) | 0.01 | (0.25) |
| Shopping centers/retail |  | 1 |  | 4 | 0.01 | 0.06 |
| Industrial/warehouse |  | (1) |  | (1) | (0.02) | (0.03) |
| Hotels/motels |  | 5 |  | (3) | 0.12 | (0.07) |
| Multi-use |  | (4) |  | (9) | (0.19) | (0.49) |
| Unsecured |  | (4) |  | (22) | (0.20) | (1.37) |
| Land and land development |  | (9) |  | (2) | (1.60) | (0.31) |
| Other |  | 1 |  | (16) | 0.01 | (0.37) |
| Total non-residential |  | (7) |  | (75) | (0.01) | (0.16) |
| Residential |  | 2 |  | (8) | 0.08 | (0.47) |
| Total commercial real estate | \$ | (5) | \$ | (83) | (0.01) | (0.18) |

${ }^{1)}$ Net charge-off ratios are calculated as net charge-offs divided by average outstanding loans excluding loans accounted for under the fair value option.

At December 31, 2015, total committed non-residential exposure was $\$ 81.0$ billion compared to $\$ 67.7$ billion at December 31, 2014, of which $\$ 55.1$ billion and $\$ 46.0$ billion were funded loans. Non-residential nonperforming loans and foreclosed properties declined $\$ 272$ million, or 74 percent, to $\$ 94$ million during 2015 primarily due to a decrease in office property. The non-residential nonperforming loans and foreclosed properties represented 0.17 percent and 0.79 percent of total non-residential loans and foreclosed properties at December 31, 2015 and 2014. Non-residential utilized reservable criticized exposure decreased $\$ 578$ million, or 54 percent, to $\$ 502$ million at December 31, 2015 compared to $\$ 1.1$ billion at December 31, 2014, which represented 0.89 percent and 2.27 percent of non-residential utilized reservable exposure. For the non-residential portfolio, net recoveries decreased $\$ 68$ million to $\$ 7$ million in 2015 compared to 2014.

At December 31, 2015, total committed residential exposure was $\$ 4.1$ billion compared to $\$ 3.6$ billion at December 31, 2014,
of which $\$ 2.1$ billion and $\$ 1.7$ billion were funded secured loans. Residential nonperforming loans and foreclosed properties decreased $\$ 8$ million, or 36 percent, and residential utilized reservable criticized exposure decreased $\$ 17$ million, or 61 percent, during 2015. The nonperforming loans, leases and foreclosed properties and the utilized reservable criticized ratios for the residential portfolio were 0.66 percent and 0.52 percent at December 31, 2015 compared to 1.28 percent and 1.51 percent at December 31, 2014.

At December 31, 2015 and 2014, the commercial real estate Ioan portfolio included $\$ 7.6$ billion and $\$ 6.7$ billion of funded construction and land development loans that were originated to fund the construction and/or rehabilitation of commercial properties. Reservable criticized construction and land development loans totaled $\$ 108$ million and $\$ 164$ million, and nonperforming construction and land development loans and foreclosed properties totaled $\$ 44$ million and $\$ 80$ million at December 31, 2015 and 2014. During a property's construction
phase, interest income is typically paid from interest reserves that are established at the inception of the loan. As construction is completed and the property is put into service, these interest reserves are depleted and interest payments from operating cash flows begin. We do not recognize interest income on nonperforming loans regardless of the existence of an interest reserve.

## Non-U.S. Commercial

At December 31, 2015, 74 percent of the non-U.S. commercial loan portfolio was managed in Global Banking and 26 percent in Global Markets. Outstanding loans, excluding loans accounted for under the fair value option, increased $\$ 11.5$ billion in 2015 primarily due to growth in securitization finance on consumer loans and increased corporate demand. Net charge-offs increased \$20 million to $\$ 54$ million in 2015. For more information on the nonU.S. commercial portfolio, see Non-U.S. Portfolio on page 67.

## U.S. Small Business Commercial

The U.S. small business commercial loan portfolio is comprised of small business card loans and small business loans managed in Consumer Banking. Credit card-related products were 45 percent and 43 percent of the U.S. small business commercial portfolio at December 31, 2015 and 2014. Net charge-offs decreased $\$ 57$ million to $\$ 225$ million in 2015 primarily driven by improvement
in small business card loan delinquencies, a reduction in higher risk vintages and increased recoveries from the sale of previously charged-off loans. Of the U.S. small business commercial net charge-offs, 81 percent and 73 percent were credit card-related products in 2015 and 2014.

## Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity

Table 44 presents the nonperforming commercial loans, leases and foreclosed properties activity during 2015 and 2014. Nonperforming loans do not include loans accounted for under the fair value option. During 2015, nonperforming commercial loans and leases increased $\$ 99$ million to $\$ 1.2$ billion primarily due to energy sector related exposure. The decline in foreclosed properties of $\$ 52$ million in 2015 was primarily due to the sale of properties. Approximately 88 percent of commercial nonperforming loans, leases and foreclosed properties were secured and approximately 69 percent were contractually current. Commercial nonperforming loans were carried at approximately 85 percent of their unpaid principal balance before consideration of the allowance for loan and lease losses as the carrying value of these loans has been reduced to the estimated property value less costs to sell.

Table 44 Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity (1, 2)


1) Balances do not include nonperforming LHFS of $\$ 220$ million and $\$ 212$ million at December 31, 2015 and 2014.
${ }^{(2)}$ Includes U.S. small business commercial activity. Small business card loans are excluded as they are not classified as nonperforming.
${ }^{(3)}$ Commercial loans and leases may be returned to performing status when all principal and interest is current and full repayment of the remaining contractual principal and interest is expected, or when the loan otherwise becomes well-secured and is in the process of collection. TDRs are generally classified as performing after a sustained period of demonstrated payment performance.
${ }^{(4)}$ New foreclosed properties represents transfers of nonperforming loans to foreclosed properties net of charge-offs recorded during the first 90 days after transfer of a loan to foreclosed properties.
${ }^{(5)}$ In 2015, $\$ 126$ million in interest income was estimated to be contractually due on $\$ 1.2$ billion of commercial loans and leases classified as nonperforming, at December 31, 2015, as presented in the table above, plus $\$ 1.2$ billion of TDRs classified as performing at December 31, 2015. Approximately $\$ 74$ million of the estimated $\$ 126$ million in contractual interest was received and included in interest income for 2015.
${ }^{(6)}$ Outstanding commercial loans exclude loans accounted for under the fair value option.

Table 45 presents our commercial TDRs by product type and performing status. U.S. small business commercial TDRs are comprised of renegotiated small business card loans and small business loans. The renegotiated small business card loans are
not classified as nonperforming as they are charged off no later than the end of the month in which the loan becomes 180 days past due. For more information on TDRs, see Note 4 - Outstanding Loans and Leases to the Consolidated Financial Statements.

Table 45 Commercial Troubled Debt Restructurings

| (Dollars in millions) | 2015 |  |  |  |  |  | 2014 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total |  | Nonperforming |  | Performing |  | Total |  | Nonperforming |  | Performing |  |
| U.S. commercial | \$ | 1,225 | \$ | 394 | \$ | 831 | \$ | 1,096 | \$ | 308 | \$ | 788 |
| Commercial real estate |  | 118 |  | 27 |  | 91 |  | 456 |  | 234 |  | 222 |
| Non-U.S. commercial |  | 363 |  | 136 |  | 227 |  | 43 |  | - |  | 43 |
| U.S. small business commercial |  | 29 |  | 10 |  | 19 |  | 35 |  | - |  | 35 |
| Total commercial troubled debt restructurings | \$ | 1,735 | \$ | 567 | \$ | 1,168 | \$ | 1,630 | \$ | 542 | \$ | 1,088 |

## Industry Concentrations

Table 46 presents commercial committed and utilized credit exposure by industry and the total net credit default protection purchased to cover the funded and unfunded portions of certain credit exposures. Our commercial credit exposure is diversified across a broad range of industries. Total commercial committed credit exposure increased $\$ 110.1$ billion, or 13 percent, in 2015 to $\$ 942.5$ billion. Increases in commercial committed exposure were concentrated in diversified financials, technology hardware and equipment, real estate, food, beverage and tobacco and retailing.

Industry limits are used internally to manage industry concentrations and are based on committed exposures and capital usage that are allocated on an industry-by-industry basis. A risk management framework is in place to set and approve industry limits as well as to provide ongoing monitoring.

Diversified financials, our largest industry concentration with committed exposure of $\$ 128.4$ billion, increased $\$ 24.9$ billion, or 24 percent, in 2015. The increase was primarily driven by growth in exposure to asset managers, acquisition financing and certain asset-backed lending products.

Real estate, our second largest industry concentration with committed exposure of $\$ 87.7$ billion, increased $\$ 11.5$ billion, or 15 percent, in 2015. The increase was primarily due to strong
demand for quality core assets in major metropolitan markets. Real estate construction and land development exposure represented 14 percent and 13 percent of the total real estate industry committed exposure at December 31, 2015 and 2014. For more information on the commercial real estate and related portfolios, see Commercial Portfolio Credit Risk Management Commercial Real Estate on page 61.

During 2015, committed exposure to the technology hardware and equipment industry increased $\$ 12.4$ billion, or 100 percent, food, beverages and tobacco increased $\$ 8.7$ billion, or 25 percent, and retailing industry increased $\$ 5.9$ billion, or 10 percent, primarily driven by bridge financing for acquisitions and increased client activity.

The significant decline in oil prices since June 2014 has impacted and may continue to impact the financial performance of energy producers as well as energy equipment and service providers within the energy sector. At December 31, 2015, these two subsectors comprised 39 percent of our overall utilized energy exposure. While we experienced modest credit losses in our energy portfolio through December 31, 2015, the magnitude of the impact over time will depend upon the level and duration of future oil prices. Our energy-related exposure decreased $\$ 3.9$ billion in 2015 to $\$ 43.8$ billion driven by paydowns from large clients.

Our committed state and municipal exposure of $\$ 43.4$ billion at December 31, 2015 consisted of $\$ 35.9$ billion of commercial utilized exposure (including $\$ 20.0$ billion of funded loans, $\$ 6.4$ billion of SBLCs and $\$ 2.2$ billion of derivative assets) and $\$ 7.5$ billion of unfunded commercial exposure (primarily unfunded loan commitments and letters of credit) and is reported in the government and public education industry in Table 46. With the U.S. economy gradually strengthening, most state and local
governments are experiencing improved fiscal circumstances and continue to honor debt obligations as agreed. While historical default rates have been low, as part of our overall and ongoing risk management processes, we continually monitor these exposures through a rigorous review process. Additionally, internal communications are regularly circulated such that exposure levels are maintained in compliance with established concentration guidelines.

Table 46 Commercial Credit Exposure by Industry (1)

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Commercial Utilized |  |  |  | Total Commercial Committed |  |  |  |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| Diversified financials | \$ | 79,496 | \$ | 63,306 | \$ | 128,436 | \$ | 103,528 |
| Real estate ${ }^{(2)}$ |  | 61,759 |  | 53,834 |  | 87,650 |  | 76,153 |
| Retailing |  | 37,675 |  | 33,683 |  | 63,975 |  | 58,043 |
| Capital goods |  | 30,790 |  | 29,028 |  | 58,583 |  | 54,653 |
| Healthcare equipment and services |  | 35,134 |  | 32,923 |  | 57,901 |  | 52,450 |
| Banking |  | 45,952 |  | 42,330 |  | 53,825 |  | 48,353 |
| Government and public education |  | 44,835 |  | 42,095 |  | 53,133 |  | 49,937 |
| Materials |  | 24,012 |  | 23,664 |  | 46,013 |  | 45,821 |
| Energy |  | 21,257 |  | 23,830 |  | 43,811 |  | 47,667 |
| Food, beverage and tobacco |  | 18,316 |  | 16,131 |  | 43,164 |  | 34,465 |
| Consumer services |  | 24,084 |  | 21,657 |  | 37,058 |  | 33,269 |
| Commercial services and supplies |  | 19,552 |  | 17,997 |  | 32,045 |  | 30,451 |
| Utilities |  | 11,396 |  | 9,399 |  | 27,849 |  | 25,235 |
| Transportation |  | 19,369 |  | 17,538 |  | 27,371 |  | 24,541 |
| Technology hardware and equipment |  | 6,337 |  | 5,489 |  | 24,734 |  | 12,350 |
| Media |  | 12,833 |  | 11,128 |  | 24,194 |  | 21,502 |
| Individuals and trusts |  | 17,992 |  | 16,749 |  | 23,176 |  | 21,195 |
| Software and services |  | 6,617 |  | 5,927 |  | 18,362 |  | 14,071 |
| Pharmaceuticals and biotechnology |  | 6,302 |  | 5,707 |  | 16,472 |  | 13,493 |
| Automobiles and components |  | 4,804 |  | 4,114 |  | 11,329 |  | 9,683 |
| Consumer durables and apparel |  | 6,053 |  | 6,111 |  | 11,165 |  | 10,613 |
| Insurance, including monolines |  | 5,095 |  | 5,204 |  | 10,728 |  | 11,252 |
| Telecommunication services |  | 4,717 |  | 3,814 |  | 10,645 |  | 9,295 |
| Food and staples retailing |  | 4,351 |  | 3,848 |  | 9,439 |  | 7,418 |
| Religious and social organizations |  | 4,526 |  | 4,881 |  | 5,929 |  | 6,548 |
| Other |  | 6,309 |  | 6,255 |  | 15,510 |  | 10,415 |
| Total commercial credit exposure by industry | \$ | 559,563 |  | 506,642 | \$ | 942,497 | \$ | 832,401 |
| Net credit default protection purchased on total commitments ${ }^{(3)}$ |  |  |  |  | \$ | $(6,677)$ | \$ | $(7,302)$ |
| (1) Includes U.S. small business commercial exposure. <br> ${ }^{(2)}$ Industries are viewed from a variety of perspectives to best isolate the per primary business activity using operating cash flows and primary source of <br> ${ }^{(3)}$ Represents net notional credit protection purchased. For additional information |  | ndustry is <br> Risk Mitiga |  | d based on <br> on page 65. |  | brrowers' or |  | nterparties' |

## Risk Mitigation

We purchase credit protection to cover the funded portion as well as the unfunded portion of certain credit exposures. To lower the cost of obtaining our desired credit protection levels, we may add credit exposure within an industry, borrower or counterparty group by selling protection.

At December 31, 2015 and 2014, net notional credit default protection purchased in our credit derivatives portfolio to hedge our funded and unfunded exposures for which we elected the fair value option, as well as certain other credit exposures, was $\$ 6.7$ billion and $\$ 7.3$ billion. We recorded net gains of $\$ 150$ million in 2015 compared to net losses of $\$ 50$ million in 2014 on these positions. The gains and losses on these instruments were offset by gains and losses on the related exposures. The Value-at-Risk (VaR) results for these exposures are included in the fair value option portfolio information in Table 56. For additional information, see Trading Risk Management on page 74.

Tables 47 and 48 present the maturity profiles and the credit exposure debt ratings of the net credit default protection portfolio at December 31, 2015 and 2014.

Table 47 Net Credit Default Protection by Maturity

|  | December 31 |  |
| :--- | :---: | :---: |
|  | 2015 | 2014 |
| Less than or equal to one year <br> Greater than one year and less than or equal to five <br> years | $39 \%$ | $43 \%$ |
| Greater than five years | 59 | 55 |
| Total net credit default protection | $\mathbf{2}$ | 2 |

Table 48 Net Credit Default Protection by Credit Exposure Debt Rating

| (Dollars in millions) | Net <br> Notional (1) |  | Percent of Total | Net <br> Notional (1) |  | Percent of Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ratings ${ }^{(2,3)}$ |  |  |  |  |  |  |
| AA | \$ | - | -\% | \$ | (30) | 0.4\% |
| A |  | (752) | 11.3 |  | (660) | 9.0 |
| BBB |  | $(3,030)$ | 45.4 |  | $(4,401)$ | 60.3 |
| BB |  | $(2,090)$ | 31.3 |  | $(1,527)$ | 20.9 |
| B |  | (634) | 9.5 |  | (610) | 8.4 |
| CCC and below |  | (139) | 2.1 |  | (42) | 0.6 |
| NR ${ }^{(4)}$ |  | (32) | 0.4 |  | (32) | 0.4 |
| Total net credit default protection | \$ | $(6,677)$ | 100.0\% | \$ | $(7,302)$ | 100.0\% |
| ${ }^{(1)}$ Represents net credit default protection (purchased) sold. <br> (2) Ratings are refreshed on a quarterly basis. <br> ${ }^{(3)}$ Ratings of BBB- or higher are considered to meet the definition of investment grade. <br> ${ }^{(4)}$ NR is comprised of index positions held and any names that have not been rated. |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

In addition to our net notional credit default protection purchased to cover the funded and unfunded portion of certain credit exposures, credit derivatives are used for market-making activities for clients and establishing positions intended to profit from directional or relative value changes. We execute the majority of our credit derivative trades in the OTC market with large, multinational financial institutions, including broker-dealers and,
to a lesser degree, with a variety of other investors. Because these transactions are executed in the OTC market, we are subject to settlement risk. We are also subject to credit risk in the event that these counterparties fail to perform under the terms of these contracts. In most cases, credit derivative transactions are executed on a daily margin basis. Therefore, events such as a credit downgrade, depending on the ultimate rating level, or a breach of credit covenants would typically require an increase in the amount of collateral required by the counterparty, where applicable, and/or allow us to take additional protective measures such as early termination of all trades.

Table 49 presents the total contract/notional amount of credit derivatives outstanding and includes both purchased and written credit derivatives. The credit risk amounts are measured as net asset exposure by counterparty, taking into consideration all contracts with the counterparty. For more information on our written credit derivatives, see Note 2 - Derivatives to the Consolidated Financial Statements.

The credit risk amounts discussed above and presented in Table 49 take into consideration the effects of legally enforceable master netting agreements while amounts disclosed in Note 2 Derivatives to the Consolidated Financial Statements are shown on a gross basis. Credit risk reflects the potential benefit from offsetting exposure to non-credit derivative products with the same counterparties that may be netted upon the occurrence of certain events, thereby reducing our overall exposure.

## Table 49 Credit Derivatives

| (Dollars in millions) | December 31 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  |  |  | 2014 |  |  |
|  | Contract/ Notional |  | Credit Risk |  | Contract/ Notional | Credit Risk |  |
| Purchased credit derivatives: |  |  |  |  |  |  |  |
| Credit default swaps | \$ | 928,300 | \$ | 3,677 | \$ 1,094,796 | \$ | 3,833 |
| Total return swaps/other |  | 26,427 |  | 1,596 | 44,333 |  | 510 |
| Total purchased credit derivatives | \$ | 954,727 | \$ | 5,273 | \$ 1,139,129 | \$ | 4,343 |
| Written credit derivatives: |  |  |  |  |  |  |  |
| Credit default swaps | \$ | 924,143 |  | n/a | \$ 1,073,101 |  | $\mathrm{n} / \mathrm{a}$ |
| Total return swaps/other |  | 39,658 |  | n/a | 61,031 |  | n/a |
| Total written credit derivatives | \$ | 963,801 |  | n/a | \$ 1,134,132 |  | n/a |

$\mathrm{n} / \mathrm{a}=$ not applicable

## Counterparty Credit Risk Valuation Adjustments

We record counterparty credit risk valuation adjustments on certain derivative assets, including our credit default protection purchased, in order to properly reflect the credit risk of the counterparty, as presented in Table 50. We calculate CVA based on a modeled expected exposure that incorporates current market risk factors including changes in market spreads and non-credit related market factors that affect the value of a derivative. The exposure also takes into consideration credit mitigants such as legally enforceable master netting agreements and collateral. For additional information, see Note 2 - Derivatives to the Consolidated Financial Statements.

We enter into risk management activities to offset market driven exposures. We often hedge the counterparty spread risk in

CVA with credit default swaps (CDS). We hedge other market risks in CVA primarily with currency and interest rate swaps. In certain instances, the net-of-hedge amounts in the table below move in the same direction as the gross amount or may move in the opposite direction. This is a consequence of the complex interaction of the risks being hedged resulting in limitations in the ability to perfectly hedge all of the market exposures at all times.

Table 50 Credit Valuation Gains and Losses

| Gains (Losses) (Dollars in millions) | 2015 |  |  |  |  |  | 2014 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Gross |  | Hedge |  | Net |  | Gross |  | Hedge |  | Net |  |
| Credit valuation | \$ | 255 | \$ | (28) | \$ | 227 | \$ | (22) | \$ | 213 | \$ | 191 |

## Non-U.S. Portfolio

Our non-U.S. credit and trading portfolios are subject to country risk. We define country risk as the risk of loss from unfavorable economic and political conditions, currency fluctuations, social instability and changes in government policies. A risk management framework is in place to measure, monitor and manage nonU.S. risk and exposures. In addition to the direct risk of doing business in a country, we also are exposed to indirect country risks (e.g., related to the collateral received on secured financing transactions or related to client clearing activities). These indirect exposures are managed in the normal course of business through credit, market and operational risk governance, rather than through country risk governance.

Table 51 presents our total non-U.S. exposure by region at December 31, 2015 and 2014. Non-U.S. exposure is presented on an internal risk management basis and includes sovereign and non-sovereign credit exposure, securities and other investments issued by or domiciled in countries other than the U.S. The risk assignments by country can be adjusted for external guarantees and certain collateral types. Exposures that are subject to external guarantees are reported under the country of the guarantor. Exposures with tangible collateral are reflected in the country where the collateral is held. For securities received, other than cross-border resale agreements, outstandings are assigned to the domicile of the issuer of the securities.

Table 51 Total Non-U.S. Exposure by Region

| (Dollars in millions) | December 31 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  |
|  | Amount | Percent of Total | Amount | Percent of Total |
| Europe | \$ 140,836 | 52\% | \$ 129,573 | 49\% |
| Asia Pacific | 75,446 | 28 | 78,792 | 30 |
| Latin America | 25,478 | 9 | 23,403 | 9 |
| Middle East and Africa | 11,516 | 4 | 10,801 | 4 |
| Other ${ }^{(1)}$ | 18,035 | 7 | 22,701 | 8 |
| Total | \$ 271,311 | 100\% | \$ 265,270 | 100\% |
| (1) Other includes Canada ex 2014 . | sure of \$16.6 | lion and \$20. | billion at Decem | $31,2015 \text { an }$ |

Our total non-U.S. exposure was $\$ 271.3$ billion at December 31, 2015, an increase of $\$ 6.0$ billion from December 31,2014. The increase in non-U.S. exposure was driven by growth in Europe, Latin America, and Middle East and Africa exposures, partially offset by a reduction in Asia Pacific and Other. Our non-U.S. exposure remained concentrated in Europe which accounted for $\$ 140.8$ billion, or 52 percent of total non-U.S.
exposure. The European exposure was mostly in Western Europe and was distributed across a variety of industries.

Table 52 presents our 20 largest non-U.S. country exposures. These exposures accounted for 86 percent and 88 percent of our total non-U.S. exposure at December 31, 2015 and 2014. Net country exposure for these 20 countries increased $\$ 6.1$ billion in 2015 primarily driven by increases in the United Kingdom, Belgium and Australia, partially offset by reductions in Canada, Japan, China, France and Hong Kong. On a product basis, the increase was driven by higher funded loans and loan equivalents in the United Kingdom, Germany, Australia and India and higher unfunded commitments in Belgium and the United Kingdom. These increases were partially offset by reductions in securities in the United Kingdom, Canada, India and France.

Funded loans and loan equivalents include loans, leases, and other extensions of credit and funds, including letters of credit and due from placements, which have not been reduced by collateral, hedges or credit default protection. Funded loans and loan equivalents are reported net of charge-offs but prior to any allowance for loan and lease losses. Unfunded commitments are the undrawn portion of legally binding commitments related to loans and loan equivalents.

Net counterparty exposure includes the fair value of derivatives, including the counterparty risk associated with CDS, and secured financing transactions. Derivatives exposures are presented net of collateral, which is predominantly cash, pledged under legally enforceable master netting agreements. Secured financing transaction exposures are presented net of eligible cash or securities pledged as collateral.

Securities and other investments are carried at fair value and long securities exposures are netted against short exposures with the same underlying issuer to, but not below, zero (i.e., negative issuer exposures are reported as zero). Other investments include our GPI portfolio and strategic investments.

Net country exposure represents country exposure less hedges and credit default protection purchased, net of credit default protection sold. We hedge certain of our country exposures with credit default protection primarily in the form of single-name, as well as indexed and tranched CDS. The exposures associated with these hedges represent the amount that would be realized upon the isolated default of an individual issuer in the relevant country assuming a zero recovery rate for that individual issuer, and are calculated based on the CDS notional amount adjusted for any fair value receivable or payable. Changes in the assumption of an isolated default can produce different results in a particular tranche.

Table 52 Top 20 Non-U.S. Countries Exposure

| (Dollars in millions) | Funded Loans and Loan Equivalents |  | Unfunded Loan Commitments |  | Net Counterparty Exposure |  | Securities/ Other Investments |  | Country Exposure at December 31 2015 |  | Hedges and Credit Default Protection |  | Net Country Exposure at December 31 2015 |  | Increase (Decrease) from December 31 2014 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| United Kingdom | \$ | 30,268 | \$ | 15,086 | \$ | 8,923 | \$ | 4,194 | \$ | 58,471 | \$ | $(5,225)$ | \$ | 53,246 | \$ | 7,699 |
| Brazil |  | 9,981 |  | 401 |  | 902 |  | 4,593 |  | 15,877 |  | (227) |  | 15,650 |  | 666 |
| Canada |  | 5,522 |  | 6,695 |  | 2,279 |  | 2,097 |  | 16,593 |  | $(1,861)$ |  | 14,732 |  | $(3,808)$ |
| Japan |  | 13,381 |  | 532 |  | 1,145 |  | 718 |  | 15,776 |  | $(1,412)$ |  | 14,364 |  | $(2,370)$ |
| Germany |  | 7,373 |  | 6,389 |  | 2,604 |  | 1,991 |  | 18,357 |  | $(4,953)$ |  | 13,404 |  | 845 |
| China |  | 9,207 |  | 627 |  | 739 |  | 748 |  | 11,321 |  | (847) |  | 10,474 |  | $(1,818)$ |
| India |  | 7,045 |  | 238 |  | 363 |  | 2,880 |  | 10,526 |  | (172) |  | 10,354 |  | (232) |
| Australia |  | 5,061 |  | 2,390 |  | 705 |  | 1,737 |  | 9,893 |  | (348) |  | 9,545 |  | 1,872 |
| France |  | 2,822 |  | 4,795 |  | 1,392 |  | 3,816 |  | 12,825 |  | $(4,139)$ |  | 8,686 |  | $(1,752)$ |
| Netherlands |  | 3,329 |  | 3,283 |  | 879 |  | 1,631 |  | 9,122 |  | $(1,488)$ |  | 7,634 |  | (501) |
| Hong Kong |  | 5,850 |  | 273 |  | 788 |  | 701 |  | 7,612 |  | (23) |  | 7,589 |  | $(1,019)$ |
| South Korea |  | 4,351 |  | 749 |  | 674 |  | 1,751 |  | 7,525 |  | (667) |  | 6,858 |  | 409 |
| Switzerland |  | 3,337 |  | 2,947 |  | 707 |  | 650 |  | 7,641 |  | $(1,378)$ |  | 6,263 |  | (268) |
| Belgium |  | 648 |  | 4,749 |  | 149 |  | 185 |  | 5,731 |  | (263) |  | 5,468 |  | 4,260 |
| Italy |  | 2,933 |  | 1,062 |  | 1,544 |  | 1,563 |  | 7,102 |  | $(1,794)$ |  | 5,308 |  | (91) |
| Mexico |  | 2,708 |  | 1,327 |  | 141 |  | 1,209 |  | 5,385 |  | (331) |  | 5,054 |  | 783 |
| Singapore |  | 2,297 |  | 167 |  | 481 |  | 1,843 |  | 4,788 |  | (59) |  | 4,729 |  | 725 |
| Turkey |  | 2,996 |  | 172 |  | 30 |  | 49 |  | 3,247 |  | (107) |  | 3,140 |  | 652 |
| Spain |  | 1,847 |  | 677 |  | 231 |  | 940 |  | 3,695 |  | (632) |  | 3,063 |  | (553) |
| United Arab Emirates |  | 2,008 |  | 56 |  | 1,027 |  | 37 |  | 3,128 |  | (102) |  | 3,026 |  | 619 |
| Total top 20 non-U.S. countries exposure | \$ | 122,964 | \$ | 52,615 | \$ | 25,703 | \$ | 33,333 | \$ | 234,615 | \$ | $(26,028)$ | \$ | 208,587 | \$ | 6,118 |

Weakening of commodity prices, signs of slowing growth in China and a recession in Brazil are driving risk aversion in emerging markets. Net exposure to China decreased to $\$ 10.5$ billion at December 31, 2015, concentrated in large state-owned companies, subsidiaries of multinational corporations and commercial banks. Net exposure to Brazil was $\$ 15.7$ billion, concentrated in sovereign securities, oil and gas companies and commercial banks.

Russian intervention in Ukraine initiated in 2014 significantly increased regional geopolitical tensions. The Russian economy continues to slow due to the negative impacts of weak oil prices, ongoing economic sanctions and high interest rates resulting from Russian central bank actions taken to counter ruble depreciation. Net exposure to Russia was reduced to $\$ 2.2$ billion at December 31, 2015, concentrated in oil and gas companies and commercial banks. Our exposure to Ukraine at December 31, 2015 was minimal. In response to Russian actions, U.S. and European governments have imposed sanctions on a limited number of Russian individuals and business entities. Geopolitical and economic conditions remain fluid with potential for further escalation of tensions, increased severity of sanctions against Russian interests, sustained low oil prices and rating agency downgrades.

Certain European countries, including Italy, Spain, Ireland and Portugal, have experienced varying degrees of financial stress in recent years. While market conditions have improved in Europe, policymakers continue to address fundamental challenges of competitiveness, growth, deflation and high unemployment. A return of political stress or financial instability in these countries
could disrupt financial markets and have a detrimental impact on global economic conditions and sovereign and non-sovereign debt in these countries. Net exposure at December 31, 2015 to Italy and Spain was $\$ 5.3$ billion and $\$ 3.1$ billion as presented in Table 52. Net exposure at December 31, 2015 to Ireland and Portugal was $\$ 1.0$ billion and $\$ 54$ million. We expect to continue to support client activities in the region and our exposures may vary over time as we monitor the situation and manage our risk profile.

Table 53 presents countries where total cross-border exposure exceeded one percent of our total assets. At December 31, 2015, the United Kingdom and France were the only countries where total cross-border exposure exceeded one percent of our total assets. At December 31, 2015, Canada and Germany had total crossborder exposure of $\$ 18.3$ billion and $\$ 16.5$ billion representing 0.85 percent and 0.77 percent of our total assets. No other countries had total cross-border exposure that exceeded 0.75 percent of our total assets at December 31, 2015.

Cross-border exposures in Table 53 are calculated using Federal Financial Institutions Examination Council (FFIEC) guidelines and not our internal risk management view; therefore, exposures are not comparable between Tables 52 and 53. Exposure includes cross-border claims by our non-U.S. offices including loans, acceptances, time deposits placed, trading account assets, securities, derivative assets, other interest-earning investments and other monetary assets. Amounts also include unfunded commitments, letters of credit and financial guarantees, and the notional amount of cash loaned under secured financing transactions. Sector definitions are consistent with FFIEC reporting requirements for preparing the Country Exposure Report.

Table 53 Total Cross-border Exposure Exceeding One Percent of Total Assets
$\left.\begin{array}{lrrrrrrrr} & & & & & & & & \\ \text { Corposure as a } \\ \text { Percent of }\end{array}\right)$

## Provision for Credit Losses

The provision for credit losses increased $\$ 886$ million to $\$ 3.2$ billion in 2015 compared to 2014. The provision for credit losses was $\$ 1.2$ billion lower than net charge-offs for 2015, resulting in a reduction in the allowance for credit losses. This compared to a reduction of $\$ 2.1$ billion in the allowance for credit losses in 2014. As we look at 2016, reserve releases are expected to decrease from 2015 levels. All else equal, this would result in increased provision expense, assuming sustained stability in underlying asset quality.

The provision for credit losses for the consumer portfolio increased $\$ 726$ million to $\$ 2.2$ billion in 2015 compared to 2014. The provision for credit losses in 2014 included $\$ 400$ million of additional costs associated with the consumer relief portion of the DoJ Settlement. Excluding these additional costs, the consumer provision for credit losses increased due to a slower pace of portfolio improvement than in 2014, and also due to a lower level of recoveries on nonperforming loan sales and other recoveries in 2015. Included in the provision is a benefit of $\$ 40$ million related to the PCI loan portfolio for 2015 compared to a benefit of $\$ 31$ million in 2014.

The provision for credit losses for the commercial portfolio, including unfunded lending commitments, increased $\$ 160$ million to $\$ 953$ million in 2015 compared to 2014 driven by energy sector exposure and higher unfunded balances.

## Allowance for Credit Losses

## Allowance for Loan and Lease Losses

The allowance for loan and lease losses is comprised of two components. The first component covers nonperforming commercial loans and TDRs. The second component covers loans and leases on which there are incurred losses that are not yet individually identifiable, as well as incurred losses that may not be represented in the loss forecast models. We evaluate the adequacy of the allowance for loan and lease losses based on the total of these two components, each of which is described in more detail below. The allowance for loan and lease losses excludes LHFS and loans accounted for under the fair value option as the fair value reflects a credit risk component.

The first component of the allowance for loan and lease losses covers both nonperforming commercial loans and all TDRs within the consumer and commercial portfolios. These loans are subject to impairment measurement based on the present value of projected future cash flows discounted at the loan's original effective interest rate, or in certain circumstances, impairment may also be based upon the collateral value or the loan's observable market price if available. Impairment measurement for the renegotiated consumer credit card, small business credit card and unsecured consumer TDR portfolios is based on the present
value of projected cash flows discounted using the average portfolio contractual interest rate, excluding promotionally priced loans, in effect prior to restructuring. For purposes of computing this specific loss component of the allowance, larger impaired loans are evaluated individually and smaller impaired loans are evaluated as a pool using historical experience for the respective product types and risk ratings of the loans.

The second component of the allowance for loan and lease losses covers the remaining consumer and commercial loans and leases that have incurred losses that are not yet individually identifiable. The allowance for consumer and certain homogeneous commercial loan and lease products is based on aggregated portfolio evaluations, generally by product type. Loss forecast models are utilized that consider a variety of factors including, but not limited to, historical loss experience, estimated defaults or foreclosures based on portfolio trends, delinquencies, economic trends and credit scores. Our consumer real estate loss forecast model estimates the portion of loans that will default based on individual loan attributes, the most significant of which are refreshed LTV or CLTV, and borrower credit score as well as vintage and geography, all of which are further broken down into current delinquency status. Additionally, we incorporate the delinquency status of underlying first-lien loans on our junior-lien home equity portfolio in our allowance process. Incorporating refreshed LTV and CLTV into our probability of default allows us to factor the impact of changes in home prices into our allowance for loan and lease losses. These loss forecast models are updated on a quarterly basis to incorporate information reflecting the current economic environment. As of December 31, 2015, the loss forecast process resulted in reductions in the allowance for all major consumer portfolios compared to December 31, 2014.

The allowance for commercial loan and lease losses is established by product type after analyzing historical loss experience, internal risk rating, current economic conditions, industry performance trends, geographic and obligor concentrations within each portfolio and any other pertinent information. The statistical models for commercial loans are generally updated annually and utilize our historical database of actual defaults and other data, including external default data. The loan risk ratings and composition of the commercial portfolios used to calculate the allowance are updated quarterly to incorporate the most recent data reflecting the current economic environment. For risk-rated commercial loans, we estimate the probability of default and the LGD based on our historical experience of defaults and credit losses. Factors considered when assessing the internal risk rating include the value of the underlying collateral, if applicable, the industry in which the obligor operates, the obligor's liquidity and other financial indicators, and other quantitative and qualitative factors relevant to the obligor's credit risk. As of December 31, 2015, the allowance increased for the
U.S. commercial, non-U.S. commercial and commercial lease financing portfolios compared to December 31, 2014.

Also included within the second component of the allowance for loan and lease losses are reserves to cover losses that are incurred but, in our assessment, may not be adequately represented in the historical loss data used in the loss forecast models. For example, factors that we consider include, among others, changes in lending policies and procedures, changes in economic and business conditions, changes in the nature and size of the portfolio, changes in portfolio concentrations, changes in the volume and severity of past due loans and nonaccrual loans, the effect of external factors such as competition, and legal and regulatory requirements. We also consider factors that are applicable to unique portfolio segments. For example, we consider the risk of uncertainty in our loss forecasting models related to junior-lien home equity loans that are current, but have first-lien loans that we do not service that are 30 days or more past due. In addition, we consider the increased risk of default associated with our interest-only loans that have yet to enter the amortization period. Further, we consider the inherent uncertainty in mathematical models that are built upon historical data.

During 2015, the factors that impacted the allowance for loan and lease losses included overall improvements in the credit quality of the portfolios driven by continuing improvements in the U.S. economy and labor markets, continuing proactive credit risk management initiatives and the impact of recent higher credit quality originations. Additionally, the resolution of uncertainties through current recognition of net charge-offs has impacted the amount of reserve needed in certain portfolios. Evidencing the improvements in the U.S. economy and labor markets are modest growth in consumer spending, improvements in unemployment levels, increases in home prices and a decrease in the absolute level and our share of national consumer bankruptcy filings. In addition to these improvements, in the consumer portfolio, returns to performing status, charge-offs, sales, paydowns and transfers to foreclosed properties continued to outpace new nonaccrual loans. Also impacting the allowance for loan and lease losses in the commercial portfolio were growth in loan balances and higher reservable criticized levels, particularly in the energy sector due primarily to lower oil prices.

We monitor differences between estimated and actual incurred loan and lease losses. This monitoring process includes periodic assessments by senior management of loan and lease portfolios and the models used to estimate incurred losses in those portfolios.

Additions to, or reductions of, the allowance for loan and lease losses generally are recorded through charges or credits to the provision for credit losses. Credit exposures deemed to be uncollectible are charged against the allowance for loan and lease losses. Recoveries of previously charged off amounts are credited to the allowance for loan and lease losses.

The allowance for loan and lease losses for the consumer portfolio, as presented in Table 55, was $\$ 7.4$ billion at

December 31, 2015, a decrease of $\$ 2.6$ billion from December 31, 2014. The decrease was primarily in the residential mortgage, home equity and credit card portfolios. Reductions in the residential mortgage and home equity portfolios were due to improved home prices and lower delinquencies, a decrease in consumer loan balances, as well as the utilization of reserves recorded as a part of the DoJ Settlement. Further, the residential mortgage and home equity allowance declined due to write-offs in our PCI loan portfolio.

The decrease in the allowance related to the U.S. credit card and unsecured consumer lending portfolios in Consumer Banking was primarily due to improvement in delinquencies and more generally in unemployment levels. For example, in the U.S. credit card portfolio, accruing loans 30 days or more past due decreased to $\$ 1.6$ billion at December 31, 2015 from $\$ 1.7$ billion (to 1.76 percent from 1.85 percent of outstanding U.S. credit card loans) at December 31, 2014, and accruing loans 90 days or more past due decreased to $\$ 789$ million at December 31, 2015 from $\$ 866$ million (to 0.88 percent from 0.94 percent of outstanding U.S. credit card loans) at December 31, 2014. See Tables 23, 24, 31 and 33 for additional details on key credit statistics for the credit card and other unsecured consumer lending portfolios.

The allowance for loan and lease losses for the commercial portfolio, as presented in Table 55, was $\$ 4.8$ billion at December 31, 2015, an increase of $\$ 412$ million from December 31, 2014 with the increase attributable to loan growth and higher reservable criticized levels. Commercial utilized reservable criticized exposure increased to $\$ 15.9$ billion at December 31, 2015 from $\$ 11.2$ billion (to 3.38 percent from 2.70 percent of total commercial utilized reservable exposure) at December 31, 2014, largely due to downgrades in the energy portfolio. Nonperforming commercial loans increased $\$ 99$ million from December 31, 2014 to $\$ 1.2$ billion (to 0.28 percent from 0.29 percent of outstanding commercial loans excluding loans accounted for under the fair value option) at December 31, 2015 largely in the energy sector. Commercial loans and leases outstanding increased to $\$ 440.8$ billion at December 31, 2015 from $\$ 387.5$ billion at December 31, 2014. See Tables 37, 38 and 40 for additional details on key commercial credit statistics.

The allowance for loan and lease losses as a percentage of total loans and leases outstanding was 1.37 percent at December 31, 2015 compared to 1.66 percent at December 31, 2014. The decrease in the ratio was primarily due to improved credit quality driven by improved economic conditions, write-offs in the PCI loan portfolio and utilization of reserves related to the DoJ Settlement. The December 31, 2015 and 2014 ratios above include the PCI loan portfolio. Excluding the PCI loan portfolio, the allowance for loan and lease losses as a percentage of total loans and leases outstanding was 1.31 percent and 1.51 percent at December 31, 2015 and 2014.

Table 54 presents a rollforward of the allowance for credit losses, which includes the allowance for loan and lease losses and the reserve for unfunded lending commitments, for 2015 and 2014.

Table 54 Allowance for Credit Losses

| (Dollars in millions) | 2015 |  | 2014 |  |
| :---: | :---: | :---: | :---: | :---: |
| Allowance for loan and lease losses, January 1 | \$ | 14,419 | \$ | 17,428 |
| Loans and leases charged off |  |  |  |  |
| Residential mortgage |  | (866) |  | (855) |
| Home equity |  | (975) |  | $(1,364)$ |
| U.S. credit card |  | $(2,738)$ |  | $(3,068)$ |
| Non-U.S. credit card |  | (275) |  | (357) |
| Direct/Indirect consumer |  | (383) |  | (456) |
| Other consumer |  | (224) |  | (268) |
| Total consumer charge-offs |  | $(5,461)$ |  | $(6,368)$ |
| U.S. commercial (1) |  | (536) |  | (584) |
| Commercial real estate |  | (30) |  | (29) |
| Commercial lease financing |  | (19) |  | (10) |
| Non-U.S. commercial |  | (59) |  | (35) |
| Total commercial charge-offs |  | (644) |  | (658) |
| Total loans and leases charged off |  | $(6,105)$ |  | $(7,026)$ |
| Recoveries of loans and leases previously charged off |  |  |  |  |
| Residential mortgage |  | 393 |  | 969 |
| Home equity |  | 339 |  | 457 |
| U.S. credit card |  | 424 |  | 430 |
| Non-U.S. credit card |  | 87 |  | 115 |
| Direct/Indirect consumer |  | 271 |  | 287 |
| Other consumer |  | 31 |  | 39 |
| Total consumer recoveries |  | 1,545 |  | 2,297 |
| U.S. commercial ${ }^{(2)}$ |  | 172 |  | 214 |
| Commercial real estate |  | 35 |  | 112 |
| Commercial lease financing |  | 10 |  | 19 |
| Non-U.S. commercial |  | 5 |  | 1 |
| Total commercial recoveries |  | 222 |  | 346 |
| Total recoveries of loans and leases previously charged off |  | 1,767 |  | 2,643 |
| Net charge-offs |  | $(4,338)$ |  | $(4,383)$ |
| Write-offs of PCI loans |  | (808) |  | (810) |
| Provision for loan and lease losses |  | 3,043 |  | 2,231 |
| Other ${ }^{(3)}$ |  | (82) |  | (47) |
| Allowance for loan and lease losses, December 31 |  | 12,234 |  | 14,419 |
| Reserve for unfunded lending commitments, January 1 |  | 528 |  | 484 |
| Provision for unfunded lending commitments |  | 118 |  | 44 |
| Reserve for unfunded lending commitments, December 31 |  | 646 |  | 528 |
| Allowance for credit losses, December 31 | \$ | 12,880 | \$ | 14,947 |

${ }^{1)}$ Includes U.S. small business commercial charge-offs of $\$ 282$ million and $\$ 345$ million in 2015 and 2014.
(2) Includes U.S. small business commercial recoveries of $\$ 57$ million and $\$ 63$ million in 2015 and 2014.
${ }^{(3)}$ Primarily represents the net impact of portfolio sales, consolidations and deconsolidations, and foreign currency translation adjustments.

## Table 54 Allowance for Credit Losses (continued)



For reporting purposes, we allocate the allowance for credit losses across products. However, the allowance is generally available to absorb any credit losses without restriction. Table 55 presents our allocation by product type.

Table 55 Allocation of the Allowance for Credit Losses by Product Type

 for under the fair value option included residential mortgage loans of $\$ 1.6$ billion and $\$ 1.9$ billion and home equity loans of $\$ 250$ million and $\$ 196$ million at December 31,2015 and 2014. Commercial loans accounted for under the fair value option included U.S. commercial loans of $\$ 2.3$ billion and $\$ 1.9$ billion and non-U.S. commercial loans of $\$ 2.8$ billion and $\$ 4.7$ billion at December 31, 2015 and 2014.
${ }^{(2)}$ Includes allowance for loan and lease losses for U.S. small business commercial loans of $\$ 507$ million and $\$ 536$ million at December 31,2015 and 2014.
(3) Includes allowance for loan and lease losses for impaired commercial loans of $\$ 217$ million and $\$ 159$ million at December 31, 2015 and 2014.
${ }^{(4)}$ Includes $\$ 804$ million and $\$ 1.7$ billion of valuation allowance presented with the allowance for loan and lease losses related to PCI loans at December 31,2015 and 2014.

## Reserve for Unfunded Lending Commitments

In addition to the allowance for loan and lease losses, we also estimate probable losses related to unfunded lending commitments such as letters of credit, financial guarantees, unfunded bankers' acceptances and binding loan commitments, excluding commitments accounted for under the fair value option. Unfunded lending commitments are subject to the same assessment as funded loans, including estimates of probability of default and LGD. Due to the nature of unfunded commitments, the estimate of probable losses must also consider utilization. To estimate the portion of these undrawn commitments that is likely to be drawn by a borrower at the time of estimated default, analyses of the Corporation's historical experience are applied to the unfunded commitments to estimate the funded EAD. The expected loss for unfunded lending commitments is the product of the probability of default, the LGD and the EAD, adjusted for any qualitative factors including economic uncertainty and inherent imprecision in models.

The reserve for unfunded lending commitments was \$646 million at December 31, 2015, an increase of $\$ 118$ million from December 31, 2014 with the increase attributable primarily to higher unfunded commitments.

## Market Risk Management

Market risk is the risk that changes in market conditions may adversely impact the value of assets or liabilities, or otherwise negatively impact earnings. This risk is inherent in the financial instruments associated with our operations, primarily within our Global Markets segment. We are also exposed to these risks in other areas of the Corporation (e.g., our ALM activities). In the event of market stress, these risks could have a material impact on the results of the Corporation. For additional information, see Interest Rate Risk Management for Non-trading Activities on page 78.

Our traditional banking loan and deposit products are nontrading positions and are generally reported at amortized cost for assets or the amount owed for liabilities (historical cost). However, these positions are still subject to changes in economic value based on varying market conditions, with one of the primary risks being changes in the levels of interest rates. The risk of adverse changes in the economic value of our non-trading positions arising from changes in interest rates is managed through our ALM activities. We have elected to account for certain assets and liabilities under the fair value option.

Our trading positions are reported at fair value with changes reflected in income. Trading positions are subject to various changes in market-based risk factors. The majority of this risk is generated by our activities in the interest rate, foreign exchange, credit, equity and commodities markets. In addition, the values of assets and liabilities could change due to market liquidity, correlations across markets and expectations of market volatility. We seek to manage these risk exposures by using a variety of techniques that encompass a broad range of financial instruments. The key risk management techniques are discussed in more detail in the Trading Risk Management section.

Global Risk Management is responsible for providing senior management with a clear and comprehensive understanding of the trading risks to which the Corporation is exposed. These responsibilities include ownership of market risk policy, developing and maintaining quantitative risk models, calculating aggregated risk measures, establishing and monitoring position limits
consistent with risk appetite, conducting daily reviews and analysis of trading inventory, approving material risk exposures and fulfilling regulatory requirements. Market risks that impact businesses outside of Global Markets are monitored and governed by their respective governance functions.

Quantitative risk models, such as VaR, are an essential component in evaluating the market risks within a portfolio. A subcommittee of the Management Risk Committee (MRC) is responsible for providing management oversight and approval of model risk management and governance (Risk Management, or RM subcommittee). The RM subcommittee defines model risk standards, consistent with the Corporation's risk framework and risk appetite, prevailing regulatory guidance and industry best practice. Models must meet certain validation criteria, including effective challenge of the model development process and a sufficient demonstration of developmental evidence incorporating a comparison of alternative theories and approaches. The RM subcommittee ensures model standards are consistent with model risk requirements and monitors the effective challenge in the model validation process across the Corporation. In addition, the relevant stakeholders must agree on any required actions or restrictions to the models and maintain a stringent monitoring process to ensure continued compliance.

For more information on the fair value of certain financial assets and liabilities, see Note 20 - Fair Value Measurements to the Consolidated Financial Statements.

## Interest Rate Risk

Interest rate risk represents exposures to instruments whose values vary with the level or volatility of interest rates. These instruments include, but are not limited to, loans, debt securities, certain trading-related assets and liabilities, deposits, borrowings and derivatives. Hedging instruments used to mitigate these risks include derivatives such as options, futures, forwards and swaps.

## Foreign Exchange Risk

Foreign exchange risk represents exposures to changes in the values of current holdings and future cash flows denominated in currencies other than the U.S. Dollar. The types of instruments exposed to this risk include investments in non-U.S. subsidiaries, foreign currency-denominated loans and securities, future cash flows in foreign currencies arising from foreign exchange transactions, foreign currency-denominated debt and various foreign exchange derivatives whose values fluctuate with changes in the level or volatility of currency exchange rates or nonU.S. interest rates. Hedging instruments used to mitigate this risk include foreign exchange options, currency swaps, futures, forwards, and foreign currency-denominated debt and deposits.

## Mortgage Risk

Mortgage risk represents exposures to changes in the values of mortgage-related instruments. The values of these instruments are sensitive to prepayment rates, mortgage rates, agency debt ratings, default, market liquidity, government participation and interest rate volatility. Our exposure to these instruments takes several forms. First, we trade and engage in market-making activities in a variety of mortgage securities including whole loans, pass-through certificates, commercial mortgages and collateralized mortgage obligations including collateralized debt obligations (CDO) using mortgages as underlying collateral. Second, we originate a variety of MBS which involves the
accumulation of mortgage-related loans in anticipation of eventual securitization. Third, we may hold positions in mortgage securities and residential mortgage loans as part of the ALM portfolio. Fourth, we create MSRs as part of our mortgage origination activities. For more information on MSRs, see Note 1 - Summary of Significant Accounting Principles and Note 23 - Mortgage Servicing Rights to the Consolidated Financial Statements. Hedging instruments used to mitigate this risk include derivatives such as options, swaps, futures and forwards as well as securities including MBS and U.S. Treasury securities. For additional information, see Mortgage Banking Risk Management on page 80.

## Equity Market Risk

Equity market risk represents exposures to securities that represent an ownership interest in a corporation in the form of domestic and foreign common stock or other equity-linked instruments. Instruments that would lead to this exposure include, but are not limited to, the following: common stock, exchangetraded funds, American Depositary Receipts, convertible bonds, listed equity options (puts and calls), OTC equity options, equity total return swaps, equity index futures and other equity derivative products. Hedging instruments used to mitigate this risk include options, futures, swaps, convertible bonds and cash positions.

## Commodity Risk

Commodity risk represents exposures to instruments traded in the petroleum, natural gas, power and metals markets. These instruments consist primarily of futures, forwards, swaps and options. Hedging instruments used to mitigate this risk include options, futures and swaps in the same or similar commodity product, as well as cash positions.

## Issuer Credit Risk

Issuer credit risk represents exposures to changes in the creditworthiness of individual issuers or groups of issuers. Our portfolio is exposed to issuer credit risk where the value of an asset may be adversely impacted by changes in the levels of credit spreads, by credit migration or by defaults. Hedging instruments used to mitigate this risk include bonds, CDS and other credit fixed-income instruments.

## Market Liquidity Risk

Market liquidity risk represents the risk that the level of expected market activity changes dramatically and, in certain cases, may even cease. This exposes us to the risk that we will not be able to transact business and execute trades in an orderly manner which may impact our results. This impact could be further exacerbated if expected hedging or pricing correlations are compromised by disproportionate demand or lack of demand for certain instruments. We utilize various risk mitigating techniques as discussed in more detail in Trading Risk Management.

## Trading Risk Management

To evaluate risk in our trading activities, we focus on the actual and potential volatility of revenues generated by individual positions as well as portfolios of positions. Various techniques and procedures are utilized to enable the most complete understanding of these risks. Quantitative measures of market risk are evaluated on a daily basis from a single position to the portfolio of the Corporation. These measures include sensitivities
of positions to various market risk factors, such as the potential impact on revenue from a one basis point change in interest rates, and statistical measures utilizing both actual and hypothetical market moves, such as VaR and stress testing. Periods of extreme market stress influence the reliability of these techniques to varying degrees. Qualitative evaluations of market risk utilize the suite of quantitative risk measures while understanding each of their respective limitations. Additionally, risk managers independently evaluate the risk of the portfolios under the current market environment and potential future environments.

VaR is a common statistic used to measure market risk as it allows the aggregation of market risk factors, including the effects of portfolio diversification. A VaR model simulates the value of a portfolio under a range of scenarios in order to generate a distribution of potential gains and losses. VaR represents the loss a portfolio is not expected to exceed more than a certain number of times per period, based on a specified holding period, confidence level and window of historical data. We use one VaR model consistently across the trading portfolios and it uses a historical simulation approach based on a three-year window of historical data. Our primary VaR statistic is equivalent to a 99 percent confidence level. This means that for a VaR with a oneday holding period, there should not be losses in excess of VaR, on average, 99 out of 100 trading days.

Within any VaR model, there are significant and numerous assumptions that will differ from company to company. The accuracy of a VaR model depends on the availability and quality of historical data for each of the risk factors in the portfolio. A VaR model may require additional modeling assumptions for new products that do not have the necessary historical market data or for less liquid positions for which accurate daily prices are not consistently available. For positions with insufficient historical data for the VaR calculation, the process for establishing an appropriate proxy is based on fundamental and statistical analysis of the new product or less liquid position. This analysis identifies reasonable alternatives that replicate both the expected volatility and correlation to other market risk factors that the missing data would be expected to experience.

VaR may not be indicative of realized revenue volatility as changes in market conditions or in the composition of the portfolio can have a material impact on the results. In particular, the historical data used for the VaR calculation might indicate higher or lower levels of portfolio diversification than will be experienced. In order for the VaR model to reflect current market conditions, we update the historical data underlying our VaR model on a weekly basis, or more frequently during periods of market stress, and regularly review the assumptions underlying the model. A relatively minor portion of risks related to our trading positions is not included in VaR. These risks are reviewed as part of our ICAAP.

Global Risk Management continually reviews, evaluates and enhances our VaR model so that it reflects the material risks in our trading portfolio. Changes to the VaR model are reviewed and approved prior to implementation and any material changes are reported to management through the appropriate management committees.

Trading limits on quantitative risk measures, including VaR, are independently set by Global Markets Risk Management and reviewed on a regular basis to ensure they remain relevant and within our overall risk appetite for market risks. Trading limits are reviewed in the context of market liquidity, volatility and strategic business priorities. Trading limits are set at both a granular level to ensure extensive coverage of risks as well as at aggregated
portfolios to account for correlations among risk factors. All trading limits are approved at least annually. Approved trading limits are stored and tracked in a centralized limits management system. Trading limit excesses are communicated to management for review. Certain quantitative market risk measures and corresponding limits have been identified as critical in the Corporation's Risk Appetite Statement. These risk appetite limits are reported on a daily basis and are approved at least annually by the ERC and the Board.

In periods of market stress, Global Markets senior leadership communicates daily to discuss losses, key risk positions and any limit excesses. As a result of this process, the businesses may selectively reduce risk.

Table 56 presents the total market-based trading portfolio VaR which is the combination of the covered positions trading portfolio and the impact from less liquid trading exposures. Covered positions are defined by regulatory standards as trading assets and liabilities, both on- and off-balance sheet, that meet a defined set of specifications. These specifications identify the most liquid trading positions which are intended to be held for a short-term horizon and where the Corporation is able to hedge the material risk elements in a two-way market. Positions in less liquid markets,
or where there are restrictions on the ability to trade the positions, typically do not qualify as covered positions. Foreign exchange and commodity positions are always considered covered positions, except for structural foreign currency positions that we choose to exclude with prior regulatory approval. In addition, Table 56 presents our fair value option portfolio, which includes the funded and unfunded exposures for which we elect the fair value option, and their corresponding hedges. The fair value option portfolio combined with the total market-based trading portfolio VaR represents the Corporation's total market-based portfolio VaR. Additionally, market risk VaR for trading activities as presented in Table 56 differs from VaR used for regulatory capital calculations due to the holding period being used. The holding period for VaR used for regulatory capital calculations is 10 days, while for the market risk VaR presented below it is one day. Both measures utilize the same process and methodology.

The total market-based portfolio VaR results in Table 56 include market risk from all business segments to which the Corporation is exposed, excluding CVA and DVA. The majority of this portfolio is within the Global Markets segment.

Table 56 presents year-end, average, high and low daily trading VaR for 2015 and 2014 using a 99 percent confidence level.

Table 56 Market Risk VaR for Trading Activities

|  | 2015 |  |  |  |  |  |  |  | 2014 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (Dollars in millions) | Year End |  | Average |  | High (1) |  | Low ${ }^{(1)}$ |  | Year <br> End |  | Average |  | High (1) |  | Low ${ }^{(1)}$ |  |
| Foreign exchange | \$ | 10 | \$ | 10 | \$ | 42 | \$ | 5 | \$ | 13 | \$ | 16 | \$ | 24 | \$ | 8 |
| Interest rate |  | 17 |  | 25 |  | 42 |  | 14 |  | 24 |  | 34 |  | 60 |  | 19 |
| Credit |  | 32 |  | 35 |  | 46 |  | 27 |  | 43 |  | 52 |  | 82 |  | 32 |
| Equity |  | 18 |  | 16 |  | 33 |  | 9 |  | 16 |  | 17 |  | 32 |  | 11 |
| Commodity |  | 4 |  | 5 |  | 8 |  | 3 |  | 8 |  | 8 |  | 10 |  | 6 |
| Portfolio diversification |  | (36) |  | (46) |  | - |  | - |  | (56) |  | (78) |  | - |  | - |
| Total covered positions trading portfolio |  | 45 |  | 45 |  | 66 |  | 26 |  | 48 |  | 49 |  | 86 |  | 33 |
| Impact from less liquid exposures |  | 3 |  | 8 |  | - |  | - |  | 7 |  | 7 |  | - |  | - |
| Total market-based trading portfolio |  | 48 |  | 53 |  | 74 |  | 31 |  | 55 |  | 56 |  | 101 |  | 38 |
| Fair value option loans |  | 35 |  | 26 |  | 36 |  | 17 |  | 35 |  | 31 |  | 40 |  | 21 |
| Fair value option hedges |  | 17 |  | 14 |  | 22 |  | 8 |  | 21 |  | 14 |  | 23 |  | 8 |
| Fair value option portfolio diversification |  | (35) |  | (26) |  | - |  | - |  | (37) |  | (24) |  | - |  | - |
| Total fair value option portfolio |  | 17 |  | 14 |  | 19 |  | 10 |  | 19 |  | 21 |  | 28 |  | 15 |
| Portfolio diversification |  | (4) |  | (6) |  | - |  | - |  | (7) |  | (12) |  | - |  | - |
| Total market-based portfolio | \$ | 61 | \$ | 61 | \$ | 85 | \$ | 41 | \$ | 67 | \$ | 65 | \$ | 120 | \$ | 44 |

${ }^{1)}$ The high and low for each portfolio may have occurred on different trading days than the high and low for the components. Therefore the impact from less liquid exposures and the amount of portfolio diversification, which is the difference between the total portfolio and the sum of the individual components, are not relevant.

The average total market-based trading portfolio VaR decreased during 2015 primarily due to reduced exposure to the credit and interest rate markets, partially offset by a reduction in portfolio diversification.

The graph below presents the daily total market-based trading portfolio VaR for 2015, corresponding to the data in Table 56.
Daily Total Market-based Trading Portfolio VaR History


Additional VaR statistics produced within the Corporation's single VaR model are provided in Table 57 at the same level of detail as in Table 56. Evaluating VaR with additional statistics allows for an increased understanding of the risks in the portfolio
as the historical market data used in the VaR calculation does not necessarily follow a predefined statistical distribution. Table 57 presents average trading VaR statistics for 99 percent and 95 percent confidence levels for 2015 and 2014.

Table 57 Average Market Risk VaR for Trading Activities - 99 percent and 95 percent VaR Statistics

| (Dollars in millions) | 2015 |  |  |  | 2014 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 99 percent |  | 95 percent |  | 99 percent |  | 95 percent |  |
| Foreign exchange | \$ | 10 | \$ | 6 | \$ | 16 | \$ | 9 |
| Interest rate |  | 25 |  | 15 |  | 34 |  | 21 |
| Credit |  | 35 |  | 20 |  | 52 |  | 26 |
| Equity |  | 16 |  | 9 |  | 17 |  | 9 |
| Commodity |  | 5 |  | 3 |  | 8 |  | 4 |
| Portfolio diversification |  | (46) |  | (31) |  | (78) |  | (43) |
| Total covered positions trading portfolio |  | 45 |  | 22 |  | 49 |  | 26 |
| Impact from less liquid exposures |  | 8 |  | 3 |  | 7 |  | 3 |
| Total market-based trading portfolio |  | 53 |  | 25 |  | 56 |  | 29 |
| Fair value option loans |  | 26 |  | 15 |  | 31 |  | 15 |
| Fair value option hedges |  | 14 |  | 9 |  | 14 |  | 9 |
| Fair value option portfolio diversification |  | (26) |  | (16) |  | (24) |  | (14) |
| Total fair value option portfolio |  | 14 |  | 8 |  | 21 |  | 10 |
| Portfolio diversification |  | (6) |  | (5) |  | (12) |  | (8) |
| Total market-based portfolio | \$ | 61 | \$ | 28 | \$ | 65 | \$ | 31 |

## Backtesting

The accuracy of the VaR methodology is evaluated by backtesting, which compares the daily VaR results, utilizing a one-day holding period, against a comparable subset of trading revenue. A backtesting excess occurs when a trading loss exceeds the VaR for the corresponding day. These excesses are evaluated to understand the positions and market moves that produced the trading loss and to ensure that the VaR methodology accurately represents those losses. As our primary VaR statistic used for backtesting is based on a 99 percent confidence level and a oneday holding period, we expect one trading loss in excess of VaR every 100 days, or between two to three trading losses in excess of VaR over the course of a year. The number of backtesting excesses observed can differ from the statistically expected number of excesses if the current level of market volatility is
materially different than the level of market volatility that existed during the three years of historical data used in the VaR calculation.

We conduct daily backtesting on our portfolios, ranging from the total market-based portfolio to individual trading areas. Additionally, we conduct daily backtesting on the VaR results used for regulatory capital calculations as well as the VaR results for key legal entities, regions and risk factors. These results are reported to senior market risk management. Senior management regularly reviews and evaluates the results of these tests.

The trading revenue used for backtesting is defined by regulatory agencies in order to most closely align with the VaR component of the regulatory capital calculation. This revenue differs from total trading-related revenue in that it excludes revenue from trading activities that either do not generate market risk or the market risk cannot be included in VaR. Some examples of the
types of revenue excluded for backtesting are fees, commissions, reserves, net interest income and intraday trading revenues.

During 2015, there were no days in which there was a backtesting excess for our total market-based portfolio VaR, utilizing a one-day holding period.

## Total Trading-related Revenue

Total trading-related revenue, excluding brokerage fees, and CVA and DVA related revenue, represents the total amount earned from trading positions, including market-based net interest income, which are taken in a diverse range of financial instruments and markets. Trading account assets and liabilities are reported at fair value. For more information on fair value, see Note 20 - Fair Value Measurements to the Consolidated Financial Statements. Tradingrelated revenues can be volatile and are largely driven by general
market conditions and customer demand. Also, trading-related revenues are dependent on the volume and type of transactions, the level of risk assumed, and the volatility of price and rate movements at any given time within the ever-changing market environment. Significant daily revenues by business are monitored and the primary drivers of these are reviewed.

The histogram below is a graphic depiction of trading volatility and illustrates the daily level of trading-related revenue for 2015 and 2014. During 2015, positive trading-related revenue was recorded for 98 percent of the trading days, of which 77 percent were daily trading gains of over $\$ 25$ million and the largest loss was $\$ 22$ million. This compares to 2014 where positive tradingrelated revenue was recorded for 95 percent of the trading days, of which 72 percent were daily trading gains of over $\$ 25$ million and the largest loss was $\$ 17$ million.


## Trading Portfolio Stress Testing

Because the very nature of a VaR model suggests results can exceed our estimates and it is dependent on a limited historical window, we also stress test our portfolio using scenario analysis. This analysis estimates the change in the value of our trading portfolio that may result from abnormal market movements.

A set of scenarios, categorized as either historical or hypothetical, are computed daily for the overall trading portfolio and individual businesses. These scenarios include shocks to underlying market risk factors that may be well beyond the shocks found in the historical data used to calculate VaR. Historical scenarios simulate the impact of the market moves that occurred during a period of extended historical market stress. Generally, a multi-week period representing the most severe point during a crisis is selected for each historical scenario. Hypothetical
scenarios provide simulations of the estimated portfolio impact from potential future market stress events. Scenarios are reviewed and updated in response to changing positions and new economic or political information. In addition, new or ad hoc scenarios are developed to address specific potential market events or particular vulnerabilities in the portfolio. The stress tests are reviewed on a regular basis and the results are presented to senior management.

Stress testing for the trading portfolio is integrated with enterprise-wide stress testing and incorporated into the limits framework. The macroeconomic scenarios used for enterprisewide stress testing purposes differ from the typical trading portfolio scenarios in that they have a longer time horizon and the results are forecasted over multiple periods for use in consolidated capital and liquidity planning. For additional information, see Managing Risk - Corporation-wide Stress Testing on page 33.

## Interest Rate Risk Management for Non-trading Activities

The following discussion presents net interest income excluding the impact of trading-related activities.

Interest rate risk represents the most significant market risk exposure to our non-trading balance sheet. Interest rate risk is measured as the potential change in net interest income caused by movements in market interest rates. Client-facing activities, primarily lending and deposit-taking, create interest rate sensitive positions on our balance sheet.

We prepare forward-looking forecasts of net interest income. The baseline forecast takes into consideration expected future business growth, ALM positioning and the direction of interest rate movements as implied by the market-based forward curve. We then measure and evaluate the impact that alternative interest rate scenarios have on the baseline forecast in order to assess interest rate sensitivity under varied conditions. The net interest income forecast is frequently updated for changing assumptions and differing outlooks based on economic trends, market conditions and business strategies. Thus, we continually monitor our balance sheet position in order to maintain an acceptable level of exposure to interest rate changes.

The interest rate scenarios that we analyze incorporate balance sheet assumptions such as loan and deposit growth and pricing, changes in funding mix, product repricing and maturity characteristics. Our overall goal is to manage interest rate risk so that movements in interest rates do not significantly adversely affect earnings and capital.

Table 58 presents the spot and 12-month forward rates used in our baseline forecasts at December 31, 2015 and 2014.

Table 58 Forward Rates

|  | December 31, 2015 |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  | Three- <br> Federal <br> month |  |  |  | 10-Year <br> Swap |
| Spot rates | $0.50 \%$ | $0.61 \%$ | $2.19 \%$ |  |  |
| 12-month forward rates | 1.00 | 1.22 | 2.39 |  |  |


|  | December 31, 2014 |  |  |
| :--- | :--- | :--- | :--- |
| Spot rates | $0.25 \%$ | $0.26 \%$ | $2.28 \%$ |
| 12-month forward rates | 0.75 | 0.91 | 2.55 |

Table 59 shows the pretax dollar impact to forecasted net interest income over the next 12 months from December 31, 2015 and 2014, resulting from instantaneous parallel and non-parallel shocks to the market-based forward curve. Periodically we evaluate the scenarios presented to ensure that they are meaningful in the context of the current rate environment. For more information on net interest income excluding the impact of trading-related activities, see page 13.

During 2015, the asset sensitivity of our balance sheet increased due to higher deposit balances and lower long-end interest rates. We continue to be asset sensitive to a parallel move in interest rates with the majority of that benefit coming from the short end of the yield curve. Additionally, higher interest rates impact the fair value of debt securities and, accordingly, for debt securities classified as AFS, may adversely affect accumulated OCl and thus capital levels under the Basel 3 capital rules. Under instantaneous upward parallel shifts, the near-term adverse impact to Basel 3 capital is reduced over time by offsetting positive
impacts to net interest income. For more information on the transition provisions of Basel 3, see Capital Management Regulatory Capital on page 35.

Table 59 Estimated Net Interest Income Excluding Trading-related Net Interest Income

| (Dollars in millions) | $\begin{array}{c}\text { Short } \\ \text { Curve Change }\end{array}$ | $\begin{array}{c}\text { Long } \\ \text { Rate (bps) }\end{array}$ | Rate (bps) |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: |$)$

The sensitivity analysis in Table 59 assumes that we take no action in response to these rate shocks and does not assume any change in other macroeconomic variables normally correlated with changes in interest rates. As part of our ALM activities, we use securities, certain residential mortgages, and interest rate and foreign exchange derivatives in managing interest rate sensitivity.

The behavior of our deposit portfolio in the baseline forecast and in alternate interest rate scenarios is a key assumption in our projected estimates of net interest income. The sensitivity analysis in Table 59 assumes no change in deposit portfolio size or mix from the baseline forecast in alternate rate environments. In higher rate scenarios, any customer activity resulting in the replacement of low-cost or noninterest-bearing deposits with higher-yielding deposits or market-based funding would reduce the Corporation's benefit in those scenarios.

## Interest Rate and Foreign Exchange Derivative Contracts

Interest rate and foreign exchange derivative contracts are utilized in our ALM activities and serve as an efficient tool to manage our interest rate and foreign exchange risk. We use derivatives to hedge the variability in cash flows or changes in fair value on our balance sheet due to interest rate and foreign exchange components. For more information on our hedging activities, see Note 2 - Derivatives to the Consolidated Financial Statements.

Our interest rate contracts are generally non-leveraged generic interest rate and foreign exchange basis swaps, options, futures and forwards. In addition, we use foreign exchange contracts, including cross-currency interest rate swaps, foreign currency futures contracts, foreign currency forward contracts and options to mitigate the foreign exchange risk associated with foreign currency-denominated assets and liabilities.

Changes to the composition of our derivatives portfolio during 2015 reflect actions taken for interest rate and foreign exchange rate risk management. The decisions to reposition our derivatives portfolio are based on the current assessment of economic and financial conditions including the interest rate and foreign currency
environments, balance sheet composition and trends, and the relative mix of our cash and derivative positions.

Table 60 presents derivatives utilized in our ALM activities including those designated as accounting and economic hedging instruments and shows the notional amount, fair value, weighted-
average receive-fixed and pay-fixed rates, expected maturity and average estimated durations of our open ALM derivatives at December 31, 2015 and 2014. These amounts do not include derivative hedges on our MSRs.

Table 60 Asset and Liability Management Interest Rate and Foreign Exchange Contracts

| (Dollars in millions, average estimated duration in years) | December 31, 2015 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fair Value |  | Expected Maturity |  |  |  |  |  |  |  |  |  |  |  |  |  | Average <br> Estimated Duration |
|  |  |  |  | Total |  | 2016 |  | 2017 |  | 2018 |  | 2019 |  | 2020 |  | ereafter |  |
| Receive-fixed interest rate swaps ${ }^{(1)}$ | \$ | 6,291 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 4.98 |
| Notional amount |  |  |  | 114,354 | \$ | 15,339 | \$ | 21,453 | \$ | 21,850 | \$ | 9,783 | \$ | 7,015 | \$ | 38,914 |  |
| Weighted-average fixed-rate |  |  |  | 3.12\% |  | 3.12\% |  | 3.64\% |  | 3.20\% |  | 2.37\% |  | 2.13\% |  | 3.16\% |  |
| Pay-fixed interest rate swaps ${ }^{(1)}$ |  | (81) |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3.98 |
| Notional amount |  |  | \$ | 12,131 | \$ | 1,025 | \$ | 1,527 | \$ | 5,668 | \$ | 600 | \$ | 51 | \$ | 3,260 |  |
| Weighted-average fixed-rate |  |  |  | 1.70\% |  | 1.65\% |  | 1.84\% |  | 1.41\% |  | 1.59\% |  | 3.64\% |  | 2.15\% |  |
| Same-currency basis swaps ${ }^{(2)}$ |  | (70) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Notional amount |  |  |  | 75,224 | \$ | 15,692 | \$ | 20,833 | \$ | 11,026 | \$ | 6,786 | \$ | 1,180 | \$ | 19,707 |  |
| Foreign exchange basis swaps ${ }^{(1,3,4)}$ |  | $(3,968)$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Notional amount |  |  |  | 144,446 |  | 25,762 |  | 27,441 |  | 19,319 |  | 12,226 |  | 10,572 |  | 49,126 |  |
| Option products ${ }^{(5)}$ |  | 57 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Notional amount (6) |  |  |  | 752 |  | 737 |  | - |  | - |  | - |  | - |  | 15 |  |
| Foreign exchange contracts ( ${ }^{(1,4,7)}$ |  | 2,345 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Notional amount (6) |  |  |  | $(25,405)$ |  | $(36,504)$ |  | 5,380 |  | $(2,228)$ |  | 2,123 |  | 52 |  | 5,772 |  |
| Futures and forward rate contracts |  | (5) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Notional amount (6) |  |  |  | 200 |  | 200 |  | - |  | - |  | - |  | - |  | - |  |
| Net ALM contracts | \$ | 4,569 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |


| (Dollars in millions, average estimated duration in years) | December 31, 2014 |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fair Value | Expected Maturity |  |  |  |  |  |  |  |  |  |  | Average Estimated Duration |
|  |  | Total | 2015 |  | 2016 |  | 2017 |  | 2018 |  | 2019 | Thereafter |  |
| Receive-fixed interest rate swaps ${ }^{(1)}$ | \$ 7,626 |  |  |  |  |  |  |  |  |  |  |  | 4.34 |
| Notional amount |  | \$ 113,766 | \$ 11,785 | \$ | 15,339 | \$ | 21,453 | \$ | 15,299 |  | 10,233 | \$ 39,657 |  |
| Weighted-average fixed-rate |  | 2.98\% | 3.56\% |  | 3.12\% |  | 3.64\% |  | 4.07\% |  | 0.49\% | 2.63\% |  |
| Pay-fixed interest rate swaps ${ }^{(1)}$ | (829) |  |  |  |  |  |  |  |  |  |  |  | 8.05 |
| Notional amount |  | \$ 14,668 | \$ 520 | \$ | 1,025 | \$ | 1,527 | \$ | 2,908 | \$ | 425 | \$ 8,263 |  |
| Weighted-average fixed-rate |  | 2.27\% | 2.30\% |  | 1.65\% |  | 1.84\% |  | 1.62\% |  | 0.09\% | 2.77\% |  |
| Same-currency basis swaps ${ }^{(2)}$ | (74) |  |  |  |  |  |  |  |  |  |  |  |  |
| Notional amount |  | \$ 94,413 | \$ 18,881 | \$ | 15,691 | \$ | 21,068 | \$ | 11,026 | \$ | 6,787 | \$ 20,960 |  |
| Foreign exchange basis swaps ${ }^{(1,3,4)}$ | $(2,352)$ |  |  |  |  |  |  |  |  |  |  |  |  |
| Notional amount |  | 161,196 | 27,629 |  | 26,118 |  | 27,026 |  | 14,255 |  | 12,359 | 53,809 |  |
| Option products ${ }^{(5)}$ | 11 |  |  |  |  |  |  |  |  |  |  |  |  |
| Notional amount (6) |  | 980 | 964 |  | - |  | - |  | - |  | - | 16 |  |
| Foreign exchange contracts (1,4,7) | 3,700 |  |  |  |  |  |  |  |  |  |  |  |  |
| Notional amount (6) |  | $(22,572)$ | $(29,931)$ |  | $(2,036)$ |  | 6,134 |  | $(2,335)$ |  | 2,359 | 3,237 |  |
| Futures and forward rate contracts | (129) |  |  |  |  |  |  |  |  |  |  |  |  |
| Notional amount (6) |  | $(14,949)$ | $(14,949)$ |  | - |  | - |  | - |  | - | - |  |
| Net ALM contracts | \$ 7,953 |  |  |  |  |  |  |  |  |  |  |  |  |

(1) Does not include basis adjustments on either fixed-rate debt issued by the Corporation or AFS debt securities, which are hedged using derivatives designated as fair value hedging instruments, that substantially offset the fair values of these derivatives.
${ }^{2)}$ At December 31, 2015 and 2014, the notional amount of same-currency basis swaps included $\$ 75.2$ billion and $\$ 94.4$ billion in both foreign currency and U.S. Dollar-denominated basis swaps in which both sides of the swap are in the same currency
${ }^{(3)}$ Foreign exchange basis swaps consisted of cross-currency variable interest rate swaps used separately or in conjunction with receive-fixed interest rate swaps.
${ }^{4)}$ Does not include foreign currency translation adjustments on certain non-U.S. debt issued by the Corporation that substantially offset the fair values of these derivatives.
${ }^{(5)}$ The notional amount of option products of $\$ 752$ million at December 31,2015 was comprised of $\$ 737$ million in foreign exchange options and $\$ 15$ million in purchased caps/floors. Option products of $\$ 980$ million at December 31, 2014 were comprised of $\$ 974$ million in foreign exchange options, $\$ 16$ million in purchased caps/floors and $\$(10)$ million in swaptions.
${ }^{(6)}$ Reflects the net of long and short positions. Amounts shown as negative reflect a net short position.
7) The notional amount of foreign exchange contracts of $\$(25.4)$ billion at December 31, 2015 was comprised of $\$ 21.3$ billion in foreign currency-denominated and cross-currency receive-fixed swaps, $\$(40.3)$ billion in net foreign currency forward rate contracts, $\$(7.6)$ billion in foreign currency-denominated pay-fixed swaps and $\$ 1.2$ billion in net foreign currency futures contracts. Foreign exchange contracts of $\$(22.6)$ billion at December 31, 2014 were comprised of $\$ 21.0$ billion in foreign currency-denominated and cross-currency receive-fixed swaps, $\$(36.4)$ billion in net foreign currency forward rate contracts, $\$(8.3)$ billion in foreign currency-denominated pay-fixed swaps and $\$ 1.1$ billion in foreign currency futures contracts.

We use interest rate derivative instruments to hedge the variability in the cash flows of our assets and liabilities and other forecasted transactions (collectively referred to as cash flow hedges). The net losses on both open and terminated cash flow hedge derivative instruments recorded in accumulated OCI were $\$ 1.7$ billion and $\$ 2.7$ billion, on a pretax basis, at December 31, 2015 and 2014. These net losses are expected to be reclassified into earnings in the same period as the hedged cash flows affect earnings and will decrease income or increase expense on the respective hedged cash flows. Assuming no change in open cash flow derivative hedge positions and no changes in prices or interest rates beyond what is implied in forward yield curves at December 31, 2015, the pretax net losses are expected to be reclassified into earnings as follows: $\$ 563$ million, or 33 percent within the next year, 37 percent in years two through five, and 20 percent in years six through ten, with the remaining 10 percent thereafter. For more information on derivatives designated as cash flow hedges, see Note 2 - Derivatives to the Consolidated Financial Statements.

We hedge our net investment in non-U.S. operations determined to have functional currencies other than the U.S. Dollar using forward foreign exchange contracts that typically settle in less than 180 days, cross-currency basis swaps and foreign exchange options. We recorded net after-tax losses on derivatives in accumulated OCl associated with net investment hedges which were offset by gains on our net investments in consolidated nonU.S. entities at December 31, 2015.

## Mortgage Banking Risk Management

We originate, fund and service mortgage loans, which subject us to credit, liquidity and interest rate risks, among others. We determine whether loans will be HFI or held-for-sale at the time of commitment and manage credit and liquidity risks by selling or securitizing a portion of the loans we originate.

Interest rate risk and market risk can be substantial in the mortgage business. Fluctuations in interest rates drive consumer demand for new mortgages and the level of refinancing activity, which in turn affects total origination and servicing income. Hedging the various sources of interest rate risk in mortgage banking is a complex process that requires complex modeling and ongoing monitoring. Typically, an increase in mortgage interest rates will lead to a decrease in mortgage originations and related fees. IRLCs and the related residential first mortgage LHFS are subject to interest rate risk between the date of the IRLC and the date the loans are sold to the secondary market, as an increase in mortgage interest rates will typically lead to a decrease in the value of these instruments.

MSRs are nonfinancial assets created when the underlying mortgage loan is sold to investors and we retain the right to service the loan. Typically, an increase in mortgage rates will lead to an increase in the value of the MSRs driven by lower prepayment expectations. This increase in value from increases in mortgage rates is opposite of, and therefore offsets, the risk described for IRLCs and LHFS. Because the interest rate risks of these two hedged items offset, we combine them into one overall hedged item with one combined economic hedge portfolio.

Interest rate and certain market risks of IRLCs and residential mortgage LHFS are economically hedged in combination with MSRs. To hedge these combined assets, we use certain derivatives such as interest rate options, interest rate swaps, forward sale commitments, eurodollar and U.S. Treasury futures,
and mortgage TBAs, as well as other securities including agency MBS, principal-only and interest-only MBS and U.S. Treasury securities. During 2015 and 2014, we recorded gains in mortgage banking income of $\$ 360$ million and $\$ 357$ million related to the change in fair value of the derivative contracts and other securities used to hedge the market risks of the MSRs, IRLCs and LHFS, net of gains and losses due to changes in fair value of these hedged items. For more information on MSRs, see Note 23 - Mortgage Servicing Rights to the Consolidated Financial Statements and for more information on mortgage banking income, see Consumer Banking on page 16.

## Compliance Risk Management

Compliance risk is the risk of legal or regulatory sanctions, material financial loss or damage to the reputation of the Corporation arising from the failure of the Corporation to comply with the requirements of applicable laws, rules, regulations and related self-regulatory organizations' standards and codes of conduct (collectively, applicable laws, rules and regulations). Global Compliance independently assesses compliance risk, and evaluates FLUs and control functions for adherence to applicable laws, rules and regulations, including identifying compliance issues and risks, performing monitoring and independent testing, and reporting on the state of compliance activities across the Corporation. Additionally, Global Compliance works with FLUs and control functions so that day-to-day activities operate in a compliant manner. For more information on FLUs and control functions, see Managing Risk on page 30.

The Corporation's approach to the management of compliance risk is described in the Global Compliance - Enterprise Policy, which outlines the requirements of the Corporation's global compliance program, and defines roles and responsibilities related to the implementation, execution and management of the compliance program by Global Compliance. The requirements work together to drive a comprehensive risk-based approach for the proactive identification, management and escalation of compliance risks throughout the Corporation.

The Global Compliance - Enterprise Policy sets the requirements for reporting compliance risk information to executive management as well as the Board or appropriate Boardlevel committees with an outline for conducting objective independent oversight of the Corporation's compliance risk management activities. The Board provides oversight of compliance risk through its Audit Committee and ERC.

## Operational Risk Management

The Corporation defines operational risk as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. Operational risk may occur anywhere in the Corporation, including third-party business processes, and is not limited to operations functions. Effects may extend beyond financial losses and may result in reputational risk impacts. Operational risk includes legal risk. Successful operational risk management is particularly important to diversified financial services companies because of the nature, volume and complexity of the financial services business. Operational risk is a significant component in the calculation of total risk-weighted assets used in the Basel 3 capital calculation under the Advanced approaches. For more information on Basel 3 Advanced approaches, see Capital Management - Advanced Approaches on page 36.

We approach operational risk management from two perspectives within the structure of the Corporation: (1) at the enterprise level to provide independent, integrated management of operational risk across the organization, and (2) at the business and control function levels to address operational risk in revenue producing and non-revenue producing units. The Operational Risk Management Program addresses the overarching processes for identifying, measuring, monitoring and controlling operational risk, and reporting operational risk information to management and the Board. A sound internal governance structure enhances the effectiveness of the Corporation's Operational Risk Management Program and is accomplished at the enterprise level through formal oversight by the Board, the ERC, the CRO and a variety of management committees and risk oversight groups aligned to the Corporation's overall risk governance framework and practices. Of these, the MRC oversees the Corporation's policies and processes for sound operational risk management. The MRC also serves as an escalation point for critical operational risk matters within the Corporation. The MRC reports operational risk activities to the ERC. The independent operational risk management teams oversee the businesses and control functions to monitor adherence to the Operational Risk Management Program and advise and challenge operational risk exposures

Within the Global Risk Management organization, the Enterprise Operational Risk team develops and guides the strategies, enterprise-wide policies, practices, controls and monitoring tools for assessing and managing operational risks across the organization. The Enterprise Operational Risk team reports results to businesses, control functions, senior management, management committees, the ERC and the Board.

The businesses and control functions are responsible for assessing, monitoring and managing all the risks within their units, including operational risks. In addition to enterprise risk management tools such as loss reporting, scenario analysis and RCSAs, operational risk executives, working in conjunction with senior business executives, have developed key tools to help identify, measure, monitor and control risk in each business and control function. Examples of these include personnel management practices; data management, data quality controls and related processes; fraud management units; cybersecurity controls, processes and systems; transaction processing, monitoring and analysis; business recovery planning; and new product introduction processes. The business and control functions are also responsible for consistently implementing and monitoring adherence to corporate practices.

Business and control function management uses the enterprise RCSA process to capture the identification and assessment of operational risk exposures and evaluate the status of risk and control issues including risk mitigation plans, as appropriate. The goals of this process are to assess changing market and business conditions, evaluate key risks impacting each business and control function, and assess the controls in place to mitigate the risks. Key operational risk indicators have been developed and are used to assist in identifying trends and issues on an enterprise, business and control function level. Independent review and challenge to the Corporation's overall operational risk management framework is performed by the Corporate Operational Risk Program Adherence Team and reported through the operational risk governance committees and management routines.

Where appropriate, insurance policies are purchased to mitigate the impact of operational losses. These insurance
policies are explicitly incorporated in the structural features of operational risk evaluation. As insurance recoveries, especially given recent market events, are subject to legal and financial uncertainty, the inclusion of these insurance policies is subject to reductions in their expected mitigating benefits.

## Reputational Risk Management

Reputational risk is the risk that negative perceptions of the Corporation's conduct or business practices will adversely affect its profitability or operations through an inability to establish new or maintain existing customer/client relationships. Reputational risk may result from many of the Corporation's activities, including those related to the management of our strategic, operational, compliance and credit risks.

The Corporation manages reputational risk through established policies and controls in its businesses and risk management processes to mitigate reputational risks in a timely manner and through proactive monitoring and identification of potential reputational risk events. The Corporation has processes and procedures in place to respond to events that give rise to reputational risk, including educating individuals and organizations that influence public opinion, external communication strategies to mitigate the risk, and informing key stakeholders of potential reputational risks.

The Corporation's organization and governance structure provides oversight of reputational risks, and key risk indicators are reported regularly and directly to management and the ERC, which provides primary oversight of reputational risk. In addition, each FLU has a committee, which includes representatives from Compliance, Legal and Risk, that is responsible for the oversight of reputational risk. Such committees' oversight includes providing approval for business activities that present elevated levels of reputational risks.

## Complex Accounting Estimates

Our significant accounting principles, as described in Note 1 Summary of Significant Accounting Principles to the Consolidated Financial Statements, are essential in understanding the MD\&A. Many of our significant accounting principles require complex judgments to estimate the values of assets and liabilities. We have procedures and processes in place to facilitate making these judgments.

The more judgmental estimates are summarized in the following discussion. We have identified and described the development of the variables most important in the estimation processes that involve mathematical models to derive the estimates. In many cases, there are numerous alternative judgments that could be used in the process of determining the inputs to the models. Where alternatives exist, we have used the factors that we believe represent the most reasonable value in developing the inputs. Actual performance that differs from our estimates of the key variables could impact our results of operations. Separate from the possible future impact to our results of operations from input and model variables, the value of our lending portfolio and marketsensitive assets and liabilities may change subsequent to the balance sheet date, often significantly, due to the nature and magnitude of future credit and market conditions. Such credit and market conditions may change quickly and in unforeseen ways and the resulting volatility could have a significant, negative effect on future operating results. These fluctuations would not be indicative of deficiencies in our models or inputs.

## Allowance for Credit Losses

The allowance for credit losses, which includes the allowance for loan and lease losses and the reserve for unfunded lending commitments, represents management's estimate of probable losses inherent in the Corporation's loan portfolio excluding those loans accounted for under the fair value option. Our process for determining the allowance for credit losses is discussed in Note 1 - Summary of Significant Accounting Principles to the Consolidated Financial Statements. We evaluate our allowance at the portfolio segment level and our portfolio segments are Consumer Real Estate, Credit Card and Other Consumer, and Commercial. Due to the variability in the drivers of the assumptions used in this process, estimates of the portfolio's inherent risks and overall collectability change with changes in the economy, individual industries, countries, and borrowers' ability and willingness to repay their obligations. The degree to which any particular assumption affects the allowance for credit losses depends on the severity of the change and its relationship to the other assumptions.

Key judgments used in determining the allowance for credit losses include risk ratings for pools of commercial loans and leases, market and collateral values and discount rates for individually evaluated loans, product type classifications for consumer and commercial loans and leases, loss rates used for consumer and commercial loans and leases, adjustments made to address current events and conditions (e.g., the recent sharp drop in oil prices), considerations regarding domestic and global economic uncertainty, and overall credit conditions.

Our estimate for the allowance for loan and lease losses is sensitive to the loss rates and expected cash flows from our Consumer Real Estate and Credit Card and Other Consumer portfolio segments, as well as our U.S. small business commercial card portfolio within the Commercial portfolio segment. For each one-percent increase in the loss rates on loans collectively evaluated for impairment in our Consumer Real Estate portfolio segment, excluding PCl loans, coupled with a one-percent decrease in the discounted cash flows on those loans individually evaluated for impairment within this portfolio segment, the allowance for loan and lease losses at December 31, 2015 would have increased by $\$ 71$ million. PCl loans within our Consumer Real Estate portfolio segment are initially recorded at fair value. Applicable accounting guidance prohibits carry-over or creation of valuation allowances in the initial accounting. However, subsequent decreases in the expected cash flows from the date of acquisition result in a charge to the provision for credit losses and a corresponding increase to the allowance for loan and lease losses. We subject our PCI portfolio to stress scenarios to evaluate the potential impact given certain events. A one-percent decrease in the expected cash flows could result in a $\$ 151$ million impairment of the portfolio. For each one-percent increase in the loss rates on loans collectively evaluated for impairment within our Credit Card and Other Consumer portfolio segment and U.S. small business commercial card portfolio, coupled with a onepercent decrease in the expected cash flows on those loans individually evaluated for impairment within the Credit Card and Other Consumer portfolio segment and the U.S. small business commercial card portfolio, the allowance for loan and lease losses at December 31, 2015 would have increased by $\$ 38$ million.

Our allowance for loan and lease losses is sensitive to the risk ratings assigned to loans and leases within the Commercial portfolio segment (excluding the U.S. small business commercial card portfolio). Assuming a downgrade of one level in the internal
risk ratings for commercial loans and leases, except loans and leases already risk-rated Doubtful as defined by regulatory authorities, the allowance for loan and lease losses would have increased by $\$ 3.2$ billion at December 31, 2015.

The allowance for loan and lease losses as a percentage of total loans and leases at December 31, 2015 was 1.37 percent and these hypothetical increases in the allowance would raise the ratio to 1.75 percent.

These sensitivity analyses do not represent management's expectations of the deterioration in risk ratings or the increases in loss rates but are provided as hypothetical scenarios to assess the sensitivity of the allowance for loan and lease losses to changes in key inputs. We believe the risk ratings and loss severities currently in use are appropriate and that the probability of the alternative scenarios outlined above occurring within a short period of time is remote.

The process of determining the level of the allowance for credit losses requires a high degree of judgment. It is possible that others, given the same information, may at any point in time reach different reasonable conclusions.

For more information on the FASB's proposed standard on accounting for credit losses, see Note 1 - Summary of Significant Accounting Principles to the Consolidated Financial Statements.

## Mortgage Servicing Rights

MSRs are nonfinancial assets that are created when a mortgage loan is sold and we retain the right to service the loan. We account for consumer MSRs, including residential mortgage and home equity MSRs, at fair value with changes in fair value primarily recorded in mortgage banking income in the Consolidated Statement of Income.

We determine the fair value of our consumer MSRs using a valuation model that calculates the present value of estimated future net servicing income. The model incorporates key economic assumptions including estimates of prepayment rates and resultant weighted-average lives of the MSRs, and the optionadjusted spread levels. These variables can, and generally do, change from quarter to quarter as market conditions and projected interest rates change. These assumptions are subjective in nature and changes in these assumptions could materially affect our operating results. For example, increasing the prepayment rate assumption used in the valuation of our consumer MSRs by 10 percent while keeping all other assumptions unchanged could have resulted in an estimated decrease of $\$ 163$ million in both MSRs and mortgage banking income for 2015. This impact does not reflect any hedge strategies that may be undertaken to mitigate such risk.

We manage potential changes in the fair value of MSRs through a comprehensive risk management program. The intent is to mitigate the effects of changes in the fair value of MSRs through the use of risk management instruments. To reduce the sensitivity of earnings to interest rate and market value fluctuations, securities including MBS and U.S. Treasury securities, as well as certain derivatives such as options and interest rate swaps, may be used to hedge certain market risks of the MSRs, but are not designated as accounting hedges. These instruments are carried at fair value with changes in fair value primarily recognized in mortgage banking income. For additional information, see Mortgage Banking Risk Management on page 80.

For more information on MSRs, including the sensitivity of weighted-average lives and the fair value of MSRs to changes in modeled assumptions, see Note 23 - Mortgage Servicing Rights to the Consolidated Financial Statements.

## Fair Value of Financial Instruments

We classify the fair values of financial instruments based on the fair value hierarchy established under applicable accounting guidance which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. Applicable accounting guidance establishes three levels of inputs used to measure fair value. We carry trading account assets and liabilities, derivative assets and liabilities, AFS debt and equity securities, other debt securities, consumer MSRs and certain other assets at fair value. Also, we account for certain loans and loan commitments, LHFS, short-term borrowings, securities financing agreements, asset-backed secured financings, long-term deposits and long-term debt under the fair value option.

The fair values of assets and liabilities may include adjustments, such as market liquidity and credit quality, where appropriate. Valuations of products using models or other techniques are sensitive to assumptions used for the significant inputs. Where market data is available, the inputs used for valuation reflect that information as of our valuation date. Inputs to valuation models are considered unobservable if they are supported by little or no market activity. In periods of extreme volatility, lessened liquidity or in illiquid markets, there may be more variability in market pricing or a lack of market data to use in the valuation process. In keeping with the prudent application of estimates and management judgment in determining the fair value of assets and liabilities, we have in place various processes and controls that include: a model validation policy that requires review and approval of quantitative models used for deal pricing, financial statement fair value determination and risk quantification; a trading product valuation policy that requires verification of all traded product valuations; and a periodic review
and substantiation of daily profit and loss reporting for all traded products. Primarily through validation controls, we utilize both broker and pricing service inputs which can and do include both market-observable and internally-modeled values and/or valuation inputs. Our reliance on this information is affected by our understanding of how the broker and/or pricing service develops its data with a higher degree of reliance applied to those that are more directly observable and lesser reliance applied to those developed through their own internal modeling. Similarly, broker quotes that are executable are given a higher level of reliance than indicative broker quotes, which are not executable. These processes and controls are performed independently of the business. For additional information, see Note 20 - Fair Value Measurements and Note 21 - Fair Value Option to the Consolidated Financial Statements.

In 2014, we implemented an FVA into valuation estimates primarily to include funding costs on uncollateralized derivatives and derivatives where we are not permitted to use the collateral received. This change resulted in a pretax net FVA charge of \$497 million at the time of implementation. Significant judgment is required in modeling expected exposure profiles and in discounting for the funding risk premium inherent in these derivatives.

## Level 3 Assets and Liabilities

Financial assets and liabilities where values are based on valuation techniques that require inputs that are both unobservable and are significant to the overall fair value measurement are classified as Level 3 under the fair value hierarchy established in applicable accounting guidance. The Level 3 financial assets and liabilities include certain loans, MBS, ABS, CDOs, CLOs and structured liabilities, highly structured, complex or long-dated derivative contracts and consumer MSRs. The fair value of these Level 3 financial assets and liabilities is determined using pricing models, discounted cash flow methodologies or similar techniques for which the determination of fair value requires significant management judgment or estimation.

Table 61 Recurring Level 3 Asset and Liability Summary

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  |  |  | 2014 |  |  |  |
|  | Level 3 Fair Value |  | As a \% of Total Level 3 Assets | As a \% of Total Assets | Level 3 <br> Fair Value |  | As a \% of Total Level 3 Assets | As a \% of Total Assets |
| Trading account assets | \$ | 5,634 | 31.13\% | 0.26\% | \$ | 6,259 | 28.12\% | 0.30\% |
| Derivative assets |  | 5,134 | 28.37 | 0.24 |  | 6,851 | 30.77 | 0.33 |
| AFS debt securities |  | 1,432 | 7.91 | 0.07 |  | 2,555 | 11.48 | 0.12 |
| Loans and leases |  | 1,620 | 8.95 | 0.08 |  | 1,983 | 8.91 | 0.09 |
| Mortgage servicing rights |  | 3,087 | 17.06 | 0.14 |  | 3,530 | 15.86 | 0.17 |
| All other Level 3 assets at fair value |  | 1,191 | 6.58 | 0.05 |  | 1,084 | 4.86 | 0.05 |
| Total Level 3 assets at fair value ${ }^{(1)}$ | \$ | 18,098 | 100.00\% | 0.84\% | \$ | 22,262 | 100.00\% | 1.06\% |
|  |  | vel 3 Value | As a \% of Total Level 3 Liabilities | As a \% of Total Liabilities |  | vel 3 Value | As a \% of Total Level 3 Liabilities | As a \% of Total Liabilities |
| Derivative liabilities | \$ | 5,575 | 74.50\% | 0.30\% | \$ | 7,771 | 76.34\% | 0.42\% |
| Long-term debt |  | 1,513 | 20.22 | 0.08 |  | 2,362 | 23.20 | 0.13 |
| All other Level 3 liabilities at fair value |  | 395 | 5.28 | 0.02 |  | 46 | 0.46 | - |
| Total Level 3 liabilities at fair value ${ }^{(1)}$ | \$ | 7,483 | 100.00\% | 0.40\% | \$ | 10,179 | 100.00\% | 0.55\% |

[^2]Level 3 financial instruments may be hedged with derivatives classified as Level 1 or 2; therefore, gains or losses associated with Level 3 financial instruments may be offset by gains or losses associated with financial instruments classified in other levels of the fair value hierarchy. The Level 3 gains and losses recorded in earnings did not have a significant impact on our liquidity or capital. We conduct a review of our fair value hierarchy classifications on a quarterly basis. Transfers into or out of Level 3 are made if the significant inputs used in the financial models measuring the fair values of the assets and liabilities became unobservable or observable, respectively, in the current marketplace. These transfers are considered to be effective as of the beginning of the quarter in which they occur. For more information on the significant transfers into and out of Level 3 during 2015 and 2014, see Note 20 - Fair Value Measurements to the Consolidated Financial Statements.

## Accrued Income Taxes and Deferred Tax Assets

Accrued income taxes, reported as a component of either other assets or accrued expenses and other liabilities on the Consolidated Balance Sheet, represent the net amount of current income taxes we expect to pay to or receive from various taxing jurisdictions attributable to our operations to date. We currently file income tax returns in more than 100 jurisdictions and consider many factors, including statutory, judicial and regulatory guidance, in estimating the appropriate accrued income taxes for each jurisdiction.

Consistent with the applicable accounting guidance, we monitor relevant tax authorities and change our estimate of accrued income taxes due to changes in income tax laws and their interpretation by the courts and regulatory authorities. These revisions of our estimate of accrued income taxes, which also may result from our income tax planning and from the resolution of income tax controversies, may be material to our operating results for any given period.

Net deferred tax assets, reported as a component of other assets on the Consolidated Balance Sheet, represent the net decrease in taxes expected to be paid in the future because of net operating loss (NOL) and tax credit carryforwards and because of future reversals of temporary differences in the bases of assets and liabilities as measured by tax laws and their bases as reported in the financial statements. NOL and tax credit carryforwards result in reductions to future tax liabilities, and many of these attributes can expire if not utilized within certain periods. We consider the need for valuation allowances to reduce net deferred tax assets to the amounts that we estimate are more-likely-than-not to be realized.

While we have established valuation allowances for certain state and non-U.S. deferred tax assets, we have concluded that no valuation allowance was necessary with respect to nearly all U.S. federal and U.K. deferred tax assets, including NOL and tax credit carryforwards. The majority of U.K. net deferred tax assets, which consist primarily of NOLs, are expected to be realized by certain subsidiaries over an extended number of years. Management's conclusion is supported by financial results and forecasts, the reorganization of certain business activities and the indefinite period to carry forward NOLs. However, significant changes to our estimates, such as changes that would be caused by substantial and prolonged worsening of the condition of Europe's capital markets, or to applicable tax laws, such as laws affecting the realizability of NOLs or other deferred tax assets,
could lead management to reassess its U.K. valuation allowance conclusions. See Note 19 - Income Taxes to the Consolidated Financial Statements for a table of significant tax attributes and additional information. For more information, see Item 1A. Risk Factors of the Corporation's 2015 Annual Report on Form 10-K.

## Goodwill and Intangible Assets

## Background

The nature of and accounting for goodwill and intangible assets are discussed in Note 1 - Summary of Significant Accounting Principles and Note 8 - Goodwill and Intangible Assets to the Consolidated Financial Statements. Goodwill is reviewed for potential impairment at the reporting unit level on an annual basis, which for the Corporation is as of June 30, and in interim periods if events or circumstances indicate a potential impairment. A reporting unit is an operating segment or one level below. As reporting units are determined after an acquisition or evolve with changes in business strategy, goodwill is assigned to reporting units and it no longer retains its association with a particular acquisition. All of the revenue streams and related activities of a reporting unit, whether acquired or organic, are available to support the value of the goodwill.

Effective January 1, 2015, the Corporation changed its basis of presentation related to its business segments. The realignment triggered a test for goodwill impairment, which was performed both immediately before and after the realignment. In performing the goodwill impairment test, the Corporation compared the fair value of the affected reporting units with their carrying value as measured by allocated equity. The fair value of the affected reporting units exceeded their carrying value and, accordingly, no goodwill impairment resulted from the realignment.

## 2015 Annual Impairment Test

Estimating the fair value of reporting units is a subjective process that involves the use of estimates and judgments, particularly related to cash flows, the appropriate discount rates and an applicable control premium. We determined the fair values of the reporting units using a combination of valuation techniques consistent with the market approach and the income approach and also utilized independent valuation specialists.

The market approach we used estimates the fair value of the individual reporting units by incorporating any combination of the tangible capital, book capital and earnings multiples from comparable publicly-traded companies in industries similar to the reporting unit. The relative weight assigned to these multiples varies among the reporting units based on qualitative and quantitative characteristics, primarily the size and relative profitability of the reporting unit as compared to the comparable publicly-traded companies. Since the fair values determined under the market approach are representative of a noncontrolling interest, we added a control premium to arrive at the reporting units' estimated fair values on a controlling basis.

For purposes of the income approach, we calculated discounted cash flows by taking the net present value of estimated future cash flows and an appropriate terminal value. Our discounted cash flow analysis employs a capital asset pricing model in estimating the discount rate (i.e., cost of equity financing) for each reporting unit. The inputs to this model include the riskfree rate of return, beta, which is a measure of the level of nondiversifiable risk associated with comparable companies for each
specific reporting unit, market equity risk premium and in certain cases an unsystematic (company-specific) risk factor. The unsystematic risk factor is the input that specifically addresses uncertainty related to our projections of earnings and growth, including the uncertainty related to loss expectations. We utilized discount rates that we believe adequately reflect the risk and uncertainty in the financial markets generally and specifically in our internally developed forecasts. We estimated expected rates of equity returns based on historical market returns and risk/return rates for industries similar to each reporting unit. We use our internal forecasts to estimate future cash flows and actual results may differ from forecasted results.

We completed our annual goodwill impairment test as of June 30,2015 for all of our reporting units that had goodwill. In performing the first step of the annual goodwill impairment analysis, we compared the fair value of each reporting unit to its estimated carrying value as measured by allocated equity, which includes goodwill. We also evaluated the U.K. Card business within All Other, as the U.K. Card business comprises substantially all of the goodwill included in All Other. To determine fair value, we utilized a combination of the market approach and the income approach. Under the market approach, we compared earnings and equity multiples of the individual reporting units to multiples of public companies comparable to the individual reporting units. The control premium used in the June 30, 2015 annual goodwill impairment test was 30 percent, based upon observed comparable premiums paid for change in control transactions for financial institutions, for all reporting units. The discount rates used in the June 30, 2015 annual goodwill impairment test ranged from 10.2 percent to 13.7 percent depending on the relative risk of a reporting unit. Growth rates developed by management for individual revenue and expense items in each reporting unit ranged from negative 3.5 percent to positive 8.0 percent.

The Corporation's market capitalization remained below our recorded book value during 2015 . As none of our reporting units are publicly-traded, individual reporting unit fair value determinations may not directly correlate to the Corporation's market capitalization. We considered the comparison of the aggregate fair value of the reporting units with assigned goodwill to the Corporation's market capitalization as of June 30, 2015. Although we believe it is reasonable to conclude that market capitalization could be an indicator of fair value over time, we do not believe that our current market capitalization would reflect the aggregate fair value of our individual reporting units with assigned goodwill, as reporting units with no assigned goodwill have not been valued and are excluded from the comparison and our market capitalization does not include consideration of individual reporting unit control premiums. Although the individual reporting units have considered the impact of recent regulatory changes in their forecasts and valuations, overall regulatory and market uncertainties persist that we believe further impact the Corporation's stock price.

Based on the results of step one of the annual goodwill impairment test, we determined that step two was not required for any of the reporting units as their fair value exceeded their carrying value indicating there was no impairment.

## 2014 Annual Impairment Test

We completed our annual goodwill impairment test as of June 30, 2014 for all of our reporting units that had goodwill. We also evaluated the U.K. Card business within All Other, as the U.K. Card business comprises the majority of the goodwill included in All Other.

Based on the results of step one of the annual goodwill impairment test, we determined that step two was not required for any of the reporting units as their fair value exceeded their carrying value indicating there was no impairment.

## Representations and Warranties Liability

The methodology used to estimate the liability for obligations under representations and warranties related to transfers of residential mortgage loans is a function of the type of representations and warranties provided in the sales contract and considers a variety of factors. Depending upon the counterparty, these factors include actual defaults, estimated future defaults, historical loss experience, estimated home prices, other economic conditions, estimated probability that we will receive a repurchase request, number of payments made by the borrower prior to default and estimated probability that we will be required to repurchase a loan. It also considers other relevant facts and circumstances, such as bulk settlements and identity of the counterparty or type of counterparty, as appropriate. The estimate of the liability for obligations under representations and warranties is based upon currently available information, significant judgment, and a number of factors, including those set forth above, that are subject to change. Changes to any one of these factors could significantly impact the estimate of our liability.

The representations and warranties provision may vary significantly each period as the methodology used to estimate the expense continues to be refined based on the level and type of repurchase requests presented, defects identified, the latest experience gained on repurchase requests and other relevant facts and circumstances. The estimate of the liability for representations and warranties is sensitive to future defaults, loss severity and the net repurchase rate. An assumed simultaneous increase or decrease of 10 percent in estimated future defaults, loss severity and the net repurchase rate would result in an increase or decrease of approximately $\$ 300$ million in the representations and warranties liability as of December 31, 2015. These sensitivities are hypothetical and are intended to provide an indication of the impact of a significant change in these key assumptions on the representations and warranties liability. In reality, changes in one assumption may result in changes in other assumptions, which may or may not counteract the sensitivity.

For more information on representations and warranties exposure and the corresponding estimated range of possible loss, see Off-Balance Sheet Arrangements and Contractual Obligations - Representations and Warranties on page 27, as well as Note 7 - Representations and Warranties Obligations and Corporate Guarantees and Note 12 - Commitments and Contingencies to the Consolidated Financial Statements.

## Litigation Reserve

For a limited number of the matters disclosed in Note 12 Commitments and Contingencies to the Consolidated Financial Statements for which a loss is probable or reasonably possible in future periods, whether in excess of a related accrued liability or where there is no accrued liability, we are able to estimate a range of possible loss. In determining whether it is possible to provide an estimate of loss or range of possible loss, the Corporation reviews and evaluates its material litigation and regulatory matters on an ongoing basis, in conjunction with any outside counsel handling the matter, in light of potentially relevant factual and legal developments. These may include information learned through the discovery process, rulings on dispositive motions, settlement discussions, and other rulings by courts, arbitrators or others. In cases in which the Corporation possesses sufficient information to develop an estimate of loss or range of possible loss, that estimate is aggregated and disclosed in Note 12 - Commitments and Contingencies to the Consolidated Financial Statements. For other disclosed matters for which a loss is probable or reasonably possible, such an estimate is not possible. Those matters for which an estimate is not possible are not included within this estimated range. Therefore, the estimated range of possible loss represents what we believe to be an estimate of possible loss only for certain matters meeting these criteria. It does not represent the Corporation's maximum loss exposure. Information is provided in Note 12 - Commitments and Contingencies to the Consolidated Financial Statements regarding the nature of all of these contingencies and, where specified, the amount of the claim associated with these loss contingencies.

## Consolidation and Accounting for Variable Interest Entities

In accordance with applicable accounting guidance, an entity that has a controlling financial interest in a variable interest entity (VIE) is referred to as the primary beneficiary and consolidates the VIE. The Corporation is deemed to have a controlling financial interest and is the primary beneficiary of a VIE if it has both the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and an obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE.

Determining whether an entity has a controlling financial interest in a VIE requires significant judgment. An entity must assess the purpose and design of the VIE, including explicit and implicit contractual arrangements, and the entity's involvement in both the design of the VIE and its ongoing activities. The entity must then determine which activities have the most significant impact on the economic performance of the VIE and whether the entity has the power to direct such activities. For VIEs that hold financial assets, the party that services the assets or makes investment management decisions may have the power to direct the most significant activities of a VIE. Alternatively, a third party that has the unilateral right to replace the servicer or investment manager or to liquidate the VIE may be deemed to be the party with power. If there are no significant ongoing activities, the party that was responsible for the design of the VIE may be deemed to
have power. If the entity determines that it has the power to direct the most significant activities of the VIE, then the entity must determine if it has either an obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE. Such economic interests may include investments in debt or equity instruments issued by the VIE, liquidity commitments, and explicit and implicit guarantees.

On a quarterly basis, we reassess whether we have a controlling financial interest and are the primary beneficiary of a VIE. The quarterly reassessment process considers whether we have acquired or divested the power to direct the activities of the VIE through changes in governing documents or other circumstances. The reassessment also considers whether we have acquired or disposed of a financial interest that could be significant to the VIE, or whether an interest in the VIE has become significant or is no longer significant. The consolidation status of the VIEs with which we are involved may change as a result of such reassessments. Changes in consolidation status are applied prospectively, with assets and liabilities of a newly consolidated VIE initially recorded at fair value. A gain or loss may be recognized upon deconsolidation of a VIE depending on the carrying values of deconsolidated assets and liabilities compared to the fair value of retained interests and ongoing contractual arrangements.

## 2014 Compared to 2013

The following discussion and analysis provide a comparison of our results of operations for 2014 and 2013. This discussion should be read in conjunction with the Consolidated Financial Statements and related Notes. Tables 8 and 9 contain financial data to supplement this discussion.

## Overview

## Net Income

Net income was $\$ 4.8$ billion in 2014 compared to $\$ 11.4$ billion in 2013. Including preferred stock dividends, net income applicable to common shareholders was $\$ 3.8$ billion, or $\$ 0.36$ per diluted share in 2014 and $\$ 10.1$ billion, or $\$ 0.90$ per diluted share in 2013.

## Net Interest Income

Net interest income on an FTE basis decreased $\$ 2.5$ billion to $\$ 40.6$ billion in 2014 compared to 2013 . The net interest yield on an FTE basis decreased 13 bps to 2.24 percent in 2014. These declines were primarily due to the acceleration of market-related premium amortization on debt securities as the decline in longterm interest rates shortened the expected lives of the securities. Also contributing to these declines were lower loan yields and consumer loan balances, lower net interest income from the ALM portfolio and a decrease in trading-related net interest income. Market-related premium amortization was an expense of $\$ 1.2$ billion in 2014 compared to a benefit of $\$ 784$ million in 2013. Partially offsetting these declines were reductions in funding yields, lower long-term debt balances and commercial loan growth.

## Noninterest Income

Noninterest income was $\$ 45.0$ billion in 2014, a decrease of $\$ 1.7$ billion compared to 2013.

- Investment and brokerage services income increased \$1.0 billion primarily driven by increased asset management fees driven by the impact of long-term AUM inflows and higher market levels.
- Equity investment income decreased $\$ 1.8$ billion to $\$ 1.1$ billion in 2014 primarily due to a lower level of gains compared to 2013 and the continued wind-down of GPI.
- Trading account profits decreased $\$ 747$ million, which included a charge of $\$ 497$ million in 2014 related to the implementation of an FVA in Global Markets and net DVA losses on derivatives of $\$ 150$ million in 2014 compared to losses of $\$ 509$ million in 2013.
- Mortgage banking income decreased $\$ 2.3$ billion primarily driven by lower servicing income and core production revenue, partially offset by a lower representations and warranties provision.
- Other income (loss) improved $\$ 2.0$ billion due to an increase of $\$ 1.1$ billion in net DVA gains on structured liabilities as our spreads widened, and gains associated with the sales of residential mortgage loans, partially offset by an increase in U.K. consumer PPI costs. Results for 2013 also included a writedown of $\$ 450$ million on a monoline receivable.


## Provision for Credit Losses

The provision for credit losses was $\$ 2.3$ billion in 2014, a decrease of $\$ 1.3$ billion compared to 2013 . The provision for credit losses was $\$ 2.1$ billion lower than net charge-offs for 2014, resulting in a reduction in the allowance for credit losses. The decrease in the provision from 2013 was driven by portfolio improvement, including increased home prices in the consumer real estate portfolio and lower unemployment levels driving improvement in the credit card portfolios, as well as improved asset quality in the commercial portfolio. Partially offsetting this decline was $\$ 400$ million of additional costs in 2014 associated with the consumer relief portion of the DoJ Settlement.

Net charge-offs totaled $\$ 4.4$ billion, or 0.49 percent of average loans and leases in 2014 compared to $\$ 7.9$ billion, or 0.87 percent in 2013. The decrease in net charge-offs was due to credit quality improvement across all major portfolios and the impact of increased recoveries primarily from nonperforming and delinquent loan sales.

## Noninterest Expense

Noninterest expense was $\$ 75.7$ billion in 2014, an increase of $\$ 6.4$ billion compared to 2013 . The increase was primarily driven by higher litigation expense. Litigation expense increased $\$ 10.3$ billion primarily as a result of charges related to the settlements with the DoJ and the Federal Housing Finance Agency (FHFA). The increase in litigation expense was partially offset by a decrease of $\$ 3.2$ billion in default-related staffing and other default-related servicing expenses.

## Income Tax Expense

The income tax expense was $\$ 2.0$ billion on pretax income of $\$ 6.9$ billion in 2014 compared to income tax expense of $\$ 4.7$ billion in 2013. The effective tax rate for 2014 was 29.5 percent and was driven by our recurring tax preference items, the resolution of several tax examinations and tax benefits from non-U.S. restructurings, partially offset by the non-deductible treatment of certain litigation charges.

The effective tax rate for 2013 was 29.3 percent and was driven by our recurring tax preference items and by certain tax benefits related to non-U.S. operations, partially offset by the $\$ 1.1$ billion negative impact from the U.K. 2013 Finance Act, enacted in July 2013, which reduced the U.K. corporate income tax rate by three percent. The $\$ 1.1$ billion charge resulted from remeasuring our U.K. net deferred tax assets, in the period of enactment, using the lower rates.

## Business Segment Operations

## Consumer Banking

Consumer Banking recorded net income of $\$ 6.2$ billion in 2014 compared to $\$ 5.9$ billion in 2013 with the increase primarily driven by lower noninterest expense and provision for credit losses, partially offset by lower revenue. Net interest income decreased $\$ 467$ million to $\$ 20.7$ billion in 2014 due to lower average card Ioan balances and yields, partially offset by the beneficial impact of an increase in investable assets as a result of higher deposit balances. Noninterest income decreased $\$ 782$ million to $\$ 11.0$ billion in 2014 primarily due to lower mortgage banking income and lower revenue from consumer protection products, partially offset by portfolio divestiture gains, and higher service charges and card income. The provision for credit losses decreased \$487 million to $\$ 2.5$ billion in 2014 primarily as a result of improvements in credit quality. Noninterest expense decreased $\$ 1.3$ billion to $\$ 19.4$ billion in 2014 primarily driven by lower personnel, operating, FDIC and litigation expenses.

## Global Wealth \& Investment Management

GWIM recorded net income of $\$ 2.8$ billion in 2014 compared to $\$ 2.9$ billion in 2013 as an increase in noninterest income and lower credit costs were offset by lower net interest income and higher noninterest expense. Net interest income decreased \$248 million to $\$ 5.8$ billion in 2014 as a result of the low rate environment, partially offset by the impact of loan growth. Noninterest income, primarily investment and brokerage services, increased $\$ 839$ million to $\$ 12.6$ billion in 2014 driven by increased asset management fees due to the impact of long-term AUM flows and higher market levels, partially offset by lower transactional revenue. Noninterest expense increased $\$ 613$ million to $\$ 13.8$ billion in 2014 primarily due to higher revenue-related incentive compensation and support expenses, partially offset by lower other expenses.

## Global Banking

Global Banking recorded net income of $\$ 5.7$ billion in 2014 compared to $\$ 5.1$ billion in 2013 with the increase primarily driven by a reduction in the provision for credit losses and, to a lesser degree, an increase in revenue, partially offset by higher noninterest expense. Revenue increased $\$ 682$ million to $\$ 18.1$ billion in 2014 primarily from higher noninterest income. The provision for credit losses decreased $\$ 820$ million to $\$ 322$ million in 2014 driven by improved credit quality, and 2013 included increased reserves from loan growth. Noninterest expense increased $\$ 659$ million to $\$ 8.8$ billion in 2014 primarily from higher depreciation expense resulting from a reclassification of assets under operating leases to other assets in 2014, as well as additional client-facing personnel expense and higher litigation expense.

## Global Markets

Global Markets recorded net income of $\$ 2.6$ billion in 2014 compared to $\$ 1.0$ billion in 2013. In 2014, we implemented an FVA into valuation estimates resulting in an initial charge of \$497 million. Excluding net DVA/FVA and charges in 2013 related to the U.K. corporate income tax rate reduction, net income decreased $\$ 156$ million to $\$ 2.7$ billion in 2014 primarily driven by lower trading account profits and net interest income, partially offset by a
decrease in noninterest expense, a $\$ 240$ million gain in 2014 related to the IPO of an equity investment and higher investment and brokerage services income. Net DVA/FVA losses were $\$ 240$ million in 2014 compared to losses of $\$ 1.2$ billion in 2013. Noninterest expense decreased $\$ 236$ million to $\$ 12.0$ billion in 2014 due to lower litigation expense and revenue-related incentives, partially offset by higher technology costs and investments in infrastructure.

## All Other

All Other recorded a net loss of $\$ 12.5$ billion in 2014 compared to a loss of $\$ 3.5$ billion in 2013 with the increase primarily driven by significantly higher litigation expense, which is included in noninterest expense, as a result of the settlements with the DoJ and FHFA, a decrease of $\$ 2.0$ billion in equity investment income, a negative impact on net interest income of market-related premium amortization expense on debt securities of $\$ 1.2$ billion in 2014 compared to a benefit of $\$ 784$ million in 2013, a $\$ 964$ million decrease in mortgage banking income due to lower servicing income, and a $\$ 363$ million increase in U.K. PPI costs. Partially offsetting these decreases were gains related to the sales of residential mortgage loans. The net loss was also impacted by a lower tax benefit rate resulting from the non-deductible treatment of a portion of the DoJ Settlement.

## Statistical Tables

Table of Contents
Table I - Average Balances and Interest Rates - FTE Basis 90
Table II - Analysis of Changes in Net Interest Income - FTE Basis 91
Table III - Preferred Stock Cash Dividend Summary 92
Table IV - Outstanding Loans and Leases 94
Table V - Allowance for Credit Losses 95
Table VI - Allocation of the Allowance for Credit Losses by Product Type 97
Table VII - Selected Loan Maturity Data 98
Table VIII - Non-exchange Traded Commodity Contracts 99
Table IX - Non-exchange Traded Commodity Contract Maturities 99
Table X - Selected Quarterly Financial Data 100
Table XI - Quarterly Average Balances and Interest Rates - FTE Basis 102
Table XII - Quarterly Supplemental Financial Data 104
Table XIII - Five-year Reconciliations to GAAP Financial Measures 105
Table XIV - Two-year Reconciliations to GAAP Financial Measures 106
Table XV - Quarterly Reconciliations to GAAP Financial Measures 107

Table I Average Balances and Interest Rates - FTE Basis

|  | 2015 |  |  |  |  | 2014 |  |  |  |  | 2013 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (Dollars in millions) | Average Balance |  | Interest <br> Income/ <br> Expense |  | Yield/ Rate | Average Balance |  | Interest Income/ <br> Expense |  | Yield/ Rate | Average Balance |  | Interest <br> Income/ <br> Expense |  | Yield/ Rate |
| Earning assets |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks ${ }^{(1)}$ | \$ | 136,391 | \$ | 369 | 0.27\% | \$ | 113,999 | \$ | 308 | 0.27\% | \$ | 72,574 | \$ | 182 | 0.25\% |
| Time deposits placed and other short-term investments |  | 9,556 |  | 146 | 1.53 |  | 11,032 |  | 170 | 1.54 |  | 16,066 |  | 187 | 1.16 |
| Federal funds sold and securities borrowed or purchased under agreements to resell |  | 211,471 |  | 988 | 0.47 |  | 222,483 |  | 1,039 | 0.47 |  | 224,331 |  | 1,229 | 0.55 |
| Trading account assets |  | 137,837 |  | 4,547 | 3.30 |  | 145,686 |  | 4,716 | 3.24 |  | 168,998 |  | 4,879 | 2.89 |
| Debt securities ${ }^{(2)}$ |  | 390,884 |  | 9,374 | 2.41 |  | 351,702 |  | 8,062 | 2.28 |  | 337,953 |  | 9,779 | 2.89 |
| Loans and leases ${ }^{(3)}$ : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage |  | 201,366 |  | 6,967 | 3.46 |  | 237,270 |  | 8,462 | 3.57 |  | 256,534 |  | 9,315 | 3.63 |
| Home equity |  | 81,070 |  | 2,984 | 3.68 |  | 89,705 |  | 3,340 | 3.72 |  | 100,264 |  | 3,835 | 3.82 |
| U.S. credit card |  | 88,244 |  | 8,085 | 9.16 |  | 88,962 |  | 8,313 | 9.34 |  | 90,369 |  | 8,792 | 9.73 |
| Non-U.S. credit card |  | 10,104 |  | 1,051 | 10.40 |  | 11,511 |  | 1,200 | 10.42 |  | 10,861 |  | 1,271 | 11.70 |
| Direct/Indirect consumer ${ }^{(4)}$ |  | 84,585 |  | 2,040 | 2.41 |  | 82,409 |  | 2,099 | 2.55 |  | 82,907 |  | 2,370 | 2.86 |
| Other consumer ${ }^{(5)}$ |  | 1,938 |  | 56 | 2.86 |  | 2,029 |  | 139 | 6.86 |  | 1,807 |  | 72 | 4.02 |
| Total consumer |  | 467,307 |  | 21,183 | 4.53 |  | 511,886 |  | 23,553 | 4.60 |  | 542,742 |  | 25,655 | 4.73 |
| U.S. commercial |  | 248,354 |  | 6,883 | 2.77 |  | 230,172 |  | 6,630 | 2.88 |  | 218,875 |  | 6,811 | 3.11 |
| Commercial real estate ${ }^{(6)}$ |  | 52,136 |  | 1,521 | 2.92 |  | 47,525 |  | 1,432 | 3.01 |  | 42,345 |  | 1,391 | 3.29 |
| Commercial lease financing |  | 19,802 |  | 628 | 3.17 |  | 19,226 |  | 658 | 3.42 |  | 23,863 |  | 851 | 3.56 |
| Non-U.S. commercial |  | 89,188 |  | 2,008 | 2.25 |  | 89,894 |  | 2,196 | 2.44 |  | 90,816 |  | 2,083 | 2.29 |
| Total commercial |  | 409,480 |  | 11,040 | 2.70 |  | 386,817 |  | 10,916 | 2.82 |  | 375,899 |  | 11,136 | 2.96 |
| Total loans and leases |  | 876,787 |  | 32,223 | 3.68 |  | 898,703 |  | 34,469 | 3.84 |  | 918,641 |  | 36,791 | 4.00 |
| Other earning assets |  | 62,020 |  | 2,891 | 4.66 |  | 66,128 |  | 2,810 | 4.25 |  | 80,985 |  | 2,832 | 3.50 |
| Total earning assets ${ }^{(7)}$ |  | 1,824,946 |  | 50,538 | 2.77 |  | 1,809,733 |  | 51,574 | 2.85 |  | 1,819,548 |  | 55,879 | 3.07 |
| Cash and due from banks |  | 28,921 |  |  |  |  | 27,079 |  |  |  |  | 36,440 |  |  |  |
| Other assets, less allowance for loan and lease losses |  | 306,274 |  |  |  |  | 308,778 |  |  |  |  | 307,525 |  |  |  |
| Total assets |  | 2,160,141 |  |  |  |  | 2,145,590 |  |  |  |  | 2,163,513 |  |  |  |
| Interest-bearing liabilities |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| U.S. interest-bearing deposits: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Savings | \$ | 46,498 | \$ | 7 | 0.01\% | \$ | 46,270 | \$ | 3 | 0.01\% | \$ | 43,868 | \$ | 22 | 0.05\% |
| NOW and money market deposit accounts |  | 543,133 |  | 273 | 0.05 |  | 518,893 |  | 316 | 0.06 |  | 506,082 |  | 413 | 0.08 |
| Consumer CDs and IRAs |  | 54,679 |  | 162 | 0.30 |  | 66,797 |  | 264 | 0.40 |  | 79,913 |  | 472 | 0.59 |
| Negotiable CDs, public funds and other deposits |  | 29,976 |  | 95 | 0.32 |  | 31,507 |  | 108 | 0.34 |  | 26,553 |  | 117 | 0.44 |
| Total U.S. interest-bearing deposits |  | 674,286 |  | 537 | 0.08 |  | 663,467 |  | 691 | 0.10 |  | 656,416 |  | 1,024 | 0.16 |
| Non-U.S. interest-bearing deposits: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Banks located in non-U.S. countries |  | 4,473 |  | 31 | 0.70 |  | 8,744 |  | 61 | 0.69 |  | 12,431 |  | 69 | 0.56 |
| Governments and official institutions |  | 1,492 |  | 5 | 0.33 |  | 1,740 |  | 2 | 0.14 |  | 1,584 |  | 3 | 0.18 |
| Time, savings and other |  | 54,767 |  | 288 | 0.53 |  | 60,729 |  | 326 | 0.54 |  | 55,630 |  | 300 | 0.54 |
| Total non-U.S. interest-bearing deposits |  | 60,732 |  | 324 | 0.53 |  | 71,213 |  | 389 | 0.55 |  | 69,645 |  | 372 | 0.54 |
| Total interest-bearing deposits |  | 735,018 |  | 861 | 0.12 |  | 734,680 |  | 1,080 | 0.15 |  | 726,061 |  | 1,396 | 0.19 |
| Federal funds purchased, securities loaned or sold under agreements to repurchase and short-term borrowings |  | 246,295 |  | 2,387 | 0.97 |  | 257,678 |  | 2,578 | 1.00 |  | 301,415 |  | 2,923 | 0.97 |
| Trading account liabilities |  | 76,772 |  | 1,343 | 1.75 |  | 87,152 |  | 1,576 | 1.81 |  | 88,323 |  | 1,638 | 1.85 |
| Long-term debt ${ }^{(8)}$ |  | 240,059 |  | 5,958 | 2.48 |  | 253,607 |  | 5,700 | 2.25 |  | 263,417 |  | 6,798 | 2.58 |
| Total interest-bearing liabilities ${ }^{(7)}$ |  | 1,298,144 |  | 10,549 | 0.81 |  | 1,333,117 |  | 10,934 | 0.82 |  | 1,379,216 |  | 12,755 | 0.92 |
| Noninterest-bearing sources: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Noninterest-bearing deposits |  | 420,842 |  |  |  |  | 389,527 |  |  |  |  | 363,674 |  |  |  |
| Other liabilities |  | 189,165 |  |  |  |  | 184,464 |  |  |  |  | 186,672 |  |  |  |
| Shareholders' equity |  | 251,990 |  |  |  |  | 238,482 |  |  |  |  | 233,951 |  |  |  |
| Total liabilities and shareholders' equity |  | 2,160,141 |  |  |  |  | 2,145,590 |  |  |  |  | 2,163,513 |  |  |  |
| Net interest spread |  |  |  |  | 1.96\% |  |  |  |  | 2.03\% |  |  |  |  | 2.15\% |
| Impact of noninterest-bearing sources |  |  |  |  | 0.23 |  |  |  |  | 0.21 |  |  |  |  | 0.22 |
| Net interest income/yield on earning assets |  |  | \$ | 39,989 | 2.19\% |  |  | \$ | 40,640 | 2.24\% |  |  | \$ | 43,124 | 2.37\% |

 cash and due from banks in the cash and cash equivalents line, consistent with the Consolidated Balance Sheet presentation. Prior periods have been reclassified to conform to current period presentation.
${ }^{(2)}$ Yields on debt securities excluding the impact of market-related adjustments were 2.50 percent, 2.62 percent and 2.67 percent in 2015 , 2014 and 2013 , respectively. Yields on debt securities excluding the impact of market-related adjustments are a non-GAAP financial measure. The Corporation believes the use of this non-GAAP financial measure provides additional clarity in assessing its results.
${ }^{(3)}$ Nonperforming loans are included in the respective average loan balances. Income on these nonperforming loans is generally recognized on a cost recovery basis. PCI loans were recorded at fair value upon acquisition and accrete interest income over the remaining life of the loan.
${ }^{4)}$ Includes non-U.S. consumer loans of $\$ 4.0$ billion, $\$ 4.4$ billion and $\$ 6.7$ billion in 2015 , 2014 and 2013, respectively.
${ }^{(5)}$ Includes consumer finance loans of $\$ 619$ million, $\$ 1.1$ billion and $\$ 1.3$ billion; consumer leases of $\$ 1.2$ billion, $\$ 819$ million and $\$ 354$ million; and consumer overdrafts of $\$ 156$ million, $\$ 149$ million and $\$ 153$ million in 2015, 2014 and 2013, respectively.
${ }^{(6)}$ Includes U.S. commercial real estate loans of $\$ 49.0$ billion, $\$ 46.0$ billion and $\$ 40.7$ billion, and non-U.S. commercial real estate loans of $\$ 3.1$ billion, $\$ 1.6$ billion and $\$ 1.6$ billion in 2015 , 2014 and 2013, respectively.
${ }^{(7)}$ Interest income includes the impact of interest rate risk management contracts, which decreased interest income on the underlying assets by $\$ 59$ million, $\$ 58$ million and $\$ 205$ million in 2015 , 2014 and 2013, respectively. Interest expense includes the impact of interest rate risk management contracts, which decreased interest expense on the underlying liabilities by $\$ 2.4$ billion, $\$ 2.5$ billion and $\$ 2.4$ billion in 2015, 2014 and 2013, respectively. For additional information, see Interest Rate Risk Management for Non-trading Activities on page 78.
${ }^{(8)}$ The yield on long-term debt excluding the $\$ 612$ million adjustment on certain trust preferred securities was 2.23 percent for 2015 . For more information, see Note 11 - Long-term Debt to the Consolidated Financial Statements. The yield on long-term debt excluding the adjustment is a non-GAAP financial measure.

Table II Analysis of Changes in Net Interest Income - FTE Basis


Table III Preferred Stock Cash Dividend Summary (1)

| Preferred Stock | December 31, 2015 |  | Declaration Date | Record Date | Payment Date | Per Annum Dividend Rate | Dividend Per Share |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | anding <br> onal unt lions) |  |  |  |  |  |  |
| Series B ${ }^{(2)}$ | \$ | 1 | January 21, 2016 | April 11, 2016 | April 25, 2016 | 7.00\% | \$ | 1.75 |
|  |  |  | October 22, 2015 | January 11, 2016 | January 25, 2016 | 7.00 |  | 1.75 |
|  |  |  | July 23, 2015 | October 9, 2015 | October 23, 2015 | 7.00 |  | 1.75 |
|  |  |  | April 16, 2015 | July 10, 2015 | July 24, 2015 | 7.00 |  | 1.75 |
|  |  |  | February 10, 2015 | April 10, 2015 | April 24, 2015 | 7.00 |  | 1.75 |
| Series D ${ }^{(3)}$ | \$ | 654 | January 11, 2016 | February 29, 2016 | March 14, 2016 | 6.204\% | \$ | 0.38775 |
|  |  |  | October 9, 2015 | November 30, 2015 | December 14, 2015 | 6.204 |  | 0.38775 |
|  |  |  | July 9, 2015 | August 31, 2015 | September 14, 2015 | 6.204 |  | 0.38775 |
|  |  |  | April 13, 2015 | May 29, 2015 | June 15, 2015 | 6.204 |  | 0.38775 |
|  |  |  | January 9, 2015 | February 27, 2015 | March 16, 2015 | 6.204 |  | 0.38775 |
| Series E ${ }^{(3)}$ | \$ | 317 | January 11, 2016 | January 29, 2016 | February 16, 2016 | Floating | \$ | 0.25556 |
|  |  |  | October 9, 2015 | October 30, 2015 | November 16, 2015 | Floating |  | 0.25556 |
|  |  |  | July 9, 2015 | July 31, 2015 | August 17, 2015 | Floating |  | 0.25556 |
|  |  |  | April 13, 2015 | April 30, 2015 | May 15, 2015 | Floating |  | 0.24722 |
|  |  |  | January 9, 2015 | January 30, 2015 | February 17, 2015 | Floating |  | 0.25556 |
| Series F | \$ | 141 | January 11, 2016 | February 29, 2016 | March 15, 2016 | Floating | \$ | 1,011.11111 |
|  |  |  | October 9, 2015 | November 30, 2015 | December 15, 2015 | Floating |  | 1,011.11111 |
|  |  |  | July 9, 2015 | August 31, 2015 | September 15, 2015 | Floating |  | 1,022.22222 |
|  |  |  | April 13, 2015 | May 29, 2015 | June 15, 2015 | Floating |  | 1,022.22222 |
|  |  |  | January 9, 2015 | February 27, 2015 | March 16, 2015 | Floating |  | 1,000.00 |
| Series G | \$ | 493 | January 11, 2016 | February 29, 2016 | March 15, 2016 | Adjustable | \$ | 1,011.11111 |
|  |  |  | October 9, 2015 | November 30, 2015 | December 15, 2015 | Adjustable |  | 1,011.11111 |
|  |  |  | July 9, 2015 | August 31, 2015 | September 15, 2015 | Adjustable |  | 1,022.22222 |
|  |  |  | April 13, 2015 | May 29, 2015 | June 15, 2015 | Adjustable |  | 1,022.22222 |
|  |  |  | January 9, 2015 | February 27, 2015 | March 16, 2015 | Adjustable |  | 1,000.00 |
| Series $1^{(3)}$ | \$ | 365 | January 11, 2016 | March 15, 2016 | April 1, 2016 | 6.625\% | \$ | 0.4140625 |
|  |  |  | October 9, 2015 | December 15, 2015 | January 4, 2016 | 6.625 |  | 0.4140625 |
|  |  |  | July 9, 2015 | September 15, 2015 | October 1, 2015 | 6.625 |  | 0.4140625 |
|  |  |  | April 13, 2015 | June 15, 2015 | July 1, 2015 | 6.625 |  | 0.4140625 |
|  |  |  | January 9, 2015 | March 15, 2015 | April 1, 2015 | 6.625 |  | 0.4140625 |
| Series K (4, 5) | \$ | 1,544 | January 11, 2016 | January 15, 2016 | February 1, 2016 | Fixed-to-floating | \$ | 40.00 |
|  |  |  | July 9, 2015 | July 15, 2015 | July 30, 2015 | Fixed-to-floating |  | 40.00 |
|  |  |  | January 9, 2015 | January 15, 2015 | January 30, 2015 | Fixed-to-floating |  | 40.00 |
| Series L | \$ | 3,080 | December 18, 2015 | January 1, 2016 | February 1, 2016 | 7.25\% | \$ | 18.125 |
|  |  |  | September 18, 2015 | October 1, 2015 | October 30, 2015 | 7.25 |  | 18.125 |
|  |  |  | June 19, 2015 | July 1, 2015 | July 30, 2015 | 7.25 |  | 18.125 |
|  |  |  | March 18, 2015 | April 1, 2015 | April 30, 2015 | 7.25 |  | 18.125 |
| Series M ${ }^{(4,5)}$ | \$ | 1,310 | October 9, 2015 | October 31, 2015 | November 16, 2015 | Fixed-to-floating | \$ | 40.625 |
|  |  |  | April 13, 2015 | April 30, 2015 | May 15, 2015 | Fixed-to-floating |  | 40.625 |
| Series T | \$ | 5,000 | January 21, 2016 | March 26, 2016 | April 11, 2016 | 6.00\% | \$ | 1,500.00 |
|  |  |  | October 22, 2015 | December 26, 2015 | January 11, 2016 | 6.00 |  | 1,500.00 |
|  |  |  | July 23, 2015 | September 25, 2015 | October 13, 2015 | 6.00 |  | 1,500.00 |
|  |  |  | April 16, 2015 | June 25, 2015 | July 10, 2015 | 6.00 |  | 1,500.00 |
|  |  |  | February 10, 2015 | March 26, 2015 | April 10, 2015 | 6.00 |  | 1,500.00 |
| Series U ${ }^{(4,5)}$ | \$ | 1,000 | October 9, 2015 | November 15, 2015 | December 1, 2015 | Fixed-to-floating | \$ | 26.00 |
|  |  |  | April 13, 2015 | May 15, 2015 | June 1, 2015 | Fixed-to-floating |  | 26.00 |
| Series V ${ }^{(4,5)}$ | \$ | 1,500 | October 9, 2015 | December 1, 2015 | December 17, 2015 | Fixed-to-floating | \$ | 25.625 |
|  |  |  | April 13, 2015 | June 1, 2015 | June 17, 2015 | Fixed-to-floating |  | 25.625 |
| Series W ${ }^{(3)}$ | \$ | 1,100 | January 11, 2016 | February 15, 2016 | March 9, 2016 | 6.625\% | \$ | 0.4140625 |
|  |  |  | October 9, 2015 | November 15, 2015 | December 9, 2015 | 6.625 |  | 0.4140625 |
|  |  |  | July 9, 2015 | August 15, 2015 | September 9, 2015 | 6.625 |  | 0.4140625 |
|  |  |  | April 13, 2015 | May 15, 2015 | June 9, 2015 | 6.625 |  | 0.4140625 |
|  |  |  | January 9, 2015 | February 15, 2015 | March 9, 2015 | 6.625 |  | 0.4140625 |
| Series X ${ }^{(4,5)}$ | \$ | 2,000 | January 11, 2016 | February 15, 2016 | March 7, 2016 | Fixed-to-floating | \$ | 31.25 |
|  |  |  | July 9, 2015 | August 15, 2015 | September 8, 2015 | Fixed-to-floating |  | 31.25 |
|  |  |  | January 9, 2015 | February 15, 2015 | March 5, 2015 | Fixed-to-floating |  | 31.25 |
| Series $\mathrm{Y}{ }^{(3)}$ | \$ | 1,100 | December 18, 2015 | January 1, 2016 | January 27, 2016 | 6.50\% | \$ | 0.40625 |
|  |  |  | September 18, 2015 | October 1, 2015 | October 27, 2015 | 6.50 |  | 0.40625 |
|  |  |  | June 19, 2015 | July 1, 2015 | July 27, 2015 | 6.50 |  | 0.40625 |
|  |  |  | March 18, 2015 | April 1, 2015 | April 27, 2015 | 6.50 |  | 0.40625 |
| Series Z (4,5) | \$ | 1,400 | September 18, 2015 | October 1, 2015 | October 23, 2015 | Fixed-to-floating | \$ | 32.50 |
|  |  |  | March 18, 2015 | April 1, 2015 | April 23, 2015 | Fixed-to-floating |  | 32.50 |
| Series AA ${ }^{(4,5)}$ | \$ | 1,900 | January 11, 2016 | March 1, 2016 | March 17, 2016 | Fixed-to-floating | \$ | 30.50 |
|  |  |  | July 9, 2015 | September 1, 2015 | September 17, 2015 | Fixed-to-floating |  | 30.50 |

For footnotes see page 93.

Table III Preferred Stock Cash Dividend Summary ${ }^{(1)}$ (continued)

${ }^{11}$ Preferred stock cash dividend summary is as of February $24,2016$.
2) Dividends are cumulative.
${ }^{(3)}$ Dividends per depositary share, each representing a $1 / 1,000^{\text {th }}$ interest in a share of preferred stock.
${ }^{(4)}$ Initially pays dividends semi-annually.
${ }^{(5)}$ Dividends per depositary share, each representing a $1 / 25^{\text {th }}$ interest in a share of preferred stock.
${ }^{(6)}$ Dividends per depositary share, each representing a $1 / 1,200^{\text {th }}$ interest in a share of preferred stock.

## Table IV Outstanding Loans and Leases

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  | 2013 |  | 2012 |  | 2011 |  |
| Consumer |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage ${ }^{(1)}$ | \$ | 187,911 | \$ | 216,197 | \$ | 248,066 | \$ | 252,929 | \$ | 273,228 |
| Home equity |  | 75,948 |  | 85,725 |  | 93,672 |  | 108,140 |  | 124,856 |
| U.S. credit card |  | 89,602 |  | 91,879 |  | 92,338 |  | 94,835 |  | 102,291 |
| Non-U.S. credit card |  | 9,975 |  | 10,465 |  | 11,541 |  | 11,697 |  | 14,418 |
| Direct/Indirect consumer ${ }^{(2)}$ |  | 88,795 |  | 80,381 |  | 82,192 |  | 83,205 |  | 89,713 |
| Other consumer ${ }^{(3)}$ |  | 2,067 |  | 1,846 |  | 1,977 |  | 1,628 |  | 2,688 |
| Total consumer loans excluding loans accounted for under the fair value option |  | 454,298 |  | 486,493 |  | 529,786 |  | 552,434 |  | 607,194 |
| Consumer loans accounted for under the fair value option (4) |  | 1,871 |  | 2,077 |  | 2,164 |  | 1,005 |  | 2,190 |
| Total consumer |  | 456,169 |  | 488,570 |  | 531,950 |  | 553,439 |  | 609,384 |
| Commercial |  |  |  |  |  |  |  |  |  |  |
| U.S. commercial (5) |  | 265,647 |  | 233,586 |  | 225,851 |  | 209,719 |  | 193,199 |
| Commercial real estate ${ }^{(6)}$ |  | 57,199 |  | 47,682 |  | 47,893 |  | 38,637 |  | 39,596 |
| Commercial lease financing |  | 21,352 |  | 19,579 |  | 25,199 |  | 23,843 |  | 21,989 |
| Non-U.S. commercial |  | 91,549 |  | 80,083 |  | 89,462 |  | 74,184 |  | 55,418 |
| Total commercial loans excluding loans accounted for under the fair value option |  | 435,747 |  | 380,930 |  | 388,405 |  | 346,383 |  | 310,202 |
| Commercial loans accounted for under the fair value option (4) |  | 5,067 |  | 6,604 |  | 7,878 |  | 7,997 |  | 6,614 |
| Total commercial |  | 440,814 |  | 387,534 |  | 396,283 |  | 354,380 |  | 316,816 |
| Total loans and leases | \$ | 896,983 | \$ | 876,104 | \$ | 928,233 | \$ | 907,819 | \$ | 926,200 |

 December 31, 2015, 2014, 2013, 2012 and 2011, respectively. The Corporation no longer originates pay option loans.
${ }^{(2)}$ Includes auto and specialty lending loans of $\$ 42.6$ billion, $\$ 37.7$ billion, $\$ 38.5$ billion, $\$ 35.9$ billion and $\$ 43.0$ billion, unsecured consumer lending loans of $\$ 886$ million, $\$ 1.5$ billion, $\$ 2.7$ billion, $\$ 4.7$ billion and $\$ 8.0$ billion, U.S. securities-based lending loans of $\$ 39.8$ billion, $\$ 35.8$ billion, $\$ 31.2$ billion, $\$ 28.3$ billion and $\$ 23.6$ billion, non-U.S. consumer loans of $\$ 3.9$ billion, $\$ 4.0$ billion, $\$ 4.7$ billion, $\$ 8.3$ billion and $\$ 7.6$ billion, student loans of $\$ 564$ million, $\$ 632$ million, $\$ 4.1$ billion, $\$ 4.8$ billion and $\$ 6.0$ billion, and other consumer loans of $\$ 1.0$ billion, $\$ 761$ million, $\$ 1.0$ billion, $\$ 1.2$ billion and $\$ 1.5$ billion at December 31, 2015, 2014, 2013, 2012 and 2011, respectively.
(3) Includes consumer finance loans of $\$ 564$ million, $\$ 676$ million, $\$ 1.2$ billion, $\$ 1.4$ billion and $\$ 1.7$ billion, consumer leases of $\$ 1.4$ billion, $\$ 1.0$ billion, $\$ 606$ million, $\$ 34$ million and $\$ 0$, consumer overdrafts of $\$ 146$ million, $\$ 162$ million, $\$ 176$ million, $\$ 177$ million and $\$ 103$ million, and other non-U.S. consumer loans of $\$ 4$ million, $\$ 3$ million, $\$ 5$ million, $\$ 5$ million and $\$ 929$ million at December 31, 2015, 2014, 2013, 2012 and 2011, respectively.
${ }^{(4)}$ Consumer loans accounted for under the fair value option were residential mortgage loans of $\$ 1.6$ billion, $\$ 1.9$ billion, $\$ 2.0$ billion, $\$ 1.0$ billion and $\$ 2.2$ billion, and home equity loans of $\$ 250$ million, $\$ 196$ million, $\$ 147$ million, $\$ 0$ and $\$ 0$ at December 31, 2015, 2014, 2013, 2012 and 2011, respectively. Commercial loans accounted for under the fair value option were U.S. commercial loans of $\$ 2.3$ billion, $\$ 1.9$ billion, $\$ 1.5$ billion, $\$ 2.3$ billion and $\$ 2.2$ billion, and non-U.S. commercial loans of $\$ 2.8$ billion, $\$ 4.7$ billion, $\$ 6.4$ billion, $\$ 5.7$ billion and $\$ 4.4$ billion at December 31 , 2015, 2014, 2013, 2012 and 2011, respectively.
${ }^{(5)}$ Includes U.S. small business commercial loans, including card-related products, of $\$ 12.9$ billion, $\$ 13.3$ billion, $\$ 13.3$ billion, $\$ 12.6$ billion and $\$ 13.3$ billion at December 31,2015 , 2014 , 2013 2012 and 2011, respectively.
${ }^{(6)}$ Includes U.S. commercial real estate loans of $\$ 53.6$ billion, $\$ 45.2$ billion, $\$ 46.3$ billion, $\$ 37.2$ billion and $\$ 37.8$ billion, and non-U.S. commercial real estate loans of $\$ 3.5$ billion, $\$ 2.5$ billion, $\$ 1.6$ billion, $\$ 1.5$ billion and $\$ 1.8$ billion at December 31, 2015, 2014, 2013, 2012 and 2011, respectively.

## Table V Allowance for Credit Losses

(Dollars in millions)

| Allowance for loan and lease losses, January 1 | \$ | 14,419 | \$ | 17,428 | \$ | 24,179 | \$ | 33,783 | \$ | 41,885 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Loans and leases charged off |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage |  | (866) |  | (855) |  | $(1,508)$ |  | $(3,276)$ |  | $(4,294)$ |
| Home equity |  | (975) |  | $(1,364)$ |  | $(2,258)$ |  | $(4,573)$ |  | $(4,997)$ |
| U.S. credit card |  | $(2,738)$ |  | $(3,068)$ |  | $(4,004)$ |  | $(5,360)$ |  | $(8,114)$ |
| Non-U.S. credit card |  | (275) |  | (357) |  | (508) |  | (835) |  | $(1,691)$ |
| Direct/Indirect consumer |  | (383) |  | (456) |  | (710) |  | $(1,258)$ |  | $(2,190)$ |
| Other consumer |  | (224) |  | (268) |  | (273) |  | (274) |  | (252) |
| Total consumer charge-offs |  | $(5,461)$ |  | $(6,368)$ |  | $(9,261)$ |  | $(15,576)$ |  | $(21,538)$ |
| U.S. commercial (1) |  | (536) |  | (584) |  | (774) |  | $(1,309)$ |  | $(1,690)$ |
| Commercial real estate |  | (30) |  | (29) |  | (251) |  | (719) |  | $(1,298)$ |
| Commercial lease financing |  | (19) |  | (10) |  | (4) |  | (32) |  | (61) |
| Non-U.S. commercial |  | (59) |  | (35) |  | (79) |  | (36) |  | (155) |
| Total commercial charge-offs |  | (644) |  | (658) |  | $(1,108)$ |  | $(2,096)$ |  | $(3,204)$ |
| Total loans and leases charged off |  | $(6,105)$ |  | $(7,026)$ |  | $(10,369)$ |  | $(17,672)$ |  | $(24,742)$ |
| Recoveries of loans and leases previously charged off |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage |  | 393 |  | 969 |  | 424 |  | 165 |  | 377 |
| Home equity |  | 339 |  | 457 |  | 455 |  | 331 |  | 517 |
| U.S. credit card |  | 424 |  | 430 |  | 628 |  | 728 |  | 838 |
| Non-U.S. credit card |  | 87 |  | 115 |  | 109 |  | 254 |  | 522 |
| Direct/Indirect consumer |  | 271 |  | 287 |  | 365 |  | 495 |  | 714 |
| Other consumer |  | 31 |  | 39 |  | 39 |  | 42 |  | 50 |
| Total consumer recoveries |  | 1,545 |  | 2,297 |  | 2,020 |  | 2,015 |  | 3,018 |
| U.S. commercial (2) |  | 172 |  | 214 |  | 287 |  | 368 |  | 500 |
| Commercial real estate |  | 35 |  | 112 |  | 102 |  | 335 |  | 351 |
| Commercial lease financing |  | 10 |  | 19 |  | 29 |  | 38 |  | 37 |
| Non-U.S. commercial |  | 5 |  | 1 |  | 34 |  | 8 |  | 3 |
| Total commercial recoveries |  | 222 |  | 346 |  | 452 |  | 749 |  | 891 |
| Total recoveries of loans and leases previously charged off |  | 1,767 |  | 2,643 |  | 2,472 |  | 2,764 |  | 3,909 |
| Net charge-offs |  | $(4,338)$ |  | $(4,383)$ |  | $(7,897)$ |  | $(14,908)$ |  | $(20,833)$ |
| Write-offs of PCI loans |  | (808) |  | (810) |  | $(2,336)$ |  | $(2,820)$ |  | - |
| Provision for loan and lease losses |  | 3,043 |  | 2,231 |  | 3,574 |  | 8,310 |  | 13,629 |
| Other ${ }^{(3)}$ |  | (82) |  | (47) |  | (92) |  | (186) |  | (898) |
| Allowance for loan and lease losses, December 31 |  | 12,234 |  | 14,419 |  | 17,428 |  | 24,179 |  | 33,783 |
| Reserve for unfunded lending commitments, January 1 |  | 528 |  | 484 |  | 513 |  | 714 |  | 1,188 |
| Provision for unfunded lending commitments |  | 118 |  | 44 |  | (18) |  | (141) |  | (219) |
| Other (4) |  | - |  | - |  | (11) |  | (60) |  | (255) |
| Reserve for unfunded lending commitments, December 31 |  | 646 |  | 528 |  | 484 |  | 513 |  | 714 |
| Allowance for credit losses, December 31 | \$ | 12,880 | \$ | 14,947 | \$ | 17,912 | \$ | 24,692 | \$ | 34,497 |

${ }^{(1)}$ Includes U.S. small business commercial charge-offs of $\$ 282$ million, $\$ 345$ million, $\$ 457$ million, $\$ 799$ million and $\$ 1.1$ billion in 2015, 2014, 2013, 2012 and 2011, respectively.
(2) Includes U.S. small business commercial recoveries of $\$ 57$ million, $\$ 63$ million, $\$ 98$ million, $\$ 100$ million and $\$ 106$ million in 2015, 2014, 2013, 2012 and 2011, respectively.
${ }^{\text {(3) }}$ Primarily represents the net impact of portfolio sales, consolidations and deconsolidations, and foreign currency translation adjustments. In addition, the 2011 amount includes a $\$ 449$ million reduction in the allowance for loan and lease losses related to Canadian consumer card loans that were transferred to LHFS
${ }^{(4)}$ Primarily represents accretion of the Merrill Lynch purchase accounting adjustment and the impact of funding previously unfunded positions.

## Table V Allowance for Credit Losses (continued)

| (Dollars in millions) | 2015 |  | 2014 |  | 2013 |  | 2012 |  | 2011 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Loan and allowance ratios: |  |  |  |  |  |  |  |  |  |  |
| Loans and leases outstanding at December 31 (5) | \$ | 890,045 | \$ | 867,422 | \$ | 918,191 | \$ | 898,817 | \$ | 917,396 |
| Allowance for loan and lease losses as a percentage of total loans and leases outstanding at December $31{ }^{(5)}$ |  | 1.37\% |  | 1.66\% |  | 1.90\% |  | 2.69\% |  | 3.68\% |
| Consumer allowance for loan and lease losses as a percentage of total consumer loans and leases outstanding at December 31 (6) |  | 1.63 |  | 2.05 |  | 2.53 |  | 3.81 |  | 4.88 |
| Commercial allowance for loan and lease losses as a percentage of total commercial loans and leases outstanding at December 31 (7) |  | 1.11 |  | 1.16 |  | 1.03 |  | 0.90 |  | 1.33 |
| Average loans and leases outstanding ${ }^{(5)}$ | \$ | 869,904 | \$ | 888,804 | \$ | 909,127 | \$ | 890,337 | \$ | 929,661 |
| Net charge-offs as a percentage of average loans and leases outstanding (5,8) |  | 0.50\% |  | 0.49\% |  | 0.87\% |  | 1.67\% |  | 2.24\% |
| Net charge-offs and PCI write-offs as a percentage of average loans and leases outstanding ${ }^{(5,9)}$ |  | 0.59 |  | 0.58 |  | 1.13 |  | 1.99 |  | 2.24 |
| Allowance for loan and lease losses as a percentage of total nonperforming loans and leases at December $31(5,10)$ |  | 130 |  | 121 |  | 102 |  | 107 |  | 135 |
| Ratio of the allowance for loan and lease losses at December 31 to net charge-offs ${ }^{(8)}$ |  | 2.82 |  | 3.29 |  | 2.21 |  | 1.62 |  | 1.62 |
| Ratio of the allowance for loan and lease losses at December 31 to net charge-offs and PCI write-offs ${ }^{(9)}$ |  | 2.38 |  | 2.78 |  | 1.70 |  | 1.36 |  | 1.62 |
| Amounts included in allowance for loan and lease losses for loans and leases that are excluded from nonperforming loans and leases at December 31 (11) | \$ | 4,518 | \$ | 5,944 | \$ | 7,680 | \$ | 12,021 | \$ | 17,490 |
| Allowance for loan and lease losses as a percentage of total nonperforming loans and leases, excluding the allowance for loan and lease losses for loans and leases that are excluded from nonperforming loans and leases at December $31(5,11)$ |  | 82\% |  | 71\% |  | 57\% |  | 54\% |  | 65\% |
| Loan and allowance ratios excluding PCI loans and the related valuation allowance: ${ }^{(12)}$ |  |  |  |  |  |  |  |  |  |  |
| Allowance for loan and lease losses as a percentage of total loans and leases outstanding at December 31 (5) |  | 1.31\% |  | 1.51\% |  | 1.67\% |  | 2.14\% |  | 2.86\% |
| Consumer allowance for loan and lease losses as a percentage of total consumer loans and leases outstanding at December $31{ }^{(6)}$ |  | 1.50 |  | 1.79 |  | 2.17 |  | 2.95 |  | 3.68 |
| Net charge-offs as a percentage of average loans and leases outstanding (5) |  | 0.51 |  | 0.50 |  | 0.90 |  | 1.73 |  | 2.32 |
| Allowance for loan and lease losses as a percentage of total nonperforming loans and leases at December $31(5,10)$ |  | 122 |  | 107 |  | 87 |  | 82 |  | 101 |
| Ratio of the allowance for loan and lease losses at December 31 to net charge-offs |  | 2.64 |  | 2.91 |  | 1.89 |  | 1.25 |  | 1.22 |

(5) Outstanding loan and lease balances and ratios do not include loans accounted for under the fair value option of $\$ 6.9$ billion, $\$ 8.7$ billion, $\$ 10.0$ billion, $\$ 9.0$ billion and $\$ 8.8$ billion at December 31 , 2015, 2014, 2013, 2012 and 2011, respectively. Average loans accounted for under the fair value option were $\$ 7.7$ billion, $\$ 9.9$ billion, $\$ 9.5$ billion, $\$ 8.4$ billion and $\$ 8.4$ billion in 2015 , 2014 , 2013, 2012 and 2011, respectively.
${ }^{(6)}$ Excludes consumer loans accounted for under the fair value option of $\$ 1.9$ billion, $\$ 2.1$ billion, $\$ 2.2$ billion, $\$ 1.0$ billion and $\$ 2.2$ billion at December 31, 2015, 2014, 2013, 2012 and 2011, respectively.
${ }^{(7)}$ Excludes commercial loans accounted for under the fair value option of $\$ 5.1$ billion, $\$ 6.6$ billion, $\$ 7.9$ billion, $\$ 8.0$ billion and $\$ 6.6$ billion at December 31, 2015, 2014, 2013, 2012 and 2011, respectively.
${ }^{(8)}$ Net charge-offs exclude $\$ 808$ million, $\$ 810$ million, $\$ 2.3$ billion and $\$ 2.8$ billion of write-offs in the PCI loan portfolio in 2015, 2014, 2013 and 2012. For more information on PCI write-offs, see Consumer Portfolio Credit Risk Management - Purchased Credit-impaired Loan Portfolio on page 54.
(9) There were no write-offs of PCI loans in 2011.
${ }^{(10)}$ For more information on our definition of nonperforming loans, see pages 56 and 63.
${ }^{(11)}$ Primarily includes amounts allocated to U.S. credit card and unsecured lending portfolios in Consumer Banking, PCI loans and the non-U.S. credit portfolio in All Other.
${ }^{(12)}$ For more information on the PCI loan portfolio and the valuation allowance for PCI loans, see Note 4 - Outstanding Loans and Leases and Note 5 - Allowance for Credit Losses to the Consolidated Financial Statements.

Table VI Allocation of the Allowance for Credit Losses by Product Type

|  | December 31 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  | 2013 |  | 2012 |  | 2011 |  |
|  | Amount | Percent of Total | Amount | Percent of Total | Amount | Percent of Total | Amount | Percent of Total | Amount | Percent of Total |
| Allowance for loan and lease losses |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage | \$ 1,500 | 12.26\% | \$ 2,900 | 20.11\% | \$ 4,084 | 23.43\% | \$ 7,088 | 29.31\% | \$ 7,985 | 23.64\% |
| Home equity | 2,414 | 19.73 | 3,035 | 21.05 | 4,434 | 25.44 | 7,845 | 32.45 | 13,094 | 38.76 |
| U.S. credit card | 2,927 | 23.93 | 3,320 | 23.03 | 3,930 | 22.55 | 4,718 | 19.51 | 6,322 | 18.71 |
| Non-U.S. credit card | 274 | 2.24 | 369 | 2.56 | 459 | 2.63 | 600 | 2.48 | 946 | 2.80 |
| Direct/Indirect consumer | 223 | 1.82 | 299 | 2.07 | 417 | 2.39 | 718 | 2.97 | 1,153 | 3.41 |
| Other consumer | 47 | 0.38 | 59 | 0.41 | 99 | 0.58 | 104 | 0.43 | 148 | 0.44 |
| Total consumer | 7,385 | 60.36 | 9,982 | 69.23 | 13,423 | 77.02 | 21,073 | 87.15 | 29,648 | 87.76 |
| U.S. commercial ${ }^{(1)}$ | 2,964 | 24.23 | 2,619 | 18.16 | 2,394 | 13.74 | 1,885 | 7.80 | 2,441 | 7.23 |
| Commercial real estate | 967 | 7.90 | 1,016 | 7.05 | 917 | 5.26 | 846 | 3.50 | 1,349 | 3.99 |
| Commercial lease financing | 164 | 1.34 | 153 | 1.06 | 118 | 0.68 | 78 | 0.32 | 92 | 0.27 |
| Non-U.S. commercial | 754 | 6.17 | 649 | 4.50 | 576 | 3.30 | 297 | 1.23 | 253 | 0.75 |
| Total commercial ${ }^{(2)}$ | 4,849 | 39.64 | 4,437 | 30.77 | 4,005 | 22.98 | 3,106 | 12.85 | 4,135 | 12.24 |
| Allowance for loan and lease losses ${ }^{(3)}$ | 12,234 | 100.00\% | 14,419 | 100.00\% | 17,428 | 100.00\% | 24,179 | 100.00\% | 33,783 | 100.00\% |
| Reserve for unfunded lending commitments | 646 |  | 528 |  | 484 |  | 513 |  | 714 |  |
| Allowance for credit losses | \$ 12,880 |  | \$ 14,947 |  | \$ 17,912 |  | \$ 24,692 |  | \$ 34,497 |  |

(1) Includes allowance for loan and lease losses for U.S. small business commercial loans of $\$ 507$ million, $\$ 536$ million, $\$ 462$ million, $\$ 642$ million and $\$ 893$ million at December 31, 2015, 2014, 2013, 2012 and 2011, respectively.
(2) Includes allowance for loan and lease losses for impaired commercial loans of $\$ 217$ million, $\$ 159$ million, $\$ 277$ million, $\$ 475$ million and $\$ 545$ million at December 31, 2015, 2014, 2013, 2012 and 2011, respectively.
${ }^{(3)}$ Includes $\$ 804$ million, $\$ 1.7$ billion, $\$ 2.5$ billion, $\$ 5.5$ billion and $\$ 8.5$ billion of valuation allowance presented with the allowance for loan and lease losses related to PCI loans at December 31, 2015, 2014, 2013, 2012 and 2011, respectively.

Table VII Selected Loan Maturity Data (1,2)

|  |  |  |
| :--- | :--- | ---: | ---: | ---: | ---: | ---: |
|  |  |  |

Table VIII Non-exchange Traded Commodity Contracts

| (Dollars in millions) | 2015 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Asset <br> Positions |  | Liability Positions |  |
| Net fair value of contracts outstanding, January 1, 2015 | \$ | 8,052 | \$ | 8,593 |
| Effect of legally enforceable master netting agreements |  | 5,506 |  | 5,506 |
| Gross fair value of contracts outstanding, January 1, 2015 |  | 13,558 |  | 14,099 |
| Contracts realized or otherwise settled |  | $(8,262)$ |  | $(9,114)$ |
| Fair value of new contracts |  | 4,624 |  | 4,250 |
| Other changes in fair value |  | 1,623 |  | 1,322 |
| Gross fair value of contracts outstanding, December 31, 2015 |  | 11,543 |  | 10,557 |
| Less: Legally enforceable master netting agreements |  | $(3,244)$ |  | $(3,244)$ |
| Net fair value of contracts outstanding, December 31, 2015 | \$ | 8,299 | \$ | 7,313 |

Table IX Non-exchange Traded Commodity Contract Maturities

| (Dollars in millions) | 2015 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Asset Positions |  | Liability <br> Positions |  |
| Less than one year | \$ | 5,420 | \$ | 5,853 |
| Greater than or equal to one year and less than three years |  | 2,619 |  | 2,121 |
| Greater than or equal to three years and less than five years |  | 723 |  | 671 |
| Greater than or equal to five years |  | 2,781 |  | 1,912 |
| Gross fair value of contracts outstanding |  | 11,543 |  | 10,557 |
| Less: Legally enforceable master netting agreements |  | $(3,244)$ |  | $(3,244)$ |
| Net fair value of contracts outstanding | \$ | 8,299 | \$ | 7,313 |

Table X Selected Quarterly Financial Data

| (In millions, except per share information) | 2015 Quarters ${ }^{(1)}$ |  |  |  |  |  |  |  | 2014 Quarters |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fourth |  | Third |  | Second |  | First |  | Fourth |  | Third |  | Second |  | First |  |
| Income statement |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net interest income | \$ | 9,756 | \$ | 9,471 | \$ | 10,461 | \$ | 9,411 | \$ | 9,594 | \$ | 10,179 | \$ | 9,973 | \$ | 10,044 |
| Noninterest income |  | 9,911 |  | 11,042 |  | 11,495 |  | 11,503 |  | 9,263 |  | 11,164 |  | 11,908 |  | 12,662 |
| Total revenue, net of interest expense |  | 19,667 |  | 20,513 |  | 21,956 |  | 20,914 |  | 18,857 |  | 21,343 |  | 21,881 |  | 22,706 |
| Provision for credit losses |  | 810 |  | 806 |  | 780 |  | 765 |  | 219 |  | 636 |  | 411 |  | 1,009 |
| Noninterest expense |  | 14,010 |  | 13,940 |  | 13,958 |  | 15,827 |  | 14,328 |  | 20,276 |  | 18,675 |  | 22,378 |
| Income (loss) before income taxes |  | 4,847 |  | 5,767 |  | 7,218 |  | 4,322 |  | 4,310 |  | 431 |  | 2,795 |  | (681) |
| Income tax expense (benefit) |  | 1,511 |  | 1,446 |  | 2,084 |  | 1,225 |  | 1,260 |  | 663 |  | 504 |  | (405) |
| Net income (loss) |  | 3,336 |  | 4,321 |  | 5,134 |  | 3,097 |  | 3,050 |  | (232) |  | 2,291 |  | (276) |
| Net income (loss) applicable to common shareholders |  | 3,006 |  | 3,880 |  | 4,804 |  | 2,715 |  | 2,738 |  | (470) |  | 2,035 |  | (514) |
| Average common shares issued and outstanding |  | 10,399 |  | 10,444 |  | 10,488 |  | 10,519 |  | 10,516 |  | 10,516 |  | 10,519 |  | 10,561 |
| Average diluted common shares issued and outstanding ${ }^{(2)}$ |  | 11,153 |  | 11,197 |  | 11,238 |  | 11,267 |  | 11,274 |  | 10,516 |  | 11,265 |  | 10,561 |
| Performance ratios |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Return on average assets |  | 0.61\% |  | 0.79\% |  | 0.96\% |  | 0.59\% |  | 0.57\% |  | $\mathrm{n} / \mathrm{m}$ |  | 0.42\% |  | $\mathrm{n} / \mathrm{m}$ |
| Four quarter trailing return on average assets (3) |  | 0.74 |  | 0.73 |  | 0.52 |  | 0.38 |  | 0.23 |  | 0.24\% |  | 0.37 |  | 0.45\% |
| Return on average common shareholders' equity |  | 5.08 |  | 6.65 |  | 8.42 |  | 4.88 |  | 4.84 |  | $\mathrm{n} / \mathrm{m}$ |  | 3.68 |  | $\mathrm{n} / \mathrm{m}$ |
| Return on average tangible common shareholders' equity (4) |  | 7.32 |  | 9.65 |  | 12.31 |  | 7.19 |  | 7.15 |  | $n / m$ |  | 5.47 |  | $\mathrm{n} / \mathrm{m}$ |
| Return on average tangible shareholders' equity (4) |  | 7.15 |  | 9.43 |  | 11.51 |  | 7.24 |  | 7.08 |  | $\mathrm{n} / \mathrm{m}$ |  | 5.64 |  | $\mathrm{n} / \mathrm{m}$ |
| Total ending equity to total ending assets |  | 11.95 |  | 11.89 |  | 11.71 |  | 11.67 |  | 11.57 |  | 11.24 |  | 10.94 |  | 10.79 |
| Total average equity to total average assets |  | 11.79 |  | 11.71 |  | 11.67 |  | 11.49 |  | 11.39 |  | 11.14 |  | 10.87 |  | 11.06 |
| Dividend payout |  | 17.27 |  | 13.43 |  | 10.90 |  | 19.38 |  | 19.21 |  | $\mathrm{n} / \mathrm{m}$ |  | 5.16 |  | $\mathrm{n} / \mathrm{m}$ |
| Per common share data |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Earnings (loss) | \$ | 0.29 | \$ | 0.37 | \$ | 0.46 | \$ | 0.26 | \$ | 0.26 | \$ | (0.04) | \$ | 0.19 | \$ | (0.05) |
| Diluted earnings (loss) ${ }^{(2)}$ |  | 0.28 |  | 0.35 |  | 0.43 |  | 0.25 |  | 0.25 |  | (0.04) |  | 0.19 |  | (0.05) |
| Dividends paid |  | 0.05 |  | 0.05 |  | 0.05 |  | 0.05 |  | 0.05 |  | 0.05 |  | 0.01 |  | 0.01 |
| Book value |  | 22.54 |  | 22.41 |  | 21.91 |  | 21.66 |  | 21.32 |  | 20.99 |  | 21.16 |  | 20.75 |
| Tangible book value ${ }^{(4)}$ |  | 15.62 |  | 15.50 |  | 15.02 |  | 14.79 |  | 14.43 |  | 14.09 |  | 14.24 |  | 13.81 |
| Market price per share of common stock |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Closing | \$ | 16.83 | \$ | 15.58 | \$ | 17.02 | \$ | 15.39 | \$ | 17.89 | \$ | 17.05 | \$ | 15.37 | \$ | 17.20 |
| High closing |  | 17.95 |  | 18.45 |  | 17.67 |  | 17.90 |  | 18.13 |  | 17.18 |  | 17.34 |  | 17.92 |
| Low closing |  | 15.38 |  | 15.26 |  | 15.41 |  | 15.15 |  | 15.76 |  | 14.98 |  | 14.51 |  | 16.10 |
| Market capitalization | \$ | 174,700 | \$ | 162,457 | \$ | 178,231 | \$ | 161,909 | \$ | 188,141 | \$ | 179,296 | \$ | 161,628 | \$ | 181,117 |
| ${ }^{(1)}$ The results for 2015 were impacted by the early adoption of new accounting guidance on recognition and measurement of financial instruments. For additional information, see Executive Summary - Recent Events on page 4. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(2)}$ The diluted earnings (loss) per common share excluded the effect of any equity instruments that are antidilutive to earnings per share. There were no potential common shares that were dilutive in the third and first quarters of 2014 because of the net loss applicable to common shareholders. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(3)}$ Calculated as total net income (loss) for four consecutive quarters divided by annualized average assets for four consecutive quarters. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(4)}$ Tangible equity ratios and tangible book value per share of common stock are non-GAAP financial measures. Other companies may define or calculate these measures differently. For more information on these ratios, see Supplemental Financial Data on page 12, and for corresponding reconciliations to GAAP financial measures, see Statistical Table XV. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(5)}$ For more information on the impact of the PCI loan portfolio on asset quality, see Consumer Portfolio Credit Risk Management on pag |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(6)}$ Includes the allowance for loan and lease losses and the reserve for unfunded lending commitments. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(7)}$ Balances and ratios do not include loans accounted for under the fair value option. For additional exclusions from nonperforming loans, leases and foreclosed properties, see Consumer Portfolio Credit Risk Management - Nonperforming Consumer Loans, Leases and Foreclosed Properties Activity on page 56 and corresponding Table 35, and Commercial Portfolio Credit Risk Management Nonperforming Commercial Loans, Leases and Foreclosed Properties Activity on page 63 and corresponding Table 44. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(8)}$ Primarily includes amounts allocated to the U.S. credit card and unsecured consumer lending portfolios in Consumer Banking, PCI loans and the non-U.S. credit card portfolio in All Oth |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(9)}$ Net charge-offs exclude $\$ 82$ million, $\$ 148$ million, $\$ 290$ million and $\$ 288$ million of write-offs in the PCI loan portfolio in the fourth, third, second and first quarters of 2015 , respectively, and $\$ 13$ million, $\$ 246$ million, $\$ 160$ million and $\$ 391$ million in the fourth, third, second and first quarters of 2014, respectively. For more information on PCI write-offs, see Consumer Portfolio Credit Risk Management - Purchased Credit-impaired Loan Portfolio on page 54. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{(10)}$ Capital ratios reported under Advanced approaches in the fourth quarter of 2015. Prior to fourth quarter of 2015, we were required to report regulatory capital ratios under the Standardized approach only. For additional information, see Capital Management on page 34. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Table X Selected Quarterly Financial Data (continued)

| (Dollars in millions) | 2015 Quarters (1) |  |  |  |  |  |  |  | 2014 Quarters |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Fourth |  | Third |  | Second |  | First |  | Fourth |  | Third |  | Second |  | First |
| Average balance sheet |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total loans and leases |  | 886,156 |  | 877,429 |  | 876,178 |  | 867,169 |  | 879,585 |  | 894,094 |  | 907,370 |  | 914,195 |
| Total assets |  | ,180,472 |  | 2,168,993 |  | 2,151,966 |  | 2,138,574 |  | 137,551 |  | 136,109 |  | 169,555 |  | 139,266 |
| Total deposits |  | ,186,051 |  | ,159,231 |  | ,146,789 |  | ,130,726 |  | 122,514 |  | 127,488 |  | 128,563 |  | 118,178 |
| Long-term debt |  | 237,384 |  | 240,520 |  | 242,230 |  | 240,127 |  | 249,221 |  | 251,772 |  | 259,825 |  | 253,678 |
| Common shareholders' equity |  | 234,851 |  | 231,620 |  | 228,780 |  | 225,357 |  | 224,479 |  | 222,374 |  | 222,221 |  | 223,207 |
| Total shareholders' equity |  | 257,125 |  | 253,893 |  | 251,054 |  | 245,744 |  | 243,454 |  | 238,040 |  | 235,803 |  | 236,559 |
| Asset quality (5) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Allowance for credit losses (6) | \$ | 12,880 | \$ | 13,318 | \$ | 13,656 | \$ | 14,213 | \$ | 14,947 | \$ | 15,635 | \$ | 16,314 | \$ | 17,127 |
| Nonperforming loans, leases and foreclosed properties (7) |  | 9,836 |  | 10,336 |  | 11,565 |  | 12,101 |  | 12,629 |  | 14,232 |  | 15,300 |  | 17,732 |
| Allowance for loan and lease losses as a percentage of total loans and leases outstanding ${ }^{(7)}$ |  | 1.37\% |  | 1.45\% |  | 1.50\% |  | 1.58\% |  | 1.66\% |  | 1.72\% |  | 1.76\% |  | 1.85\% |
| Allowance for loan and lease losses as a percentage of total nonperforming loans and leases ${ }^{(7)}$ |  | 130 |  | 129 |  | 122 |  | 122 |  | 121 |  | 112 |  | 108 |  | 97 |
| Allowance for loan and lease losses as a percentage of total nonperforming loans and leases, excluding the PCI loan portfolio ${ }^{(7)}$ |  | 122 |  | 120 |  | 111 |  | 110 |  | 107 |  | 100 |  | 95 |  | 85 |
| Amounts included in allowance for loan and lease losses for loans and leases that are excluded from nonperforming loans and leases (8) | \$ | 4,518 | \$ | 4,682 | \$ | 5,050 | \$ | 5,492 | \$ | 5,944 | \$ | 6,013 | \$ | 6,488 | \$ | 7,143 |
| Allowance for loan and lease losses as a percentage of total nonperforming loans and leases, excluding the allowance for loan and lease losses for loans and leases that are excluded from nonperforming loans and leases ${ }^{(7,8)}$ |  | 82\% |  | 81\% |  | 75\% |  | 73\% | 71\% |  |  | 67\% | 64\% |  | 55\% |  |
| Net charge-offs ${ }^{(9)}$ | \$ | 1,144 | \$ | 932 | \$ | 1,068 | \$ | 1,194 | \$ | 879 | \$ | 1,043 | \$ | 1,073 | \$ | 1,388 |
| Annualized net charge-offs as a percentage of average loans and leases outstanding ${ }^{(7,9)}$ | 0.52\% |  | 0.43\% |  | 0.49\% |  | 0.56\% |  | 0.40\% |  | 0.47\% |  | 0.48\% |  | 0.62\% |  |
| Annualized net charge-offs as a percentage of average loans and leases outstanding, excluding the PCI loan portfolio (7) | 0.53 |  | 0.43 |  | 0.50 |  | 0.58 |  | 0.41 |  | 0.48 |  | 0.49 |  | 0.64 |  |
| Annualized net charge-offs and PCI write-offs as a percentage of average loans and leases outstanding ${ }^{(7)}$ | 0.55 |  | 0.49 |  | 0.63 |  | 0.70 |  | 0.41 |  | 0.58 |  | 0.55 |  | 0.80 |  |
| Nonperforming loans and leases as a percentage of total loans and leases outstanding ${ }^{(7)}$ | 1.05 |  | 1.12 |  | 1.23 |  | 1.30 |  | 1.38 |  | 1.54 |  | 1.64 |  | 1.90 |  |
| Nonperforming loans, leases and foreclosed properties as a percentage of total loans, leases and foreclosed properties ${ }^{(7)}$ | 1.10 |  | 1.18 |  | 1.32 |  | 1.40 |  | 1.45 |  | 1.62 |  | 1.71 |  | 1.97 |  |
| Ratio of the allowance for loan and lease losses at period end to annualized net charge-offs (9) | 2.70 |  | 3.42 |  | 3.05 |  | 2.82 |  | 4.14 |  | 3.65 |  | 3.67 |  | 2.95 |  |
| Ratio of the allowance for loan and lease losses at period end to annualized net charge-offs, excluding the PCI loan portfolio | 2.52 |  | 3.18 |  | 2.79 |  | 2.55 |  | 3.66 |  | 3.27 |  | 3.25 |  | 2.58 |  |
| Ratio of the allowance for loan and lease losses at period end to annualized net charge-offs and PCl write-offs | 2.52 |  | 2.95 |  | 2.40 |  | 2.28 |  | 4.08 |  | 2.95 |  | 3.20 |  | 2.30 |  |
| Capital ratios at period end (10) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Risk-based capital: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Common equity tier 1 capital | 10.2\% |  |  |  | 11.6\% | 11.2\% |  | 11.1\% |  | 12.3\% |  | 12.0\% |  | 12.0\% |  | 11.8\% |  |
| Tier 1 capital | 11.3 |  | 12.9 |  |  |  | 12.5 |  | 12.3 |  |  |  | 13.4 |  | 12.8 |  | 12.5 |  | 11.9 |  |
| Total capital | 13.2 |  | 15.8 |  | 15.5 |  | 15.3 |  | 16.5 |  | 15.8 |  | 15.3 |  | 14.8 |  |
| Tier 1 leverage | 8.6 |  | 8.5 |  | 8.5 |  | 8.4 |  | 8.2 |  | 7.9 |  | 7.7 |  | 7.4 |  |
| Tangible equity ${ }^{(4)}$ | 8.9 |  | 8.8 |  | 8.6 |  | 8.6 |  | 8.4 |  | 8.1 |  | 7.8 |  | 7.6 |  |
| Tangible common equity (4) | 7.8 |  | 7.8 |  | 7.6 |  | 7.5 |  | 7.5 |  | 7.2 |  | 7.1 |  | 7.0 |  |

For footnotes see page 100.

Table XI Quarterly Average Balances and Interest Rates - FTE Basis

|  | Fourth Quarter 2015 |  |  |  | Third Quarter 2015 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (Dollars in millions) | Average Balance |  | terest come/ pense | Yield/ Rate |  | Average Balance |  | erest ome/ ense | Yield/ Rate |
| Earning assets |  |  |  |  |  |  |  |  |  |
| Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks | \$ 148,102 | \$ | 108 | 0.29\% | \$ | 145,174 | \$ | 96 | 0.26\% |
| Time deposits placed and other short-term investments | 10,120 |  | 41 | 1.61 |  | 11,503 |  | 38 | 1.32 |
| Federal funds sold and securities borrowed or purchased under agreements to resell | 207,585 |  | 214 | 0.41 |  | 210,127 |  | 275 | 0.52 |
| Trading account assets | 134,797 |  | 1,141 | 3.37 |  | 140,484 |  | 1,170 | 3.31 |
| Debt securities ${ }^{(1)}$ | 399,423 |  | 2,541 | 2.55 |  | 394,420 |  | 1,853 | 1.88 |
| Loans and leases (2): |  |  |  |  |  |  |  |  |  |
| Residential mortgage | 189,650 |  | 1,644 | 3.47 |  | 193,791 |  | 1,690 | 3.49 |
| Home equity | 77,109 |  | 715 | 3.69 |  | 79,715 |  | 730 | 3.64 |
| U.S. credit card | 88,623 |  | 2,045 | 9.15 |  | 88,201 |  | 2,033 | 9.15 |
| Non-U.S. credit card | 10,155 |  | 258 | 10.07 |  | 10,244 |  | 267 | 10.34 |
| Direct/Indirect consumer ${ }^{(3)}$ | 87,858 |  | 530 | 2.40 |  | 85,975 |  | 515 | 2.38 |
| Other consumer ${ }^{(4)}$ | 2,039 |  | 11 | 2.09 |  | 1,980 |  | 15 | 3.01 |
| Total consumer | 455,434 |  | 5,203 | 4.55 |  | 459,906 |  | 5,250 | 4.54 |
| U.S. commercial | 261,727 |  | 1,790 | 2.72 |  | 251,908 |  | 1,744 | 2.75 |
| Commercial real estate ${ }^{(5)}$ | 56,126 |  | 408 | 2.89 |  | 53,605 |  | 384 | 2.84 |
| Commercial lease financing | 20,422 |  | 155 | 3.03 |  | 20,013 |  | 153 | 3.07 |
| Non-U.S. commercial | 92,447 |  | 530 | 2.27 |  | 91,997 |  | 514 | 2.22 |
| Total commercial | 430,722 |  | 2,883 | 2.66 |  | 417,523 |  | 2,795 | 2.66 |
| Total loans and leases | 886,156 |  | 8,086 | 3.63 |  | 877,429 |  | 8,045 | 3.65 |
| Other earning assets | 61,070 |  | 748 | 4.87 |  | 62,847 |  | 716 | 4.52 |
| Total earning assets ${ }^{(6)}$ | 1,847,253 |  | 12,879 | 2.77 |  | 1,841,984 |  | 12,193 | 2.63 |
| Cash and due from banks | 29,503 |  |  |  |  | 27,730 |  |  |  |
| Other assets, less allowance for loan and lease losses | 303,716 |  |  |  |  | 299,279 |  |  |  |
| Total assets | \$ 2,180,472 |  |  |  |  | 2,168,993 |  |  |  |
| Interest-bearing liabilities |  |  |  |  |  |  |  |  |  |
| U.S. interest-bearing deposits: |  |  |  |  |  |  |  |  |  |
| Savings | \$ 46,094 | \$ | 1 | 0.01\% | \$ | 46,297 | \$ | 2 | 0.02\% |
| NOW and money market deposit accounts | 558,441 |  | 68 | 0.05 |  | 545,741 |  | 67 | 0.05 |
| Consumer CDs and IRAs | 51,107 |  | 37 | 0.29 |  | 53,174 |  | 38 | 0.29 |
| Negotiable CDs, public funds and other deposits | 30,546 |  | 25 | 0.32 |  | 30,631 |  | 26 | 0.33 |
| Total U.S. interest-bearing deposits | 686,188 |  | 131 | 0.08 |  | 675,843 |  | 133 | 0.08 |
| Non-U.S. interest-bearing deposits: |  |  |  |  |  |  |  |  |  |
| Banks located in non-U.S. countries | 3,997 |  | 7 | 0.69 |  | 4,196 |  | 7 | 0.71 |
| Governments and official institutions | 1,687 |  | 2 | 0.37 |  | 1,654 |  | 1 | 0.33 |
| Time, savings and other | 55,965 |  | 71 | 0.51 |  | 53,793 |  | 73 | 0.53 |
| Total non-U.S. interest-bearing deposits | 61,649 |  | 80 | 0.52 |  | 59,643 |  | 81 | 0.54 |
| Total interest-bearing deposits | 747,837 |  | 211 | 0.11 |  | 735,486 |  | 214 | 0.12 |
| Federal funds purchased, securities loaned or sold under agreements to repurchase and short-term borrowings | 231,650 |  | 519 | 0.89 |  | 257,323 |  | 597 | 0.92 |
| Trading account liabilities | 73,139 |  | 272 | 1.48 |  | 77,443 |  | 342 | 1.75 |
| Long-term debt ${ }^{(7)}$ | 237,384 |  | 1,895 | 3.18 |  | 240,520 |  | 1,343 | 2.22 |
| Total interest-bearing liabilities ${ }^{(6)}$ | 1,290,010 |  | 2,897 | 0.89 |  | 1,310,772 |  | 2,496 | 0.76 |
| Noninterest-bearing sources: |  |  |  |  |  |  |  |  |  |
| Noninterest-bearing deposits | 438,214 |  |  |  |  | 423,745 |  |  |  |
| Other liabilities | 195,123 |  |  |  |  | 180,583 |  |  |  |
| Shareholders' equity | 257,125 |  |  |  |  | 253,893 |  |  |  |
| Total liabilities and shareholders' equity | \$ 2,180,472 |  |  |  |  | 2,168,993 |  |  |  |
| Net interest spread |  |  |  | 1.88\% |  |  |  |  | 1.87\% |
| Impact of noninterest-bearing sources |  |  |  | 0.27 |  |  |  |  | 0.23 |
| Net interest income/yield on earning assets |  | \$ | 9,982 | 2.15\% |  |  | \$ | 9,697 | 2.10\% |

(1) Yields on debt securities excluding the impact of market-related adjustments were 2.47 percent, 2.50 percent, 2.48 percent and 2.54 percent in the fourth, third, second and first quarters of 2015 , respectively, and 2.53 percent in the fourth quarter of 2014. Yields on debt securities excluding the impact of market-related adjustments are a non-GAAP financial measure. The Corporation believes the use of this non-GAAP financial measure provides additional clarity in assessing its results.
${ }^{\text {2) }}$ Nonperforming loans are included in the respective average loan balances. Income on these nonperforming loans is generally recognized on a cost recovery basis. PCI loans were recorded at fair value upon acquisition and accrete interest income over the remaining life of the loan.
3) Includes non-U.S. consumer loans of $\$ 4.0$ billion for each of the quarters of 2015 and $\$ 4.2$ billion in the fourth quarter of 2014.
${ }^{(4)}$ Includes consumer finance loans of $\$ 578$ million, $\$ 605$ million, $\$ 632$ million and $\$ 661$ million in the fourth, third, second and first quarters of 2015 , respectively, and $\$ 907$ million in the fourth quarter of 2014; consumer leases of $\$ 1.3$ billion, $\$ 1.2$ billion, $\$ 1.1$ billion and $\$ 1.0$ billion in the fourth, third, second and first quarters of 2015 , respectively, and $\$ 965$ million in the fourth quarter of 2014; and consumer overdrafts of $\$ 174$ million, $\$ 177$ million, $\$ 131$ million and $\$ 141$ million in the fourth, third, second and first quarters of 2015 , respectively, and $\$ 156$ million in the fourth quarter of 2014.
${ }^{\text {5) }}$ Includes U.S. commercial real estate loans of $\$ 52.8$ billion, $\$ 49.8$ billion, $\$ 47.6$ billion and $\$ 45.6$ billion in the fourth, third, second and first quarters of 2015 , respectively, and $\$ 45.1$ billion in the fourth quarter of 2014; and non-U.S. commercial real estate loans of $\$ 3.3$ billion, $\$ 3.8$ billion, $\$ 2.8$ billion and $\$ 2.7$ billion in the fourth, third, second and first quarters of 2015 , respectively, and $\$ 1.9$ billion in the fourth quarter of 2014.
${ }^{(6)}$ Interest income includes the impact of interest rate risk management contracts, which decreased interest income on the underlying assets by $\$ 32$ million, $\$ 8$ million, $\$ 8$ million and $\$ 11$ million in the fourth, third, second and first quarters of 2015, respectively, and $\$ 10$ million in the fourth quarter of 2014. Interest expense includes the impact of interest rate risk management contracts, which decreased interest expense on the underlying liabilities by $\$ 681$ million, $\$ 590$ million, $\$ 509$ million and $\$ 582$ million in the fourth, third, second and first quarters of 2015 , respectively, and $\$ 659$ million in the fourth quarter of 2014. For additional information, see Interest Rate Risk Management for Non-trading Activities on page 78.
(7) The yield on long-term debt excluding the $\$ 612$ million adjustment on certain trust preferred securities was 2.15 percent for the fourth quarter of 2015 . For more information, see Note 11 - Longterm Debt to the Consolidated Financial Statements. The yield on long-term debt excluding the adjustment is a non-GAAP financial measure.

Table XI Quarterly Average Balances and Interest Rates - FTE Basis (continued)

|  | Second Quarter 2015 |  |  |  |  | First Quarter 2015 |  |  |  |  | Fourth Quarter 2014 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (Dollars in millions) | Average Balance |  | Interest <br> Income/ <br> Expense |  | Yield/ Rate | Average Balance |  | Interest <br> Income/ <br> Expense |  | Yield/ Rate | Average Balance |  | Interest Income/ <br> Expense |  | Yield/ Rate |
| Earning assets |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks | \$ | 125,762 | \$ | 81 | 0.26\% | \$ | 126,189 | \$ | 84 | 0.27\% | \$ | 109,042 | \$ | 74 | 0.27\% |
| Time deposits placed and other short-term investments |  | 8,183 |  | 34 | 1.64 |  | 8,379 |  | 33 | 1.61 |  | 9,339 |  | 41 | 1.73 |
| Federal funds sold and securities borrowed or purchased under agreements to resell |  | 214,326 |  | 268 | 0.50 |  | 213,931 |  | 231 | 0.44 |  | 217,982 |  | 238 | 0.43 |
| Trading account assets |  | 137,137 |  | 1,114 | 3.25 |  | 138,946 |  | 1,122 | 3.26 |  | 144,147 |  | 1,141 | 3.15 |
| Debt securities ${ }^{(1)}$ |  | 386,357 |  | 3,082 | 3.21 |  | 383,120 |  | 1,898 | 2.01 |  | 371,014 |  | 1,687 | 1.82 |
| Loans and leases (2): |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage |  | 207,356 |  | 1,782 | 3.44 |  | 215,030 |  | 1,851 | 3.45 |  | 223,132 |  | 1,946 | 3.49 |
| Home equity |  | 82,640 |  | 769 | 3.73 |  | 84,915 |  | 770 | 3.66 |  | 86,825 |  | 808 | 3.70 |
| U.S. credit card |  | 87,460 |  | 1,980 | 9.08 |  | 88,695 |  | 2,027 | 9.27 |  | 89,381 |  | 2,087 | 9.26 |
| Non-U.S. credit card |  | 10,012 |  | 264 | 10.56 |  | 10,002 |  | 262 | 10.64 |  | 10,950 |  | 280 | 10.14 |
| Direct/Indirect consumer ${ }^{(3)}$ |  | 83,698 |  | 504 | 2.42 |  | 80,713 |  | 491 | 2.47 |  | 83,121 |  | 522 | 2.49 |
| Other consumer ${ }^{(4)}$ |  | 1,885 |  | 15 | 3.14 |  | 1,847 |  | 15 | 3.29 |  | 2,031 |  | 85 | 16.75 |
| Total consumer |  | 473,051 |  | 5,314 | 4.50 |  | 481,202 |  | 5,416 | 4.54 |  | 495,440 |  | 5,728 | 4.60 |
| U.S. commercial |  | 244,540 |  | 1,704 | 2.80 |  | 234,907 |  | 1,645 | 2.84 |  | 231,215 |  | 1,648 | 2.83 |
| Commercial real estate (5) |  | 50,478 |  | 382 | 3.03 |  | 48,234 |  | 347 | 2.92 |  | 46,996 |  | 360 | 3.04 |
| Commercial lease financing |  | 19,486 |  | 149 | 3.05 |  | 19,271 |  | 171 | 3.55 |  | 19,090 |  | 154 | 3.23 |
| Non-U.S. commercial |  | 88,623 |  | 479 | 2.17 |  | 83,555 |  | 485 | 2.35 |  | 86,844 |  | 527 | 2.41 |
| Total commercial |  | 403,127 |  | 2,714 | 2.70 |  | 385,967 |  | 2,648 | 2.78 |  | 384,145 |  | 2,689 | 2.78 |
| Total loans and leases |  | 876,178 |  | 8,028 | 3.67 |  | 867,169 |  | 8,064 | 3.76 |  | 879,585 |  | 8,417 | 3.81 |
| Other earning assets |  | 62,712 |  | 721 | 4.60 |  | 61,441 |  | 706 | 4.66 |  | 65,864 |  | 738 | 4.46 |
| Total earning assets ${ }^{(6)}$ |  | 1,810,655 |  | 13,328 | 2.95 |  | 1,799,175 |  | 12,138 | 2.72 |  | 1,796,973 |  | 12,336 | 2.73 |
| Cash and due from banks |  | 30,751 |  |  |  |  | 27,695 |  |  |  |  | 27,590 |  |  |  |
| Other assets, less allowance for loan and lease losses |  | 310,560 |  |  |  |  | 311,704 |  |  |  |  | 312,988 |  |  |  |
| Total assets |  | 2,151,966 |  |  |  |  | 2,138,574 |  |  |  |  | 2,137,551 |  |  |  |
| Interest-bearing liabilities |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| U.S. interest-bearing deposits: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Savings | \$ | 47,381 | \$ | 2 | 0.02\% | \$ | 46,224 | \$ | 2 | 0.02\% | \$ | 45,621 | \$ | 1 | 0.01\% |
| NOW and money market deposit accounts |  | 536,201 |  | 71 | 0.05 |  | 531,827 |  | 67 | 0.05 |  | 515,995 |  | 76 | 0.06 |
| Consumer CDs and IRAs |  | 55,832 |  | 42 | 0.30 |  | 58,704 |  | 45 | 0.31 |  | 61,880 |  | 52 | 0.33 |
| Negotiable CDs, public funds and other deposits |  | 29,904 |  | 22 | 0.30 |  | 28,796 |  | 22 | 0.31 |  | 30,950 |  | 22 | 0.29 |
| Total U.S. interest-bearing deposits |  | 669,318 |  | 137 | 0.08 |  | 665,551 |  | 136 | 0.08 |  | 654,446 |  | 151 | 0.09 |
| Non-U.S. interest-bearing deposits: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Banks located in non-U.S. countries |  | 5,162 |  | 9 | 0.67 |  | 4,544 |  | 8 | 0.74 |  | 5,415 |  | 9 | 0.63 |
| Governments and official institutions |  | 1,239 |  | 1 | 0.38 |  | 1,382 |  | 1 | 0.21 |  | 1,647 |  | 1 | 0.18 |
| Time, savings and other |  | 55,030 |  | 69 | 0.51 |  | 54,276 |  | 75 | 0.55 |  | 57,029 |  | 76 | 0.53 |
| Total non-U.S. interest-bearing deposits |  | 61,431 |  | 79 | 0.52 |  | 60,202 |  | 84 | 0.56 |  | 64,091 |  | 86 | 0.53 |
| Total interest-bearing deposits |  | 730,749 |  | 216 | 0.12 |  | 725,753 |  | 220 | 0.12 |  | 718,537 |  | 237 | 0.13 |
| Federal funds purchased, securities loaned or sold under agreements to repurchase and short-term borrowings |  | 252,088 |  | 686 | 1.09 |  | 244,134 |  | 585 | 0.97 |  | 251,432 |  | 615 | 0.97 |
| Trading account liabilities |  | 77,772 |  | 335 | 1.73 |  | 78,787 |  | 394 | 2.03 |  | 78,174 |  | 351 | 1.78 |
| Long-term debt ${ }^{(7)}$ |  | 242,230 |  | 1,407 | 2.33 |  | 240,127 |  | 1,313 | 2.20 |  | 249,221 |  | 1,315 | 2.10 |
| Total interest-bearing liabilities ${ }^{(6)}$ |  | 1,302,839 |  | 2,644 | 0.81 |  | 1,288,801 |  | 2,512 | 0.79 |  | 1,297,364 |  | 2,518 | 0.77 |
| Noninterest-bearing sources: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Noninterest-bearing deposits |  | 416,040 |  |  |  |  | 404,973 |  |  |  |  | 403,977 |  |  |  |
| Other liabilities |  | 182,033 |  |  |  |  | 199,056 |  |  |  |  | 192,756 |  |  |  |
| Shareholders' equity |  | 251,054 |  |  |  |  | 245,744 |  |  |  |  | 243,454 |  |  |  |
| Total liabilities and shareholders' equity |  | 2,151,966 |  |  |  |  | 2,138,574 |  |  |  |  | 2,137,551 |  |  |  |
| Net interest spread |  |  |  |  | 2.14\% |  |  |  |  | 1.93\% |  |  |  |  | 1.96\% |
| Impact of noninterest-bearing sources |  |  |  |  | 0.23 |  |  |  |  | 0.23 |  |  |  |  | 0.22 |
| Net interest income/yield on earning assets |  |  | \$ | 10,684 | 2.37\% |  |  | \$ | 9,626 | 2.16\% |  |  | \$ | 9,818 | 2.18\% |

[^3]Table XII Quarterly Supplemental Financial Data

| (Dollars in millions, except per share information) | 2015 Quarters |  |  |  | 2014 Quarters |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fourth | Third | Second | First | Fourth | Third | Second | First |
| Fully taxable-equivalent basis data ${ }^{(1)}$ |  |  |  |  |  |  |  |  |
| Net interest income | \$ 9,982 | \$ 9,697 | \$ 10,684 | \$ 9,626 | \$ 9,818 | \$ 10,401 | \$ 10,181 | \$ 10,240 |
| Total revenue, net of interest expense ${ }^{(2)}$ | 19,893 | 20,739 | 22,179 | 21,129 | 19,081 | 21,565 | 22,089 | 22,902 |
| Net interest yield | 2.15\% | 2.10\% | 2.37\% | 2.16\% | 2.17\% | 2.28\% | 2.22\% | 2.31\% |
| Efficiency ratio ${ }^{(2)}$ | 70.43 | 67.22 | 62.93 | 74.91 | 75.09 | 94.03 | 84.54 | 97.71 |

 picture of the interest margin for comparative purposes. For more information on these performance measures and ratios, see Supplemental Financial Data on page 12 and for corresponding reconciliations to GAAP financial measures, see Statistical Table XV.
${ }^{(2)}$ The results for 2015 were impacted by the early adoption of new accounting guidance on recognition and measurement of financial instruments. For additional information, see Executive Summary - Recent Events on page 4.

## Table XIII Five-year Reconciliations to GAAP Financial Measures ${ }^{(1)}$

 Corporation, see Supplemental Financial Data on page 12.

Table XIV Two-year Reconciliations to GAAP Financial Measures ${ }^{(1)}$

| (Dollars in millions) | 2015 |  |  | 2014 |
| :---: | :---: | :---: | :---: | :---: |
| Consumer Banking |  |  |  |  |
| Reported net income | \$ | 6,588 | \$ | 6,220 |
| Adjustment related to intangibles ${ }^{(2)}$ |  | 4 |  | 4 |
| Adjusted net income | \$ | 6,592 | \$ | 6,224 |
| Average allocated equity ${ }^{(3)}$ | \$ | 63,188 | \$ | 64,285 |
| Adjustment related to goodwill and a percentage of intangibles |  | $(30,188)$ |  | $(30,285)$ |
| Average allocated capital | \$ | 33,000 | \$ | 34,000 |
| Deposits |  |  |  |  |
| Reported net income | \$ | 2,603 | \$ | 2,292 |
| Adjustment related to intangibles ${ }^{(2)}$ |  | - |  | - |
| Adjusted net income | \$ | 2,603 | \$ | 2,292 |
| Average allocated equity ${ }^{(3)}$ | \$ | 30,336 | \$ | 29,367 |
| Adjustment related to goodwill and a percentage of intangibles |  | $(18,336)$ |  | $(18,367)$ |
| Average allocated capital | \$ | 12,000 | \$ | 11,000 |
| Consumer Lending |  |  |  |  |
| Reported net income | \$ | 3,985 | \$ | 3,928 |
| Adjustment related to intangibles ${ }^{(2)}$ |  | 4 |  | 4 |
| Adjusted net income | \$ | 3,989 | \$ | 3,932 |
| Average allocated equity ${ }^{(3)}$ | \$ | 32,852 | \$ | 34,918 |
| Adjustment related to goodwill and a percentage of intangibles |  | $(11,852)$ |  | $(11,918)$ |
| Average allocated capital | \$ | 21,000 | \$ | 23,000 |
| Global Wealth \& Investment Management |  |  |  |  |
| Reported net income | \$ | 2,544 | \$ | 2,848 |
| Adjustment related to intangibles ${ }^{(2)}$ |  | 11 |  | 13 |
| Adjusted net income | \$ | 2,555 | \$ | 2,861 |
| Average allocated equity (3) | \$ | 22,215 | \$ | 22,278 |
| Adjustment related to goodwill and a percentage of intangibles |  | $(10,215)$ |  | $(10,278)$ |
| Average allocated capital | \$ | 12,000 | \$ | 12,000 |
| Global Banking |  |  |  |  |
| Reported net income | \$ | 5,220 | \$ | 5,679 |
| Adjustment related to intangibles ${ }^{(2)}$ |  | 1 |  | 2 |
| Adjusted net income | \$ | 5,221 | \$ | 5,681 |
| Average allocated equity ${ }^{(3)}$ | \$ | 58,935 | \$ | 57,429 |
| Adjustment related to goodwill and a percentage of intangibles |  | $(23,935)$ |  | $(23,929)$ |
| Average allocated capital | \$ | 35,000 | \$ | 33,500 |
| Global Markets |  |  |  |  |
| Reported net income | \$ | 2,419 | \$ | 2,588 |
| Adjustment related to intangibles ${ }^{(2)}$ |  | 10 |  | 9 |
| Adjusted net income | \$ | 2,429 | \$ | 2,597 |
| Average allocated equity ${ }^{(3)}$ | \$ | 40,372 | \$ | 39,346 |
| Adjustment related to goodwill and a percentage of intangibles |  | $(5,372)$ |  | $(5,346)$ |
| Average allocated capital | \$ | 35,000 | \$ | 34,000 |
| (1) Presents reconciliations of non-GAAP financial measures to GAAP financial measures. We believe the use of these non-GAAP financial measures provides additional clarity in assessing the results of the Corporation and our segments. Other companies may define or calculate these measures differently. For more information on non-GAAP financial measures and ratios we use in assessing the results of the Corporation, see Supplemental Financial Data on page 12. <br> (2) Represents cost of funds, earnings credits and certain expenses related to intangibles. <br> ${ }^{(3)}$ Average allocated equity is comprised of average allocated capital plus capital for the portion of goodwill and intangibles specifically assigned to the business segment. For more information on allocated capital, see Business Segment Operations on page 14 and Note 8 - Goodwill and Intangible Assets to the Consolidated Financial Statements. |  |  |  |  |

Table XV Quarterly Reconciliations to GAAP Financial Measures ${ }^{(1)}$

|  | 2015 Quarters |  |  |  |  |  |  |  | 2014 Quarters |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (Dollars in millions) | Fourth |  | Third |  | Second |  | First |  | Fourth |  | Third |  | Second |  | First |  |
| Reconciliation of net interest income to net interest income on a fully taxable-equivalent basis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net interest income | \$ | 9,756 | \$ | 9,471 | \$ | 10,461 | \$ | 9,411 | \$ | 9,594 | \$ | 10,179 | \$ | 9,973 | \$ | 10,044 |
| Fully taxable-equivalent adjustment |  | 226 |  | 226 |  | 223 |  | 215 |  | 224 |  | 222 |  | 208 |  | 196 |
| Net interest income on a fully taxable-equivalent basis | \$ | 9,982 | \$ | 9,697 | \$ | 10,684 | \$ | 9,626 | \$ | 9,818 | \$ | 10,401 | \$ | 10,181 | \$ | 10,240 |
| Reconciliation of total revenue, net of interest expense to total revenue, net of interest expense on a fully taxable-equivalent basis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total revenue, net of interest expense ${ }^{(2)}$ | \$ | 19,667 | \$ | 20,513 | \$ | 21,956 | \$ | 20,914 | \$ | 18,857 | \$ | 21,343 | \$ | 21,881 | \$ | 22,706 |
| Fully taxable-equivalent adjustment |  | 226 |  | 226 |  | 223 |  | 215 |  | 224 |  | 222 |  | 208 |  | 196 |
| Total revenue, net of interest expense on a fully taxable-equivalent basis | \$ | 19,893 | \$ | 20,739 | \$ | 22,179 | \$ | 21,129 | \$ | 19,081 | \$ | 21,565 | \$ | 22,089 | \$ | 22,902 |
| Reconciliation of income tax expense (benefit) to income tax expense (benefit) on a fully taxable-equivalent basis |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Income tax expense (benefit) ${ }^{(2)}$ | \$ | 1,511 | \$ | 1,446 | \$ | 2,084 | \$ | 1,225 | \$ | 1,260 | \$ | 663 | \$ | 504 | \$ | (405) |
| Fully taxable-equivalent adjustment |  | 226 |  | 226 |  | 223 |  | 215 |  | 224 |  | 222 |  | 208 |  | 196 |
| Income tax expense (benefit) on a fully taxable-equivalent basis | \$ | 1,737 | \$ | 1,672 | \$ | 2,307 | \$ | 1,440 | \$ | 1,484 | \$ | 885 | \$ | 712 | \$ | (209) |
| Reconciliation of average common shareholders' equity to average tangible common shareholders' equity |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Common shareholders' equity | \$ | 234,851 | \$ | 231,620 | \$ | 228,780 | \$ | 225,357 | \$ | 224,479 | \$ | 222,374 | \$ | 222,221 | \$ | 23,207 |
| Goodwill |  | $(69,761)$ |  | $(69,774)$ |  | $(69,775)$ |  | $(69,776)$ |  | $(69,782)$ |  | $(69,792)$ |  | $(69,822)$ |  | $(69,842)$ |
| Intangible assets (excluding MSRs) |  | $(3,888)$ |  | $(4,099)$ |  | $(4,307)$ |  | $(4,518)$ |  | $(4,747)$ |  | $(4,992)$ |  | $(5,235)$ |  | $(5,474)$ |
| Related deferred tax liabilities |  | 1,753 |  | 1,811 |  | 1,885 |  | 1,959 |  | 2,019 |  | 2,077 |  | 2,100 |  | 2,165 |
| Tangible common shareholders' equity | \$ | 162,955 | \$ | 159,558 | \$ | 156,583 | \$ | 153,022 | \$ | 151,969 | \$ | 149,667 | \$ | 149,264 | \$ | 150,056 |
| Reconciliation of average shareholders' equity to average tangible shareholders' equity |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Shareholders' equity | \$ | 257,125 | \$ | 253,893 | \$ | 251,054 | \$ | 245,744 | \$ | 243,454 | \$ | 238,040 | \$ | 235,803 | \$ | 236,559 |
| Goodwill |  | $(69,761)$ |  | $(69,774)$ |  | $(69,775)$ |  | $(69,776)$ |  | $(69,782)$ |  | $(69,792)$ |  | $(69,822)$ |  | $(69,842)$ |
| Intangible assets (excluding MSRs) |  | $(3,888)$ |  | $(4,099)$ |  | $(4,307)$ |  | $(4,518)$ |  | $(4,747)$ |  | $(4,992)$ |  | $(5,235)$ |  | $(5,474)$ |
| Related deferred tax liabilities |  | 1,753 |  | 1,811 |  | 1,885 |  | 1,959 |  | 2,019 |  | 2,077 |  | 2,100 |  | 2,165 |
| Tangible shareholders' equity | \$ | 185,229 | \$ | 181,831 | \$ | 178,857 | \$ | 173,409 | \$ | 170,944 | \$ | 165,333 | \$ | 162,846 | \$ | 163,408 |
| Reconciliation of period-end common shareholders' equity to period-end tangible common shareholders' equity |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Common shareholders' equity | \$ | 233,932 | \$ | 233,632 | \$ | 229,386 | \$ | 227,915 | \$ | 224,162 | \$ | 220,768 | \$ | 222,565 | \$ | 218,536 |
| Goodwill |  | $(69,761)$ |  | $(69,761)$ |  | $(69,775)$ |  | $(69,776)$ |  | $(69,777)$ |  | $(69,784)$ |  | $(69,810)$ |  | $(69,842)$ |
| Intangible assets (excluding MSRs) |  | $(3,768)$ |  | $(3,973)$ |  | $(4,188)$ |  | $(4,391)$ |  | $(4,612)$ |  | $(4,849)$ |  | $(5,099)$ |  | $(5,337)$ |
| Related deferred tax liabilities |  | 1,716 |  | 1,762 |  | 1,813 |  | 1,900 |  | 1,960 |  | 2,019 |  | 2,078 |  | 2,100 |
| Tangible common shareholders' equity | \$ | 162,119 | \$ | 161,660 | \$ | 157,236 | \$ | 155,648 | \$ | 151,733 | \$ | 148,154 | \$ | 149,734 | \$ | 145,457 |
| Reconciliation of period-end shareholders' equity to period-end tangible shareholders' equity |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Shareholders' equity | \$ | 256,205 | \$ | 255,905 | \$ | 251,659 | \$ | 250,188 | \$ | 243,471 | \$ | 238,681 | \$ | 237,411 | \$ | 231,888 |
| Goodwill |  | $(69,761)$ |  | $(69,761)$ |  | $(69,775)$ |  | $(69,776)$ |  | $(69,777)$ |  | $(69,784)$ |  | $(69,810)$ |  | $(69,842)$ |
| Intangible assets (excluding MSRs) |  | $(3,768)$ |  | $(3,973)$ |  | $(4,188)$ |  | $(4,391)$ |  | $(4,612)$ |  | $(4,849)$ |  | $(5,099)$ |  | $(5,337)$ |
| Related deferred tax liabilities |  | 1,716 |  | 1,762 |  | 1,813 |  | 1,900 |  | 1,960 |  | 2,019 |  | 2,078 |  | 2,100 |
| Tangible shareholders' equity | \$ | 184,392 | \$ | 183,933 | \$ | 179,509 | \$ | 177,921 | \$ | 171,042 | \$ | 166,067 | \$ | 164,580 | \$ | 158,809 |
| Reconciliation of period-end assets to period-end tangible assets |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Assets |  | 2,144,316 |  | 2,153,006 |  | 2,149,034 |  | ,143,545 |  | ,104,534 |  | ,123,613 |  | ,170,557 |  | ,149,851 |
| Goodwill |  | $(69,761)$ |  | $(69,761)$ |  | $(69,775)$ |  | $(69,776)$ |  | $(69,777)$ |  | $(69,784)$ |  | $(69,810)$ |  | $(69,842)$ |
| Intangible assets (excluding MSRs) |  | $(3,768)$ |  | $(3,973)$ |  | $(4,188)$ |  | $(4,391)$ |  | $(4,612)$ |  | $(4,849)$ |  | $(5,099)$ |  | $(5,337)$ |
| Related deferred tax liabilities |  | 1,716 |  | 1,762 |  | 1,813 |  | 1,900 |  | 1,960 |  | 2,019 |  | 2,078 |  | 2,100 |
| Tangible assets |  | 2,072,503 |  | 2,081,034 |  | 2,076,884 |  | ,071,278 |  | ,032,105 |  | ,050,999 |  | ,097,726 |  | ,076,772 |

 of the Corporation. Other companies may define or calculate these measures differently. For more information on non-GAAP financial measures and ratios we use in assessing the results of the Corporation, see Supplemental Financial Data on page 12.
 - Recent Events on page 4.

## Glossary

Alt-A Mortgage - A type of U.S. mortgage that, for various reasons, is considered riskier than A-paper, or "prime," and less risky than "subprime," the riskiest category. Alt-A interest rates, which are determined by credit risk, therefore tend to be between those of prime and subprime consumer real estate loans. Typically, Alt-A mortgages are characterized by borrowers with less than full documentation, lower credit scores and higher LTVs.

Assets in Custody - Consist largely of custodial and nondiscretionary trust assets excluding brokerage assets administered for clients. Trust assets encompass a broad range of asset types including real estate, private company ownership interest, personal property and investments.

Assets Under Management (AUM) - The total market value of assets under the investment advisory and/or discretion of GWIM which generate asset management fees based on a percentage of the assets' market values. AUM reflects assets that are generally managed for institutional, high net worth and retail clients, and are distributed through various investment products including mutual funds, other commingled vehicles and separate accounts. AUM is classified in two categories, Liquidity AUM and Long-term AUM. Liquidity AUM are assets under advisory and discretion of GWIM in which the investment strategy seeks current income, while maintaining liquidity and capital preservation. The duration of these strategies is primarily less than one year. Longterm AUM are assets under advisory and/or discretion of GWIM in which the duration of investment strategy is longer than one year.

Carrying Value (with respect to loans) - The amount at which a loan is recorded on the balance sheet. For loans recorded at amortized cost, carrying value is the unpaid principal balance net of unamortized deferred loan origination fees and costs, and unamortized purchase premium or discount. For loans that are or have been on nonaccrual status, the carrying value is also reduced by any net charge-offs that have been recorded and the amount of interest payments applied as a reduction of principal under the cost recovery method. For PCI loans, the carrying value equals fair value upon acquisition adjusted for subsequent cash collections and yield accreted to date. For credit card loans, the carrying value also includes interest that has been billed to the customer. For loans classified as held-for-sale, carrying value is the lower of carrying value as described in the sentences above, or fair value. For loans for which we have elected the fair value option, the carrying value is fair value.

Client Brokerage Assets - Include client assets which are held in brokerage accounts. This includes non-discretionary brokerage and fee-based assets which generate brokerage income and asset management fee revenue.

Committed Credit Exposure - Includes any funded portion of a facility plus the unfunded portion of a facility on which the lender is legally bound to advance funds during a specified period under prescribed conditions.

Credit Derivatives - Contractual agreements that provide protection against a credit event on one or more referenced
obligations. The nature of a credit event is established by the protection purchaser and the protection seller at the inception of the transaction, and such events generally include bankruptcy or insolvency of the referenced credit entity, failure to meet payment obligations when due, as well as acceleration of indebtedness and payment repudiation or moratorium. The purchaser of the credit derivative pays a periodic fee in return for a payment by the protection seller upon the occurrence, if any, of such a credit event. A credit default swap is a type of a credit derivative.

Credit Valuation Adjustment (CVA) - A portfolio adjustment required to properly reflect the counterparty credit risk exposure as part of the fair value of derivative instruments.

Debit Valuation Adjustment (DVA) - A portfolio adjustment required to properly reflect the Corporation's own credit risk exposure as part of the fair value of derivative instruments and/or structured liabilities.

Funding Valuation Adjustment (FVA) - A portfolio adjustment required to include funding costs on uncollateralized derivatives and derivatives where the Corporation is not permitted to use the collateral it receives.

Interest Rate Lock Commitment (IRLC) - Commitment with a loan applicant in which the loan terms, including interest rate and price, are guaranteed for a designated period of time subject to credit approval.

Letter of Credit - A document issued on behalf of a customer to a third party promising to pay the third party upon presentation of specified documents. A letter of credit effectively substitutes the issuer's credit for that of the customer.

Loan-to-value (LTV) - A commonly used credit quality metric that is reported in terms of ending and average LTV. Ending LTV is calculated as the outstanding carrying value of the loan at the end of the period divided by the estimated value of the property securing the loan. An additional metric related to LTV is combined loan-to-value (CLTV) which is similar to the LTV metric, yet combines the outstanding balance on the residential mortgage loan and the outstanding carrying value on the home equity loan or available line of credit, both of which are secured by the same property, divided by the estimated value of the property. A LTV of 100 percent reflects a loan that is currently secured by a property valued at an amount exactly equal to the carrying value or available line of the loan. Estimated property values are generally determined through the use of automated valuation models (AVMs) or the CoreLogic Case-Shiller Index. An AVM is a tool that estimates the value of a property by reference to large volumes of market data including sales of comparable properties and price trends specific to the MSA in which the property being valued is located. CoreLogic CaseShiller is a widely used index based on data from repeat sales of single family homes. CoreLogic Case-Shiller indexed-based values are reported on a three-month or one-quarter lag.

Margin Receivable - An extension of credit secured by eligible securities in certain brokerage accounts.

Market-related Adjustments - Include adjustments to premium amortization or discount accretion on debt securities when a decrease in long-term rates shortens (or an increase extends) the estimated lives of mortgage-related debt securities. Also included in market-related adjustments is hedge ineffectiveness that impacts net interest income.

Matched Book-Repurchase and resale agreements and securities borrowed and loaned transactions entered into to accommodate customers and earn interest rate spreads.

Mortgage Servicing Right (MSR) - The right to service a mortgage loan when the underlying loan is sold or securitized. Servicing includes collections for principal, interest and escrow payments from borrowers and accounting for and remitting principal and interest payments to investors.

Net Interest Yield - Net interest income divided by average total interest-earning assets.

Nonperforming Loans and Leases - Include loans and leases that have been placed on nonaccrual status, including nonaccruing loans whose contractual terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties (TDRs). Loans accounted for under the fair value option, PCl loans and LHFS are not reported as nonperforming loans and leases. Consumer credit card loans, business card loans, consumer loans secured by personal property (except for certain secured consumer loans, including those that have been modified in a TDR), and consumer loans secured by real estate that are insured by the FHA or through long-term credit protection agreements with FNMA and FHLMC (fully-insured Ioan portfolio) are not placed on nonaccrual status and are, therefore, not reported as nonperforming loans and leases.

Prompt Corrective Action (PCA) - A framework established by the U.S. banking regulators requiring banks to maintain certain levels of regulatory capital ratios, comprised of five categories of capitalization: "well capitalized," "adequately capitalized," "undercapitalized," "significantly undercapitalized," and "critically undercapitalized." Insured depository institutions that fail to meet these capital levels are subject to increasingly strict limits on their activities, including their ability to make capital distributions, pay management compensation, grow assets and take other actions.

Purchased Credit-impaired (PCI) Loan - A loan purchased as an individual loan, in a portfolio of loans or in a business combination
with evidence of deterioration in credit quality since origination for which it is probable, upon acquisition, that the investor will be unable to collect all contractually required payments. These loans are recorded at fair value upon acquisition.

Subprime Loans - Although a standard industry definition for subprime loans (including subprime mortgage loans) does not exist, the Corporation defines subprime loans as specific product offerings for higher risk borrowers, including individuals with one or a combination of high credit risk factors, such as low FICO scores, high debt to income ratios and inferior payment history.

Troubled Debt Restructurings (TDRs) - Loans whose contractual terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties. Certain consumer loans for which a binding offer to restructure has been extended are also classified as TDRs. Concessions could include a reduction in the interest rate to a rate that is below market on the loan, payment extensions, forgiveness of principal, forbearance, loans discharged in bankruptcy or other actions intended to maximize collection. Secured consumer loans that have been discharged in Chapter 7 bankruptcy and have not been reaffirmed by the borrower are classified as TDRs at the time of discharge from bankruptcy. TDRs are generally reported as nonperforming loans and leases while on nonaccrual status. Nonperforming TDRs may be returned to accrual status when, among other criteria, payment in full of all amounts due under the restructured terms is expected and the borrower has demonstrated a sustained period of repayment performance, generally six months. TDRs that are on accrual status are reported as performing TDRs through the end of the calendar year in which the restructuring occurred or the year in which they are returned to accrual status. In addition, if accruing TDRs bear less than a market rate of interest at the time of modification, they are reported as performing TDRs throughout their remaining lives unless and until they cease to perform in accordance with their modified contractual terms, at which time they would be placed on nonaccrual status and reported as nonperforming TDRs.

Value-at-Risk (VaR) - VaR is a model that simulates the value of a portfolio under a range of hypothetical scenarios in order to generate a distribution of potential gains and losses. VaR represents the loss the portfolio is expected to experience with a given confidence level based on historical data. A VaR model is an effective tool in estimating ranges of potential gains and losses on our trading portfolios.

## Acronyms

| ABS | Asset-backed securities | HFI | Held-for-investment |
| :--- | :--- | :--- | :--- |
| AFS | Available-for-sale | HQLA | High Quality Liquid Assets |
| ALM | Asset and liability management | HUD | U.S. Department of Housing and Urban <br> ARM |
| Adjustable-rate mortgage |  | Development |  |
| AUM | Assets under management | IRM | Independent risk management |
| BHC | Bank holding company | LCR | Liquidity Coverage Ratio |
| CCAR | Comprehensive Capital Analysis and Review | LGD | Loss-given default |
| CDO | Collateralized debt obligation | LHFS | Loans held-for-sale |
| CGA | Corporate General Auditor | LIBOR | London InterBank Offered Rate |
| CLO | Collateralized loan obligation | LTV | Loan-to-value |
| CRA | Community Reinvestment Act | MD\&A | Management's Discussion and Analysis of |
| CVA | Credit valuation adjustment |  | Financial Condition and Results of Operations |
| DVA | Debit valuation adjustment | MI | Mortgage insurance |
| EAD | Exposure at default | MRC | Management Risk Committee |
| ERC | Enterprise Risk Committee | MSA | Metropolitan statistical area |
| FDIC | Federal Deposit Insurance Corporation | MSR | Mortgage servicing right |
| FHA | Federal Housing Administration | NSFR | Net Stable Funding Ratio |
| FHFA | Federal Housing Finance Agency | OCC | Office of the Comptroller of the Currency |
| FHLB | Federal Home Loan Bank | OCI | Other comprehensive income |
| FHLMC | Freddie Mac | OTC | Over-the-counter |
| FICC | Fixed-income, currencies and commodities | OTTI | Other-than-temporary impairment |
| FICO | Fair Isaac Corporation (credit score) | PCA | Prompt Corrective Action |
| FLUs | Front line units | PCI | Purchased credit-impaired |
| FNMA | Fannie Mae | PPI | Payment protection insurance |
| FTE | Fully taxable-equivalent | RCSAs | Risk and Control Self Assessments |
| FVA | Funding valuation adjustment | RMBS | Residential mortgage-backed securities |
| GAAP | Accounting principles generally accepted in the | SBLCs | Standby letters of credit |
|  | United States of America | SEC | Securities and Exchange Commission |
| GM\&CA | Global Marketing and Corporate Affairs | SLR | Supplementary leverage ratio |
| GNMA | Government National Mortgage Association | TDR | Troubled debt restructurings |
| GSE | Government-sponsored enterprise | TLAC | Total Loss-Absorbing Capacity |
| HELOC | Home equity lines of credit | VIE | Variable interest entity |

Item 8. Financial Statements and Supplementary Data

## Table of Contents

|  | Page |
| :---: | :---: |
| Consolidated Statement of Income | 4 |
| Consolidated Statement of Comprehensive Income | 5 |
| Consolidated Balance Sheet | 6 |
| Consolidated Statement of Changes in Shareholders' Equity | 8 |
| Consolidated Statement of Cash Flows | 9 |
| Note 1 - Summary of Significant Accounting Principles | 10 |
| Note 2 - Derivatives | 21 |
| Note 3 - Securities | 31 |
| Note 4 - Outstanding Loans and Leases | 36 |
| Note 5 - Allowance for Credit Losses | 50 |
| Note 6 - Securitizations and Other Variable Interest Entities | 52 |
| Note 7 - Representations and Warranties Obligations and Corporate Guarantees | 58 |
| Note 8 - Goodwill and Intangible Assets | 62 |
| Note 9 - Deposits | 63 |
| Note 10 - Federal Funds Sold or Purchased, Securities Financing Agreements and Short-term Borrowings | 63 |
| Note 11 - Long-term Debt | 66 |
| Note 12 - Commitments and Contingencies | 69 |
| Note 13 - Shareholders' Equity | 77 |
| Note 14 - Accumulated Other Comprehensive Income (Loss) | 81 |
| Note 15 - Earnings Per Common Share | 83 |
| Note 16 - Regulatory Requirements and Restrictions | 84 |
| Note 17 - Employee Benefit Plans | 86 |
| Note 18 - Stock-based Compensation Plans | 93 |
| Note 19 - Income Taxes | 94 |
| Note 20 - Fair Value Measurements | 97 |
| Note 21 - Fair Value Option | 111 |
| Note 22 - Fair Value of Financial Instruments | 114 |
| Note 23 - Mortgage Servicing Rights | 115 |
| Note 24 - Business Segment Information | 116 |
| Note 25 - Parent Company Information | 120 |
| Note 26 - Performance by Geographical Area | 122 |

## Report of Management on Internal Control Over Financial Reporting

The management of Bank of America Corporation is responsible for establishing and maintaining adequate internal control over financial reporting.

The Corporation's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. The Corporation's internal control over financial reporting includes those policies and procedures that: (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Corporation; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America, and that receipts and expenditures of the Corporation are being made only in accordance with authorizations of management and directors of the Corporation; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Corporation's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of the Corporation's internal control over financial reporting as of December 31, 2015
based on the framework set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control Integrated Framework (2013). Based on that assessment, management concluded that, as of December 31, 2015, the Corporation's internal control over financial reporting is effective.

The Corporation's internal control over financial reporting as of December 31, 2015 has been audited by PricewaterhouseCoopers, LLP, an independent registered public accounting firm, as stated in their accompanying report which expresses an unqualified opinion on the effectiveness of the Corporation's internal control over financial reporting as of December 31, 2015.


Brian T. Moynihan
Chairman, Chief Executive Officer and President


Paul M. Donofrio
Chief Financial Officer

## Report of Independent Registered Public Accounting Firm

## To the Board of Directors and Shareholders of Bank of America Corporation:

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, comprehensive income, changes in shareholders' equity and cash flows present fairly, in all material respects, the financial position of Bank of America Corporation and its subsidiaries at December 31, 2015 and 2014, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2015 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2015, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Corporation's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Report of Management on Internal Control Over Financial Reporting. Our responsibility is to express opinions on these financial statements and on the Corporation's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing
and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.


Charlotte, North Carolina
February 24, 2016, except with respect to our opinion on the Consolidated Financial Statements insofar as it relates to the effects of changes in segments discussed in Note 1, for which the date is August 1, 2016.

## Bank of America Corporation and Subsidiaries

## Consolidated Statement of Income

| (Dollars in millions, except per share information) | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Interest income |  |  |  |  |  |  |
| Loans and leases | \$ | 31,918 | \$ | 34,145 | \$ | 36,470 |
| Debt securities |  | 9,319 |  | 8,021 |  | 9,749 |
| Federal funds sold and securities borrowed or purchased under agreements to resell |  | 988 |  | 1,039 |  | 1,229 |
| Trading account assets |  | 4,397 |  | 4,561 |  | 4,706 |
| Other interest income |  | 3,026 |  | 2,958 |  | 2,866 |
| Total interest income |  | 49,648 |  | 50,724 |  | 55,020 |


| Interest expense |  |  |  |
| :---: | :---: | :---: | :---: |
| Deposits | 861 | 1,080 | 1,396 |
| Short-term borrowings | 2,387 | 2,578 | 2,923 |
| Trading account liabilities | 1,343 | 1,576 | 1,638 |
| Long-term debt | 5,958 | 5,700 | 6,798 |
| Total interest expense | 10,549 | 10,934 | 12,755 |
| Net interest income | 39,099 | 39,790 | 42,265 |


| Noninterest income |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Card income |  | 5,959 |  | 5,944 |  | 5,826 |
| Service charges |  | 7,381 |  | 7,443 |  | 7,390 |
| Investment and brokerage services |  | 13,337 |  | 13,284 |  | 12,282 |
| Investment banking income |  | 5,572 |  | 6,065 |  | 6,126 |
| Equity investment income |  | 261 |  | 1,130 |  | 2,901 |
| Trading account profits |  | 6,473 |  | 6,309 |  | 7,056 |
| Mortgage banking income |  | 2,364 |  | 1,563 |  | 3,874 |
| Gains on sales of debt securities |  | 1,091 |  | 1,354 |  | 1,271 |
| Other income (loss) |  | 1,513 |  | 1,905 |  | (49) |
| Total noninterest income |  | 43,951 |  | 44,997 |  | 46,677 |
| Total revenue, net of interest expense |  | 83,050 |  | 84,787 |  | 88,942 |
| Provision for credit losses |  | 3,161 |  | 2,275 |  | 3,556 |
| Noninterest expense |  |  |  |  |  |  |
| Personnel |  | 32,868 |  | 33,787 |  | 34,719 |
| Occupancy |  | 4,093 |  | 4,260 |  | 4,475 |
| Equipment |  | 2,039 |  | 2,125 |  | 2,146 |
| Marketing |  | 1,811 |  | 1,829 |  | 1,834 |
| Professional fees |  | 2,264 |  | 2,472 |  | 2,884 |
| Amortization of intangibles |  | 834 |  | 936 |  | 1,086 |
| Data processing |  | 3,115 |  | 3,144 |  | 3,170 |
| Telecommunications |  | 823 |  | 1,259 |  | 1,593 |
| Other general operating |  | 9,888 |  | 25,845 |  | 17,307 |
| Total noninterest expense |  | 57,735 |  | 75,657 |  | 69,214 |
| Income before income taxes |  | 22,154 |  | 6,855 |  | 16,172 |
| Income tax expense |  | 6,266 |  | 2,022 |  | 4,741 |
| Net income | \$ | 15,888 | \$ | 4,833 | \$ | 11,431 |
| Preferred stock dividends |  | 1,483 |  | 1,044 |  | 1,349 |
| Net income applicable to common shareholders | \$ | 14,405 | \$ | 3,789 | \$ | 10,082 |


| Per common share information | $\mathbf{1 . 3 8}$ | $\$$ |
| :--- | ---: | ---: |
| Earnings | 0.36 | $\$$ |
| Diluted earnings | 0.94 |  |
| Dividends paid | 0.31 | 0.36 |
| Average common shares issued and outstanding (in thousands) | $\mathbf{0 . 2 0}$ | 0.12 |
| Average diluted common shares issued and outstanding (in thousands) | $\mathbf{1 1 , 2 1 , 2 1 3 , 9 9 2}$ | $10,527,818$ |

## Bank of America Corporation and Subsidiaries

## Consolidated Statement of Comprehensive Income

| (Dollars in millions) | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Net income | \$ | 15,888 | \$ | 4,833 | \$ | 11,431 |
| Other comprehensive income (loss), net-of-tax: |  |  |  |  |  |  |
| Net change in available-for-sale debt and marketable equity securities |  | $(1,598)$ |  | 4,621 |  | $(8,166)$ |
| Net change in debit valuation adjustments |  | 615 |  | - |  | - |
| Net change in derivatives |  | 584 |  | 616 |  | 592 |
| Employee benefit plan adjustments |  | 394 |  | (943) |  | 2,049 |
| Net change in foreign currency translation adjustments |  | (123) |  | (157) |  | (135) |
| Other comprehensive income (loss) |  | (128) |  | 4,137 |  | $(5,660)$ |
| Comprehensive income | \$ | 15,760 | \$ | 8,970 | \$ | 5,771 |

## Bank of America Corporation and Subsidiaries

## Consolidated Balance Sheet

| (Dollars in millions) | December 31 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  |
| Assets |  |  |  |  |
| Cash and due from banks | \$ | 31,265 | \$ | 33,118 |
| Interest-bearing deposits with the Federal Reserve, non-U.S. central banks and other banks |  | 128,088 |  | 105,471 |
| Cash and cash equivalents |  | 159,353 |  | 138,589 |
| Time deposits placed and other short-term investments |  | 7,744 |  | 7,510 |
| Federal funds sold and securities borrowed or purchased under agreements to resell (includes $\$ 55,143$ and $\$ 62,182$ measured at fair value) |  | 192,482 |  | 191,823 |
| Trading account assets (includes \$107,776 and \$110,620 pledged as collateral) |  | 176,527 |  | 191,785 |
| Derivative assets |  | 49,990 |  | 52,682 |
| Debt securities: |  |  |  |  |
| Carried at fair value (includes \$29,810 and \$32,741 pledged as collateral) |  | 322,380 |  | 320,695 |
| Held-to-maturity, at cost (fair value - \$84,046 and \$59,641; \$9,074 and \$15,432 pledged as collateral) |  | 84,625 |  | 59,766 |
| Total debt securities |  | 407,005 |  | 380,461 |
| Loans and leases (includes \$6,938 and \$8,681 measured at fair value and \$37,767 and \$52,959 pledged as collateral) |  | 896,983 |  | 876,104 |
| Allowance for loan and lease losses |  | $(12,234)$ |  | $(14,419)$ |
| Loans and leases, net of allowance |  | 884,749 |  | 861,685 |
| Premises and equipment, net |  | 9,485 |  | 10,049 |
| Mortgage servicing rights (includes \$3,087 and \$3,530 measured at fair value) |  | 3,087 |  | 3,530 |
| Goodwill |  | 69,761 |  | 69,777 |
| Intangible assets |  | 3,768 |  | 4,612 |
| Loans held-for-sale (includes \$4,818 and \$6,801 measured at fair value) |  | 7,453 |  | 12,836 |
| Customer and other receivables |  | 58,312 |  | 61,845 |
| Other assets (includes \$14,320 and \$13,873 measured at fair value) |  | 114,600 |  | 117,350 |
| Total assets |  | 2,144,316 |  | ,104,534 |

Assets of consolidated variable interest entities included in total assets above (isolated to settle the liabilities of the variable interest entities)

| Trading account assets | $\mathbf{6}$ | $\mathbf{6 , 3 4 4}$ |
| :--- | ---: | ---: |
| Loans and leases | $\mathbf{\$}$ | $\mathbf{6 2 , 8 9 0}$ |
| Allowance for loan and lease losses | $\mathbf{9 5 , 1 8 7}$ |  |
| Loans and leases, net of allowance | $\mathbf{( 1 , 3 2 0 )}$ | $\mathbf{( 1 , 9 6 8 )}$ |
| Loans held-for-sale | $\mathbf{7 1 , 6 2 6}$ | $\mathbf{9 3}, 219$ |
| All other assets | 1,822 |  |
| Total assets of consolidated variable interest entities | $\mathbf{2 8 4}$ | $\mathbf{1 , 5 3 0}$ |

## Bank of America Corporation and Subsidiaries

## Consolidated Balance Sheet (continued)

| (Dollars in millions) | December 31 |  |
| :---: | :---: | :---: |
|  | 2015 | 2014 |
| Liabilities |  |  |
| Deposits in U.S. offices: |  |  |
| Noninterest-bearing | \$ 422,237 | \$ 393,102 |
| Interest-bearing (includes \$1,116 and \$1,469 measured at fair value) | 703,761 | 660,161 |
| Deposits in non-U.S. offices: |  |  |
| Noninterest-bearing | 9,916 | 7,230 |
| Interest-bearing | 61,345 | 58,443 |
| Total deposits | 1,197,259 | 1,118,936 |
| Federal funds purchased and securities loaned or sold under agreements to repurchase (includes $\$ \mathbf{2 4 , 5 7 4}$ and $\$ 35,357$ measured at fair value) | 174,291 | 201,277 |
| Trading account liabilities | 66,963 | 74,192 |
| Derivative liabilities | 38,450 | 46,909 |
| Short-term borrowings (includes \$1,325 and \$2,697 measured at fair value) | 28,098 | 31,172 |
| Accrued expenses and other liabilities (includes $\$ 13,899$ and $\$ 12,055$ measured at fair value and $\$ 646$ and $\$ 528$ of reserve for unfunded lending commitments) | 146,286 | 145,438 |
| Long-term debt (includes \$30,097 and \$36,404 measured at fair value) | 236,764 | 243,139 |
| Total liabilities | 1,888,111 | 1,861,063 |
| Commitments and contingencies (Note 6 - Securitizations and Other Variable Interest Entities, Note 7 - Representations and Warranties Obligations and Corporate Guarantees and Note 12 - Commitments and Contingencies) |  |  |
| Shareholders' equity |  |  |
| Preferred stock, \$0.01 par value; authorized - 100,000,000 shares; issued and outstanding - 3,767,790 and 3,647,790 shares | 22,273 | 19,309 |
| Common stock and additional paid-in capital, \$0.01 par value; authorized - $12,800,000,000$ shares; issued and outstanding $10,380,265,063$ and $10,516,542,476$ shares | 151,042 | 153,458 |
| Retained earnings | 88,564 | 75,024 |
| Accumulated other comprehensive income (loss) | $(5,674)$ | $(4,320)$ |
| Total shareholders' equity | 256,205 | 243,471 |
| Total liabilities and shareholders' equity | \$ 2,144,316 | \$ 2,104,534 |


| Short-term borrowings | \$ | 681 | \$ | 1,032 |
| :---: | :---: | :---: | :---: | :---: |
| Long-term debt (includes \$11,304 and \$11,943 of non-recourse debt) |  | 14,073 |  | 13,307 |
| All other liabilities (includes \$20 and \$84 of non-recourse liabilities) |  | 21 |  | 138 |
| Total liabilities of consolidated variable interest entities | \$ | 14,775 | \$ | 14,477 |

## Bank of America Corporation and Subsidiaries

Consolidated Statement of Changes in Shareholders' Equity

| (Dollars in millions, shares in thousands) | Preferred Stock |  | Common Stock and Additional Paid-in Capital |  |  | Retained Earnings |  | Accumulated Other Comprehensive Income (Loss) |  | Total Shareholders' Equity |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Shares |  | Amount |  |  |  |  |  |  |
| Balance, December 31, 2012 | \$ | 18,768 | 10,778,264 | \$ | 158,142 | \$ | 62,843 | \$ | $(2,797)$ | \$ | 236,956 |
| Net income |  |  |  |  |  |  | 11,431 |  |  |  | 11,431 |
| Net change in available-for-sale debt and marketable equity securities |  |  |  |  |  |  |  |  | $(8,166)$ |  | $(8,166)$ |
| Net change in derivatives |  |  |  |  |  |  |  |  | 592 |  | 592 |
| Employee benefit plan adjustments |  |  |  |  |  |  |  |  | 2,049 |  | 2,049 |
| Net change in foreign currency translation adjustments |  |  |  |  |  |  |  |  | (135) |  | (135) |
| Dividends paid: |  |  |  |  |  |  |  |  |  |  |  |
| Common |  |  |  |  |  |  | (428) |  |  |  | (428) |
| Preferred |  |  |  |  |  |  | $(1,249)$ |  |  |  | $(1,249)$ |
| Issuance of preferred stock |  | 1,008 |  |  |  |  |  |  |  |  | 1,008 |
| Redemption of preferred stock |  | $(6,461)$ |  |  |  |  | (100) |  |  |  | $(6,561)$ |
| Common stock issued under employee plans and related tax effects |  |  | 45,288 |  | 371 |  |  |  |  |  | 371 |
| Common stock repurchased |  |  | $(231,744)$ |  | $(3,220)$ |  |  |  |  |  | $(3,220)$ |
| Other |  | 37 |  |  |  |  |  |  |  |  | 37 |
| Balance, December 31, 2013 |  | 13,352 | 10,591,808 |  | 155,293 |  | 72,497 |  | $(8,457)$ |  | 232,685 |
| Net income |  |  |  |  |  |  | 4,833 |  |  |  | 4,833 |
| Net change in available-for-sale debt and marketable equity securities |  |  |  |  |  |  |  |  | 4,621 |  | 4,621 |
| Net change in derivatives |  |  |  |  |  |  |  |  | 616 |  | 616 |
| Employee benefit plan adjustments |  |  |  |  |  |  |  |  | (943) |  | (943) |
| Net change in foreign currency translation adjustments |  |  |  |  |  |  |  |  | (157) |  | (157) |
| Dividends paid: |  |  |  |  |  |  |  |  |  |  |  |
| Common |  |  |  |  |  |  | $(1,262)$ |  |  |  | $(1,262)$ |
| Preferred |  |  |  |  |  |  | $(1,044)$ |  |  |  | $(1,044)$ |
| Issuance of preferred stock |  | 5,957 |  |  |  |  |  |  |  |  | 5,957 |
| Common stock issued under employee plans and related tax effects |  |  | 25,866 |  | (160) |  |  |  |  |  | (160) |
| Common stock repurchased |  |  | $(101,132)$ |  | $(1,675)$ |  |  |  |  |  | $(1,675)$ |
| Balance, December 31, 2014 |  | 19,309 | 10,516,542 |  | 153,458 |  | 75,024 |  | $(4,320)$ |  | 243,471 |
| Cumulative adjustment for accounting change related to debit valuation adjustments |  |  |  |  |  |  | 1,226 |  | $(1,226)$ |  | - |
| Net income |  |  |  |  |  |  | 15,888 |  |  |  | 15,888 |
| Net change in available-for-sale debt and marketable equity securities |  |  |  |  |  |  |  |  | $(1,598)$ |  | $(1,598)$ |
| Net change in debit valuation adjustments |  |  |  |  |  |  |  |  | 615 |  | 615 |
| Net change in derivatives |  |  |  |  |  |  |  |  | 584 |  | 584 |
| Employee benefit plan adjustments |  |  |  |  |  |  |  |  | 394 |  | 394 |
| Net change in foreign currency translation adjustments |  |  |  |  |  |  |  |  | (123) |  | (123) |
| Dividends paid: |  |  |  |  |  |  |  |  |  |  |  |
| Common |  |  |  |  |  |  | $(2,091)$ |  |  |  | $(2,091)$ |
| Preferred |  |  |  |  |  |  | $(1,483)$ |  |  |  | $(1,483)$ |
| Issuance of preferred stock |  | 2,964 |  |  |  |  |  |  |  |  | 2,964 |
| Common stock issued under employee plans and related tax effects |  |  | 4,054 |  | (42) |  |  |  |  |  | (42) |
| Common stock repurchased |  |  | $(140,331)$ |  | $(2,374)$ |  |  |  |  |  | $(2,374)$ |
| Balance, December 31, 2015 | \$ | 22,273 | 10,380,265 | \$ | 151,042 | \$ | 88,564 | \$ | $(5,674)$ | \$ | 256,205 |

## Bank of America Corporation and Subsidiaries

## Consolidated Statement of Cash Flows

| (Dollars in millions) | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Operating activities |  |  |  |  |  |  |
| Net income | \$ | 15,888 | \$ | 4,833 | \$ | 11,431 |
| Adjustments to reconcile net income to net cash provided by operating activities: |  |  |  |  |  |  |
| Provision for credit losses |  | 3,161 |  | 2,275 |  | 3,556 |
| Gains on sales of debt securities |  | $(1,091)$ |  | $(1,354)$ |  | $(1,271)$ |
| Realized debit valuation adjustments on structured liabilities |  | 556 |  | - |  | - |
| Depreciation and premises improvements amortization |  | 1,555 |  | 1,586 |  | 1,597 |
| Amortization of intangibles |  | 834 |  | 936 |  | 1,086 |
| Net amortization of premium/discount on debt securities |  | 2,472 |  | 2,688 |  | 1,577 |
| Deferred income taxes |  | 3,108 |  | 726 |  | 3,262 |
| Stock-based compensation |  | 28 |  | 78 |  | 363 |
| Loans held-for-sale: |  |  |  |  |  |  |
| Originations and purchases |  | $(37,933)$ |  | $(39,358)$ |  | $(65,688)$ |
| Proceeds from sales and paydowns of loans originally classified as held-for-sale |  | 36,204 |  | 38,528 |  | 77,707 |
| Net change in: |  |  |  |  |  |  |
| Trading and derivative instruments |  | 2,550 |  | 5,866 |  | 32,530 |
| Other assets |  | 2,493 |  | 5,894 |  | 35,154 |
| Accrued expenses and other liabilities |  | 730 |  | 9,702 |  | $(12,919)$ |
| Other operating activities, net |  | $(2,208)$ |  | $(1,605)$ |  | 4,432 |
| Net cash provided by operating activities |  | 28,347 |  | 30,795 |  | 92,817 |
| Investing activities |  |  |  |  |  |  |
| Net change in: |  |  |  |  |  |  |
| Time deposits placed and other short-term investments |  | 50 |  | 4,030 |  | 7,154 |
| Federal funds sold and securities borrowed or purchased under agreements to resell |  | (659) |  | $(1,495)$ |  | 29,596 |
| Debt securities carried at fair value: |  |  |  |  |  |  |
| Proceeds from sales |  | 145,079 |  | 126,399 |  | 103,743 |
| Proceeds from paydowns and maturities |  | 84,988 |  | 79,704 |  | 85,554 |
| Purchases |  | $(219,412)$ |  | $(247,902)$ |  | $(160,744)$ |
| Held-to-maturity debt securities: |  |  |  |  |  |  |
| Proceeds from paydowns and maturities |  | 12,872 |  | 7,889 |  | 8,472 |
| Purchases |  | $(36,575)$ |  | $(13,274)$ |  | $(14,388)$ |
| Loans and leases: |  |  |  |  |  |  |
| Proceeds from sales |  | 22,316 |  | 28,765 |  | 12,331 |
| Purchases |  | $(12,629)$ |  | $(10,609)$ |  | $(16,734)$ |
| Other changes in loans and leases, net |  | $(51,895)$ |  | 19,160 |  | $(34,256)$ |
| Proceeds from sales of equity investments |  | 333 |  | 1,577 |  | 4,818 |
| Other investing activities, net |  | (39) |  | $(2,504)$ |  | (488) |
| Net cash provided by (used in) investing activities |  | $(55,571)$ |  | $(8,260)$ |  | 25,058 |
| Financing activities |  |  |  |  |  |  |
| Net change in: |  |  |  |  |  |  |
| Deposits |  | 78,347 |  | (335) |  | 14,010 |
| Federal funds purchased and securities loaned or sold under agreements to repurchase |  | $(26,986)$ |  | 3,171 |  | $(95,153)$ |
| Short-term borrowings |  | $(3,074)$ |  | $(14,827)$ |  | 16,009 |
| Long-term debt: |  |  |  |  |  |  |
| Proceeds from issuance |  | 43,670 |  | 51,573 |  | 45,658 |
| Retirement of long-term debt |  | $(40,365)$ |  | $(53,749)$ |  | $(65,602)$ |
| Preferred stock: |  |  |  |  |  |  |
| Proceeds from issuance |  | 2,964 |  | 5,957 |  | 1,008 |
| Redemption |  | - |  | - |  | $(6,461)$ |
| Common stock repurchased |  | $(2,374)$ |  | $(1,675)$ |  | $(3,220)$ |
| Cash dividends paid |  | $(3,574)$ |  | $(2,306)$ |  | $(1,677)$ |
| Excess tax benefits on share-based payments |  | 16 |  | 34 |  | 12 |
| Other financing activities, net |  | (39) |  | (44) |  | (26) |
| Net cash provided by (used in) financing activities |  | 48,585 |  | $(12,201)$ |  | $(95,442)$ |
| Effect of exchange rate changes on cash and cash equivalents |  | (597) |  | $(3,067)$ |  | $(1,863)$ |
| Net increase in cash and cash equivalents |  | 20,764 |  | 7,267 |  | 20,570 |
| Cash and cash equivalents at January 1 |  | 138,589 |  | 131,322 |  | 110,752 |
| Cash and cash equivalents at December 31 | \$ | 159,353 | \$ | 138,589 | \$ | 131,322 |
| Supplemental cash flow disclosures |  |  |  |  |  |  |
| Interest paid | \$ | 10,623 | \$ | 11,082 | \$ | 12,912 |
| Income taxes paid |  | 2,326 |  | 2,558 |  | 1,559 |
| Income taxes refunded |  | (151) |  | (144) |  | (244) |

## Bank of America Corporation and Subsidiaries Notes to Consolidated Financial Statements

## NOTE 1 Summary of Significant Accounting

## Principles

Bank of America Corporation (together with its consolidated subsidiaries, the Corporation), a bank holding company (BHC) and a financial holding company, provides a diverse range of financial services and products throughout the U.S. and in certain international markets. The term "the Corporation" as used herein may refer to Bank of America Corporation individually, Bank of America Corporation and its subsidiaries, or certain of Bank of America Corporation's subsidiaries or affiliates.

## Principles of Consolidation and Basis of Presentation

The Consolidated Financial Statements include the accounts of the Corporation and its majority-owned subsidiaries, and those variable interest entities (VIEs) where the Corporation is the primary beneficiary. Intercompany accounts and transactions have been eliminated. Results of operations of acquired companies are included from the dates of acquisition and for VIEs, from the dates that the Corporation became the primary beneficiary. Assets held in an agency or fiduciary capacity are not included in the Consolidated Financial Statements. The Corporation accounts for investments in companies for which it owns a voting interest and for which it has the ability to exercise significant influence over operating and financing decisions using the equity method of accounting. These investments are included in other assets. Equity method investments are subject to impairment testing and the Corporation's proportionate share of income or loss is included in equity investment income.

The preparation of the Consolidated Financial Statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires management to make estimates and assumptions that affect reported amounts and disclosures. Realized results could differ from those estimates and assumptions.

In the Annual Report on Form 10-K for the year ended December 31, 2015, the Corporation reported its results of operations through five business segments: Consumer Banking, Global Wealth \& Investment Management (GWIM), Global Banking, Global Markets and Legacy Assets \& Servicing (LAS), with the remaining operations recorded in All Other. Effective April 1, 2016, to align the segments with how the Corporation manages the businesses, the Corporation changed its basis of presentation to eliminate the LAS segment, and following such change, the Corporation reports its results of operations through the following four business segments: Consumer Banking, GWIM, Global Banking and Global Markets, with the remaining operations recorded in All Other. Consumer real estate loans, including loans previously held in or serviced by LAS, have been designated as either core or non-core based on criteria described in Note 4 - Outstanding Loans and Leases and Note 24 - Business Segment Information. Following the realignment, core loans owned by the Corporation, which include all loans originated after the realignment, are held in the Consumer Banking and GWIM segments. Non-core loans owned by the Corporation, which are principally run-off portfolios, as well as loans held for asset and liability management (ALM) activities are held in All Other. Mortgage servicing rights (MSRs) pertaining to core and non-core loans serviced for others are held in Consumer

Banking and All Other, respectively. Prior periods have been reclassified to conform to the current period presentation.

The Corporation classifies certain leases in other assets. Previously these leases were classified in loans and leases. The 2015 and 2014 periods have been reclassified to conform to current period presentation.

## New Accounting Pronouncements

In January 2016, the FASB issued new accounting guidance on recognition and measurement of financial instruments. The new guidance makes targeted changes to existing GAAP including, among other provisions, requiring certain equity investments to be measured at fair value with changes in fair value reported in earnings and requiring changes in instrument-specific credit risk (i.e., debit valuation adjustments (DVA)) for financial liabilities recorded at fair value under the fair value option to be reported in other comprehensive income (OCI). The accounting for DVA related to other financial liabilities, for example, derivatives, does not change. The new guidance is effective on January 1, 2018, with early adoption permitted for the provisions related to DVA.

The Corporation early adopted, retrospective to January 1, 2015, the provisions of this new accounting guidance related to DVA on financial liabilities accounted for under the fair value option. The impact of the adoption was to reclassify, as of January 1, 2015, unrealized DVA losses of $\$ 1.2$ billion after tax ( $\$ 2.0$ billion pretax) from January 1, 2015 retained earnings to accumulated OCI. Further, pretax unrealized DVA gains of \$301 million, \$301 million and $\$ 420$ million were reclassified from other income to accumulated OCI for the three months ended September 30, 2015, June 30, 2015 and March 31, 2015, respectively. This had the effect of reducing net income as previously reported for the aforementioned quarters by $\$ 187$ million, $\$ 186$ million and $\$ 260$ million, or approximately $\$ 0.02$ per share in each quarter. This change is reflected in the Consolidated Statement of Income and the Global Markets segment results. Financial statements for 2014 and 2013 were not subject to restatement under the provisions of this new accounting guidance. For additional information, see Note 14 - Accumulated Other Comprehensive Income (Loss) and Note 21 - Fair Value Option. The Corporation does not expect the provisions of this new accounting guidance other than those related to DVA, as described above, to have a material impact on its consolidated financial position or results of operations.

In February 2015, the FASB issued new accounting guidance that amends the criteria for determining whether limited partnerships and similar entities are VIEs, clarifies when a general partner or asset manager should consolidate an entity and eliminates the indefinite deferral of certain aspects of VIE accounting guidance for investments in certain investment funds. Money market funds registered under Rule 2a-7 of the Investment Company Act and similar funds are exempt from consolidation under the new guidance. The new accounting guidance is effective on January 1, 2016. The Corporation does not expect the new guidance to have a material impact on its consolidated financial position or results of operations.

In May 2014, the FASB issued new accounting guidance to clarify the principles for recognizing revenue from contracts with customers. The new accounting guidance, which does not apply
to financial instruments, is effective on January 1, 2018. The Corporation does not expect the new guidance to have a material impact on its consolidated financial position or results of operations.

In December 2012, the FASB issued a proposed standard on accounting for credit losses. It would replace multiple existing impairment models, including an "incurred loss" model for loans, with an "expected loss" model. The FASB has indicated a tentative effective date of January 1, 2019, and final guidance is expected to be issued in the second quarter of 2016. The final standard may materially reduce retained earnings in the period of adoption.

## Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, cash items in the process of collection, cash segregated under federal and other brokerage regulations, and amounts due from correspondent banks, the Federal Reserve Bank and certain non-U.S. central banks.

## Consolidated Statement of Cash Flows

In the Consolidated Statement of Cash Flows for the year ended December 31, 2014 as included herein, the Corporation made certain corrections related to non-cash activity which are not material to the Consolidated Financial Statements taken as a whole, do not impact the Consolidated Statement of Income or Consolidated Balance Sheet, and have no impact on the Corporation's cash and cash equivalents balance. Certain noncash transactions involving the sale of loans and receipt of debt securities as proceeds were incorrectly classified between operating activities and investing activities. The corrections resulted in a $\$ 3.4$ billion increase in net cash provided by operating activities, offset by a $\$ 3.4$ billion increase in net cash used in investing activities when compared to the Consolidated Statement of Cash Flows in the Form 10-K for the year ended December 31, 2014.

The Consolidated Statement of Cash Flows included in the previously-filed Form 10-Qs for the quarterly periods ended March 31, 2015 and June 30, 2015 also incorrectly reported this type of non-cash activity by $\$ 4.8$ billion and $\$ 9.3$ billion, where an increase in net cash provided by operating activities was offset by an increase in net cash used in investing activities. The incorrectly reported amounts in these 2015 quarterly periods also were not material to the Consolidated Financial Statements taken as a whole, did not impact the Consolidated Statements of Income or Consolidated Balance Sheets and had no impact on cash and cash equivalents for those periods.

For information on certain non-cash transactions, which are not reflected in the Consolidated Statement of Cash Flows, see Note 4 - Outstanding Loans and Leases and Note 6 - Securitizations and Other Variable Interest Entities.

## Securities Financing Agreements

The Corporation enters into securities borrowed or purchased under agreements to resell and securities loaned or sold under agreements to repurchase (securities financing agreements) to accommodate customers (also referred to as "matched-book transactions"), obtain securities to cover short positions, and to finance inventory positions. Securities financing agreements are treated as collateralized financing transactions except in instances where the transaction is required to be accounted for as individual sale and purchase transactions. Generally, these agreements are
recorded at the amounts at which the securities were acquired or sold plus accrued interest, except for certain securities financing agreements that the Corporation accounts for under the fair value option. Changes in the fair value of securities financing agreements that are accounted for under the fair value option are recorded in trading account profits in the Consolidated Statement of Income.

The Corporation's policy is to obtain possession of collateral with a market value equal to or in excess of the principal amount loaned under resale agreements. To ensure that the market value of the underlying collateral remains sufficient, collateral is generally valued daily and the Corporation may require counterparties to deposit additional collateral or may return collateral pledged when appropriate. Securities financing agreements give rise to negligible credit risk as a result of these collateral provisions and, accordingly, no allowance for loan losses is considered necessary.

In transactions where the Corporation acts as the lender in a securities lending agreement and receives securities that can be pledged or sold as collateral, it recognizes an asset on the Consolidated Balance Sheet at fair value, representing the securities received, and a liability, representing the obligation to return those securities.

## Collateral

The Corporation accepts securities as collateral that it is permitted by contract or custom to sell or repledge. At December 31, 2015 and 2014, the fair value of this collateral was $\$ 458.9$ billion and $\$ 508.7$ billion, of which $\$ 383.5$ billion and $\$ 419.3$ billion was sold or repledged. The primary source of this collateral is securities borrowed or purchased under agreements to resell.

The Corporation also pledges company-owned securities and loans as collateral in transactions that include repurchase agreements, securities loaned, public and trust deposits, U.S. Treasury tax and loan notes, and short-term borrowings. This collateral, which in some cases can be sold or repledged by the counterparties to the transactions, is parenthetically disclosed on the Consolidated Balance Sheet.

In certain cases, the Corporation has transferred assets to consolidated VIEs where those restricted assets serve as collateral for the interests issued by the VIEs. These assets are included on the Consolidated Balance Sheet in Assets of Consolidated VIEs.

In addition, the Corporation obtains collateral in connection with its derivative contracts. Required collateral levels vary depending on the credit risk rating and the type of counterparty. Generally, the Corporation accepts collateral in the form of cash, U.S. Treasury securities and other marketable securities. Based on provisions contained in master netting agreements, the Corporation nets cash collateral received against derivative assets. The Corporation also pledges collateral on its own derivative positions which can be applied against derivative liabilities.

## Trading Instruments

Financial instruments utilized in trading activities are carried at fair value. Fair value is generally based on quoted market prices or quoted market prices for similar assets and liabilities. If these market prices are not available, fair values are estimated based on dealer quotes, pricing models, discounted cash flow methodologies, or similar techniques where the determination of
fair value may require significant management judgment or estimation. Realized gains and losses are recorded on a tradedate basis. Realized and unrealized gains and losses are recognized in trading account profits.

## Derivatives and Hedging Activities

Derivatives are entered into on behalf of customers, for trading or to support risk management activities. Derivatives used in risk management activities include derivatives that are both designated in qualifying accounting hedge relationships and derivatives used to hedge market risks in relationships that are not designated in qualifying accounting hedge relationships (referred to as other risk management activities). Derivatives utilized by the Corporation include swaps, financial futures and forward settlement contracts, and option contracts.

All derivatives are recorded on the Consolidated Balance Sheet at fair value, taking into consideration the effects of legally enforceable master netting agreements that allow the Corporation to settle positive and negative positions and offset cash collateral held with the same counterparty on a net basis. For exchangetraded contracts, fair value is based on quoted market prices in active or inactive markets or is derived from observable marketbased pricing parameters, similar to those applied to over-thecounter (OTC) derivatives. For non-exchange traded contracts, fair value is based on dealer quotes, pricing models, discounted cash flow methodologies or similar techniques for which the determination of fair value may require significant management judgment or estimation.

Valuations of derivative assets and liabilities reflect the value of the instrument including counterparty credit risk. These values also take into account the Corporation's own credit standing.

## Trading Derivatives and Other Risk Management Activities

Derivatives held for trading purposes are included in derivative assets or derivative liabilities on the Consolidated Balance Sheet with changes in fair value included in trading account profits.

Derivatives used for other risk management activities are included in derivative assets or derivative liabilities. Derivatives used in other risk management activities have not been designated in a qualifying accounting hedge relationship because they did not qualify or the risk that is being mitigated pertains to an item that is reported at fair value through earnings so that the effect of measuring the derivative instrument and the asset or liability to which the risk exposure pertains will offset in the Consolidated Statement of Income to the extent effective. The changes in the fair value of derivatives that serve to mitigate certain risks associated with MSRs, interest rate lock commitments (IRLCs) and first mortgage loans held-for-sale (LHFS) that are originated by the Corporation are recorded in mortgage banking income. Changes in the fair value of derivatives that serve to mitigate interest rate risk and foreign currency risk are included in other income (loss). Credit derivatives are also used by the Corporation to mitigate the risk associated with various credit exposures. The changes in the fair value of these derivatives are included in other income (loss).

## Derivatives Used For Hedge Accounting Purposes (Accounting Hedges)

For accounting hedges, the Corporation formally documents at inception all relationships between hedging instruments and
hedged items, as well as the risk management objectives and strategies for undertaking various accounting hedges. Additionally, the Corporation primarily uses regression analysis at the inception of a hedge and for each reporting period thereafter to assess whether the derivative used in an accounting hedge transaction is expected to be and has been highly effective in offsetting changes in the fair value or cash flows of a hedged item or forecasted transaction. The Corporation discontinues hedge accounting when it is determined that a derivative is not expected to be or has ceased to be highly effective as a hedge, and then reflects changes in fair value of the derivative in earnings after termination of the hedge relationship.

The Corporation uses its accounting hedges as either fair value hedges, cash flow hedges or hedges of net investments in foreign operations. The Corporation manages interest rate and foreign currency exchange rate sensitivity predominantly through the use of derivatives.

Fair value hedges are used to protect against changes in the fair value of the Corporation's assets and liabilities that are attributable to interest rate or foreign exchange volatility. Changes in the fair value of derivatives designated as fair value hedges are recorded in earnings, together and in the same income statement line item with changes in the fair value of the related hedged item. If a derivative instrument in a fair value hedge is terminated or the hedge designation removed, the previous adjustments to the carrying value of the hedged asset or liability are subsequently accounted for in the same manner as other components of the carrying value of that asset or liability. For interest-earning assets and interest-bearing liabilities, such adjustments are amortized to earnings over the remaining life of the respective asset or liability.

Cash flow hedges are used primarily to minimize the variability in cash flows of assets or liabilities, or forecasted transactions caused by interest rate or foreign exchange fluctuations. Changes in the fair value of derivatives designated as cash flow hedges are recorded in accumulated OCl and are reclassified into the line item in the income statement in which the hedged item is recorded in the same period the hedged item affects earnings. Hedge ineffectiveness and gains and losses on the component of a derivative excluded in assessing hedge effectiveness are recorded in the same income statement line item. The Corporation records changes in the fair value of derivatives used as hedges of the net investment in foreign operations, to the extent effective, as a component of accumulated OCI. If a derivative instrument in a cash flow hedge is terminated or the hedge designation is removed, related amounts in accumulated OCl are reclassified into earnings in the same period or periods during which the hedged forecasted transaction affects earnings. If it becomes probable that a forecasted transaction will not occur, any related amounts in accumulated OCl are reclassified into earnings in that period.

## Interest Rate Lock Commitments

The Corporation enters into IRLCs in connection with its mortgage banking activities to fund residential mortgage loans at specified times in the future. IRLCs that relate to the origination of mortgage loans that will be classified as held-for-sale are considered derivative instruments under applicable accounting guidance. As such, these IRLCs are recorded at fair value with changes in fair value recorded in mortgage banking income, typically resulting in recognition of a gain when the Corporation enters into IRLCs.

In estimating the fair value of an IRLC, the Corporation assigns a probability that the loan commitment will be exercised and the
loan will be funded. The fair value of the commitments is derived from the fair value of related mortgage loans which is based on observable market data and includes the expected net future cash flows related to servicing of the loans. Changes in the fair value of IRLCs are recognized based on interest rate changes, changes in the probability that the commitment will be exercised and the passage of time. Changes from the expected future cash flows related to the customer relationship are excluded from the valuation of IRLCs.

Outstanding IRLCs expose the Corporation to the risk that the price of the loans underlying the commitments might decline from inception of the rate lock to funding of the loan. To manage this risk, the Corporation utilizes forward loan sales commitments and other derivative instruments, including interest rate swaps and options, to economically hedge the risk of potential changes in the value of the loans that would result from the commitments. The changes in the fair value of these derivatives are recorded in mortgage banking income.

## Securities

Debt securities are recorded on the Consolidated Balance Sheet as of their trade date. Debt securities bought principally with the intent to buy and sell in the short term as part of the Corporation's trading activities are reported at fair value in trading account assets with unrealized gains and losses included in trading account profits. Debt securities purchased for longer term investment purposes, as part of ALM and other strategic activities are generally reported at fair value as available-for-sale (AFS) securities with net unrealized gains and losses net-of-tax included in accumulated OCI. Certain other debt securities purchased for ALM and other strategic purposes are reported at fair value with unrealized gains and losses reported in other income (loss). These are referred to as other debt securities carried at fair value. AFS securities and other debt securities carried at fair value are reported in debt securities on the Consolidated Balance Sheet. The Corporation may hedge these other debt securities with risk management derivatives with the unrealized gains and losses also reported in other income (loss). The debt securities are carried at fair value with unrealized gains and losses reported in other income (loss) to mitigate accounting asymmetry with the risk management derivatives and to achieve operational simplifications. Debt securities which management has the intent and ability to hold to maturity are reported at amortized cost. Certain debt securities purchased for use in other risk management activities, such as hedging certain market risks related to MSRs, are reported in other assets at fair value with unrealized gains and losses reported in the same line item as the item being hedged.

The Corporation regularly evaluates each AFS and held-tomaturity (HTM) debt security where the value has declined below amortized cost to assess whether the decline in fair value is other than temporary. In determining whether an impairment is other than temporary, the Corporation considers the severity and duration of the decline in fair value, the length of time expected for recovery, the financial condition of the issuer, and other qualitative factors, as well as whether the Corporation either plans to sell the security or it is more-likely-than-not that it will be required to sell the security before recovery of the amortized cost. If the impairment of the AFS or HTM debt security is credit-related, an other-than-temporary impairment (OTTI) loss is recorded in earnings. For AFS debt securities, the non-credit related impairment loss is recognized in accumulated OCI. If the

Corporation intends to sell an AFS debt security or believes it will more-likely-than-not be required to sell a security, the Corporation records the full amount of the impairment loss as an OTTI loss.

Interest on debt securities, including amortization of premiums and accretion of discounts, is included in interest income. Premiums and discounts are amortized to interest income over the estimated lives of the securities. Prepayment experience, which is primarily driven by interest rates, is continually evaluated to determine the estimated lives of the securities. When a change is made to the estimated lives of the securities, the related premium or discount is adjusted, with a corresponding charge or credit to interest income, to the appropriate amount had the current estimated lives been applied since the acquisition of the securities. Realized gains and losses from the sales of debt securities are determined using the specific identification method.

Marketable equity securities are classified based on management's intention on the date of purchase and recorded on the Consolidated Balance Sheet as of the trade date. Marketable equity securities that are bought and held principally for the purpose of resale in the near term are classified as trading and are carried at fair value with unrealized gains and losses included in trading account profits. Other marketable equity securities are accounted for as AFS and classified in other assets. All AFS marketable equity securities are carried at fair value with net unrealized gains and losses included in accumulated OCI, net-oftax. If there is an other-than-temporary decline in the fair value of any individual AFS marketable equity security, the cost basis is reduced and the Corporation reclassifies the associated net unrealized loss out of accumulated OCI with a corresponding charge to equity investment income. Dividend income on AFS marketable equity securities is included in equity investment income. Realized gains and losses on the sale of all AFS marketable equity securities, which are recorded in equity investment income, are determined using the specific identification method.

Certain equity investments held by Global Principal Investments, the Corporation's diversified equity investor in private equity, real estate and other alternative investments, are subject to investment company accounting under applicable accounting guidance and, accordingly, are carried at fair value with changes in fair value reported in equity investment income. These investments are included in other assets. Initially, the transaction price of the investment is generally considered to be the best indicator of fair value. Thereafter, valuation of direct investments is based on an assessment of each individual investment using methodologies that include publicly-traded comparables derived by multiplying a key performance metric of the portfolio company by the relevant valuation multiple observed for comparable companies, acquisition comparables, entry level multiples and discounted cash flow analyses, and are subject to appropriate discounts for lack of liquidity or marketability. For fund investments, the Corporation generally records the fair value of its proportionate interest in the fund's capital as reported by the respective fund managers.

## Loans and Leases

Loans, with the exception of loans accounted for under the fair value option, are measured at historical cost and reported at their outstanding principal balances net of any unearned income, charge-offs, unamortized deferred fees and costs on originated loans, and for purchased loans, net of any unamortized premiums
or discounts. Loan origination fees and certain direct origination costs are deferred and recognized as adjustments to interest income over the lives of the related loans. Unearned income, discounts and premiums are amortized to interest income using a level yield methodology. The Corporation elects to account for certain consumer and commercial loans under the fair value option with changes in fair value reported in other income (loss).

Under applicable accounting guidance, for reporting purposes, the loan and lease portfolio is categorized by portfolio segment and, within each portfolio segment, by class of financing receivables. A portfolio segment is defined as the level at which an entity develops and documents a systematic methodology to determine the allowance for credit losses, and a class of financing receivables is defined as the level of disaggregation of portfolio segments based on the initial measurement attribute, risk characteristics and methods for assessing risk. The Corporation's three portfolio segments are Consumer Real Estate, Credit Card and Other Consumer, and Commercial. The classes within the Consumer Real Estate portfolio segment are residential mortgage and home equity. The classes within the Credit Card and Other Consumer portfolio segment are U.S. credit card, non-U.S. credit card, direct/indirect consumer and other consumer. The classes within the Commercial portfolio segment are U.S. commercial, commercial real estate, commercial lease financing, non-U.S. commercial and U.S. small business commercial.

## Purchased Credit-impaired Loans

Purchased loans with evidence of credit quality deterioration as of the purchase date for which it is probable that the Corporation will not receive all contractually required payments receivable are accounted for as purchased credit-impaired (PCI) loans. Evidence of credit quality deterioration since origination may include past due status, refreshed credit scores and refreshed loan-to-value (LTV) ratios. At acquisition, PCl loans are recorded at fair value with no allowance for credit losses, and accounted for individually or aggregated in pools based on similar risk characteristics such as credit risk, collateral type and interest rate risk. The Corporation estimates the amount and timing of expected cash flows for each loan or pool of loans. The expected cash flows in excess of the amount paid for the loans is referred to as the accretable yield and is recorded as interest income over the remaining estimated life of the loan or pool of loans. The excess of the PCI loans' contractual principal and interest over the expected cash flows is referred to as the nonaccretable difference. Over the life of the PCl loans, the expected cash flows continue to be estimated using models that incorporate management's estimate of current assumptions such as default rates, loss severity and prepayment speeds. If, upon subsequent valuation, the Corporation determines it is probable that the present value of the expected cash flows has decreased, a charge to the provision for credit losses is recorded with a corresponding increase in the allowance for credit losses. If it is probable that there is a significant increase in the present value of expected cash flows, the allowance for credit losses is reduced or, if there is no remaining allowance for credit losses related to these PCI loans, the accretable yield is increased through a reclassification from nonaccretable difference, resulting in a prospective increase in interest income. Reclassifications to or from nonaccretable difference can also occur for changes in the PCI loans' estimated lives. If a loan within a PCl pool is sold, foreclosed, forgiven or the expectation of any
future proceeds is remote, the loan is removed from the pool at its proportional carrying value. If the loan's recovery value is less than the loan's carrying value, the difference is first applied against the PCl pool's nonaccretable difference and then against the allowance for credit losses.

## Leases

The Corporation provides equipment financing to its customers through a variety of lease arrangements. Direct financing leases are carried at the aggregate of lease payments receivable plus estimated residual value of the leased property less unearned income. Leveraged leases, which are a form of financing leases, are reported net of non-recourse debt. Unearned income on leveraged and direct financing leases is accreted to interest income over the lease terms using methods that approximate the interest method.

## Allowance for Credit Losses

The allowance for credit losses, which includes the allowance for loan and lease losses and the reserve for unfunded lending commitments, represents management's estimate of probable losses inherent in the Corporation's lending activities. The allowance for loan and lease losses and the reserve for unfunded lending commitments exclude amounts for loans and unfunded lending commitments accounted for under the fair value option as the fair values of these instruments reflect a credit component. The allowance for loan and lease losses does not include amounts related to accrued interest receivable, other than billed interest and fees on credit card receivables, as accrued interest receivable is reversed when a loan is placed on nonaccrual status. The allowance for loan and lease losses represents the estimated probable credit losses on funded consumer and commercial loans and leases while the reserve for unfunded lending commitments, including standby letters of credit (SBLCs) and binding unfunded loan commitments, represents estimated probable credit losses on these unfunded credit instruments based on utilization assumptions. Lending-related credit exposures deemed to be uncollectible, excluding loans carried at fair value, are charged off against these accounts. Write-offs on PCI loans on which there is a valuation allowance are recorded against the valuation allowance. For additional information, see Purchased Creditimpaired Loans in this Note. Cash recovered on previously chargedoff amounts is recorded as a recovery to these accounts. Management evaluates the adequacy of the allowance for credit losses based on the combined total of the allowance for loan and lease losses and the reserve for unfunded lending commitments.

The Corporation performs periodic and systematic detailed reviews of its lending portfolios to identify credit risks and to assess the overall collectability of those portfolios. The allowance on certain homogeneous consumer loan portfolios, which generally consist of consumer real estate within the Consumer Real Estate portfolio segment and credit card loans within the Credit Card and Other Consumer portfolio segment, is based on aggregated portfolio segment evaluations generally by product type. Loss forecast models are utilized for these portfolios which consider a variety of factors including, but not limited to, historical loss experience, estimated defaults or foreclosures based on portfolio trends, delinquencies, bankruptcies, economic conditions and credit scores.

The Corporation's Consumer Real Estate portfolio segment is comprised primarily of large groups of homogeneous consumer loans secured by residential real estate. The amount of losses incurred in the homogeneous loan pools is estimated based on the number of loans that will default and the loss in the event of default. Using modeling methodologies, the Corporation estimates the number of homogeneous loans that will default based on the individual loan attributes aggregated into pools of homogeneous loans with similar attributes. The attributes that are most significant to the probability of default and are used to estimate defaults include refreshed LTV or, in the case of a subordinated lien, refreshed combined LTV, borrower credit score, months since origination (referred to as vintage) and geography, all of which are further broken down by present collection status (whether the loan is current, delinquent, in default or in bankruptcy). This estimate is based on the Corporation's historical experience with the loan portfolio. The estimate is adjusted to reflect an assessment of environmental factors not yet reflected in the historical data underlying the loss estimates, such as changes in real estate values, local and national economies, underwriting standards and the regulatory environment. The probability of default on a loan is based on an analysis of the movement of loans with the measured attributes from either current or any of the delinquency categories to default over a 12-month period. On home equity loans where the Corporation holds only a second-lien position and foreclosure is not the best alternative, the loss severity is estimated at 100 percent.

The allowance on certain commercial loans (except business card and certain small business loans) is calculated using loss rates delineated by risk rating and product type. Factors considered when assessing loss rates include the value of the underlying collateral, if applicable, the industry of the obligor, and the obligor's liquidity and other financial indicators along with certain qualitative factors. These statistical models are updated regularly for changes in economic and business conditions. Included in the analysis of consumer and commercial loan portfolios are reserves which are maintained to cover uncertainties that affect the Corporation's estimate of probable losses including domestic and global economic uncertainty and large single-name defaults.

The remaining portfolios, including nonperforming commercial loans, as well as consumer and commercial loans modified in a troubled debt restructuring (TDR), are reviewed in accordance with applicable accounting guidance on impaired loans and TDRs. If necessary, a specific allowance is established for these loans if they are deemed to be impaired. A loan is considered impaired when, based on current information and events, it is probable that the Corporation will be unable to collect all amounts due, including principal and/or interest, in accordance with the contractual terms of the agreement, or the loan has been modified in a TDR. Once a loan has been identified as impaired, management measures impairment primarily based on the present value of payments expected to be received, discounted at the loans' original effective contractual interest rates, or discounted at the portfolio average contractual annual percentage rate, excluding promotionally priced loans, in effect prior to restructuring. Impaired loans and TDRs may also be measured based on observable market prices, or for loans that are solely dependent on the collateral for repayment, the estimated fair value of the collateral less costs to sell. If the recorded investment in impaired loans exceeds this amount, a specific allowance is established as a component of the allowance for loan and lease losses unless these are secured consumer loans that are solely dependent on the collateral for repayment,
in which case the amount that exceeds the fair value of the collateral is charged off.

Generally, when determining the fair value of the collateral securing consumer real estate-secured loans that are solely dependent on the collateral for repayment, prior to performing a detailed property valuation including a walk-through of a property, the Corporation initially estimates the fair value of the collateral securing these consumer loans using an automated valuation model (AVM). An AVM is a tool that estimates the value of a property by reference to market data including sales of comparable properties and price trends specific to the Metropolitan Statistical Area in which the property being valued is located. In the event that an AVM value is not available, the Corporation utilizes publicized indices or if these methods provide less reliable valuations, the Corporation uses appraisals or broker price opinions to estimate the fair value of the collateral. While there is inherent imprecision in these valuations, the Corporation believes that they are representative of the portfolio in the aggregate.

In addition to the allowance for loan and lease losses, the Corporation also estimates probable losses related to unfunded lending commitments, such as letters of credit and financial guarantees, and binding unfunded loan commitments. The reserve for unfunded lending commitments excludes commitments accounted for under the fair value option. Unfunded lending commitments are subject to individual reviews and are analyzed and segregated by risk according to the Corporation's internal risk rating scale. These risk classifications, in conjunction with an analysis of historical loss experience, utilization assumptions, current economic conditions, performance trends within the portfolio and any other pertinent information, result in the estimation of the reserve for unfunded lending commitments.

The allowance for credit losses related to the loan and lease portfolio is reported separately on the Consolidated Balance Sheet whereas the reserve for unfunded lending commitments is reported on the Consolidated Balance Sheet in accrued expenses and other liabilities. The provision for credit losses related to the loan and lease portfolio and unfunded lending commitments is reported in the Consolidated Statement of Income.

## Nonperforming Loans and Leases, Charge-offs and Delinquencies

Nonperforming loans and leases generally include loans and leases that have been placed on nonaccrual status, including nonaccruing loans whose contractual terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties. Loans accounted for under the fair value option, PCI loans and LHFS are not reported as nonperforming.

In accordance with the Corporation's policies, consumer real estate-secured loans, including residential mortgages and home equity loans, are generally placed on nonaccrual status and classified as nonperforming at 90 days past due unless repayment of the loan is insured by the Federal Housing Administration (FHA) or through individually insured long-term standby agreements with Fannie Mae (FNMA) or Freddie Mac (FHLMC) (the fully-insured portfolio). Residential mortgage loans in the fully-insured portfolio are not placed on nonaccrual status and, therefore, are not reported as nonperforming. Junior-lien home equity loans are placed on nonaccrual status and classified as nonperforming when the underlying first-lien mortgage loan becomes 90 days past due even if the junior-lien loan is current. Accrued interest receivable
is reversed when a consumer loan is placed on nonaccrual status. Interest collections on nonaccruing consumer loans for which the ultimate collectability of principal is uncertain are generally applied as principal reductions; otherwise, such collections are credited to interest income when received. These loans may be restored to accrual status when all principal and interest is current and full repayment of the remaining contractual principal and interest is expected, or when the loan otherwise becomes well-secured and is in the process of collection. The outstanding balance of real estate-secured loans that is in excess of the estimated property value less costs to sell is charged off no later than the end of the month in which the loan becomes 180 days past due unless the loan is fully insured. The estimated property value less costs to sell is determined using the same process as described for impaired loans in Allowance for Credit Losses in this Note.

Consumer loans secured by personal property, credit card loans and other unsecured consumer loans are not placed on nonaccrual status prior to charge-off and, therefore, are not reported as nonperforming loans, except for certain secured consumer loans, including those that have been modified in a TDR. Personal property-secured loans are charged off to collateral value no later than the end of the month in which the account becomes 120 days past due or, for loans in bankruptcy, 60 days past due. Credit card and other unsecured consumer loans are charged off no later than the end of the month in which the account becomes 180 days past due or within 60 days after receipt of notification of death or bankruptcy.

Commercial loans and leases, excluding business card loans, that are past due 90 days or more as to principal or interest, or where reasonable doubt exists as to timely collection, including loans that are individually identified as being impaired, are generally placed on nonaccrual status and classified as nonperforming unless well-secured and in the process of collection.

Accrued interest receivable is reversed when commercial loans and leases are placed on nonaccrual status. Interest collections on nonaccruing commercial loans and leases for which the ultimate collectability of principal is uncertain are applied as principal reductions; otherwise, such collections are credited to income when received. Commercial loans and leases may be restored to accrual status when all principal and interest is current and full repayment of the remaining contractual principal and interest is expected, or when the loan otherwise becomes wellsecured and is in the process of collection. Business card loans are charged off no later than the end of the month in which the account becomes 180 days past due or 60 days after receipt of notification of death or bankruptcy. These loans are not placed on nonaccrual status prior to charge-off and, therefore, are not reported as nonperforming loans. Other commercial loans and leases are generally charged off when all or a portion of the principal amount is determined to be uncollectible.

The entire balance of a consumer loan or commercial loan or lease is contractually delinquent if the minimum payment is not received by the specified due date on the customer's billing statement. Interest and fees continue to accrue on past due loans and leases until the date the loan is placed on nonaccrual status, if applicable.

PCl loans are recorded at fair value at the acquisition date. Although the PCI loans may be contractually delinquent, the Corporation does not classify these loans as nonperforming as the loans were written down to fair value at the acquisition date and the accretable yield is recognized in interest income over the
remaining life of the loan. In addition, reported net charge-offs exclude write-offs on PCI loans as the fair value already considers the estimated credit losses.

## Troubled Debt Restructurings

Consumer and commercial loans and leases whose contractual terms have been restructured in a manner that grants a concession to a borrower experiencing financial difficulties are classified as TDRs. Concessions could include a reduction in the interest rate to a rate that is below market on the loan, payment extensions, forgiveness of principal, forbearance or other actions designed to maximize collections. Loans classified as TDRs are considered impaired loans. Loans that are carried at fair value, LHFS and PCI loans are not classified as TDRs.

Consumer and commercial loans and leases whose contractual terms have been modified in a TDR and are current at the time of restructuring may remain on accrual status if there is demonstrated performance prior to the restructuring and payment in full under the restructured terms is expected. Otherwise, the loans are placed on nonaccrual status and reported as nonperforming, except for fully-insured consumer real estate loans, until there is sustained repayment performance for a reasonable period, generally six months. If accruing TDRs cease to perform in accordance with their modified contractual terms, they are placed on nonaccrual status and reported as nonperforming TDRs. Generally, TDRs are reported as performing or nonperforming TDRs, depending on nonaccrual status, throughout their remaining lives. Accruing TDRs that bear a market rate of interest are reported as performing TDRs through the end of the calendar year in which the loans are returned to accrual status.

Secured consumer loans that have been discharged in Chapter 7 bankruptcy and have not been reaffirmed by the borrower are classified as TDRs at the time of discharge. Such loans are placed on nonaccrual status and written down to the estimated collateral value less costs to sell no later than at the time of discharge. If these loans are contractually current, interest collections are generally recorded in interest income on a cash basis. Consumer real estate-secured loans for which a binding offer to restructure has been extended are also classified as TDRs. Credit card and other unsecured consumer loans that have been renegotiated in a TDR are not placed on nonaccrual status. Credit card and other unsecured consumer loans that have been renegotiated and placed on a fixed payment plan after July 1, 2012 are generally charged off no later than the end of the month in which the account becomes 120 days past due.

A loan that had previously been modified in a TDR and is subsequently refinanced under current underwriting standards at a market rate with no concessionary terms is accounted for as a new loan and is no longer reported as a TDR.

## Loans Held-for-sale

Loans that are intended to be sold in the foreseeable future, including residential mortgages, loan syndications, and to a lesser degree, commercial real estate, consumer finance and other loans, are reported as LHFS and are carried at the lower of aggregate cost or fair value. The Corporation accounts for certain LHFS, including residential mortgage LHFS, under the fair value option. Loan origination costs related to LHFS that the Corporation accounts for under the fair value option are recognized in noninterest expense when incurred. Loan origination costs for LHFS carried at the lower of cost or fair value are capitalized as
part of the carrying value of the loans and recognized as a reduction of noninterest income upon the sale of such loans. LHFS that are on nonaccrual status and are reported as nonperforming, as defined in the policy herein, are reported separately from nonperforming loans and leases.

## Premises and Equipment

Premises and equipment are carried at cost less accumulated depreciation and amortization. Depreciation and amortization are recognized using the straight-line method over the estimated useful lives of the assets. Estimated lives range up to 40 years for buildings, up to 12 years for furniture and equipment, and the shorter of lease term or estimated useful life for leasehold improvements.

## Internally-developed Software

The Corporation capitalizes the costs associated with certain internally-developed software, and amortizes the costs over the expected useful life. Direct project costs of internally-developed software are capitalized when it is probable that the project will be completed and the software will be used for its intended function.

## Mortgage Servicing Rights

The Corporation accounts for consumer MSRs, including residential mortgage and home equity MSRs, at fair value with changes in fair value recorded in mortgage banking income. To reduce the volatility of earnings related to interest rate and market value fluctuations, U.S. Treasury securities, mortgage-backed securities and derivatives such as options and interest rate swaps may be used to hedge certain market risks of the MSRs. Such derivatives are not designated as qualifying accounting hedges. These instruments are carried at fair value with changes in fair value recognized in mortgage banking income. The Corporation estimates the fair value of consumer MSRs using a valuation model that calculates the present value of estimated future net servicing income and, when available, quoted prices from independent parties.

## Goodwill and Intangible Assets

Goodwill is the purchase premium after adjusting for the fair value of net assets acquired. Goodwill is not amortized but is reviewed for potential impairment on an annual basis, or when events or circumstances indicate a potential impairment, at the reporting unit level. A reporting unit, as defined under applicable accounting guidance, is a business segment or one level below a business segment. The goodwill impairment analysis is a two-step test. The first step of the goodwill impairment test involves comparing the fair value of each reporting unit with its carrying value, including goodwill, as measured by allocated equity. In certain circumstances, the first step may be performed using a qualitative assessment. If the fair value of the reporting unit exceeds its carrying value, goodwill of the reporting unit is considered not impaired; however, if the carrying value of the reporting unit exceeds its fair value, the second step must be performed to measure potential impairment.

The second step involves calculating an implied fair value of goodwill for each reporting unit for which the first step indicated possible impairment. The implied fair value of goodwill is determined in the same manner as the amount of goodwill
recognized in a business combination, which is the excess of the fair value of the reporting unit, as determined in the first step, over the aggregate fair values of the assets, liabilities and identifiable intangibles as if the reporting unit was being acquired in a business combination. Measurement of the fair values of the assets and liabilities of a reporting unit is consistent with the requirements of the fair value measurements accounting guidance, as described in Fair Value in this Note. The adjustments to measure the assets, liabilities and intangibles at fair value are for the purpose of measuring the implied fair value of goodwill and such adjustments are not reflected on the Consolidated Balance Sheet. If the implied fair value of goodwill exceeds the goodwill assigned to the reporting unit, there is no impairment. If the goodwill assigned to a reporting unit exceeds the implied fair value of goodwill, an impairment charge is recorded for the excess. An impairment loss recognized cannot exceed the amount of goodwill assigned to a reporting unit. An impairment loss establishes a new basis in the goodwill and subsequent reversals of goodwill impairment losses are not permitted under applicable accounting guidance.

For intangible assets subject to amortization, an impairment loss is recognized if the carrying value of the intangible asset is not recoverable and exceeds fair value. The carrying value of the intangible asset is considered not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the use of the asset. Intangible assets deemed to have indefinite useful lives are not subject to amortization. An impairment loss is recognized if the carrying value of the intangible asset with an indefinite life exceeds its fair value.

## Variable Interest Entities

A VIE is an entity that lacks equity investors or whose equity investors do not have a controlling financial interest in the entity through their equity investments. The entity that has a controlling financial interest in a VIE is referred to as the primary beneficiary and consolidates the VIE. The Corporation is deemed to have a controlling financial interest and is the primary beneficiary of a VIE if it has both the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and an obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE. On a quarterly basis, the Corporation reassesses whether it has a controlling financial interest in and is the primary beneficiary of a VIE. The quarterly reassessment process considers whether the Corporation has acquired or divested the power to direct the activities of the VIE through changes in governing documents or other circumstances. The reassessment also considers whether the Corporation has acquired or disposed of a financial interest that could be significant to the VIE, or whether an interest in the VIE has become significant or is no longer significant. The consolidation status of the VIEs with which the Corporation is involved may change as a result of such reassessments. Changes in consolidation status are applied prospectively, with assets and liabilities of a newly consolidated VIE initially recorded at fair value. A gain or loss may be recognized upon deconsolidation of a VIE depending on the carrying values of deconsolidated assets and liabilities compared to the fair value of retained interests and ongoing contractual arrangements.

The Corporation primarily uses VIEs for its securitization activities, in which the Corporation transfers whole loans or debt securities into a trust or other vehicle such that the assets are legally isolated from the creditors of the Corporation. Assets held in a trust can only be used to settle obligations of the trust. The
creditors of these trusts typically have no recourse to the Corporation except in accordance with the Corporation's obligations under standard representations and warranties.

When the Corporation is the servicer of whole loans held in a securitization trust, including non-agency residential mortgages, home equity loans, credit cards, automobile loans and student loans, the Corporation has the power to direct the most significant activities of the trust. The Corporation generally does not have the power to direct the most significant activities of a residential mortgage agency trust except in certain circumstances in which the Corporation holds substantially all of the issued securities and has the unilateral right to liquidate the trust. The power to direct the most significant activities of a commercial mortgage securitization trust is typically held by the special servicer or by the party holding specific subordinate securities which embody certain controlling rights. The Corporation consolidates a wholeloan securitization trust if it has the power to direct the most significant activities and also holds securities issued by the trust or has other contractual arrangements, other than standard representations and warranties, that could potentially be significant to the trust.

The Corporation may also transfer trading account securities and AFS securities into municipal bond or resecuritization trusts. The Corporation consolidates a municipal bond or resecuritization trust if it has control over the ongoing activities of the trust such as the remarketing of the trust's liabilities or, if there are no ongoing activities, sole discretion over the design of the trust, including the identification of securities to be transferred in and the structure of securities to be issued, and also retains securities or has liquidity or other commitments that could potentially be significant to the trust. The Corporation does not consolidate a municipal bond or resecuritization trust if one or a limited number of thirdparty investors share responsibility for the design of the trust or have control over the significant activities of the trust through liquidation or other substantive rights.

Other VIEs used by the Corporation include collateralized debt obligations (CDOs), investment vehicles created on behalf of customers and other investment vehicles. The Corporation does not routinely serve as collateral manager for CDOs and, therefore, does not typically have the power to direct the activities that most significantly impact the economic performance of a CDO. However, following an event of default, if the Corporation is a majority holder of senior securities issued by a CDO and acquires the power to manage the assets of the CDO, the Corporation consolidates the CDO.

The Corporation consolidates a customer or other investment vehicle if it has control over the initial design of the vehicle or manages the assets in the vehicle and also absorbs potentially significant gains or losses through an investment in the vehicle, derivative contracts or other arrangements. The Corporation does not consolidate an investment vehicle if a single investor controlled the initial design of the vehicle or manages the assets in the vehicles or if the Corporation does not have a variable interest that could potentially be significant to the vehicle.

Retained interests in securitized assets are initially recorded at fair value. In addition, the Corporation may invest in debt securities issued by unconsolidated VIEs. Fair values of these debt securities, which are classified as trading account assets, debt securities carried at fair value or held-to-maturity securities, are based primarily on quoted market prices in active or inactive markets. Generally, quoted market prices for retained residual interests are not available; therefore, the Corporation estimates
fair values based on the present value of the associated expected future cash flows. This may require management to estimate credit losses, prepayment speeds, forward interest yield curves, discount rates and other factors that impact the value of retained interests. Retained residual interests in unconsolidated securitization trusts are classified in trading account assets or other assets with changes in fair value recorded in earnings. The Corporation may also enter into derivatives with unconsolidated VIEs, which are carried at fair value with changes in fair value recorded in earnings.

## Fair Value

The Corporation measures the fair values of its assets and liabilities, where applicable, in accordance with accounting guidance that requires an entity to base fair value on exit price. A three-level hierarchy, provided in the applicable accounting guidance, for inputs is utilized in measuring fair value which maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that observable inputs be used to determine the exit price when available. Under applicable accounting guidance, the Corporation categorizes its financial instruments, based on the priority of inputs to the valuation technique, into this three-level hierarchy, as described below. Trading account assets and liabilities, derivative assets and liabilities, AFS debt and equity securities, other debt securities carried at fair value, consumer MSRs and certain other assets are carried at fair value in accordance with applicable accounting guidance. The Corporation has also elected to account for certain assets and liabilities under the fair value option, including certain commercial and consumer loans and loan commitments, LHFS, short-term borrowings, securities financing agreements, long-term deposits and long-term debt. The following describes the threelevel hierarchy.

Level 1 Unadjusted quoted prices in active markets for identical assets or liabilities. Level 1 assets and liabilities include debt and equity securities and derivative contracts that are traded in an active exchange market, as well as certain U.S. Treasury securities that are highly liquid and are actively traded in OTC markets.
Level 2 Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Level 2 assets and liabilities include debt securities with quoted prices that are traded less frequently than exchange-traded instruments and derivative contracts where fair value is determined using a pricing model with inputs that are observable in the market or can be derived principally from or corroborated by observable market data. This category generally includes U.S. government and agency mortgage-backed and asset-backed securities (ABS), corporate debt securities, derivative contracts, certain loans and LHFS.
Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the overall fair value of the assets or liabilities. Level 3 assets and liabilities include financial instruments for which the determination of fair value requires significant management judgment or estimation. The fair value for such assets and liabilities is generally determined using
pricing models, discounted cash flow methodologies or similar techniques that incorporate the assumptions a market participant would use in pricing the asset or liability. This category generally includes retained residual interests in securitizations, consumer MSRs, certain ABS, highly structured, complex or long-dated derivative contracts, certain loans and LHFS, IRLCs and certain CDOs where independent pricing information cannot be obtained for a significant portion of the underlying assets.

## Income Taxes

There are two components of income tax expense: current and deferred. Current income tax expense reflects taxes to be paid or refunded for the current period. Deferred income tax expense results from changes in deferred tax assets and liabilities between periods. These gross deferred tax assets and liabilities represent decreases or increases in taxes expected to be paid in the future because of future reversals of temporary differences in the bases of assets and liabilities as measured by tax laws and their bases as reported in the financial statements. Deferred tax assets are also recognized for tax attributes such as net operating loss carryforwards and tax credit carryforwards. Valuation allowances are recorded to reduce deferred tax assets to the amounts management concludes are more-likely-than-not to be realized.

Income tax benefits are recognized and measured based upon a two-step model: first, a tax position must be more-likely-than-not to be sustained based solely on its technical merits in order to be recognized, and second, the benefit is measured as the largest dollar amount of that position that is more-likely-than-not to be sustained upon settlement. The difference between the benefit recognized and the tax benefit claimed on a tax return is referred to as an unrecognized tax benefit. The Corporation records income tax-related interest and penalties, if applicable, within income tax expense.

## Accumulated Other Comprehensive Income

The Corporation records the following in accumulated OCI, net-oftax: unrealized gains and losses on AFS debt and marketable equity securities, unrealized gains or losses on DVA on financial liabilities recorded at fair value under the fair value option, gains and losses on cash flow accounting hedges, certain employee benefit plan adjustments, and foreign currency translation adjustments and related hedges of net investments in foreign operations. Unrealized gains and losses on AFS debt and marketable equity securities are reclassified to earnings as the gains or losses are realized upon sale of the securities. Unrealized Iosses on AFS securities deemed to represent OTTI are reclassified to earnings at the time of the impairment charge. For AFS debt securities that the Corporation does not intend to sell or it is not more-likely-than-not that it will be required to sell, only the credit component of an unrealized loss is reclassified to earnings. Realized gains or losses on DVA are reclassified to earnings upon derecognition of the liability. Gains or losses on derivatives accounted for as cash flow hedges are reclassified to earnings when the hedged transaction affects earnings. Translation gains
or losses on foreign currency translation adjustments are reclassified to earnings upon the substantial sale or liquidation of investments in foreign operations.

## Revenue Recognition

The following summarizes the Corporation's revenue recognition policies as they relate to certain noninterest income line items in the Consolidated Statement of Income.

Card income includes fees such as interchange, cash advance, annual, late, over-limit and other miscellaneous fees, which are recorded as revenue when earned. Uncollected fees are included in the customer card receivables balances with an amount recorded in the allowance for loan and lease losses for estimated uncollectible card receivables. Uncollected fees are written off when a card receivable reaches 180 days past due.

Service charges include fees for insufficient funds, overdrafts and other banking services and are recorded as revenue when earned. Uncollected fees are included in outstanding loan balances with an amount recorded for estimated uncollectible service fees receivable. Uncollected fees are written off when a fee receivable reaches 60 days past due.

Investment and brokerage services revenue consists primarily of asset management fees and brokerage income that are recognized over the period the services are provided or when commissions are earned. Asset management fees consist primarily of fees for investment management and trust services and are generally based on the dollar amount of the assets being managed. Brokerage income generally includes commissions and fees earned on the sale of various financial products.

Investment banking income consists primarily of advisory and underwriting fees that are recognized in income as the services are provided and no contingencies exist. Revenues are generally recognized net of any direct expenses. Non-reimbursed expenses are recorded as noninterest expense.

## Earnings Per Common Share

Earnings per common share (EPS) is computed by dividing net income (loss) allocated to common shareholders by the weightedaverage common shares outstanding, except that it does not include unvested common shares subject to repurchase or cancellation. Net income (loss) allocated to common shareholders represents net income (loss) applicable to common shareholders which is net income (loss) adjusted for preferred stock dividends including dividends declared, accretion of discounts on preferred stock including accelerated accretion when preferred stock is repaid early, and cumulative dividends related to the current dividend period that have not been declared as of period end, less income allocated to participating securities (see below for more information). Diluted EPS is computed by dividing income (loss) allocated to common shareholders plus dividends on dilutive convertible preferred stock and preferred stock that can be tendered to exercise warrants, by the weighted-average common shares outstanding plus amounts representing the dilutive effect of stock options outstanding, restricted stock, restricted stock units, outstanding warrants and the dilution resulting from the conversion of convertible preferred stock, if applicable.

Unvested share-based payment awards that contain nonforfeitable rights to dividends are participating securities that are included in computing EPS using the two-class method. The two-class method is an earnings allocation formula under which EPS is calculated for common stock and participating securities according to dividends declared and participating rights in undistributed earnings. Under this method, all earnings, distributed and undistributed, are allocated to participating securities and common shares based on their respective rights to receive dividends.

In an exchange of non-convertible preferred stock, income allocated to common shareholders is adjusted for the difference between the carrying value of the preferred stock and the fair value of the consideration exchanged. In an induced conversion of convertible preferred stock, income allocated to common shareholders is reduced by the excess of the fair value of the consideration exchanged over the fair value of the common stock that would have been issued under the original conversion terms.

## Foreign Currency Translation

Assets, liabilities and operations of foreign branches and subsidiaries are recorded based on the functional currency of each entity. For certain of the foreign operations, the functional currency is the local currency, in which case the assets, liabilities and operations are translated, for consolidation purposes, from the local currency to the U.S. Dollar reporting currency at period-end rates for assets and liabilities and generally at average rates for results of operations. The resulting unrealized gains or losses, as well as gains and losses from certain hedges, are reported as a component of accumulated OCI, net-of-tax. When the foreign entity's functional currency is determined to be the U.S. Dollar, the
resulting remeasurement gains or losses on foreign currencydenominated assets or liabilities are included in earnings.

## Credit Card and Deposit Arrangements

## Endorsing Organization Agreements

The Corporation contracts with other organizations to obtain their endorsement of the Corporation's loan and deposit products. This endorsement may provide to the Corporation exclusive rights to market to the organization's members or to customers on behalf of the Corporation. These organizations endorse the Corporation's loan and deposit products and provide the Corporation with their mailing lists and marketing activities. These agreements generally have terms that range five or more years. The Corporation typically pays royalties in exchange for the endorsement. Compensation costs related to the credit card agreements are recorded as contrarevenue in card income.

## Cardholder Reward Agreements

The Corporation offers reward programs that allow its cardholders to earn points that can be redeemed for a broad range of rewards including cash, travel and gift cards. The Corporation establishes a rewards liability based upon the points earned that are expected to be redeemed and the average cost per point redeemed. The points to be redeemed are estimated based on past redemption behavior, card product type, account transaction activity and other historical card performance. The liability is reduced as the points are redeemed. The estimated cost of the rewards programs is recorded as contra-revenue in card income.

## NOTE 2 Derivatives

## Derivative Balances

Derivatives are entered into on behalf of customers, for trading, or to support risk management activities. Derivatives used in risk management activities include derivatives that may or may not be designated in qualifying hedge accounting relationships. Derivatives that are not designated in qualifying hedge accounting relationships are referred to as other risk management derivatives. For more information on the Corporation's derivatives and hedging
activities, see Note 1 - Summary of Significant Accounting Principles. The following tables present derivative instruments included on the Consolidated Balance Sheet in derivative assets and liabilities at December 31, 2015 and 2014. Balances are presented on a gross basis, prior to the application of counterparty and cash collateral netting. Total derivative assets and liabilities are adjusted on an aggregate basis to take into consideration the effects of legally enforceable master netting agreements and have been reduced by the cash collateral received or paid.

| (Dollars in billions) | Contract/ <br> Notional (1) |  | December 31, 2015 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Gross Derivative Assets |  |  |  |  |  | Gross Derivative Liabilities |  |  |  |  |  |
|  |  |  | Trading and Other Risk Management Derivatives |  | Qualifying <br> Accounting Hedges |  | Total |  | Trading and Other Risk Management Derivatives |  | Qualifying <br> Accounting Hedges |  | Total |  |
| Interest rate contracts |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Swaps | \$ | 21,706.8 | \$ | 439.6 | \$ | 7.4 | \$ | 447.0 | \$ | 440.8 | \$ | 1.2 | \$ | 442.0 |
| Futures and forwards |  | 7,259.7 |  | 1.1 |  | - |  | 1.1 |  | 1.3 |  | - |  | 1.3 |
| Written options |  | 1,322.4 |  | - |  | - |  | - |  | 57.6 |  | - |  | 57.6 |
| Purchased options |  | 1,403.3 |  | 58.9 |  | - |  | 58.9 |  | - |  | - |  | - |
| Foreign exchange contracts |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Swaps |  | 2,149.9 |  | 49.2 |  | 0.9 |  | 50.1 |  | 52.2 |  | 2.8 |  | 55.0 |
| Spot, futures and forwards |  | 4,104.4 |  | 46.0 |  | 1.2 |  | 47.2 |  | 45.8 |  | 0.3 |  | 46.1 |
| Written options |  | 467.2 |  | - |  | - |  | - |  | 10.6 |  | - |  | 10.6 |
| Purchased options |  | 439.9 |  | 10.2 |  | - |  | 10.2 |  | - |  | - |  | - |
| Equity contracts |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Swaps |  | 201.2 |  | 3.3 |  | - |  | 3.3 |  | 3.8 |  | - |  | 3.8 |
| Futures and forwards |  | 74.0 |  | 2.1 |  | - |  | 2.1 |  | 1.2 |  | - |  | 1.2 |
| Written options |  | 352.8 |  | - |  | - |  | - |  | 21.1 |  | - |  | 21.1 |
| Purchased options |  | 325.4 |  | 23.8 |  | - |  | 23.8 |  | - |  | - |  | - |
| Commodity contracts ${ }^{(2)}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Swaps |  | 47.0 |  | 4.7 |  | - |  | 4.7 |  | 7.1 |  | - |  | 7.1 |
| Futures and forwards |  | 45.6 |  | 3.8 |  | - |  | 3.8 |  | 0.7 |  | - |  | 0.7 |
| Written options |  | 36.6 |  | - |  | - |  | - |  | 4.4 |  | - |  | 4.4 |
| Purchased options |  | 37.4 |  | 4.2 |  | - |  | 4.2 |  | - |  | - |  | - |
| Credit derivatives |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Purchased credit derivatives: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Credit default swaps |  | 928.3 |  | 14.4 |  | - |  | 14.4 |  | 14.8 |  | - |  | 14.8 |
| Total return swaps/other |  | 26.4 |  | 0.2 |  | - |  | 0.2 |  | 1.9 |  | - |  | 1.9 |
| Written credit derivatives: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Credit default swaps |  | 924.1 |  | 15.3 |  | - |  | 15.3 |  | 13.1 |  | - |  | 13.1 |
| Total return swaps/other |  | 39.7 |  | 2.3 |  | - |  | 2.3 |  | 0.4 |  | - |  | 0.4 |
| Gross derivative assets/liabilities |  |  | \$ | 679.1 | \$ | 9.5 | \$ | 688.6 | \$ | 676.8 | \$ | 4.3 | \$ | 681.1 |
| Less: Legally enforceable master netting agreements ${ }^{(2)}$ |  |  |  |  |  |  |  | 596.7) |  |  |  |  |  | (596.7) |
| Less: Cash collateral received/paid |  |  |  |  |  |  |  | (41.9) |  |  |  |  |  | (45.9) |
| Total derivative assets/liabilities |  |  |  |  |  |  | \$ | 50.0 |  |  |  |  | \$ | 38.5 |

${ }^{(1)}$ Represents the total contract/notional amount of derivative assets and liabilities outstanding.
${ }^{(2)}$ The notional amount for certain commodity derivatives has been reduced to reflect the impact of legally closed positions, which had no impact on the net fair value.

|  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |

${ }^{(1)}$ Represents the total contract/notional amount of derivative assets and liabilities outstanding.
${ }^{(2)}$ The notional amount for certain commodity derivatives has been reduced to reflect the impact of legally closed positions, which had no impact on the net fair value.

## Offsetting of Derivatives

The Corporation enters into International Swaps and Derivatives Association, Inc. (ISDA) master netting agreements or similar agreements with substantially all of the Corporation's derivative counterparties. Where legally enforceable, these master netting agreements give the Corporation, in the event of default by the counterparty, the right to liquidate securities held as collateral and to offset receivables and payables with the same counterparty. For purposes of the Consolidated Balance Sheet, the Corporation offsets derivative assets and liabilities and cash collateral held with the same counterparty where it has such a legally enforceable master netting agreement.

The Offsetting of Derivatives table presents derivative instruments included in derivative assets and liabilities on the Consolidated Balance Sheet at December 31, 2015 and 2014 by primary risk (e.g., interest rate risk) and the platform, where applicable, on which these derivatives are transacted. Exchangetraded derivatives include listed options transacted on an exchange. OTC derivatives include bilateral transactions between the Corporation and a particular counterparty. OTC-cleared derivatives include bilateral transactions between the Corporation and a counterparty where the transaction is cleared through a clearinghouse. Balances are presented on a gross basis, prior to
the application of counterparty and cash collateral netting. Total gross derivative assets and liabilities are adjusted on an aggregate basis to take into consideration the effects of legally enforceable master netting agreements which includes reducing the balance for counterparty netting and cash collateral received or paid.

Other gross derivative assets and liabilities in the table represent derivatives entered into under master netting agreements where uncertainty exists as to the enforceability of these agreements under bankruptcy laws in some countries or industries and, accordingly, receivables and payables with counterparties in these countries or industries are reported on a gross basis.

Also included in the table is financial instruments collateral related to legally enforceable master netting agreements that represents securities collateral received or pledged and customer cash collateral held at third-party custodians. These amounts are not offset on the Consolidated Balance Sheet but are shown as a reduction to total derivative assets and liabilities in the table to derive net derivative assets and liabilities.

For more information on offsetting of securities financing agreements, see Note 10 - Federal Funds Sold or Purchased, Securities Financing Agreements and Short-term Borrowings.

## Offsetting of Derivatives

| (Dollars in billions) | December 31, 2015 |  |  |  | December 31, 2014 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Derivative Assets |  | Derivative Liabilities |  | Derivative Assets |  | Derivative Liabilities |  |
| Interest rate contracts |  |  |  |  |  |  |  |  |
| Over-the-counter | \$ | 309.3 | \$ | 297.2 | \$ | 386.6 | \$ | 373.2 |
| Exchange-traded |  | - |  | - |  | 0.1 |  | 0.1 |
| Over-the-counter cleared |  | 197.0 |  | 201.7 |  | 365.7 |  | 368.7 |
| Foreign exchange contracts |  |  |  |  |  |  |  |  |
| Over-the-counter |  | 103.2 |  | 107.5 |  | 133.0 |  | 139.9 |
| Over-the-counter cleared |  | 0.1 |  | 0.1 |  | - |  | - |
| Equity contracts |  |  |  |  |  |  |  |  |
| Over-the-counter |  | 16.6 |  | 14.0 |  | 19.5 |  | 16.7 |
| Exchange-traded |  | 10.0 |  | 9.2 |  | 8.6 |  | 7.8 |
| Commodity contracts |  |  |  |  |  |  |  |  |
| Over-the-counter |  | 7.3 |  | 8.9 |  | 10.2 |  | 11.9 |
| Exchange-traded (1) |  | 1.8 |  | 1.8 |  | 3.3 |  | 3.4 |
| Over-the-counter cleared |  | 0.1 |  | 0.1 |  | 0.1 |  | 0.6 |
| Credit derivatives |  |  |  |  |  |  |  |  |
| Over-the-counter |  | 24.6 |  | 22.9 |  | 30.8 |  | 30.2 |
| Over-the-counter cleared |  | 6.5 |  | 6.4 |  | 7.0 |  | 6.8 |
| Total gross derivative assets/liabilities, before netting |  |  |  |  |  |  |  |  |
| Over-the-counter |  | 461.0 |  | 450.5 |  | 580.1 |  | 571.9 |
| Exchange-traded (1) |  | 11.8 |  | 11.0 |  | 12.0 |  | 11.3 |
| Over-the-counter cleared |  | 203.7 |  | 208.3 |  | 372.8 |  | 376.1 |
| Less: Legally enforceable master netting agreements and cash collateral received/paid |  |  |  |  |  |  |  |  |
| Over-the-counter |  | (426.6) |  | (425.7) |  | (545.7) |  | (545.5) |
| Exchange-traded (1) |  | (8.7) |  | (8.7) |  | (9.8) |  | (9.8) |
| Over-the-counter cleared |  | (203.3) |  | (208.2) |  | (372.5) |  | (375.5) |
| Derivative assets/liabilities, after netting |  | 37.9 |  | 27.2 |  | 36.9 |  | 28.5 |
| Other gross derivative assets/liabilities |  | 12.1 |  | 11.3 |  | 15.8 |  | 18.4 |
| Total derivative assets/liabilities |  | 50.0 |  | 38.5 |  | 52.7 |  | 46.9 |
| Less: Financial instruments collateral ${ }^{(2)}$ |  | (13.9) |  | (6.5) |  | (13.3) |  | (8.9) |
| Total net derivative assets/liabilities | \$ | 36.1 | \$ | 32.0 | \$ | 39.4 | \$ | 38.0 |

1) The notional amount for certain commodity derivatives has been reduced to reflect the impact of legally closed positions, which had no impact on the net fair value.
${ }^{(2)}$ These amounts are limited to the derivative asset/liability balance and, accordingly, do not include excess collateral received/pledged.

## ALM and Risk Management Derivatives

The Corporation's ALM and risk management activities include the use of derivatives to mitigate risk to the Corporation including derivatives designated in qualifying hedge accounting relationships and derivatives used in other risk management activities. Interest rate, foreign exchange, equity, commodity and credit contracts are utilized in the Corporation's ALM and risk management activities.

The Corporation maintains an overall interest rate risk management strategy that incorporates the use of interest rate contracts, which are generally non-leveraged generic interest rate and basis swaps, options, futures and forwards, to minimize significant fluctuations in earnings caused by interest rate volatility. The Corporation's goal is to manage interest rate sensitivity and volatility so that movements in interest rates do not significantly adversely affect earnings or capital. As a result of interest rate fluctuations, hedged fixed-rate assets and liabilities appreciate or depreciate in fair value. Gains or losses on the derivative instruments that are linked to the hedged fixed-rate assets and liabilities are expected to substantially offset this unrealized appreciation or depreciation.

Market risk, including interest rate risk, can be substantial in the mortgage business. Market risk is the risk that values of mortgage assets or revenues will be adversely affected by changes in market conditions such as interest rate movements. To mitigate the interest rate risk in mortgage banking production income, the

Corporation utilizes forward loan sale commitments and other derivative instruments, including purchased options, and certain debt securities. The Corporation also utilizes derivatives such as interest rate options, interest rate swaps, forward settlement contracts and eurodollar futures to hedge certain market risks of MSRs. For more information on MSRs, see Note 23 - Mortgage Servicing Rights.

The Corporation uses foreign exchange contracts to manage the foreign exchange risk associated with certain foreign currencydenominated assets and liabilities, as well as the Corporation's investments in non-U.S. subsidiaries. Foreign exchange contracts, which include spot and forward contracts, represent agreements to exchange the currency of one country for the currency of another country at an agreed-upon price on an agreed-upon settlement date. Exposure to loss on these contracts will increase or decrease over their respective lives as currency exchange and interest rates fluctuate.

The Corporation enters into derivative commodity contracts such as futures, swaps, options and forwards as well as nonderivative commodity contracts to provide price risk management services to customers or to manage price risk associated with its physical and financial commodity positions. The non-derivative commodity contracts and physical inventories of commodities expose the Corporation to earnings volatility. Fair value accounting hedges provide a method to mitigate a portion of this earnings volatility.

The Corporation purchases credit derivatives to manage credit risk related to certain funded and unfunded credit exposures. Credit derivatives include credit default swaps (CDS), total return swaps and swaptions. These derivatives are recorded on the Consolidated Balance Sheet at fair value with changes in fair value recorded in other income.

## Derivatives Designated as Accounting Hedges

The Corporation uses various types of interest rate, commodity and foreign exchange derivative contracts to protect against changes in the fair value of its assets and liabilities due to fluctuations in interest rates, commodity prices and exchange rates (fair value hedges). The Corporation also uses these types of contracts and equity derivatives to protect against changes in the cash flows of its assets and liabilities, and other forecasted transactions (cash flow hedges). The Corporation hedges its net investment in consolidated non-U.S. operations determined to
have functional currencies other than the U.S. Dollar using forward exchange contracts and cross-currency basis swaps, and by issuing foreign currency-denominated debt (net investment hedges).

## Fair Value Hedges

The table below summarizes information related to fair value hedges for 2015, 2014 and 2013, including hedges of interest rate risk on long-term debt that were acquired as part of a business combination and redesignated at that time. At redesignation, the fair value of the derivatives was positive. As the derivatives mature, the fair value will approach zero. As a result, ineffectiveness will occur and the fair value changes in the derivatives and the longterm debt being hedged may be directionally the same in certain scenarios. Based on a regression analysis, the derivatives continue to be highly effective at offsetting changes in the fair value of the long-term debt attributable to interest rate risk.

## Derivatives Designated as Fair Value Hedges

| Gains (Losses) | 2015 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Derivative |  | Hedged Item |  | Hedge Ineffectiveness |  |
| Interest rate risk on long-term debt (1) | \$ | (718) | \$ | (77) | \$ | (795) |
| Interest rate and foreign currency risk on long-term debt (1) |  | $(1,898)$ |  | 1,812 |  | (86) |
| Interest rate risk on available-for-sale securities ${ }^{(2)}$ |  | 105 |  | (127) |  | (22) |
| Price risk on commodity inventory ${ }^{(3)}$ |  | 15 |  | (11) |  | 4 |
| Total | \$ | $(2,496)$ | \$ | 1,597 | \$ | (899) |
|  | 2014 |  |  |  |  |  |
| Interest rate risk on long-term debt (1) | \$ | 2,144 | \$ | $(2,935)$ | \$ | (791) |
| Interest rate and foreign currency risk on long-term debt (1) |  | $(2,212)$ |  | 2,120 |  | (92) |
| Interest rate risk on available-for-sale securities ${ }^{(2)}$ |  | (35) |  | 3 |  | (32) |
| Price risk on commodity inventory ${ }^{(3)}$ |  | 21 |  | (15) |  | 6 |
| Total | \$ | (82) | \$ | (827) | \$ | (909) |
|  | 2013 |  |  |  |  |  |
| Interest rate risk on long-term debt (1) | \$ | $(4,704)$ | \$ | 3,925 | \$ | (779) |
| Interest rate and foreign currency risk on long-term debt (1) |  | $(1,291)$ |  | 1,085 |  | (206) |
| Interest rate risk on available-for-sale securities ${ }^{(2)}$ |  | 839 |  | (840) |  | (1) |
| Price risk on commodity inventory ${ }^{(3)}$ |  | (13) |  | 11 |  | (2) |
| Total | \$ | $(5,169)$ | \$ | 4,181 | \$ | (988) |

[^4]${ }^{(2)}$ Amounts are recorded in interest income on debt securities.
${ }^{(3)}$ Amounts relating to commodity inventory are recorded in trading account profits.

## Cash Flow and Net Investment Hedges

The table below summarizes certain information related to cash flow hedges and net investment hedges for 2015, 2014 and 2013. Of the $\$ 1.1$ billion net loss (after-tax) on derivatives in accumulated OCI for 2015, \$563 million (\$352 million after-tax) is expected to be reclassified into earnings in the next 12 months. These net losses reclassified into earnings are expected to primarily reduce
net interest income related to the respective hedged items. Amounts related to price risk on restricted stock awards reclassified from accumulated OCI are recorded in personnel expense. For terminated cash flow hedges, the time period over which substantially all of the forecasted transactions are hedged is approximately seven years, with a maximum length of time for certain forecasted transactions of 20 years.

Derivatives Designated as Cash Flow and Net Investment Hedges

| (Dollars in millions, amounts pretax) | 2015 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Gains (Losses) Recognized in Accumulated OCI on Derivatives |  | Gains (Losses) in Income Reclassified from Accumulated OCI |  | Hedge Ineffectiveness and Amounts Excluded from Effectiveness Testing ${ }^{(1)}$ |  |
| Cash flow hedges |  |  |  |  |  |  |
| Interest rate risk on variable-rate portfolios | \$ | 95 | \$ | (974) | \$ | (2) |
| Price risk on restricted stock awards (2) |  | (40) |  | 91 |  | - |
| Total | \$ | 55 | \$ | (883) | \$ | (2) |
| Net investment hedges |  |  |  |  |  |  |
| Foreign exchange risk | \$ | 3,010 | \$ | 153 | \$ | (298) |


| Cash flow hedges | 2014 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ |  |  |  |  |  |
| Interest rate risk on variable-rate portfolios |  | 68 | \$ | $(1,119)$ | \$ | (4) |
| Price risk on restricted stock awards ${ }^{(2)}$ | 127 |  |  | 359 |  | - |
| Total | \$ | 195 | \$ | (760) | \$ | (4) |
| Net investment hedges |  |  |  |  |  |  |
| Foreign exchange risk | \$ | 3,021 | \$ | 21 | \$ | (503) |


|  | 2013 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cash flow hedges |  |  |  |  |  |  |
| Interest rate risk on variable-rate portfolios | \$ | (321) | \$ | $(1,102)$ | \$ | - |
| Price risk on restricted stock awards (2) |  | 477 |  | 329 |  | - |
| Total | \$ | 156 | \$ | (773) | \$ | - |
| Net investment hedges |  |  |  |  |  |  |
| Foreign exchange risk | \$ | 1,024 | \$ | (355) | \$ | (134) |

[^5]${ }^{2)}$ The hedge gain (loss) recognized in accumulated OCl is primarily related to the change in the Corporation's stock price for the period.

## Other Risk Management Derivatives

Other risk management derivatives are used by the Corporation to reduce certain risk exposures. These derivatives are not qualifying accounting hedges because either they did not qualify for or were not designated as accounting hedges. The table below presents gains (losses) on these derivatives for 2015, 2014 and 2013. These gains (losses) are largely offset by the income or expense that is recorded on the hedged item.

## Other Risk Management Derivatives

Gains (Losses)
(Dollars in millions)
Interest rate risk on mortgage banking income (1)
Credit risk on loans ${ }^{(2)}$
Interest rate and foreign currency risk on ALM activities ${ }^{(3)}$
Price risk on restricted stock awards (4)

| 2015 |  | 2014 |  | 2013 |
| :---: | ---: | ---: | ---: | ---: |
| $\$$ | $\mathbf{2 5 4}$ | $\$$ | 1,017 | $\$$ |
|  | $(22)$ | 16 | $(619)$ |  |
|  | $(222)$ | $(3,683)$ | $(47)$ |  |
|  | $(267)$ | 600 | 2,501 |  |
|  | 11 | $(9)$ | 865 |  |
|  |  | $(19)$ |  |  |
|  |  |  |  |  |

(1) Net gains (losses) on these derivatives are recorded in mortgage banking income as they are used to mitigate the interest rate risk related to MSRs, IRLCs and mortgage loans held-for-sale, all of which are measured at fair value with changes in fair value recorded in mortgage banking income. The net gains on IRLCs related to the origination of mortgage loans that are held-for-sale, which are not included in the table but are considered derivative instruments, were $\$ 714$ million, $\$ 776$ million and $\$ 927$ million for 2015,2014 and 2013 , respectively.
${ }^{(2)}$ Primarily related to derivatives that are economic hedges of credit risk on loans. Net gains (losses) on these derivatives are recorded in other income.
${ }^{(3)}$ Primarily related to hedges of debt securities carried at fair value and hedges of foreign currency-denominated debt. Gains (losses) on these derivatives and the related hedged items are recorded in other income.
${ }^{(4)}$ Gains (losses) on these derivatives are recorded in personnel expense.

## Transfers of Financial Assets with Risk Retained through Derivatives

The Corporation enters into certain transactions involving the transfer of financial assets that are accounted for as sales where substantially all of the economic exposure to the transferred financial assets is retained by the Corporation through a derivative agreement with the initial transferee. These transactions are accounted for as sales because the Corporation does not retain control over the assets transferred.

Through December 31, 2015, the Corporation transferred \$7.9 billion of primarily non-U.S. government-guaranteed mortgagebacked securities (MBS) to a third-party trust. The Corporation received gross cash proceeds of $\$ 7.9$ billion at the transfer dates. At December 31, 2015, the fair value of these securities was $\$ 7.2$ billion. The Corporation simultaneously entered into derivatives with those counterparties whereby the Corporation retained certain economic exposures to those securities (e.g., interest rate and/or credit risk). A derivative asset of $\$ 24$ million and a liability of $\$ 29$ million were recorded at December 31, 2015 and are included in credit derivatives in the derivative instruments table on page 21. The economic exposure retained by the Corporation is typically hedged with interest rate swaps and interest rate swaptions.

## Sales and Trading Revenue

The Corporation enters into trading derivatives to facilitate client transactions and to manage risk exposures arising from trading account assets and liabilities. It is the Corporation's policy to include these derivative instruments in its trading activities which
include derivatives and non-derivative cash instruments. The resulting risk from these derivatives is managed on a portfolio basis as part of the Corporation's Global Markets business segment. The related sales and trading revenue generated within Global Markets is recorded in various income statement line items including trading account profits and net interest income as well as other revenue categories

Sales and trading revenue includes changes in the fair value and realized gains and losses on the sales of trading and other assets, net interest income, and fees primarily from commissions on equity securities. Revenue is generated by the difference in the client price for an instrument and the price at which the trading desk can execute the trade in the dealer market. For equity securities, commissions related to purchases and sales are recorded in the "Other" column in the Sales and Trading Revenue table. Changes in the fair value of these securities are included in trading account profits. For debt securities, revenue, with the exception of interest associated with the debt securities, is typically included in trading account profits. Unlike commissions for equity securities, the initial revenue related to broker-dealer services for debt securities is typically included in the pricing of the instrument rather than being charged through separate fee arrangements. Therefore, this revenue is recorded in trading account profits as part of the initial mark to fair value. For derivatives, the majority of revenue is included in trading account profits. In transactions where the Corporation acts as agent, which include exchange-traded futures and options, fees are recorded in other income.

The table below, which includes both derivatives and nonderivative cash instruments, identifies the amounts in the respective income statement line items attributable to the Corporation's sales and trading revenue in Global Markets, categorized by primary risk, for 2015, 2014 and 2013. The difference between total trading account profits in the table below and in the Consolidated Statement of Income represents trading activities in business segments other than Global Markets. This table includes DVA and funding valuation adjustment (FVA) gains (losses). Global Markets results in Note 24 - Business Segment

Information are presented on a fully taxable-equivalent (FTE) basis. The table below is not presented on an FTE basis.

The results for 2015 were impacted by the early adoption of new accounting guidance on recognition and measurement of financial instruments. As such, amounts in the "Other" column for 2015 exclude unrealized DVA resulting from changes in the Corporation's own credit spreads on liabilities accounted for under the fair value option. Amounts for 2014 and 2013 include such amounts. For more information on the new accounting guidance, see Note 1 - Summary of Significant Accounting Principles.

## Sales and Trading Revenue

| (Dollars in millions) | 2015 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Trading Account Profits |  | Net Interest Income |  | Other ${ }^{(1)}$ |  | Total |  |
| Interest rate risk | \$ | 1,304 | \$ | 1,306 | \$ | (264) | \$ | 2,346 |
| Foreign exchange risk |  | 1,322 |  | (10) |  | (117) |  | 1,195 |
| Equity risk |  | 2,115 |  | 56 |  | 2,146 |  | 4,317 |
| Credit risk |  | 901 |  | 2,360 |  | 452 |  | 3,713 |
| Other risk |  | 467 |  | (82) |  | 62 |  | 447 |
| Total sales and trading revenue | \$ | 6,109 | \$ | 3,630 | \$ | 2,279 | \$ | 12,018 |
|  | 2014 |  |  |  |  |  |  |  |
| Interest rate risk | \$ | 991 | \$ | 946 | \$ | 466 | \$ | 2,403 |
| Foreign exchange risk |  | 1,177 |  | 7 |  | (128) |  | 1,056 |
| Equity risk |  | 1,954 |  | (79) |  | 2,307 |  | 4,182 |
| Credit risk |  | 1,396 |  | 2,563 |  | 617 |  | 4,576 |
| Other risk |  | 509 |  | (123) |  | 105 |  | 491 |
| Total sales and trading revenue | \$ | 6,027 | \$ | 3,314 | \$ | 3,367 | \$ | 12,708 |
|  | 2013 |  |  |  |  |  |  |  |
| Interest rate risk | \$ | 1,255 | \$ | 1,035 | \$ | (226) | \$ | 2,064 |
| Foreign exchange risk |  | 1,169 |  | 6 |  | (100) |  | 1,075 |
| Equity risk |  | 1,994 |  | 112 |  | 2,066 |  | 4,172 |
| Credit risk |  | 1,966 |  | 2,646 |  | 77 |  | 4,689 |
| Other risk |  | 386 |  | (217) |  | 70 |  | 239 |
| Total sales and trading revenue | \$ | 6,770 | \$ | 3,582 | \$ | 1,887 | \$ | 12,239 |

${ }^{(1)}$ Represents amounts in investment and brokerage services and other income that are recorded in Global Markets and included in the definition of sales and trading revenue. Includes investment and brokerage services revenue of $\$ 2.2$ billion, $\$ 2.2$ billion and $\$ 2.1$ billion for 2015,2014 and 2013, respectively.

## Credit Derivatives

The Corporation enters into credit derivatives primarily to facilitate client transactions and to manage credit risk exposures. Credit derivatives derive value based on an underlying third-party referenced obligation or a portfolio of referenced obligations and generally require the Corporation, as the seller of credit protection, to make payments to a buyer upon the occurrence of a pre-defined credit event. Such credit events generally include bankruptcy of the referenced credit entity and failure to pay under the obligation, as well as acceleration of indebtedness and payment repudiation or moratorium. For credit derivatives based on a portfolio of referenced credits or credit indices, the Corporation may not be required to make payment until a specified amount of loss has
occurred and/or may only be required to make payment up to a specified amount.

Credit derivative instruments where the Corporation is the seller of credit protection and their expiration at December 31, 2015 and 2014 are summarized in the table below. These instruments are classified as investment and non-investment grade based on the credit quality of the underlying referenced obligation. The Corporation considers ratings of BBB- or higher as investment grade. Non-investment grade includes non-rated credit derivative instruments. The Corporation discloses internal categorizations of investment grade and non-investment grade consistent with how risk is managed for these instruments.

Credit Derivative Instruments

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Carrying Value |  |  |  |  |  |  |  |  |  |
|  | Less than One Year |  | One to Three Years |  | Three to Five Years |  | Over Five Years |  | Total |  |
| Credit default swaps: |  |  |  |  |  |  |  |  |  |  |
| Investment grade | \$ | 84 | \$ | 481 | \$ | 2,203 | \$ | 680 | \$ | 3,448 |
| Non-investment grade |  | 672 |  | 3,035 |  | 2,386 |  | 3,583 |  | 9,676 |
| Total |  | 756 |  | 3,516 |  | 4,589 |  | 4,263 |  | 13,124 |
| Total return swaps/other: |  |  |  |  |  |  |  |  |  |  |
| Investment grade |  | 5 |  | - |  | - |  | - |  | 5 |
| Non-investment grade |  | 171 |  | 236 |  | 8 |  | 2 |  | 417 |
| Total |  | 176 |  | 236 |  | 8 |  | 2 |  | 422 |
| Total credit derivatives | \$ | 932 | \$ | 3,752 | \$ | 4,597 | \$ | 4,265 | \$ | 13,546 |
| Credit-related notes: |  |  |  |  |  |  |  |  |  |  |
| Investment grade | \$ | 267 | \$ | 57 | \$ | 444 | \$ | 2,203 | \$ | 2,971 |
| Non-investment grade |  | 61 |  | 118 |  | 117 |  | 1,264 |  | 1,560 |
| Total credit-related notes | \$ | 328 | \$ | 175 | \$ | 561 | \$ | 3,467 | \$ | 4,531 |
|  |  |  |  | Maxi | um | Payout/No | on |  |  |  |
| Credit default swaps: |  |  |  |  |  |  |  |  |  |  |
| Investment grade | \$ | 149,177 | \$ | 280,658 | \$ | 178,990 | \$ | 26,352 | \$ | 635,177 |
| Non-investment grade |  | 81,596 |  | 135,850 |  | 53,299 |  | 18,221 |  | 288,966 |
| Total |  | 230,773 |  | 416,508 |  | 232,289 |  | 44,573 |  | 924,143 |
| Total return swaps/other: |  |  |  |  |  |  |  |  |  |  |
| Investment grade |  | 9,758 |  | - |  | - |  | - |  | 9,758 |
| Non-investment grade |  | 20,917 |  | 6,989 |  | 1,371 |  | 623 |  | 29,900 |
| Total |  | 30,675 |  | 6,989 |  | 1,371 |  | 623 |  | 39,658 |
| Total credit derivatives | \$ | 261,448 | \$ | 423,497 | \$ | 233,660 | \$ | 45,196 | \$ | 963,801 |


|  | December 31, 2014 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Carrying Value |  |  |  |  |  |  |  |  |  |
| Credit default swaps: |  |  |  |  |  |  |  |  |  |  |
| Investment grade | \$ | 100 | \$ | 714 | \$ | 1,455 | \$ | 939 | \$ | 3,208 |
| Non-investment grade |  | 916 |  | 2,107 |  | 1,338 |  | 4,301 |  | 8,662 |
| Total |  | 1,016 |  | 2,821 |  | 2,793 |  | 5,240 |  | 11,870 |
| Total return swaps/other: |  |  |  |  |  |  |  |  |  |  |
| Investment grade |  | 24 |  | - |  | - |  | - |  | 24 |
| Non-investment grade |  | 64 |  | 247 |  | 2 |  | - |  | 313 |
| Total |  | 88 |  | 247 |  | 2 |  | - |  | 337 |
| Total credit derivatives | \$ | 1,104 | \$ | 3,068 | \$ | 2,795 | \$ | 5,240 | \$ | 12,207 |
| Credit-related notes: |  |  |  |  |  |  |  |  |  |  |
| Investment grade | \$ | 2 | \$ | 365 | \$ | 568 | \$ | 2,634 | \$ | 3,569 |
| Non-investment grade |  | 5 |  | 141 |  | 85 |  | 1,443 |  | 1,674 |
| Total credit-related notes | \$ | 7 | \$ | 506 | \$ | 653 | \$ | 4,077 | \$ | 5,243 |
|  | Maximum Payout/Notional |  |  |  |  |  |  |  |  |  |
| Credit default swaps: |  |  |  |  |  |  |  |  |  |  |
| Investment grade | \$ | 132,974 | \$ | 342,914 | \$ | 242,728 | \$ | 28,982 | \$ | 747,598 |
| Non-investment grade |  | 54,326 |  | 170,580 |  | 80,011 |  | 20,586 |  | 325,503 |
| Total |  | 187,300 |  | 513,494 |  | 322,739 |  | 49,568 |  | ,073,101 |
| Total return swaps/other: |  |  |  |  |  |  |  |  |  |  |
| Investment grade |  | 22,645 |  | - |  | - |  | - |  | 22,645 |
| Non-investment grade |  | 23,839 |  | 10,792 |  | 3,268 |  | 487 |  | 38,386 |
| Total |  | 46,484 |  | 10,792 |  | 3,268 |  | 487 |  | 61,031 |
| Total credit derivatives | \$ | 233,784 | \$ | 524,286 | \$ | 326,007 | \$ | 50,055 |  | ,134,132 |

The notional amount represents the maximum amount payable by the Corporation for most credit derivatives. However, the Corporation does not monitor its exposure to credit derivatives based solely on the notional amount because this measure does not take into consideration the probability of occurrence. As such, the notional amount is not a reliable indicator of the Corporation's exposure to these contracts. Instead, a risk framework is used to define risk tolerances and establish limits to help ensure that certain credit risk-related losses occur within acceptable, predefined limits.

The Corporation manages its market risk exposure to credit derivatives by entering into a variety of offsetting derivative contracts and security positions. For example, in certain instances, the Corporation may purchase credit protection with identical underlying referenced names to offset its exposure. The carrying value and notional amount of written credit derivatives for which the Corporation held purchased credit derivatives with identical underlying referenced names and terms were $\$ 8.2$ billion and $\$ 706.0$ billion at December 31, 2015 and $\$ 5.7$ billion and $\$ 880.6$ billion at December 31, 2014

Credit-related notes in the table on page 28 include investments in securities issued by CDO, collateralized loan obligation (CLO) and credit-linked note vehicles. These instruments are primarily classified as trading securities. The carrying value of these instruments equals the Corporation's maximum exposure to loss. The Corporation is not obligated to make any payments to the entities under the terms of the securities owned.

## Credit-related Contingent Features and Collateral

The Corporation executes the majority of its derivative contracts in the OTC market with large, international financial institutions, including broker-dealers and, to a lesser degree, with a variety of non-financial companies. A significant majority of the derivative transactions are executed on a daily margin basis. Therefore, events such as a credit rating downgrade (depending on the ultimate rating level) or a breach of credit covenants would typically require an increase in the amount of collateral required of the counterparty, where applicable, and/or allow the Corporation to take additional protective measures such as early termination of all trades. Further, as previously discussed on page 21, the Corporation enters into legally enforceable master netting agreements which reduce risk by permitting the closeout and netting of transactions with the same counterparty upon the occurrence of certain events.

A majority of the Corporation's derivative contracts contain credit risk-related contingent features, primarily in the form of ISDA master netting agreements and credit support documentation that enhance the creditworthiness of these instruments compared to other obligations of the respective counterparty with whom the Corporation has transacted. These contingent features may be for the benefit of the Corporation as well as its counterparties with respect to changes in the Corporation's creditworthiness and the mark-to-market exposure under the derivative transactions. At December 31, 2015 and 2014, the Corporation held cash and securities collateral of $\$ 78.9$ billion and $\$ 82.0$ billion, and posted cash and securities collateral of $\$ 62.7$ billion and $\$ 67.9$ billion in the normal course of business under derivative agreements. This
excludes cross-product margining agreements where clients are permitted to margin on a net basis for both derivative and secured financing arrangements.

In connection with certain OTC derivative contracts and other trading agreements, the Corporation can be required to provide additional collateral or to terminate transactions with certain counterparties in the event of a downgrade of the senior debt ratings of the Corporation or certain subsidiaries. The amount of additional collateral required depends on the contract and is usually a fixed incremental amount and/or the market value of the exposure.

At December 31, 2015, the amount of collateral, calculated based on the terms of the contracts, that the Corporation and certain subsidiaries could be required to post to counterparties but had not yet posted to counterparties was approximately $\$ 2.9$ billion, including $\$ 1.6$ billion for Bank of America, N.A. (BANA).

Some counterparties are currently able to unilaterally terminate certain contracts, or the Corporation or certain subsidiaries may be required to take other action such as find a suitable replacement or obtain a guarantee. At December 31, 2015, the current liability recorded for these derivative contracts was $\$ 69$ million.

The table below presents the amount of additional collateral that would have been contractually required by derivative contracts and other trading agreements at December 31, 2015 if the rating agencies had downgraded their long-term senior debt ratings for the Corporation or certain subsidiaries by one incremental notch and by an additional second incremental notch.

## Additional Collateral Required to be Posted Upon Downgrade

| (Dollars in millions) | December 31, 2015 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Oneincrementalnotch |  | Second incremental notch |  |
| Bank of America Corporation | \$ | 1,011 | \$ | 1,948 |
| Bank of America, N.A. and subsidiaries ${ }^{(1)}$ |  | 762 |  | 1,474 |

${ }^{(1)}$ Included in Bank of America Corporation collateral requirements in this table.

The table below presents the derivative liabilities that would be subject to unilateral termination by counterparties and the amounts of collateral that would have been contractually required at December 31, 2015 if the long-term senior debt ratings for the Corporation or certain subsidiaries had been lower by one incremental notch and by an additional second incremental notch.

Derivative Liabilities Subject to Unilateral Termination Upon Downgrade

| (Dollars in millions) | December 31, 2015 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \hline \text { One } \\ \text { incremental } \\ \text { notch } \end{gathered}$ |  | Second incremental notch |  |
| Derivative liabilities | \$ | 879 | \$ | 2,792 |
| Collateral posted |  | 501 |  | 2,269 |

## Valuation Adjustments on Derivatives

The Corporation records credit risk valuation adjustments on derivatives in order to properly reflect the credit quality of the counterparties and its own credit quality. The Corporation calculates valuation adjustments on derivatives based on a modeled expected exposure that incorporates current market risk factors. The exposure also takes into consideration credit mitigants such as enforceable master netting agreements and collateral. CDS spread data is used to estimate the default probabilities and severities that are applied to the exposures. Where no observable credit default data is available for counterparties, the Corporation uses proxies and other market data to estimate default probabilities and severity.

Valuation adjustments on derivatives are affected by changes in market spreads, non-credit related market factors such as interest rate and currency changes that affect the expected exposure, and other factors like changes in collateral arrangements and partial payments. Credit spreads and non-credit factors can move independently. For example, for an interest rate swap, changes in interest rates may increase the expected exposure, which would increase the counterparty credit valuation adjustment (CVA). Independently, counterparty credit spreads may tighten, which would result in an offsetting decrease to CVA.

The Corporation early adopted, retrospective to January 1, 2015, the provision of new accounting guidance issued in January 2016 that requires the Corporation to record unrealized DVA resulting from changes in the Corporation's own credit spreads on liabilities accounted for under the fair value option in accumulated OCl . This new accounting guidance had no impact on the accounting for DVA on derivatives. For additional information, see New Accounting Pronouncements in Note 1 - Summary of Significant Accounting Principles.

In 2014, the Corporation implemented a funding valuation adjustment (FVA) into valuation estimates primarily to include
funding costs on uncollateralized derivatives and derivatives where the Corporation is not permitted to use the collateral it receives. The change in estimate resulted in a net pretax FVA charge of $\$ 497$ million, at the time of implementation, including a charge of $\$ 632$ million related to funding costs, partially offset by a funding benefit of $\$ 135$ million, both related to derivative asset exposures. The net FVA charge was recorded as a reduction to sales and trading revenue in Global Markets. The Corporation calculates this valuation adjustment based on modeled expected exposure profiles discounted for the funding risk premium inherent in these derivatives. FVA related to derivative assets and liabilities is the effect of funding costs on the fair value of these derivatives.

The Corporation enters into risk management activities to offset market driven exposures. The Corporation often hedges the counterparty spread risk in CVA with CDS. The Corporation hedges other market risks in both CVA and DVA primarily with currency and interest rate swaps. In certain instances, the net-of-hedge amounts in the table below move in the same direction as the gross amount or may move in the opposite direction. This is a consequence of the complex interaction of the risks being hedged resulting in limitations in the ability to perfectly hedge all of the market exposures at all times.

The table below presents CVA, DVA and FVA gains (losses) on derivatives, which are recorded in trading account profits, on a gross and net of hedge basis for 2015, 2014 and 2013. CVA gains reduce the cumulative CVA thereby increasing the derivative assets balance. DVA gains increase the cumulative DVA thereby decreasing the derivative liabilities balance. CVA and DVA losses have the opposite impact. FVA gains related to derivative assets reduce the cumulative FVA thereby increasing the derivative assets balance. FVA gains related to derivative liabilities increase the cumulative FVA thereby decreasing the derivative liabilities balance.

## Valuation Adjustments on Derivatives

| Gains (Losses) |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  |  |  | 2014 |  |  |  | 2013 |  |  |  |
| (Dollars in millions) | Gross |  | Net |  | Gross |  | Net |  | Gross |  | Net |  |
| Derivative assets (CVA) ${ }^{(1)}$ | \$ | 255 | \$ | 227 | \$ | (22) | \$ | 191 | \$ | 738 | \$ | (96) |
| Derivative assets (FVA) ${ }^{(2)}$ |  | (34) |  | (34) |  | (632) |  | (632) |  | n/a |  | n/a |
| Derivative liabilities (DVA) ${ }^{(3)}$ |  | (18) |  | (153) |  | (28) |  | (150) |  | (39) |  | (75) |
| Derivative liabilities (FVA) (2) |  | 50 |  | 50 |  | 135 |  | 135 |  | n/a |  | n/a |

(1) At December 31, 2015, 2014 and 2013, the cumulative CVA reduced the derivative assets balance by $\$ 1.4$ billion, $\$ 1.6$ billion and $\$ 1.6$ billion, respectively.
(2) FVA was adopted in 2014 and the cumulative FVA reduced the net derivatives balance by $\$ 481$ million and $\$ 497$ million at December 31,2015 and 2014.
(3) At December 31, 2015, 2014 and 2013, the cumulative DVA reduced the derivative liabilities balance by $\$ 750$ million, $\$ 769$ million and $\$ 803$ million, respectively.
$\mathrm{n} / \mathrm{a}=$ not applicable

## NOTE 3 Securities

The table below presents the amortized cost, gross unrealized gains and losses, and fair value of AFS debt securities, other debt securities carried at fair value, HTM debt securities and AFS marketable equity securities at December 31, 2015 and 2014.

## Debt Securities and Available-for-Sale Marketable Equity Securities



|  | December 31, 2014 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Available-for-sale debt securities |  |  |  |  |  |  |  |  |
| Mortgage-backed securities: |  |  |  |  |  |  |  |  |
| Agency | \$ | 163,592 | \$ | 2,040 | \$ | (593) | \$ | 165,039 |
| Agency-collateralized mortgage obligations |  | 14,175 |  | 152 |  | (79) |  | 14,248 |
| Commercial |  | 3,931 |  | 69 |  | - |  | 4,000 |
| Non-agency residential ${ }^{(1)}$ |  | 4,244 |  | 287 |  | (77) |  | 4,454 |
| Total mortgage-backed securities |  | 185,942 |  | 2,548 |  | (749) |  | 187,741 |
| U.S. Treasury and agency securities |  | 69,267 |  | 360 |  | (32) |  | 69,595 |
| Non-U.S. securities |  | 6,208 |  | 33 |  | (11) |  | 6,230 |
| Corporate/Agency bonds |  | 361 |  | 9 |  | (2) |  | 368 |
| Other taxable securities, substantially all asset-backed securities |  | 10,774 |  | 39 |  | (22) |  | 10,791 |
| Total taxable securities |  | 272,552 |  | 2,989 |  | (816) |  | 274,725 |
| Tax-exempt securities |  | 9,556 |  | 12 |  | (19) |  | 9,549 |
| Total available-for-sale debt securities |  | 282,108 |  | 3,001 |  | (835) |  | 284,274 |
| Other debt securities carried at fair value |  | 36,524 |  | 261 |  | (364) |  | 36,421 |
| Total debt securities carried at fair value ${ }^{(2)}$ |  | 318,632 |  | 3,262 |  | $(1,199)$ |  | 320,695 |
| Held-to-maturity debt securities, substantially all U.S. agency mortgage-backed securities |  | 59,766 |  | 486 |  | (611) |  | 59,641 |
| Total debt securities | \$ | 378,398 | \$ | 3,748 | \$ | $(1,810)$ | \$ | 380,336 |
| Available-for-sale marketable equity securities ${ }^{(3)}$ | \$ | 336 | \$ | 27 | \$ | - | \$ | 363 |

(1) At December 31, 2015 and 2014, the underlying collateral type included approximately 71 percent and 76 percent prime, 15 percent and 14 percent Alt-A, and 14 percent and 10 percent subprime.
${ }^{(2)}$ The Corporation had debt securities from FNMA and FHLMC that each exceeded 10 percent of shareholders' equity, with an amortized cost of $\$ 146.2$ billion and $\$ 53.4$ billion, and a fair value of $\$ 145.5$ billion and $\$ 53.2$ billion at December 31, 2015. Debt securities from FNMA and FHLMC that exceeded 10 percent of shareholders' equity had an amortized cost of $\$ 130.7$ billion and $\$ 28.3$ billion, and a fair value of $\$ 131.4$ billion and $\$ 28.6$ billion at December 31, 2014.
${ }^{(3)}$ Classified in other assets on the Consolidated Balance Sheet.

At December 31, 2015, the accumulated net unrealized loss on AFS debt securities included in accumulated OCI was $\$ 300$ million, net of the related income tax benefit of $\$ 188$ million. At December 31, 2015 and 2014, the Corporation had nonperforming AFS debt securities of $\$ 188$ million and $\$ 161$ million.

The table below presents the components of other debt securities carried at fair value where the changes in fair value are reported in other income. In 2015, the Corporation recorded unrealized mark-to-market net gains of $\$ 43$ million and realized net losses of $\$ 313$ million, compared to unrealized mark-to-market net gains of $\$ 1.2$ billion and realized net gains of $\$ 275$ million in 2014. These amounts exclude hedge results.
Other Debt Securities Carried at Fair Value

| (Dollars in millions) | December 31 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  |
| Mortgage-backed securities: |  |  |  |  |
| Agency | \$ | - | \$ | 15,704 |
| Agency-collateralized mortgage obligations |  | 7 |  | - |
| Non-agency residential |  | 3,490 |  | 3,745 |
| Total mortgage-backed securities |  | 3,497 |  | 19,449 |
| U.S. Treasury and agency securities |  | - |  | 1,541 |
| Non-U.S. securities ${ }^{(1)}$ |  | 12,843 |  | 15,132 |
| Other taxable securities, substantially all asset-backed securities |  | 267 |  | 299 |
| Total | \$ | 16,607 | \$ | 36,421 |
| (1) These securities are primarily used to satisfy requirements. |  | rnational |  | liquidit |

The gross realized gains and losses on sales of AFS debt securities for 2015, 2014 and 2013 are presented in the table below.

## Gains and Losses on Sales of AFS Debt Securities

| (Dollars in millions) | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Gross gains | \$ | 1,118 | \$ | 1,366 | \$ | 1,302 |
| Gross losses |  | (27) |  | (12) |  | (31) |
| Net gains on sales of AFS debt securities | \$ | 1,091 | \$ | 1,354 | \$ | 1,271 |
| Income tax expense attributable to realized net gains on sales of AFS debt securities | \$ | 415 | \$ | 515 | \$ | 470 |

The table below presents the fair value and the associated gross unrealized losses on AFS debt securities and whether these securities have had gross unrealized losses for less than 12 months or for 12 months or longer at December 31, 2015 and 2014.

Temporarily Impaired and Other-than-temporarily Impaired AFS Debt Securities


|  | December 31, 2014 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Temporarily impaired AFS debt securities |  |  |  |  |  |  |  |  |  |  |  |
| Mortgage-backed securities: |  |  |  |  |  |  |  |  |  |  |  |  |
| Agency | \$ | 1,366 | \$ | (8) | \$ | 43,118 | \$ | (585) | \$ | 44,484 | \$ | (593) |
| Agency-collateralized mortgage obligations |  | 2,242 |  | (19) |  | 3,075 |  | (60) |  | 5,317 |  | (79) |
| Non-agency residential |  | 307 |  | (3) |  | 809 |  | (41) |  | 1,116 |  | (44) |
| Total mortgage-backed securities |  | 3,915 |  | (30) |  | 47,002 |  | (686) |  | 50,917 |  | (716) |
| U.S. Treasury and agency securities |  | 10,121 |  | (22) |  | 667 |  | (10) |  | 10,788 |  | (32) |
| Non-U.S. securities |  | 157 |  | (9) |  | 32 |  | (2) |  | 189 |  | (11) |
| Corporate/Agency bonds |  | 43 |  | (1) |  | 93 |  | (1) |  | 136 |  | (2) |
| Other taxable securities, substantially all asset-backed securities |  | 575 |  | (3) |  | 1,080 |  | (19) |  | 1,655 |  | (22) |
| Total taxable securities |  | 14,811 |  | (65) |  | 48,874 |  | (718) |  | 63,685 |  | (783) |
| Tax-exempt securities |  | 980 |  | (1) |  | 680 |  | (18) |  | 1,660 |  | (19) |
| Total temporarily impaired AFS debt securities |  | 15,791 |  | (66) |  | 49,554 |  | (736) |  | 65,345 |  | (802) |
| Other-than-temporarily impaired AFS debt securities ${ }^{(1)}$ |  |  |  |  |  |  |  |  |  |  |  |  |
| Non-agency residential mortgage-backed securities |  | 555 |  | (33) |  | - |  | - |  | 555 |  | (33) |
| Total temporarily impaired and other-than-temporarily impaired AFS debt securities | \$ | 16,346 | \$ | (99) | \$ | 49,554 | \$ | (736) | \$ | 65,900 | \$ | (835) |

(1) Includes other-than-temporarily impaired AFS debt securities on which an OTTI loss, primarily related to changes in interest rates, remains in accumulated OCI.

The Corporation recorded OTTI losses on AFS debt securities in 2015, 2014 and 2013 as presented in the Net Credit-related Impairment Losses Recognized in Earnings table. Substantially all OTTI losses in 2015, 2014 and 2013 consisted of credit losses on non-agency residential mortgage-backed securities (RMBS) and were recorded in other income in the Consolidated Statement of Income. The credit losses on the RMBS in 2015 were driven by decreases in the estimated RMBS cash flows primarily due to a model change resulting in the refinement of expected cash flows.

A debt security is impaired when its fair value is less than its amortized cost. If the Corporation intends or will more-likely-thannot be required to sell a debt security prior to recovery, the entire impairment loss is recorded in the Consolidated Statement of Income. For AFS debt securities the Corporation does not intend or will not more-likely-than-not be required to sell, an analysis is performed to determine if any of the impairment is due to credit or whether it is due to other factors (e.g., interest rate). Credit losses are considered unrecoverable and are recorded in the Consolidated Statement of Income with the remaining unrealized losses recorded in OCI. In certain instances, the credit loss on a
debt security may exceed the total impairment, in which case, the excess of the credit loss over the total impairment is recorded as an unrealized gain in OCI.

## Net Credit-related Impairment Losses Recognized in Earnings

| (Dollars in millions) | 2015 |  | 2014 |  | 2013 |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Total OTTI losses | $\$$ | $(111)$ | $\$$ | $(30)$ | $\$$ | $(21)$ |
| Less: non-credit portion of total OTTI <br> losses recognized in OCI |  | 30 |  | 14 | 1 |  |
| Net credit-related impairment losses <br> recognized in earnings | $\$$ | $(81)$ | $\$$ | $(16)$ | $\$$ | $(20)$ |

The table below presents a rollforward of the credit losses recognized in earnings in 2015, 2014 and 2013 on AFS debt securities that the Corporation does not have the intent to sell or will not more-likely-than-not be required to sell.

## Rollforward of OTTI Credit Losses Recognized

| (Dollars in millions) | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Balance, January 1 | \$ | 200 | \$ | 184 | \$ | 243 |
| Additions for credit losses recognized on AFS debt securities that had no previous impairment losses |  | 52 |  | 14 |  | 6 |
| Additions for credit losses recognized on AFS debt securities that had previously incurred impairment losses |  | 29 |  | 2 |  | 14 |
| Reductions for AFS debt securities matured, sold or intended to be sold |  | (15) |  | - |  | (79) |
| Balance, December 31 | \$ | 266 | \$ | 200 | \$ | 184 |

The Corporation estimates the portion of a loss on a security that is attributable to credit using a discounted cash flow model and estimates the expected cash flows of the underlying collateral using internal credit, interest rate and prepayment risk models that incorporate management's best estimate of current key assumptions such as default rates, loss severity and prepayment rates. Assumptions used for the underlying loans that support the MBS can vary widely from loan to loan and are influenced by such factors as loan interest rate, geographic location of the borrower, borrower characteristics and collateral type. Based on these assumptions, the Corporation then determines how the underlying collateral cash flows will be distributed to each MBS issued from the applicable special purpose entity. Expected principal and interest cash flows on an impaired AFS debt security are discounted using the effective yield of each individual impaired AFS debt security.

Significant assumptions used in estimating the expected cash flows for measuring credit losses on non-agency RMBS were as follows at December 31, 2015.

## Significant Assumptions

|  |  | Range ${ }^{(1)}$ |  |
| :--- | :---: | :---: | :---: |
|  | Weighted- <br> average | 10th <br> Percentile ${ }^{(2)}$ | 90th <br> Percentile ${ }^{(2)}$ |
| Prepayment speed | $12.6 \%$ | $3.8 \%$ | $25.5 \%$ |
| Loss severity | 32.6 | 12.9 | 34.8 |
| Life default rate | 26.0 | 0.8 | 86.1 |

${ }^{(1)}$ Represents the range of inputs/assumptions based upon the underlying collateral.
(2) The value of a variable below which the indicated percentile of observations will fall.

Constant prepayment speed and loss severity rates are projected considering collateral characteristics such as LTV, creditworthiness of borrowers as measured using Fair Isaac Corporation (FICO) scores, and geographic concentrations. The weighted-average severity by collateral type was 29.2 percent for prime, 31.4 percent for Alt-A and 42.9 percent for subprime at December 31, 2015. Additionally, default rates are projected by considering collateral characteristics including, but not limited to, LTV, FICO and geographic concentration. Weighted-average life default rates by collateral type were 16.1 percent for prime, 28.0 percent for Alt-A and 27.2 percent for subprime at December 31, 2015.

The expected maturity distribution and yields of the Corporation's debt securities carried at fair value and HTM debt securities at December 31, 2015 are summarized in the table below. Actual maturities may differ from the contractual or expected maturities since borrowers may have the right to prepay obligations with or without prepayment penalties.

Maturities of Debt Securities Carried at Fair Value and Held-to-maturity Debt Securities


| Debt securities carried at fair value |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mortgage-backed securities: |  |  |  |  |  |  |  |  |
| Agency |  | 59 | \$ | 29,150 | \$196,720 | \$ | 3,018 | \$228,947 |
| Agency-collateralized mortgage obligations |  | 157 |  | 3,056 | 7,779 |  | - | 10,992 |
| Commercial |  | 223 |  | 618 | 6,324 |  | - | 7,165 |
| Non-agency residential |  | 354 |  | 1,102 | 1,263 |  | 3,950 | 6,669 |
| Total mortgage-backed securities |  | 793 |  | 33,926 | 212,086 |  | 6,968 | 253,773 |
| U.S. Treasury and agency securities |  | 516 |  | 23,266 | 1,493 |  | 2 | 25,277 |
| Non-U.S. securities |  | 16,720 |  | 1,884 | 6 |  | - | 18,610 |
| Corporate/Agency bonds |  | 41 |  | 70 | 128 |  | 4 | 243 |
| Other taxable securities, substantially all asset-backed securities |  | 3,102 |  | 4,349 | 2,296 |  | 722 | 10,469 |
| Total taxable securities |  | 21,172 |  | 63,495 | 216,009 |  | 7,696 | 308,372 |
| Tax-exempt securities |  | 836 |  | 5,161 | 5,882 |  | 2,129 | 14,008 |
| Total debt securities carried at fair value |  | 22,008 | \$ | 68,656 | \$ 221,891 | \$ | 9,825 | \$ 322,380 |
| Fair value of HTM debt securities ${ }^{(2)}$ |  | 569 | \$ | 18,356 | \$ 62,360 | \$ | 2,761 | \$ 84,046 |

${ }^{(1)}$ Average yield is computed using the effective yield of each security at the end of the period, weighted based on the amortized cost of each security. The effective yield considers the contractual coupon, amortization of premiums and accretion of discounts, and excludes the effect of related hedging derivatives.
${ }^{(2)}$ Substantially all U.S. agency MBS.

## Certain Corporate and Strategic Investments

The Corporation's 49 percent investment in a merchant services joint venture, which is recorded in other assets on the Consolidated Balance Sheet and in All Other, had a carrying value of $\$ 3.0$ billion and $\$ 3.1$ billion at December 31, 2015 and 2014. For additional information, see Note 12 - Commitments and Contingencies.

In 2013, the Corporation sold its remaining investment in China Construction Bank Corporation (CCB) and realized a pretax gain of $\$ 753$ million in All Other reported in equity investment income in the Consolidated Statement of Income. The strategic assistance agreement between the Corporation and CCB, which includes cooperation in specific business areas, extends through 2016.

The Corporation holds investments in partnerships that construct, own and operate real estate projects that qualify for low income housing tax credits. The Corporation earns a return primarily through the receipt of tax credits allocated to the real estate projects.

Total low income housing tax credit investments were $\$ 7.1$ billion and $\$ 6.6$ billion at December 31, 2015 and 2014. These investments are reported in other assets on the Consolidated Balance Sheet. The Corporation had unfunded commitments to provide capital contributions of $\$ 2.4$ billion and $\$ 2.2$ billion to these partnerships at December 31, 2015 and 2014, which are expected to be paid over the next five years. These commitments are reported in accrued expenses and other liabilities on the Consolidated Balance Sheet. During 2015 and 2014, the Corporation recognized tax credits and other tax benefits from investments in affordable housing partnerships of $\$ 928$ million and $\$ 920$ million, partially offset by pretax losses recognized in other income of $\$ 629$ million and $\$ 601$ million.

NOTE 4 Outstanding Loans and Leases
The following tables present total outstanding loans and leases and an aging analysis for the Consumer Real Estate, Credit Card and Other Consumer, and Commercial portfolio segments, by class of financing receivables, at December 31, 2015 and 2014.

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 30-59 Days Past Due (1) |  | 60-89 Days Past Due ${ }^{(1)}$ |  | 90 Days or More <br> Past Due (2) |  | Total Past <br> Due 30 Days or More |  | Total Current or Less Than 30 Days Past Due (3) |  | Purchased Creditimpaired (4) |  | Loans <br> Accounted for Under the Fair Value Option |  | Total Outstandings |  |
| Consumer real estate |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Core portfolio |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage | \$ | 1,214 | \$ | 368 | \$ | 1,414 | \$ | 2,996 | \$ | 138,799 |  |  |  |  | \$ | 141,795 |
| Home equity |  | 200 |  | 93 |  | 579 |  | 872 |  | 54,045 |  |  |  |  |  | 54,917 |
| Non-core portfolio |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage ${ }^{(5)}$ |  | 2,045 |  | 1,167 |  | 8,439 |  | 11,651 |  | 22,399 | \$ | 12,066 |  |  |  | 46,116 |
| Home equity |  | 335 |  | 174 |  | 1,170 |  | 1,679 |  | 14,733 |  | 4,619 |  |  |  | 21,031 |
| Credit card and other consumer |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| U.S. credit card |  | 454 |  | 332 |  | 789 |  | 1,575 |  | 88,027 |  |  |  |  |  | 89,602 |
| Non-U.S. credit card |  | 39 |  | 31 |  | 76 |  | 146 |  | 9,829 |  |  |  |  |  | 9,975 |
| Direct/Indirect consumer (6) |  | 227 |  | 62 |  | 42 |  | 331 |  | 88,464 |  |  |  |  |  | 88,795 |
| Other consumer ${ }^{(7)}$ |  | 18 |  | 3 |  | 4 |  | 25 |  | 2,042 |  |  |  |  |  | 2,067 |
| Total consumer |  | 4,532 |  | 2,230 |  | 12,513 |  | 19,275 |  | 418,338 |  | 16,685 |  |  |  | 454,298 |
| Consumer loans accounted for under the fair value option ${ }^{(8)}$ |  |  |  |  |  |  |  |  |  |  |  |  | \$ | 1,871 |  | 1,871 |
| Total consumer loans and leases |  | 4,532 |  | 2,230 |  | 12,513 |  | 19,275 |  | 418,338 |  | 16,685 |  | 1,871 |  | 456,169 |
| Commercial |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| U.S. commercial |  | 444 |  | 148 |  | 332 |  | 924 |  | 251,847 |  |  |  |  |  | 252,771 |
| Commercial real estate ${ }^{(9)}$ |  | 36 |  | 11 |  | 82 |  | 129 |  | 57,070 |  |  |  |  |  | 57,199 |
| Commercial lease financing |  | 150 |  | 29 |  | 20 |  | 199 |  | 21,153 |  |  |  |  |  | 21,352 |
| Non-U.S. commercial |  | 6 |  | 1 |  | 1 |  | 8 |  | 91,541 |  |  |  |  |  | 91,549 |
| U.S. small business commercial |  | 83 |  | 41 |  | 72 |  | 196 |  | 12,680 |  |  |  |  |  | 12,876 |
| Total commercial |  | 719 |  | 230 |  | 507 |  | 1,456 |  | 434,291 |  |  |  |  |  | 435,747 |
| Commercial loans accounted for under the fair value option (8) |  |  |  |  |  |  |  |  |  |  |  |  |  | 5,067 |  | 5,067 |
| Total commercial loans and leases |  | 719 |  | 230 |  | 507 |  | 1,456 |  | 434,291 |  |  |  | 5,067 |  | 440,814 |
| Total loans and leases | \$ | 5,251 | \$ | 2,460 | \$ | 13,020 | \$ | 20,731 | \$ | 852,629 | \$ | 16,685 | \$ | 6,938 | \$ | 896,983 |
| Percentage of outstandings |  | 0.59\% |  | 0.27\% |  | 1.45\% |  | 2.31\% |  | 95.06\% |  | 1.86\% |  | 0.77\% |  | 100.00\% |

${ }^{(1)}$ Consumer real estate loans $30-59$ days past due includes fully-insured loans of $\$ 1.7$ billion and nonperforming loans of $\$ 379$ million. Consumer real estate loans $60-89$ days past due includes fullyinsured loans of $\$ 1.0$ billion and nonperforming loans of $\$ 297$ million.
(2) Consumer real estate includes fully-insured loans of $\$ 7.2$ billion.
${ }^{(3)}$ Consumer real estate includes $\$ 3.0$ billion and direct/indirect consumer includes $\$ 21$ million of nonperforming loans
${ }^{(4)} \mathrm{PCl}$ loan amounts are shown gross of the valuation allowance
${ }^{5)}$ Total outstandings includes pay option loans of $\$ 2.3$ billion. The Corporation no longer originates this product.
${ }^{6}$ ) Total outstandings includes auto and specialty lending loans of $\$ 42.6$ billion, unsecured consumer lending loans of $\$ 886$ million, U.S. securities-based lending loans of $\$ 39.8$ billion, non-U.S. consumer loans of $\$ 3.9$ billion, student loans of $\$ 564$ million and other consumer loans of $\$ 1.0$ billion.
${ }^{\text {(7) }}$ Total outstandings includes consumer finance loans of $\$ 564$ million, consumer leases of $\$ 1.4$ billion and consumer overdrafts of $\$ 146$ million.
${ }^{(8)}$ Consumer loans accounted for under the fair value option were residential mortgage loans of $\$ 1.6$ billion and home equity loans of $\$ 250$ million. Commercial loans accounted for under the fair value option were U.S. commercial loans of $\$ 2.3$ billion and non-U.S. commercial loans of $\$ 2.8$ billion. For additional information, see Note 20 - Fair Value Measurements and Note 21 - Fair Value Option.
${ }^{\text {(9) }}$ Total outstandings includes U.S. commercial real estate loans of $\$ 53.6$ billion and non-U.S. commercial real estate loans of $\$ 3.5$ billion.

|  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

Following the realignment of its business segments effective April 1, 2016, the Corporation categorizes consumer real estate loans as core and non-core on the basis of loan and customer characteristics such as origination date, product type, LTV, FICO score and delinquency status consistent with its current consumer and mortgage servicing strategy. Generally, loans that were originated after January 1, 2010, qualified under governmentsponsored enterprise underwriting guidelines, or otherwise met the Corporation's underwriting guidelines in place in 2015 are characterized as core loans. Loans held in legacy private-label securitizations, government-insured loans originated prior to 2010, loan products no longer originated, and loans originated prior to 2010 and classified as nonperforming or modified in a TDR prior to 2016 are generally characterized as non-core loans, and are principally run-off portfolios. Core loans as reported within this Note include loans held in the Consumer Banking and GWIM segments, as well as loans held for ALM activities in All Other.

The Corporation has entered into long-term credit protection agreements with FNMA and FHLMC on loans totaling $\$ 3.7$ billion and $\$ 17.2$ billion at December 31, 2015 and 2014, providing full credit protection on residential mortgage loans that become
severely delinquent. All of these loans are individually insured and therefore the Corporation does not record an allowance for credit losses related to these loans.

## Nonperforming Loans and Leases

The Corporation classifies junior-lien home equity loans as nonperforming when the first-lien loan becomes 90 days past due even if the junior-lien loan is performing. At December 31, 2015 and 2014, $\$ 484$ million and $\$ 800$ million of such junior-lien home equity loans were included in nonperforming loans.

The Corporation classifies consumer real estate loans that have been discharged in Chapter 7 bankruptcy and not reaffirmed by the borrower as TDRs, irrespective of payment history or delinquency status, even if the repayment terms for the loan have not been otherwise modified. The Corporation continues to have a lien on the underlying collateral. At December 31, 2015, nonperforming loans discharged in Chapter 7 bankruptcy with no change in repayment terms were $\$ 785$ million of which $\$ 457$ million were current on their contractual payments, while \$285 million were 90 days or more past due. Of the contractually current
nonperforming loans, more than 80 percent were discharged in Chapter 7 bankruptcy more than 12 months ago, and more than 60 percent were discharged 24 months or more ago. As subsequent cash payments are received on these nonperforming loans that are contractually current, the interest component of the payments is generally recorded as interest income on a cash basis and the principal component is recorded as a reduction in the carrying value of the loan.

During 2015, the Corporation sold nonperforming and other delinquent consumer real estate loans with a carrying value of $\$ 3.2$ billion, including $\$ 1.4$ billion of PCI loans, compared to $\$ 6.7$ billion, including $\$ 1.9$ billion of PCI loans, in 2014. The Corporation
recorded recoveries related to these sales of $\$ 133$ million and $\$ 407$ million during 2015 and 2014. Gains related to these sales of $\$ 173$ million and $\$ 247$ million were recorded in other income in the Consolidated Statement of Income during 2015 and 2014.

The table below presents the Corporation's nonperforming loans and leases including nonperforming TDRs, and loans accruing past due 90 days or more at December 31, 2015 and 2014. Nonperforming LHFS are excluded from nonperforming loans and leases as they are recorded at either fair value or the lower of cost or fair value. For more information on the criteria for classification as nonperforming, see Note 1 - Summary of Significant Accounting Principles.

## Credit Quality

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Nonperforming Loans and Leases |  |  |  | Accruing Past Due 90 Days or More |  |  |  |
|  |  | 2015 |  | 2014 |  | 2015 |  | 2014 |
| Consumer real estate |  |  |  |  |  |  |  |  |
| Core portfolio |  |  |  |  |  |  |  |  |
| Residential mortgage (1) | \$ | 1,825 | \$ | 2,329 | \$ | 382 | \$ | 1,128 |
| Home equity |  | 974 |  | 1,247 |  | - |  | - |
| Non-core portfolio |  |  |  |  |  |  |  |  |
| Residential mortgage ${ }^{(1)}$ |  | 2,978 |  | 4,560 |  | 6,768 |  | 10,279 |
| Home equity |  | 2,363 |  | 2,654 |  | - |  | - |
| Credit card and other consumer |  |  |  |  |  |  |  |  |
| U.S. credit card |  | n/a |  | n/a |  | 789 |  | 866 |
| Non-U.S. credit card |  | n/a |  | n/a |  | 76 |  | 95 |
| Direct/Indirect consumer |  | 24 |  | 28 |  | 39 |  | 64 |
| Other consumer |  | 1 |  | 1 |  | 3 |  | 1 |
| Total consumer |  | 8,165 |  | 10,819 |  | 8,057 |  | 12,433 |
| Commercial |  |  |  |  |  |  |  |  |
| U.S. commercial |  | 867 |  | 701 |  | 113 |  | 110 |
| Commercial real estate |  | 93 |  | 321 |  | 3 |  | 3 |
| Commercial lease financing |  | 12 |  | 3 |  | 15 |  | 40 |
| Non-U.S. commercial |  | 158 |  | 1 |  | 1 |  | - |
| U.S. small business commercial |  | 82 |  | 87 |  | 61 |  | 67 |
| Total commercial |  | 1,212 |  | 1,113 |  | 193 |  | 220 |
| Total loans and leases | \$ | 9,377 | \$ | 11,932 | \$ | 8,250 | \$ | 12,653 |
| ${ }^{(1)}$ Residential mortgage loans in the core and non-core portfolios accruing past due 90 days or more are fully-insured loans. At December 31, 2015 and 2014 , residential mortgage includes $\$ 4.3$ billion and $\$ 7.3$ billion of loans on which interest has been curtailed by the FHA, and therefore are no longer accruing interest, although principal is still insured, and $\$ 2.9$ billion and $\$ 4.1$ billion of loans on which interest is still accruing. <br> $\mathrm{n} / \mathrm{a}=$ not applicable |  |  |  |  |  |  |  |  |

## Credit Quality Indicators

The Corporation monitors credit quality within its Consumer Real Estate, Credit Card and Other Consumer, and Commercial portfolio segments based on primary credit quality indicators. For more information on the portfolio segments, see Note 1 - Summary of Significant Accounting Principles. Within the Consumer Real Estate portfolio segment, the primary credit quality indicators are refreshed LTV and refreshed FICO score. Refreshed LTV measures the carrying value of the loan as a percentage of the value of the property securing the loan, refreshed quarterly. Home equity loans are evaluated using combined loan-to-value (CLTV) which measures the carrying value of the Corporation's loan and available line of credit combined with any outstanding senior liens against the property as a percentage of the value of the property securing the loan, refreshed quarterly. FICO score measures the creditworthiness of the borrower based on the financial obligations of the borrower and the borrower's credit history. At a minimum,

FICO scores are refreshed quarterly, and in many cases, more frequently. FICO scores are also a primary credit quality indicator for the Credit Card and Other Consumer portfolio segment and the business card portfolio within U.S. small business commercial. Within the Commercial portfolio segment, loans are evaluated using the internal classifications of pass rated or reservable criticized as the primary credit quality indicators. The term reservable criticized refers to those commercial loans that are internally classified or listed by the Corporation as Special Mention, Substandard or Doubtful, which are asset quality categories defined by regulatory authorities. These assets have an elevated level of risk and may have a high probability of default or total loss. Pass rated refers to all loans not considered reservable criticized. In addition to these primary credit quality indicators, the Corporation uses other credit quality indicators for certain types of loans.

The following tables present certain credit quality indicators for the Corporation's Consumer Real Estate, Credit Card and Other Consumer, and Commercial portfolio segments, by class of financing receivables, at December 31, 2015 and 2014.

Consumer Real Estate - Credit Quality Indicators ${ }^{(1)}$

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Core Portfolio Residential Mortgage ${ }^{(2)}$ |  | Non-core Residential Mortgage ${ }^{(2)}$ |  | Residential Mortgage PCI ${ }^{(3)}$ |  | Core Portfolio Home Equity ${ }^{(2)}$ |  | Non-core Home Equity (2) |  | Home Equity PCI |  |
| Refreshed LTV (4) |  |  |  |  |  |  |  |  |  |  |  |  |
| Less than or equal to 90 percent | \$ | 110,023 | \$ | 16,481 | \$ | 8,655 | \$ | 51,262 | \$ | 8,347 | \$ | 2,003 |
| Greater than 90 percent but less than or equal to 100 percent |  | 4,038 |  | 2,224 |  | 1,403 |  | 1,858 |  | 2,190 |  | 852 |
| Greater than 100 percent |  | 2,638 |  | 3,364 |  | 2,008 |  | 1,797 |  | 5,875 |  | 1,764 |
| Fully-insured loans ${ }^{(5)}$ |  | 25,096 |  | 11,981 |  | - |  | - |  | - |  | - |
| Total consumer real estate | \$ | 141,795 | \$ | 34,050 | \$ | 12,066 | \$ | 54,917 | \$ | 16,412 | \$ | 4,619 |
| Refreshed FICO score |  |  |  |  |  |  |  |  |  |  |  |  |
| Less than 620 | \$ | 3,129 | \$ | 4,749 | \$ | 3,798 | \$ | 1,322 | \$ | 3,490 | \$ | 729 |
| Greater than or equal to 620 and less than 680 |  | 5,472 |  | 3,762 |  | 2,586 |  | 3,295 |  | 3,862 |  | 825 |
| Greater than or equal to 680 and less than 740 |  | 22,486 |  | 5,138 |  | 3,187 |  | 12,180 |  | 3,451 |  | 1,356 |
| Greater than or equal to 740 |  | 85,612 |  | 8,420 |  | 2,495 |  | 38,120 |  | 5,609 |  | 1,709 |
| Fully-insured loans ${ }^{(5)}$ |  | 25,096 |  | 11,981 |  | - |  | - |  | - |  | - |
| Total consumer real estate | \$ | 141,795 | \$ | 34,050 | \$ | 12,066 | \$ | 54,917 | \$ | 16,412 | \$ | 4,619 |

(1) Excludes $\$ 1.9$ billion of loans accounted for under the fair value option.
${ }^{(2)}$ Excludes PCI loans.
${ }^{(3)}$ Includes $\$ 2.0$ billion of pay option loans. The Corporation no longer originates this product.
${ }^{(4)}$ Refreshed LTV percentages for PCI loans are calculated using the carrying value net of the related valuation allowance.
${ }^{(5)}$ Credit quality indicators are not reported for fully-insured loans as principal repayment is insured.

## Credit Card and Other Consumer - Credit Quality Indicators

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | U.S. Credit Card |  | Non-U.S. Credit Card |  | Direct/Indirect Consumer |  | Other Consumer ${ }^{(1)}$ |  |
| Refreshed FICO score |  |  |  |  |  |  |  |  |
| Less than 620 | \$ | 4,196 | \$ | - | \$ | 1,244 | \$ | 217 |
| Greater than or equal to 620 and less than 680 |  | 11,857 |  | - |  | 1,698 |  | 214 |
| Greater than or equal to 680 and less than 740 |  | 34,270 |  | - |  | 10,955 |  | 337 |
| Greater than or equal to 740 |  | 39,279 |  | - |  | 29,581 |  | 1,149 |
| Other internal credit metrics $(2,3,4)$ |  | - |  | 9,975 |  | 45,317 |  | 150 |
| Total credit card and other consumer | \$ | 89,602 | \$ | 9,975 | \$ | 88,795 | \$ | 2,067 |

(1) Twenty-seven percent of the other consumer portfolio is associated with portfolios from certain consumer finance businesses that the Corporation previously exited.
${ }^{(2)}$ Other internal credit metrics may include delinquency status, geography or other factors.
 originates, primarily student loans.
(4) Non-U.S. credit card represents the U.K. credit card portfolio which is evaluated using internal credit metrics, including delinquency status. At December 31 , 2015 , 98 percent of this portfolio was current or less than 30 days past due, one percent was $30-89$ days past due and one percent was 90 days or more past due.

## Commercial - Credit Quality Indicators (1)

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | U.S. <br> Commercial |  | Commercial Real Estate |  | Commercial Lease Financing |  | Non-U.S. Commercial |  | $\begin{gathered} \text { U.S. Small } \\ \text { Business } \\ \text { Commercial }{ }^{(2)} \end{gathered}$ |  |
| Risk ratings |  |  |  |  |  |  |  |  |  |  |
| Pass rated | \$ | 243,922 | \$ | 56,688 | \$ | 20,644 | \$ | 87,905 | \$ | 571 |
| Reservable criticized |  | 8,849 |  | 511 |  | 708 |  | 3,644 |  | 96 |
| Refreshed FICO score ${ }^{(3)}$ |  |  |  |  |  |  |  |  |  |  |
| Less than 620 |  |  |  |  |  |  |  |  |  | 184 |
| Greater than or equal to 620 and less than 680 |  |  |  |  |  |  |  |  |  | 543 |
| Greater than or equal to 680 and less than 740 |  |  |  |  |  |  |  |  |  | 1,627 |
| Greater than or equal to 740 |  |  |  |  |  |  |  |  |  | 3,027 |
| Other internal credit metrics $(3,4)$ |  |  |  |  |  |  |  |  |  | 6,828 |
| Total commercial | \$ | 252,771 | \$ | 57,199 | \$ | 21,352 | \$ | 91,549 | \$ | 12,876 |

(1) Excludes $\$ 5.1$ billion of loans accounted for under the fair value option.
 delinquency status, rather than risk ratings. At December 31, 2015, 98 percent of the balances where internal credit metrics are used was current or less than 30 days past due.
${ }^{(3)}$ Refreshed FICO score and other internal credit metrics are applicable only to the U.S. small business commercial portfolio.
${ }^{(4)}$ Other internal credit metrics may include delinquency status, application scores, geography or other factors.

| (Dollars in millions) | December 31, 2014 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Core Portfolio Residential Mortgage ${ }^{(2)}$ |  | Non-core Residential Mortgage (2) |  | Residential <br> Mortgage PCI (3) |  | Core Portfolio Home Equity ${ }^{(2)}$ |  | Non-core Home Equity (2) |  | Home Equity PCI |  |
| Refreshed LTV (4) |  |  |  |  |  |  |  |  |  |  |  |  |
| Less than or equal to 90 percent | \$ | 99,001 | \$ | 19,736 | \$ | 9,972 | \$ | 52,413 | \$ | 10,405 | \$ | 2,046 |
| Greater than 90 percent but less than or equal to 100 percent |  | 4,680 |  | 3,364 |  | 2,005 |  | 3,408 |  | 2,308 |  | 1,048 |
| Greater than 100 percent |  | 3,885 |  | 5,409 |  | 3,175 |  | 3,772 |  | 7,802 |  | 2,523 |
| Fully-insured loans ${ }^{(5)}$ |  | 48,723 |  | 16,247 |  | - |  | - |  | - |  | - |
| Total consumer real estate | \$ | 156,289 | \$ | 44,756 | \$ | 15,152 | \$ | 59,593 | \$ | 20,515 | \$ | 5,617 |
| Refreshed FICO score |  |  |  |  |  |  |  |  |  |  |  |  |
| Less than 620 | \$ | 3,779 | \$ | 6,729 | \$ | 6,109 | \$ | 1,671 | \$ | 4,055 | \$ | 864 |
| Greater than or equal to 620 and less than 680 |  | 6,040 |  | 4,269 |  | 3,014 |  | 4,099 |  | 4,163 |  | 995 |
| Greater than or equal to 680 and less than 740 |  | 21,771 |  | 6,640 |  | 3,310 |  | 13,278 |  | 4,806 |  | 1,651 |
| Greater than or equal to 740 |  | 75,976 |  | 10,871 |  | 2,719 |  | 40,545 |  | 7,491 |  | 2,107 |
| Fully-insured loans ${ }^{(5)}$ |  | 48,723 |  | 16,247 |  | - |  | - |  | - |  | - |
| Total consumer real estate | \$ | 156,289 | \$ | 44,756 | \$ | 15,152 | \$ | 59,593 | \$ | 20,515 | \$ | 5,617 |

(1) Excludes $\$ 2.1$ billion of loans accounted for under the fair value option.
${ }^{(2)}$ Excludes PCI loans.
${ }^{(3)}$ Includes $\$ 2.8$ billion of pay option loans. The Corporation no longer originates this product.
${ }^{(4)}$ Refreshed LTV percentages for PCI loans are calculated using the carrying value net of the related valuation allowance.
${ }^{5)}$ Credit quality indicators are not reported for fully-insured loans as principal repayment is insured.

## Credit Card and Other Consumer - Credit Quality Indicators

(Dollars in millions)
Refreshed FICO score
Less than 620
Greater than or equal to 620 and less than 680
Greater than or equal to 680 and less than 740
Greater than or equal to 740
Other internal credit metrics $(2,3,4)$
Total credit card and other consumer
(1) Thirty-seven percent of the other consumer portfolio is associated with portfolios from certain consumer finance businesses that the Corporation previously exited.
(2) Other internal credit metrics may include delinquency status, geography or other factors.
 originates, primarily student loans.
${ }^{(4)}$ Non-U.S. credit card represents the U.K. credit card portfolio which is evaluated using internal credit metrics, including delinquency status. At December 31,2014 , 98 percent of this portfolio was current or less than 30 days past due, one percent was $30-89$ days past due and one percent was 90 days or more past due.

## Commercial - Credit Quality Indicators ${ }^{(1)}$

| (Dollars in millions) | December 31, 2014 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | U.S. <br> Commercial |  | Commercial Real Estate |  | Commercial Lease Financing |  | Non-U.S. Commercial |  | U.S. SmallBusinessCommercial (2) |  |
| Risk ratings |  |  |  |  |  |  |  |  |  |  |
| Pass rated | \$ | 213,839 | \$ | 46,632 | \$ | 18,882 | \$ | 79,367 | \$ | 751 |
| Reservable criticized |  | 6,454 |  | 1,050 |  | 697 |  | 716 |  | 182 |
| Refreshed FICO score ${ }^{(3)}$ |  |  |  |  |  |  |  |  |  |  |
| Less than 620 |  |  |  |  |  |  |  |  |  | 184 |
| Greater than or equal to 620 and less than 680 |  |  |  |  |  |  |  |  |  | 529 |
| Greater than or equal to 680 and less than 740 |  |  |  |  |  |  |  |  |  | 1,591 |
| Greater than or equal to 740 |  |  |  |  |  |  |  |  |  | 2,910 |
| Other internal credit metrics $(3,4)$ |  |  |  |  |  |  |  |  |  | 7,146 |
| Total commercial | \$ | 220,293 | \$ | 47,682 | \$ | 19,579 | \$ | 80,083 | \$ | 13,293 |

(1) Excludes $\$ 6.6$ billion of loans accounted for under the fair value option.
 delinquency status, rather than risk ratings. At December 31, 2014, 98 percent of the balances where internal credit metrics are used was current or less than 30 days past due.
${ }^{(3)}$ Refreshed FICO score and other internal credit metrics are applicable only to the U.S. small business commercial portfolio.
${ }^{(4)}$ Other internal credit metrics may include delinquency status, application scores, geography or other factors.

## Impaired Loans and Troubled Debt Restructurings

A loan is considered impaired when, based on current information, it is probable that the Corporation will be unable to collect all amounts due from the borrower in accordance with the contractual terms of the loan. Impaired loans include nonperforming commercial loans and all consumer and commercial TDRs. Impaired loans exclude nonperforming consumer loans and nonperforming commercial leases unless they are classified as TDRs. Loans accounted for under the fair value option are also excluded. PCl loans are excluded and reported separately on page 49. For additional information, see Note 1 - Summary of Significant Accounting Principles.

## Consumer Real Estate

Impaired consumer real estate Ioans within the Consumer Real Estate portfolio segment consist entirely of TDRs. Excluding PCI loans, most modifications of consumer real estate loans meet the definition of TDRs when a binding offer is extended to a borrower. Modifications of consumer real estate loans are done in accordance with the government's Making Home Affordable Program (modifications under government programs) or the Corporation's proprietary programs (modifications under proprietary programs). These modifications are considered to be TDRs if concessions have been granted to borrowers experiencing financial difficulties. Concessions may include reductions in interest rates, capitalization of past due amounts, principal and/ or interest forbearance, payment extensions, principal and/or interest forgiveness, or combinations thereof.

Prior to permanently modifying a loan, the Corporation may enter into trial modifications with certain borrowers under both government and proprietary programs. Trial modifications generally represent a three- to four-month period during which the borrower makes monthly payments under the anticipated modified payment terms. Upon successful completion of the trial period, the Corporation and the borrower enter into a permanent modification. Binding trial modifications are classified as TDRs when the trial offer is made and continue to be classified as TDRs regardless of whether the borrower enters into a permanent modification.

Consumer real estate loans that have been discharged in Chapter 7 bankruptcy with no change in repayment terms and not reaffirmed by the borrower of $\$ 1.8$ billion were included in TDRs at December 31, 2015, of which $\$ 785$ million were classified as nonperforming and $\$ 765$ million were loans fully-insured by the FHA. For more information on loans discharged in Chapter 7 bankruptcy, see Nonperforming Loans and Leases in this Note.

A consumer real estate loan, excluding PCI loans which are reported separately, is not classified as impaired unless it is a TDR. Once such a loan has been designated as a TDR, it is then individually assessed for impairment. Consumer real estate TDRs are measured primarily based on the net present value of the estimated cash flows discounted at the loan's original effective interest rate, as discussed in the following paragraph. If the carrying value of a TDR exceeds this amount, a specific allowance is recorded as a component of the allowance for loan and lease losses. Alternatively, consumer real estate TDRs that are
considered to be dependent solely on the collateral for repayment (e.g., due to the lack of income verification) are measured based on the estimated fair value of the collateral and a charge-off is recorded if the carrying value exceeds the fair value of the collateral. Consumer real estate loans that reached 180 days past due prior to modification had been charged off to their net realizable value, less costs to sell, before they were modified as TDRs in accordance with established policy. Therefore, modifications of consumer real estate loans that are 180 or more days past due as TDRs do not have an impact on the allowance for loan and lease losses nor are additional charge-offs required at the time of modification. Subsequent declines in the fair value of the collateral after a loan has reached 180 days past due are recorded as chargeoffs. Fully-insured loans are protected against principal loss, and therefore, the Corporation does not record an allowance for loan and lease losses on the outstanding principal balance, even after they have been modified in a TDR.

The net present value of the estimated cash flows used to measure impairment is based on model-driven estimates of projected payments, prepayments, defaults and loss-given-default (LGD). Using statistical modeling methodologies, the Corporation estimates the probability that a loan will default prior to maturity based on the attributes of each loan. The factors that are most relevant to the probability of default are the refreshed LTV, or in the case of a subordinated lien, refreshed CLTV, borrower credit score, months since origination (i.e., vintage) and geography. Each of these factors is further broken down by present collection status (whether the loan is current, delinquent, in default or in bankruptcy). Severity (or LGD) is estimated based on the refreshed LTV for first mortgages or CLTV for subordinated liens. The estimates are based on the Corporation's historical experience as adjusted to reflect an assessment of environmental factors that may not be reflected in the historical data, such as changes in real estate values, local and national economies, underwriting standards and the regulatory environment. The probability of default models also incorporate recent experience with modification programs including redefaults subsequent to modification, a loan's default history prior to modification and the change in borrower payments post-modification.

At December 31, 2015 and 2014, remaining commitments to lend additional funds to debtors whose terms have been modified in a consumer real estate TDR were immaterial. Consumer real estate foreclosed properties totaled $\$ 444$ million and $\$ 630$ million at December 31, 2015 and 2014. The carrying value of consumer real estate loans, including fully-insured and PCl loans, for which formal foreclosure proceedings were in process as of December 31, 2015 was $\$ 5.8$ billion. During 2015 and 2014, the Corporation reclassified $\$ 2.1$ billion and $\$ 1.9$ billion of consumer real estate loans to foreclosed properties or, for properties acquired upon foreclosure of certain government-guaranteed loans (principally FHA-insured loans), to other assets. The reclassifications represent non-cash investing activities and, accordingly, are not reflected on the Consolidated Statement of Cash Flows.

The table below provides the unpaid principal balance, carrying value and related allowance at December 31, 2015 and 2014, and the average carrying value and interest income recognized for 2015, 2014 and 2013 for impaired loans in the Corporation's

Consumer Real Estate portfolio segment. Certain impaired consumer real estate loans do not have a related allowance as the current valuation of these impaired loans exceeded the carrying value, which is net of previously recorded charge-offs.

## Impaired Loans - Consumer Real Estate

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  | December 31, 2014 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Unpaid <br> Principal <br> Balance |  | Carrying Value |  | Related Allowance |  | Unpaid Principal Balance |  | Carrying Value |  | Related Allowance |  |
| With no recorded allowance |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage | \$ | 14,888 | \$ | 11,901 | \$ | - | \$ | 19,710 | \$ | 15,605 | \$ | - |
| Home equity |  | 3,545 |  | 1,775 |  | - |  | 3,540 |  | 1,630 |  | - |
| With an allowance recorded |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage | \$ | 6,624 | \$ | 6,471 | \$ | 399 | \$ | 7,861 | \$ | 7,665 | \$ | 531 |
| Home equity |  | 1,047 |  | 911 |  | 235 |  | 852 |  | 728 |  | 196 |
| Total |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage | \$ | 21,512 | \$ | 18,372 | \$ | 399 | \$ | 27,571 | \$ | 23,270 | \$ | 531 |
| Home equity |  | 4,592 |  | 2,686 |  | 235 |  | 4,392 |  | 2,358 |  | 196 |


|  | 2015 |  |  |  | 2014 |  |  |  | 2013 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average <br> Carrying Value |  | Interest Income Recognized (1) |  | Average <br> Carrying Value |  | Interest Income Recognized (1) |  | Average Carrying Value |  | Interest <br> Income <br> Recognized |  |
| With no recorded allowance |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage | \$ | 13,867 | \$ | 403 | \$ | 15,065 | \$ | 490 | \$ | 16,625 | \$ | 621 |
| Home equity |  | 1,777 |  | 89 |  | 1,486 |  | 87 |  | 1,245 |  | 76 |
| With an allowance recorded |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage | \$ | 7,290 | \$ | 236 | \$ | 10,826 | \$ | 411 | \$ | 13,926 | \$ | 616 |
| Home equity |  | 785 |  | 24 |  | 743 |  | 25 |  | 912 |  | 41 |
| Total |  |  |  |  |  |  |  |  |  |  |  |  |
| Residential mortgage | \$ | 21,157 | \$ | 639 | \$ | 25,891 | \$ | 901 | \$ | 30,551 | \$ | 1,237 |
| Home equity |  | 2,562 |  | 113 |  | 2,229 |  | 112 |  | 2,157 |  | 117 |

(1) Interest income recognized includes interest accrued and collected on the outstanding balances of accruing impaired loans as well as interest cash collections on nonaccruing impaired loans for which the principal is considered collectible.

The table below presents the December 31, 2015, 2014 and 2013 unpaid principal balance, carrying value, and average preand post-modification interest rates on consumer real estate loans that were modified in TDRs during 2015, 2014 and 2013, and net charge-offs recorded during the period in which the modification
occurred. The following Consumer Real Estate portfolio segment tables include loans that were initially classified as TDRs during the period and also loans that had previously been classified as TDRs and were modified again during the period.

Consumer Real Estate - TDRs Entered into During 2015, 2014 and 2013 (1)

|  |  |  |  | December | 1, 2015 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (Dollars in millions) |  | paid cipal ance |  | rying lue | Pre- <br> Modification Interest Rate | Post- <br> Modification Interest Rate (2) |  | fs ${ }^{(3)}$ |
| Residential mortgage | \$ | 2,986 | \$ | 2,655 | 4.98\% | 4.43\% | \$ | 97 |
| Home equity |  | 1,019 |  | 775 | 3.54 | 3.17 |  | 84 |
| Total | \$ | 4,005 | \$ | 3,430 | 4.61 | 4.11 | \$ | 181 |
|  |  |  |  | December | 1, 2014 |  |  |  |
| Residential mortgage | \$ | 5,940 | \$ | 5,120 | 5.28\% | 4.93\% | \$ | 72 |
| Home equity |  | 863 |  | 592 | 4.00 | 3.33 |  | 99 |
| Total | \$ | 6,803 | \$ | 5,712 | 5.12 | 4.73 | \$ | 171 |
|  |  |  |  | December | 1,2013 |  |  |  |
| Residential mortgage | \$ | 11,233 | \$ | 10,016 | 5.30\% | 4.27\% | \$ | 235 |
| Home equity |  | 878 |  | 521 | 5.29 | 3.92 |  | 192 |
| Total | \$ | 12,111 | \$ | 10,537 | 5.30 | 4.24 | \$ | 427 |

(1) During 2015, 2014 and 2013, the Corporation forgave principal of $\$ 396$ million, $\$ 53$ million and $\$ 467$ million, respectively, related to residential mortgage loans in connection with TDRs.
${ }^{(2)}$ The post-modification interest rate reflects the interest rate applicable only to permanently completed modifications, which exclude loans that are in a trial modification period.
${ }^{3)}$ Net charge-offs include amounts recorded on loans modified during the period that are no longer held by the Corporation at December 31, 2015 , 2014 and 2013 due to sales and other dispositions.

The table below presents the December 31, 2015, 2014 and 2013 carrying value for consumer real estate loans that were modified in a TDR during 2015, 2014 and 2013, by type of modification.

## Consumer Real Estate - Modification Programs

| (Dollars in millions) | TDRs Entered into During 2015 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Residential Mortgage |  | Home Equity |  | Total Carrying Value |  |
| Modifications under government programs |  |  |  |  |  |  |
| Contractual interest rate reduction | \$ | 408 | \$ | 23 | \$ | 431 |
| Principal and/or interest forbearance |  | 4 |  | 7 |  | 11 |
| Other modifications ${ }^{(1)}$ |  | 46 |  | - |  | 46 |
| Total modifications under government programs |  | 458 |  | 30 |  | 488 |
| Modifications under proprietary programs |  |  |  |  |  |  |
| Contractual interest rate reduction |  | 191 |  | 28 |  | 219 |
| Capitalization of past due amounts |  | 69 |  | 10 |  | 79 |
| Principal and/or interest forbearance |  | 124 |  | 44 |  | 168 |
| Other modifications ${ }^{(1)}$ |  | 34 |  | 95 |  | 129 |
| Total modifications under proprietary programs |  | 418 |  | 177 |  | 595 |
| Trial modifications |  | 1,516 |  | 452 |  | 1,968 |
| Loans discharged in Chapter 7 bankruptcy ${ }^{(2)}$ |  | 263 |  | 116 |  | 379 |
| Total modifications | \$ | 2,655 | \$ | 775 | \$ | 3,430 |


| Modifications under government programs | TDRs Entered into During 2014 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
| Contractual interest rate reduction | \$ | 643 | \$ | 56 | \$ | 699 |
| Principal and/or interest forbearance |  | 16 |  | 18 |  | 34 |
| Other modifications ${ }^{(1)}$ |  | 98 |  | 1 |  | 99 |
| Total modifications under government programs | 757 |  |  | 75 |  | 832 |
| Modifications under proprietary programs |  |  |  |  |  |  |
| Contractual interest rate reduction | 244 |  |  | 22 |  | 266 |
| Capitalization of past due amounts | 71 |  |  | 2 |  | 73 |
| Principal and/or interest forbearance | 66 |  |  | 75 |  | 141 |
| Other modifications ${ }^{(1)}$ | 40 |  |  | 47 |  | 87 |
| Total modifications under proprietary programs | 421 |  |  | 146 |  | 567 |
| Trial modifications | 3,421 |  |  | 182 |  | 3,603 |
| Loans discharged in Chapter 7 bankruptcy ${ }^{(2)}$ | 521 |  |  | 189 |  | 710 |
| Total modifications | \$ | 5,120 | \$ | 592 | \$ | 5,712 |


|  | TDRs Entered into During 2013 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Modifications under government programs |  |  |  |  |  |  |
| Contractual interest rate reduction | \$ | 1,815 | \$ | 48 | \$ | 1,863 |
| Principal and/or interest forbearance |  | 35 |  | 24 |  | 59 |
| Other modifications ${ }^{(1)}$ |  | 100 |  | - |  | 100 |
| Total modifications under government programs |  | 1,950 |  | 72 |  | 2,022 |
| Modifications under proprietary programs |  |  |  |  |  |  |
| Contractual interest rate reduction |  | 2,799 |  | 40 |  | 2,839 |
| Capitalization of past due amounts |  | 132 |  | 2 |  | 134 |
| Principal and/or interest forbearance |  | 469 |  | 17 |  | 486 |
| Other modifications ${ }^{(1)}$ |  | 105 |  | 25 |  | 130 |
| Total modifications under proprietary programs |  | 3,505 |  | 84 |  | 3,589 |
| Trial modifications |  | 3,410 |  | 87 |  | 3,497 |
| Loans discharged in Chapter 7 bankruptcy ${ }^{(2)}$ |  | 1,151 |  | 278 |  | 1,429 |
| Total modifications | \$ | 10,016 | \$ | 521 | \$ | 10,537 |

(1) Includes other modifications such as term or payment extensions and repayment plans.
${ }^{(2)}$ Includes loans discharged in Chapter 7 bankruptcy with no change in repayment terms that are classified as TDRs.

The table below presents the carrying value of consumer real estate loans that entered into payment default during 2015, 2014 and 2013 that were modified in a TDR during the 12 months preceding payment default. A payment default for consumer real estate TDRs is recognized when a borrower has missed three
monthly payments (not necessarily consecutively) since modification. Payment defaults on a trial modification where the borrower has not yet met the terms of the agreement are included in the table below if the borrower is 90 days or more past due three months after the offer to modify is made.

Consumer Real Estate - TDRs Entering Payment Default That Were Modified During the Preceding 12 Months

| (Dollars in millions) | 2015 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Residential Mortgage |  | Home Equity |  | Total Carrying Value ${ }^{(1)}$ |  |
| Modifications under government programs | \$ | 452 | \$ | 5 | \$ | 457 |
| Modifications under proprietary programs |  | 263 |  | 24 |  | 287 |
| Loans discharged in Chapter 7 bankruptcy ${ }^{(2)}$ |  | 238 |  | 47 |  | 285 |
| Trial modifications ${ }^{(3)}$ |  | 2,997 |  | 181 |  | 3,178 |
| Total modifications | \$ | 3,950 | \$ | 257 | \$ | 4,207 |


|  | 2014 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Modifications under government programs | \$ | 696 | \$ | 4 | \$ | 700 |
| Modifications under proprietary programs |  | 714 |  | 12 |  | 726 |
| Loans discharged in Chapter 7 bankruptcy ${ }^{(2)}$ |  | 481 |  | 70 |  | 551 |
| Trial modifications |  | 2,231 |  | 56 |  | 2,287 |
| Total modifications | \$ | 4,122 | \$ | 142 | \$ | 4,264 |


| Modifications under government programs | \$ | 454 | \$ | 2 | \$ | 456 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Modifications under proprietary programs |  | 1,117 |  | 4 |  | 1,121 |
| Loans discharged in Chapter 7 bankruptcy ${ }^{(2)}$ |  | 964 |  | 30 |  | 994 |
| Trial modifications |  | 4,376 |  | 14 |  | 4,390 |
| Total modifications | \$ | 6,911 | \$ | 50 | \$ | 6,961 |

(1) Includes loans with a carrying value of $\$ 1.8$ billion, $\$ 2.0$ billion and $\$ 2.4$ billion that entered into payment default during 2015,2014 and 2013 , respectively, but were no longer held by the Corporation as of December 31, 2015, 2014 and 2013 due to sales and other dispositions.
${ }^{(2)}$ Includes loans discharged in Chapter 7 bankruptcy with no change in repayment terms that are classified as TDRs
${ }^{(3)}$ Includes $\$ 1.7$ billion of trial modification offers made in connection with the 2014 settlement with the U.S. Department of Justice to which the customer has not responded for 2015

## Credit Card and Other Consumer

Impaired loans within the Credit Card and Other Consumer portfolio segment consist entirely of loans that have been modified in TDRs (the renegotiated credit card and other consumer TDR portfolio, collectively referred to as the renegotiated TDR portfolio). The Corporation seeks to assist customers that are experiencing financial difficulty by modifying loans while ensuring compliance with federal, local and international laws and guidelines. Credit card and other consumer loan modifications generally involve reducing the interest rate on the account and placing the customer on a fixed payment plan not exceeding 60 months, all of which are considered TDRs. In addition, the accounts of non-U.S. credit card customers who do not qualify for a fixed payment plan may have their interest rates reduced, as required by certain local jurisdictions. These modifications, which are also TDRs, tend to experience higher payment default rates given that the borrowers may lack the ability to repay even with the interest rate reduction. In substantially all cases, the customer's available line of credit is canceled. The Corporation makes loan modifications directly with borrowers for debt held only by the Corporation (internal programs). Additionally, the Corporation makes loan modifications for borrowers working with third-party renegotiation agencies that provide solutions to customers' entire unsecured debt structures (external programs). The Corporation classifies other secured
consumer loans that have been discharged in Chapter 7 bankruptcy as TDRs which are written down to collateral value and placed on nonaccrual status no later than the time of discharge. For more information on the regulatory guidance on loans discharged in Chapter 7 bankruptcy, see Nonperforming Loans and Leases in this Note.

All credit card and substantially all other consumer loans that have been modified in TDRs remain on accrual status until the loan is either paid in full or charged off, which occurs no later than the end of the month in which the loan becomes 180 days past due or generally at 120 days past due for a loan that has been placed on a fixed payment plan.

The allowance for impaired credit card and substantially all other consumer loans is based on the present value of projected cash flows, which incorporates the Corporation's historical payment default and loss experience on modified loans, discounted using the portfolio's average contractual interest rate, excluding promotionally priced loans, in effect prior to restructuring. Credit card and other consumer loans are included in homogeneous pools which are collectively evaluated for impairment. For these portfolios, loss forecast models are utilized that consider a variety of factors including, but not limited to, historical loss experience, delinquency status, economic trends and credit scores.

The table below provides the unpaid principal balance, carrying value and related allowance at December 31, 2015 and 2014, and the average carrying value and interest income recognized for 2015, 2014 and 2013 on the Corporation's renegotiated TDR portfolio in the Credit Card and Other Consumer portfolio segment.

## Impaired Loans - Credit Card and Other Consumer - Renegotiated TDRs

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  | December 31, 2014 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Unpaid <br> Principal <br> Balance |  | Carrying Value ${ }^{(1)}$ |  | Related Allowance |  | Unpaid <br> Principal <br> Balance |  | Carrying Value ${ }^{(1)}$ |  | Related <br> Allowance |  |
| With no recorded allowance |  |  |  |  |  |  |  |  |  |  |  |  |
| Direct/Indirect consumer | \$ | 50 | \$ | 21 | \$ | - | \$ | 59 | \$ | 25 | \$ | - |
| With an allowance recorded |  |  |  |  |  |  |  |  |  |  |  |  |
| U.S. credit card | \$ | 598 | \$ | 611 | \$ | 176 | \$ | 804 | \$ | 856 | \$ | 207 |
| Non-U.S. credit card |  | 109 |  | 126 |  | 70 |  | 132 |  | 168 |  | 108 |
| Direct/Indirect consumer |  | 17 |  | 21 |  | 4 |  | 76 |  | 92 |  | 24 |
| Total |  |  |  |  |  |  |  |  |  |  |  |  |
| U.S. credit card | \$ | 598 | \$ | 611 | \$ | 176 | \$ | 804 | \$ | 856 | \$ | 207 |
| Non-U.S. credit card |  | 109 |  | 126 |  | 70 |  | 132 |  | 168 |  | 108 |
| Direct/Indirect consumer |  | 67 |  | 42 |  | 4 |  | 135 |  | 117 |  | 24 |


(1) Includes accrued interest and fees.
${ }^{(2)}$ Interest income recognized includes interest accrued and collected on the outstanding balances of accruing impaired loans as well as interest cash collections on nonaccruing impaired loans for which the principal is considered collectible.

The table below provides information on the Corporation's primary modification programs for the renegotiated TDR portfolio at December 31, 2015 and 2014.

Credit Card and Other Consumer - Renegotiated TDRs by Program Type

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Internal Programs |  |  |  | External Programs |  |  |  | Other ${ }^{(1)}$ |  |  |  | Total |  |  |  | Percent of Balances Current or Less Than 30 Days Past Due |  |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 | 2014 |
| U.S. credit card | \$ | 313 | \$ | 450 | \$ | 296 | \$ | 397 | \$ | 2 | \$ | 9 | \$ | 611 | \$ | 856 | 88.74\% | 84.99\% |
| Non-U.S. credit card |  | 21 |  | 41 |  | 10 |  | 16 |  | 95 |  | 111 |  | 126 |  | 168 | 44.25 | 47.56 |
| Direct/Indirect consumer |  | 11 |  | 50 |  | 7 |  | 34 |  | 24 |  | 33 |  | 42 |  | 117 | 89.12 | 85.21 |
| Total renegotiated TDRs | \$ | 345 | \$ | 541 | \$ | 313 | \$ | 447 | \$ | 121 | \$ | 153 | \$ | 779 | \$ | 1,141 | 81.55 | 79.51 |

The table below provides information on the Corporation's renegotiated TDR portfolio including the December 31, 2015, 2014 and 2013 unpaid principal balance, carrying value, and average pre- and post-modification interest rates of loans that were modified in TDRs during 2015, 2014 and 2013, and net charge-offs recorded during the period in which the modification occurred.

## Credit Card and Other Consumer - Renegotiated TDRs Entered into During 2015, 2014 and 2013


(1) Includes accrued interest and fees.

The table below provides information on the Corporation's primary modification programs for the renegotiated TDR portfolio for loans that were modified in TDRs during 2015, 2014 and 2013.

Credit Card and Other Consumer - Renegotiated TDRs Entered into During the Period by Program Type

| (Dollars in millions) | 2015 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Internal Programs |  | External Programs |  | Other ${ }^{(1)}$ |  | Total |  |
| U.S. credit card | \$ | 134 | \$ | 84 | \$ | - | \$ | 218 |
| Non-U.S. credit card |  | 3 |  | 4 |  | 79 |  | 86 |
| Direct/Indirect consumer |  | 1 |  | - |  | 11 |  | 12 |
| Total renegotiated TDRs | \$ | 138 | \$ | 88 | \$ | 90 | \$ | 316 |
|  | 2014 |  |  |  |  |  |  |  |
| U.S. credit card | \$ | 196 | \$ | 105 | \$ | - | \$ | 301 |
| Non-U.S. credit card |  | 6 |  | 6 |  | 94 |  | 106 |
| Direct/Indirect consumer |  | 4 |  | 2 |  | 13 |  | 19 |
| Total renegotiated TDRs | \$ | 206 | \$ | 113 | \$ | 107 | \$ | 426 |
|  | 2013 |  |  |  |  |  |  |  |
| U.S. credit card | \$ | 192 | \$ | 137 | \$ | - | \$ | 329 |
| Non-U.S. credit card |  | 16 |  | 9 |  | 122 |  | 147 |
| Direct/Indirect consumer |  | 15 |  | 8 |  | 15 |  | 38 |
| Other consumer |  | 8 |  | - |  | - |  | 8 |
| Total renegotiated TDRs | \$ | 231 | \$ | 154 | \$ | 137 | \$ | 522 |

${ }^{(1)}$ Other TDRs for non-U.S. credit card include modifications of accounts that are ineligible for a fixed payment plan.

Credit card and other consumer loans are deemed to be in payment default during the quarter in which a borrower misses the second of two consecutive payments. Payment defaults are one of the factors considered when projecting future cash flows in the calculation of the allowance for loan and lease losses for impaired credit card and other consumer loans. Based on historical experience, the Corporation estimates that 14 percent of new U.S. credit card TDRs, 88 percent of new non-U.S. credit card TDRs and 12 percent of new direct/indirect consumer TDRs may be in payment default within 12 months after modification. Loans that entered into payment default during 2015, 2014 and 2013 that had been modified in a TDR during the preceding 12 months were $\$ 43$ million, $\$ 56$ million and $\$ 61$ million for U.S. credit card, $\$ 152$ million, $\$ 200$ million and $\$ 236$ million for non-U.S. credit card, and $\$ 3$ million, $\$ 5$ million and $\$ 12$ million for direct/indirect consumer.

## Commercial Loans

Impaired commercial loans, which include nonperforming loans and TDRs (both performing and nonperforming), are primarily measured based on the present value of payments expected to be received, discounted at the loan's original effective interest rate. Commercial impaired loans may also be measured based on observable market prices or, for loans that are solely dependent on the collateral for repayment, the estimated fair value of collateral, less costs to sell. If the carrying value of a loan exceeds this amount, a specific allowance is recorded as a component of the allowance for loan and lease losses.

Modifications of loans to commercial borrowers that are experiencing financial difficulty are designed to reduce the Corporation's loss exposure while providing the borrower with an
opportunity to work through financial difficulties, often to avoid foreclosure or bankruptcy. Each modification is unique and reflects the individual circumstances of the borrower. Modifications that result in a TDR may include extensions of maturity at a concessionary (below market) rate of interest, payment forbearances or other actions designed to benefit the customer while mitigating the Corporation's risk exposure. Reductions in interest rates are rare. Instead, the interest rates are typically increased, although the increased rate may not represent a market rate of interest. Infrequently, concessions may also include principal forgiveness in connection with foreclosure, short sale or other settlement agreements leading to termination or sale of the loan.

At the time of restructuring, the loans are remeasured to reflect the impact, if any, on projected cash flows resulting from the modified terms. If there was no forgiveness of principal and the interest rate was not decreased, the modification may have little or no impact on the allowance established for the loan. If a portion of the loan is deemed to be uncollectible, a charge-off may be recorded at the time of restructuring. Alternatively, a charge-off may have already been recorded in a previous period such that no charge-off is required at the time of modification. For more information on modifications for the U.S. small business commercial portfolio, see Credit Card and Other Consumer in this Note.

At December 31, 2015 and 2014, remaining commitments to lend additional funds to debtors whose terms have been modified in a commercial loan TDR were immaterial. Commercial foreclosed properties totaled $\$ 15$ million and $\$ 67$ million at December 31, 2015 and 2014.

The table below provides the unpaid principal balance, carrying value and related allowance at December 31, 2015 and 2014, and the average carrying value and interest income recognized for 2015, 2014 and 2013 for impaired loans in the Corporation's Commercial loan portfolio segment. Certain impaired commercial loans do not have a related allowance as the valuation of these impaired loans exceeded the carrying value, which is net of previously recorded charge-offs.

| Impaired Loans - Commercial |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | December 31, 2015 |  |  |  |  |  | December 31, 2014 |  |  |  |  |  |
| (Dollars in millions) | Unpaid <br> Principal <br> Balance |  | Carrying Value |  | Related Allowance |  | Unpaid <br> Principal <br> Balance |  | Carrying Value |  | Related <br> Allowance |  |
| With no recorded allowance |  |  |  |  |  |  |  |  |  |  |  |  |
| U.S. commercial | \$ | 566 | \$ | 541 | \$ | - | \$ | 668 | \$ | 650 | \$ | - |
| Commercial real estate |  | 82 |  | 77 |  | - |  | 60 |  | 48 |  | - |
| Non-U.S. commercial |  | 4 |  | 4 |  | - |  | - |  | - |  | - |
| With an allowance recorded |  |  |  |  |  |  |  |  |  |  |  |  |
| U.S. commercial | \$ | 1,350 | \$ | 1,157 | \$ | 115 | \$ | 1,139 | \$ | 839 | \$ | 75 |
| Commercial real estate |  | 328 |  | 107 |  | 11 |  | 678 |  | 495 |  | 48 |
| Non-U.S. commercial |  | 531 |  | 381 |  | 56 |  | 47 |  | 44 |  | 1 |
| U.S. small business commercial ${ }^{(1)}$ |  | 105 |  | 101 |  | 35 |  | 133 |  | 122 |  | 35 |
| Total |  |  |  |  |  |  |  |  |  |  |  |  |
| U.S. commercial | \$ | 1,916 | \$ | 1,698 | \$ | 115 | \$ | 1,807 | \$ | 1,489 | \$ | 75 |
| Commercial real estate |  | 410 |  | 184 |  | 11 |  | 738 |  | 543 |  | 48 |
| Non-U.S. commercial |  | 535 |  | 385 |  | 56 |  | 47 |  | 44 |  | 1 |
| U.S. small business commercial (1) |  | 105 |  | 101 |  | 35 |  | 133 |  | 122 |  | 35 |


|  | 2015 |  |  |  | 2014 |  |  |  | 2013 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average Carrying Value |  | $\begin{gathered} \text { Interest } \\ \text { Income } \\ \text { Recognized (2) } \end{gathered}$ |  | Average Carrying Value |  | Interest Income Recognized (2) |  | Average Carrying Value |  | Interest Income Recognized (2) |  |
| With no recorded allowance |  |  |  |  |  |  |  |  |  |  |  |  |
| U.S. commercial | \$ | 688 | \$ | \$ 14 | \$ | 546 |  | \$ 12 | \$ | 442 | \$ | 6 |
| Commercial real estate |  | 75 |  | 1 |  | 166 |  | 3 |  | 269 |  | 3 |
| Non-U.S. commercial |  | 29 |  | 1 |  | 15 |  | - |  | 28 |  | - |
| With an allowance recorded |  |  |  |  |  |  |  |  |  |  |  |  |
| U.S. commercial | \$ | 953 | \$ | \$ 48 | \$ | 1,198 |  | \$ 51 | \$ | 1,553 | \$ | 47 |
| Commercial real estate |  | 216 |  | 7 |  | 632 |  | 16 |  | 1,148 |  | 28 |
| Non-U.S. commercial |  | 125 |  | 7 |  | 52 |  | 3 |  | 109 |  | 5 |
| U.S. small business commercial (1) |  | 109 |  | 1 |  | 151 |  | 3 |  | 236 |  | 6 |
| Total |  |  |  |  |  |  |  |  |  |  |  |  |
| U.S. commercial | \$ | 1,641 | \$ | \$ 62 | \$ | 1,744 |  | \$ 63 | \$ | 1,995 | \$ | 53 |
| Commercial real estate |  | 291 |  | 8 |  | 798 |  | 19 |  | 1,417 |  | 31 |
| Non-U.S. commercial |  | 154 |  | 8 |  | 67 |  | 3 |  | 137 |  | 5 |
| U.S. small business commercial (1) |  | 109 |  | 1 |  | 151 |  | 3 |  | 236 |  | 6 |

(1) Includes U.S. small business commercial renegotiated TDR loans and related allowance.
 which the principal is considered collectible.

The table below presents the December 31, 2015, 2014 and 2013 unpaid principal balance and carrying value of commercial loans that were modified as TDRs during 2015, 2014 and 2013, and net charge-offs that were recorded during the period in which the modification occurred. The table below includes loans that were initially classified as TDRs during the period and also loans that had previously been classified as TDRs and were modified again during the period.

Commercial - TDRs Entered into During 2015, 2014 and 2013

| (Dollars in millions) | December 31, 2015 |  |  |  | 2015 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Unpaid Principal Balance |  | Carrying Value |  | Net <br> Charge-offs |  |
| U.S. commercial | \$ | 853 | \$ | 779 | \$ | 28 |
| Commercial real estate |  | 42 |  | 42 |  | - |
| Non-U.S. commercial |  | 329 |  | 326 |  | - |
| U.S. small business commercial ${ }^{(1)}$ |  | 14 |  | 11 |  | 3 |
| Total | \$ | 1,238 | \$ | 1,158 | \$ | 31 |
|  | December 31, 2014 |  |  |  | 2014 |  |
| U.S. commercial | \$ | 818 | \$ | 785 | \$ | 49 |
| Commercial real estate |  | 346 |  | 346 |  | 8 |
| Non-U.S. commercial |  | 44 |  | 43 |  | - |
| U.S. small business commercial ${ }^{(1)}$ |  | 3 |  | 3 |  | - |
| Total | \$ | 1,211 | \$ | 1,177 | \$ | 57 |
|  | December 31, 2013 |  |  |  | 2013 |  |
| U.S. commercial | \$ | 926 | \$ | 910 | \$ | 33 |
| Commercial real estate |  | 483 |  | 425 |  | 3 |
| Non-U.S. commercial |  | 61 |  | 44 |  | 7 |
| U.S. small business commercial (1) |  | 8 |  | 9 |  | 1 |
| Total | \$ | 1,478 | \$ | 1,388 | \$ | 44 |

A commercial TDR is generally deemed to be in payment default when the loan is 90 days or more past due, including delinquencies that were not resolved as part of the modification. U.S. small business commercial TDRs are deemed to be in payment default during the quarter in which a borrower misses the second of two consecutive payments. Payment defaults are one of the factors considered when projecting future cash flows, along with observable market prices or fair value of collateral when measuring the allowance for loan and lease losses. TDRs that were in payment default had a carrying value of $\$ 105$ million, $\$ 103$ million and $\$ 55$ million for U.S. commercial and $\$ 25$ million, $\$ 211$ million and $\$ 128$ million for commercial real estate at December 31, 2015, 2014 and 2013, respectively.

## Purchased Credit-impaired Loans

PCI loans are acquired loans with evidence of credit quality deterioration since origination for which it is probable at purchase date that the Corporation will be unable to collect all contractually required payments.

The following table shows activity for the accretable yield on PCI loans, which include the Countrywide Financial Corporation (Countrywide) portfolio and loans repurchased in connection with the 2013 settlement with FNMA. The amount of accretable yield is affected by changes in credit outlooks, including metrics such as default rates and loss severities, prepayment speeds, which can change the amount and period of time over which interest payments are expected to be received, and the interest rates on variable rate loans. The reclassifications from nonaccretable difference during 2015 and 2014 were primarily due to lower expected loss rates and a decrease in the forecasted prepayment speeds. Changes in the prepayment assumption affect the expected remaining life of the portfolio which results in a change to the amount of future interest cash flows.

## Rollforward of Accretable Yield

| (Dollars in millions) |  |  |
| :--- | ---: | ---: |
| Accretable yield, January 1, 2014 | 6,694 |  |
| Accretion |  | $(1,061)$ |
| Disposals/transfers | $(506)$ |  |
| Reclassifications from nonaccretable difference | 481 |  |
| Accretable yield, December 31, 2014 | $\mathbf{5 , 6 0 8}$ |  |
| Accretion | $\mathbf{( 8 6 1 )}$ |  |
| Disposals/transfers | $\mathbf{4 6 5 )}$ |  |
| Reclassifications from nonaccretable difference | $\mathbf{2 8 7}$ |  |
| Accretable yield, December 31, 2015 | $\mathbf{4 , 5 6 9}$ |  |

During 2015, the Corporation sold PCI loans with a carrying value of $\$ 1.4$ billion, which excludes the related allowance of $\$ 234$ million. For more information on PCI loans, see Note 1 - Summary of Significant Accounting Principles, and for the carrying value and valuation allowance for PCI loans, see Note 5 - Allowance for Credit Losses.

## Loans Held-for-sale

The Corporation had LHFS of $\$ 7.5$ billion and $\$ 12.8$ billion at December 31, 2015 and 2014. Cash and non-cash proceeds from sales and paydowns of loans originally classified as LHFS were $\$ 41.2$ billion, $\$ 40.1$ billion and $\$ 81.0$ billion for 2015, 2014 and 2013, respectively. Cash used for originations and purchases of LHFS totaled $\$ 37.9$ billion, $\$ 39.4$ billion and $\$ 65.7$ billion for 2015, 2014 and 2013, respectively.

NOTE 5 Allowance for Credit Losses
The table below summarizes the changes in the allowance for credit losses by portfolio segment for 2015, 2014 and 2013.

|  |  |  |
| :--- | ---: | ---: | ---: | ---: |
|  |  |  |

${ }^{(1)}$ Primarily represents the net impact of portfolio sales, consolidations and deconsolidations, and foreign currency translation adjustments.

In 2015, 2014 and 2013, for the PCI loan portfolio, the Corporation recorded a provision benefit of $\$ 40$ million, $\$ 31$ million and $\$ 707$ million, respectively. Write-offs in the PCl loan portfolio totaled $\$ 808$ million, $\$ 810$ million and $\$ 2.3$ billion during 2015, 2014 and 2013, respectively. Write-offs included $\$ 234$ million, $\$ 317$ million and $\$ 414$ million associated with the sale of PCl loans during 2015, 2014 and 2013, respectively. Write-offs in

2013 also included certain PCI loans that were ineligible for the National Mortgage Settlement, but had characteristics similar to the eligible loans, and the expectation of future cash proceeds was considered remote. The valuation allowance associated with the PCI loan portfolio was $\$ 804$ million, $\$ 1.7$ billion and $\$ 2.5$ billion at December 31, 2015, 2014 and 2013, respectively.

The table below presents the allowance and the carrying value of outstanding loans and leases by portfolio segment at December 31, 2015 and 2014.

## Allowance and Carrying Value by Portfolio Segment

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Consumer <br> Real Estate |  | Credit Card and Other Consumer |  | Commercial |  | Total |  |
| Impaired loans and troubled debt restructurings (1) |  |  |  |  |  |  |  |  |
| Allowance for loan and lease losses ${ }^{(2)}$ | \$ | 634 | \$ | 250 | \$ | 217 | \$ | 1,101 |
| Carrying value ${ }^{(3)}$ |  | 21,058 |  | 779 |  | 2,368 |  | 24,205 |
| Allowance as a percentage of carrying value |  | 3.01\% |  | 32.09\% |  | 9.16\% |  | 4.55\% |
| Loans collectively evaluated for impairment |  |  |  |  |  |  |  |  |
| Allowance for loan and lease losses | \$ | 2,476 | \$ | 3,221 | \$ | 4,632 | \$ | 10,329 |
| Carrying value ( 3,4 ) |  | 226,116 |  | 189,660 |  | 433,379 |  | 849,155 |
| Allowance as a percentage of carrying value ${ }^{(4)}$ |  | 1.10\% |  | 1.70\% |  | 1.07\% |  | 1.22\% |
| Purchased credit-impaired loans |  |  |  |  |  |  |  |  |
| Valuation allowance | \$ | 804 |  | n/a |  | n/a | \$ | 804 |
| Carrying value gross of valuation allowance |  | 16,685 |  | n/a |  | n/a |  | 16,685 |
| Valuation allowance as a percentage of carrying value |  | 4.82\% |  | n/a |  | n/a |  | 4.82\% |
| Total |  |  |  |  |  |  |  |  |
| Allowance for loan and lease losses | \$ | 3,914 | \$ | 3,471 | \$ | 4,849 | \$ | 12,234 |
| Carrying value ${ }^{(3,4)}$ |  | 263,859 |  | 190,439 |  | 435,747 |  | 890,045 |
| Allowance as a percentage of carrying value ${ }^{(4)}$ |  | 1.48\% |  | 1.82\% |  | 1.11\% |  | 1.37\% |



## NOTE 6 Securitizations and Other Variable

## Interest Entities

The Corporation utilizes variable interest entities (VIEs) in the ordinary course of business to support its own and its customers' financing and investing needs. The Corporation routinely securitizes loans and debt securities using VIEs as a source of funding for the Corporation and as a means of transferring the economic risk of the loans or debt securities to third parties. The assets are transferred into a trust or other securitization vehicle such that the assets are legally isolated from the creditors of the Corporation and are not available to satisfy its obligations. These assets can only be used to settle obligations of the trust or other securitization vehicle. The Corporation also administers, structures or invests in other VIEs including CDOs, investment vehicles and other entities. For more information on the Corporation's utilization of VIEs, see Note 1 - Summary of Significant Accounting Principles.

The tables in this Note present the assets and liabilities of consolidated and unconsolidated VIEs at December 31, 2015 and 2014, in situations where the Corporation has continuing involvement with transferred assets or if the Corporation otherwise has a variable interest in the VIE. The tables also present the Corporation's maximum loss exposure at December 31, 2015 and 2014 resulting from its involvement with consolidated VIEs and unconsolidated VIEs in which the Corporation holds a variable interest. The Corporation's maximum loss exposure is based on the unlikely event that all of the assets in the VIEs become worthless and incorporates not only potential losses associated with assets recorded on the Consolidated Balance Sheet but also potential losses associated with off-balance sheet commitments such as unfunded liquidity commitments and other contractual arrangements. The Corporation's maximum loss exposure does not include losses previously recognized through write-downs of assets.

The Corporation invests in ABS issued by third-party VIEs with which it has no other form of involvement and enters into certain commercial lending arrangements that may also incorporate the use of VIEs to hold collateral. These securities and loans are
included in Note 3 - Securities or Note 4 - Outstanding Loans and Leases. In addition, the Corporation uses VIEs such as trust preferred securities trusts in connection with its funding activities. For additional information, see Note 11 - Long-term Debt. The Corporation uses VIEs, such as cash funds managed within GWIM, to provide investment opportunities for clients. These VIEs, which are not consolidated by the Corporation, are not included in the tables in this Note.

Except as described below, the Corporation did not provide financial support to consolidated or unconsolidated VIEs during 2015 or 2014 that it was not previously contractually required to provide, nor does it intend to do so.

## First-lien Mortgage Securitizations

## First-lien Mortgages

As part of its mortgage banking activities, the Corporation securitizes a portion of the first-lien residential mortgage loans it originates or purchases from third parties, generally in the form of RMBS guaranteed by government-sponsored enterprises, FNMA and FHLMC (collectively the GSEs), or Government National Mortgage Association (GNMA) primarily in the case of FHA-insured and U.S. Department of Veterans Affairs (VA)-guaranteed mortgage loans. Securitization usually occurs in conjunction with or shortly after origination or purchase and the Corporation may also securitize loans held in its residential mortgage portfolio. In addition, the Corporation may, from time to time, securitize commercial mortgages it originates or purchases from other entities. The Corporation typically services the loans it securitizes. Further, the Corporation may retain beneficial interests in the securitization trusts including senior and subordinate securities and equity tranches issued by the trusts. Except as described below and in Note 7 - Representations and Warranties Obligations and Corporate Guarantees, the Corporation does not provide guarantees or recourse to the securitization trusts other than standard representations and warranties.

The table below summarizes select information related to firstlien mortgage securitizations for 2015 and 2014.

## First-lien Mortgage Securitizations


 into the market to third-party investors for cash proceeds.
${ }^{(2)}$ A majority of the first-lien residential and commercial mortgage loans securitized are initially classified as LHFS and accounted for under the fair value option. Gains recognized on these LHFS prior to securitization, which totaled $\$ 750$ million and $\$ 715$ million, net of hedges, during 2015 and 2014, are not included in the table above.

In addition to cash proceeds as reported in the table above, the Corporation received securities with an initial fair value of $\$ 22.3$ billion and $\$ 5.4$ billion in connection with first-lien mortgage securitizations in 2015 and 2014. The receipt of these securities represents non-cash operating and investing activities and, accordingly, is not reflected on the Consolidated Statement of Cash Flows. All of these securities were initially classified as Level 2 assets within the fair value hierarchy. During 2015 and 2014, there were no changes to the initial classification.

The Corporation recognizes consumer MSRs from the sale or securitization of first-lien mortgage loans. Servicing fee and ancillary fee income on consumer mortgage loans serviced,
including securitizations where the Corporation has continuing involvement, were $\$ 1.4$ billion and $\$ 1.8$ billion in 2015 and 2014. Servicing advances on consumer mortgage loans, including securitizations where the Corporation has continuing involvement, were $\$ 7.8$ billion and $\$ 10.4$ billion at December 31, 2015 and 2014. The Corporation may have the option to repurchase delinquent loans out of securitization trusts, which reduces the amount of servicing advances it is required to make. During 2015 and 2014, $\$ 3.7$ billion and $\$ 5.2$ billion of loans were repurchased from first-lien securitization trusts primarily as a result of loan delinquencies or to perform modifications. The majority of these loans repurchased were FHA-insured mortgages collateralizing

GNMA securities. For more information on MSRs, see Note 23 Mortgage Servicing Rights.

During 2015, the Corporation deconsolidated agency residential mortgage securitization vehicles with total assets of $\$ 4.5$ billion following the sale of retained interests to third parties, after which the Corporation no longer had the unilateral ability to
liquidate the vehicles. Gains on sale of \$287 million were recorded in other income in the Consolidated Statement of Income.

The table below summarizes select information related to firstlien mortgage securitization trusts in which the Corporation held a variable interest at December 31, 2015 and 2014.

First-lien Mortgage VIEs

| (Dollars in millions) | Residential Mortgage |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Commercial Mortgage |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Agency |  |  |  | Non-agency |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  | Prime |  |  |  | Subprime |  |  |  | Alt-A |  |  |  |  |  |  |  |
|  | December 31 |  |  |  | 2015 |  |  |  | December 31 |  |  |  | 2015 |  |  |  | December 31 |  |  |  |
|  | 2015 |  | 2014 |  |  |  | 2014 |  | 2015 |  | 2014 |  |  |  | 2014 |  | 2015 |  | 2014 |  |
| Unconsolidated VIEs |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum loss exposure ${ }^{(1)}$ | \$ | 28,188 | \$ | 14,918 | \$ | 1,027 | \$ | 1,288 | \$ | 2,905 | \$ | 3,167 | \$ | 622 | \$ | 710 | \$ | 326 | \$ | 352 |
| On-balance sheet assets |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Senior securities held (2): |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trading account assets | \$ | 1,297 | \$ | 584 | \$ | 42 | \$ | 3 | \$ | 94 | \$ | 14 | \$ | 99 | \$ | 81 | \$ | 59 | \$ | 54 |
| Debt securities carried at fair value |  | 24,369 |  | 13,473 |  | 613 |  | 816 |  | 2,479 |  | 2,811 |  | 340 |  | 383 |  | - |  | 76 |
| Held-to-maturity securities |  | 2,507 |  | 837 |  | - |  | - |  | - |  | - |  | - |  | - |  | 37 |  | 42 |
| Subordinate securities held ${ }^{(2)}$ : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trading account assets |  | - |  | - |  | 1 |  | - |  | 37 |  | - |  | 2 |  | 1 |  | 22 |  | 58 |
| Debt securities carried at fair value |  | - |  | - |  | 12 |  | 12 |  | 3 |  | 5 |  | 28 |  | - |  | 54 |  | 58 |
| Held-to-maturity securities |  | - |  | - |  | - |  | - |  | - |  | - |  | - |  | - |  | 13 |  | 15 |
| Residual interests held |  | - |  | - |  | - |  | 10 |  | - |  | - |  | - |  | - |  | 48 |  | 22 |
| All other assets ${ }^{(3)}$ |  | 15 |  | 24 |  | 40 |  | 56 |  | - |  | 1 |  | 153 |  | 245 |  | - |  | - |
| Total retained positions | \$ | 28,188 | \$ | 14,918 | \$ | 708 | \$ | 897 | \$ | 2,613 | \$ | 2,831 | \$ | 622 | \$ | 710 | \$ | 233 | \$ | 325 |
| Principal balance outstanding ${ }^{(4)}$ | \$ | 313,613 | \$ | 397,055 | \$ | 16,087 | \$ | 20,167 | \$ | 27,854 | \$ | 32,592 | \$ | ,848 | \$ | ,054 | \$ | ,243 | \$ | ,593 |

Consolidated VIEs

| Maximum loss exposure (1) | \$ | 26,878 | \$ | 38,345 | \$ | 65 | \$ | 77 | \$ | 232 | \$ | 206 | \$ | - | \$ | - | \$ | - | \$ | - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| On-balance sheet assets |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trading account assets | \$ | 1,101 | \$ | 1,538 | \$ | - | \$ | - | \$ | 188 | \$ | 30 | \$ | - | \$ | - | \$ | - | \$ | - |
| Loans and leases |  | 25,328 |  | 36,187 |  | 111 |  | 130 |  | 675 |  | 768 |  | - |  | - |  | - |  | - |
| Allowance for loan and lease losses |  | - |  | (2) |  | - |  | - |  | - |  | - |  | - |  | - |  | - |  | - |
| All other assets |  | 449 |  | 623 |  | - |  | 6 |  | 54 |  | 15 |  | - |  | - |  | - |  | - |
| Total assets | \$ | 26,878 | \$ | 38,346 | \$ | 111 | \$ | 136 | \$ | 917 | \$ | 813 | \$ | - | \$ | - | \$ | - | \$ | - |
| On-balance sheet liabilities |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Long-term debt | \$ | - | \$ | 1 | \$ | 46 | \$ | 56 | \$ | 840 | \$ | 770 | \$ | - | \$ | - | \$ | - | \$ | - |
| All other liabilities |  | 1 |  | - |  | - |  | 3 |  | - |  | 13 |  | - |  | - |  | - |  | - |
| Total liabilities | \$ | 1 | \$ | 1 | \$ | 46 | \$ | 59 | \$ | 840 | \$ | 783 | \$ | - | \$ | - | \$ | - | \$ | - |

(1) Maximum loss exposure includes obligations under loss-sharing reinsurance and other arrangements for non-agency residential mortgage and commercial mortgage securitizations, but excludes the liability for representations and warranties obligations and corporate guarantees and also excludes servicing advances and other servicing rights and obligations. For additional information, see Note 7 - Representations and Warranties Obligations and Corporate Guarantees and Note 23 - Mortgage Servicing Rights.
${ }^{2)}$ As a holder of these securities, the Corporation receives scheduled principal and interest payments. During 2015 and 2014, there were no OTTI losses recorded on those securities classified as AFS debt securities
3) Not included in the table above are all other assets of $\$ 222$ million and $\$ 635$ million, representing the unpaid principal balance of mortgage loans eligible for repurchase from unconsolidated residential mortgage securitization vehicles, principally guaranteed by GNMA, and all other liabilities of $\$ 222$ million and $\$ 635$ million, representing the principal amount that would be payable to the securitization vehicles if the Corporation was to exercise the repurchase option, at December 31, 2015 and 2014.
${ }^{(4)}$ Principal balance outstanding includes loans the Corporation transferred with which it has continuing involvement, which may include servicing the loans

## Other Asset-backed Securitizations

The table below summarizes select information related to home equity loan, credit card and other asset-backed VIEs in which the Corporation held a variable interest at December 31, 2015 and 2014.

Home Equity Loan, Credit Card and Other Asset-backed VIEs

| (Dollars in millions) | Home Equity Loan (1) |  |  |  | Credit Card (2, 3) |  |  |  | Resecuritization Trusts |  |  |  | Municipal Bond Trusts |  |  |  | Automobile and Other Securitization Trusts |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | December 31 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| Unconsolidated VIEs |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum loss exposure | \$ | 3,988 | \$ | 4,801 | \$ | - | \$ | - | \$ | 13,043 | \$ | 8,569 | \$ | 1,572 | \$ | 2,100 | \$ | 63 | \$ | 77 |
| On-balance sheet assets |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Senior securities held (4,5): Trading account assets | \$ | - | \$ | 12 | \$ | - | \$ | - | \$ | 1,248 | \$ | 767 | \$ | 2 | \$ | 25 | \$ | - | \$ | 6 |
| Debt securities carried at fair value |  | - |  | - |  | - |  | - |  | 4,341 |  | 6,945 |  | - |  | - |  | 53 |  | 61 |
| Held-to-maturity securities |  | - |  | - |  | - |  | - |  | 7,367 |  | 740 |  | - |  | - |  | - |  | - |
| Subordinate securities held (4,5): Trading account assets |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trading account assets |  | - |  | 2 |  | - |  | - |  | 17 |  | 44 |  | - |  | - |  | - |  | - |
| Debt securities carried at fair value |  | 57 |  | 39 |  | - |  | - |  | 70 |  | 73 |  | - |  | - |  | - |  | - |
| All other assets |  | - |  | - |  | - |  | - |  | - |  | - |  | - |  | - |  | 10 |  | 10 |
| Total retained positions | \$ | 57 | \$ | 53 | \$ | - | \$ | - | \$ | 13,043 | \$ | 8,569 | \$ | 2 | \$ | 25 | \$ | 63 | \$ | 77 |
| Total assets of VIEs (6) | \$ | 5,883 | \$ | 6,362 | \$ | - | \$ | - | \$ | 35,362 | \$ | 28,065 | \$ | 2,518 | \$ | 3,314 | \$ | 314 | \$ | 1,276 |
| Consolidated VIEs |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Maximum loss exposure | \$ | 231 | \$ | 991 | \$ | 32,678 |  | 43,139 | \$ | 354 | \$ | 654 | \$ | 1,973 | \$ | 2,440 | \$ | - | \$ | 92 |
| On-balance sheet assets |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trading account assets | \$ | - | \$ | - | \$ | - | \$ | - | \$ | 771 | \$ | 1,295 | \$ | 1,984 | \$ | 2,452 | \$ | - | \$ | - |
| Loans and leases |  | 321 |  | 1,014 |  | 43,194 |  | 53,068 |  | - |  | - |  | - |  | - |  | - |  | - |
| Allowance for loan and lease losses |  | (18) |  | (56) |  | $(1,293)$ |  | $(1,904)$ |  | - |  | - |  | - |  | - |  | - |  | - |
| Loans held-for-sale |  | - |  | - |  | - |  | - |  | - |  | - |  | - |  | - |  | - |  | 555 |
| All other assets |  | 20 |  | 33 |  | 342 |  | 392 |  | - |  | - |  | 1 |  | - |  | - |  | 54 |
| Total assets | \$ | 323 | \$ | 991 | \$ | 42,243 | \$ | 51,556 | \$ | 771 | \$ | 1,295 | \$ | 1,985 | \$ | 2,452 | \$ | - | \$ | 609 |
| On-balance sheet liabilities |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Short-term borrowings | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | \$ | 681 | \$ | 1,032 | \$ | - | \$ | - |
| Long-term debt |  | 183 |  | 1,076 |  | 9,550 |  | 8,401 |  | 417 |  | 641 |  | 12 |  | 12 |  | - |  | 516 |
| All other liabilities |  | - |  | - |  | 15 |  | 16 |  | - |  | - |  | - |  | - |  | - |  | 1 |
| Total liabilities | \$ | 183 | \$ | 1,076 | \$ | 9,565 | \$ | 8,417 | \$ | 417 | \$ | 641 | \$ | 693 | \$ | 1,044 | \$ | - | \$ | 517 |

(1) For unconsolidated home equity loan VIEs, the maximum loss exposure includes outstanding trust certificates issued by trusts in rapid amortization, net of recorded reserves. For both consolidated and unconsolidated home equity loan VIEs, the maximum loss exposure excludes the liability for representations and warranties obligations and corporate guarantees. For additional information see Note 7 - Representations and Warranties Obligations and Corporate Guarantees.
(2) At December 31, 2015 and 2014, loans and leases in the consolidated credit card trust included $\$ 24.7$ billion and $\$ 36.9$ billion of seller's interest.
${ }^{(3)}$ At December 31, 2015 and 2014, all other assets in the consolidated credit card trust included restricted cash, certain short-term investments, and unbilled accrued interest and fees.
4) As a holder of these securities, the Corporation receives scheduled principal and interest payments. During 2015 and 2014, there were no OTtI losses recorded on those securities classified as AFS or HTM debt securities.
5) The retained senior and subordinate securities were valued using quoted market prices or observable market inputs (Level 2 of the fair value hierarchy).
${ }^{(6)}$ Total assets include loans the Corporation transferred with which it has continuing involvement, which may include servicing the loan.

## Home Equity Loans

The Corporation retains interests in home equity securitization trusts to which it transferred home equity loans. These retained interests include senior and subordinate securities and residual interests. In addition, the Corporation may be obligated to provide subordinate funding to the trusts during a rapid amortization event. The Corporation typically services the loans in the trusts. Except as described below and in Note 7 - Representations and Warranties Obligations and Corporate Guarantees, the Corporation does not provide guarantees or recourse to the securitization trusts other than standard representations and warranties. There were no securitizations of home equity loans during 2015 and 2014, and all of the home equity trusts that hold revolving home equity lines of credit (HELOCs) have entered the rapid amortization phase.

The maximum loss exposure in the table above includes the Corporation's obligation to provide subordinate funding to the consolidated and unconsolidated home equity loan securitizations that have entered a rapid amortization phase. During this period, cash payments from borrowers are accumulated to repay outstanding debt securities and the Corporation continues to make advances to borrowers when they draw on their lines of credit. At December 31, 2015 and 2014, home equity loan securitizations in rapid amortization for which the Corporation has a subordinate funding obligation, including both consolidated and unconsolidated trusts, had $\$ 4.0$ billion and $\$ 5.8$ billion of trust certificates outstanding. This amount is significantly greater than the amount the Corporation expects to fund. The charges that will ultimately be recorded as a result of the rapid amortization events depend on the undrawn available credit on the home equity lines, which totaled $\$ 7$ million and $\$ 39$ million at December 31, 2015 and 2014, as well as performance of the loans, the amount of subsequent draws and the timing of related cash flows.

During 2015, the Corporation deconsolidated several home equity line of credit trusts with total assets of $\$ 488$ million and total liabilities of $\$ 611$ million as its obligation to provide subordinated funding is no longer considered to be a potentially significant variable interest in the trusts following a decline in the amount of credit available to be drawn by borrowers. In connection with deconsolidation, the Corporation recorded a gain of \$123 million in other income in the Consolidated Statement of Income. The derecognition of assets and liabilities represents non-cash investing and financing activities and, accordingly, is not reflected on the Consolidated Statement of Cash Flows.

## Credit Card Securitizations

The Corporation securitizes originated and purchased credit card loans. The Corporation's continuing involvement with the securitization trust includes servicing the receivables, retaining an undivided interest (seller's interest) in the receivables, and holding certain retained interests including senior and subordinate securities, subordinate interests in accrued interest and fees on the securitized receivables, and cash reserve accounts. The seller's interest in the trust, which is pari passu to the investors' interest, is classified in loans and leases.

During 2015, $\$ 2.3$ billion of new senior debt securities were issued to third-party investors from the credit card securitization trust compared to $\$ 4.1$ billion issued during 2014.

The Corporation held subordinate securities issued by the credit card securitization trust with a notional principal amount of $\$ 7.5$ billion and $\$ 7.4$ billion at December 31, 2015 and 2014. These securities serve as a form of credit enhancement to the senior debt securities and have a stated interest rate of zero
percent. There were $\$ 371$ million of these subordinate securities issued during 2015 and $\$ 662$ million issued during 2014.

## Resecuritization Trusts

The Corporation transfers existing securities, typically MBS, into resecuritization vehicles at the request of customers seeking securities with specific characteristics. The Corporation may also resecuritize securities within its investment portfolio for purposes of improving liquidity and capital, and managing credit or interest rate risk. Generally, there are no significant ongoing activities performed in a resecuritization trust and no single investor has the unilateral ability to liquidate the trust.

The Corporation resecuritized $\$ 30.7$ billion and $\$ 14.4$ billion of securities in 2015 and 2014. Resecuritizations in 2014 included $\$ 1.5$ billion of AFS debt securities, and gains on sale of $\$ 71$ million were recorded. There were no resecuritizations of AFS debt securities during 2015. Other securities transferred into resecuritization vehicles during 2015 and 2014 were measured at fair value with changes in fair value recorded in trading account profits or other income prior to the resecuritization and no gain or loss on sale was recorded. Resecuritization proceeds included securities with an initial fair value of $\$ 9.8$ billion and $\$ 4.6$ billion, including $\$ 6.9$ billion and $\$ 747$ million which were subsequently classified as HTM during 2015 and 2014. All of these securities were classified as Level 2 within the fair value hierarchy.

## Municipal Bond Trusts

The Corporation administers municipal bond trusts that hold highlyrated, long-term, fixed-rate municipal bonds. The trusts obtain financing by issuing floating-rate trust certificates that reprice on a weekly or other short-term basis to third-party investors. The Corporation may transfer assets into the trusts and may also serve as remarketing agent and/or liquidity provider for the trusts. The floating-rate investors have the right to tender the certificates at specified dates. Should the Corporation be unable to remarket the tendered certificates, it may be obligated to purchase them at par under standby liquidity facilities. The Corporation also provides credit enhancement to investors in certain municipal bond trusts whereby the Corporation guarantees the payment of interest and principal on floating-rate certificates issued by these trusts in the event of default by the issuer of the underlying municipal bond.

The Corporation's liquidity commitments to unconsolidated municipal bond trusts, including those for which the Corporation was transferor, totaled $\$ 1.6$ billion and $\$ 2.1$ billion at December 31, 2015 and 2014. The weighted-average remaining life of bonds held in the trusts at December 31, 2015 was 7.4 years. There were no material write-downs or downgrades of assets or issuers during 2015 and 2014.

## Automobile and Other Securitization Trusts

The Corporation transfers automobile and other loans into securitization trusts, typically to improve liquidity or manage credit risk. At December 31, 2015 and 2014, the Corporation serviced assets or otherwise had continuing involvement with automobile and other securitization trusts with outstanding balances of $\$ 314$ million and $\$ 1.9$ billion, including trusts collateralized by automobile loans of $\$ 125$ million and $\$ 400$ million, other loans of $\$ 189$ million and $\$ 876$ million, and student loans of $\$ 0$ and \$609 million.

During 2015, the Corporation deconsolidated a student loan trust with total assets of $\$ 515$ million and total liabilities of $\$ 449$
million following the transfer of servicing and sale of retained interests to third parties. No gain or loss was recorded as a result of the deconsolidation. The derecognition of assets and liabilities represents non-cash investing and financing activities and, accordingly, is not reflected on the Consolidated Statement of Cash Flows.

## Other Variable Interest Entities

The table below summarizes select information related to other VIEs in which the Corporation held a variable interest at December 31, 2015 and 2014.

Other VIEs

| (Dollars in millions)Maximum loss exposure | December 31 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  |  |  |  |  | 2014 |  |  |  |  |  |
|  | Consolidated |  | Unconsolidated |  | Total |  | Consolidated |  | Unconsolidated |  | Total |  |
|  | \$ | 6,295 | \$ | 12,916 | \$ | 19,211 | \$ | 7,981 | \$ | 12,391 | \$ | 20,372 |
| On-balance sheet assets |  |  |  |  |  |  |  |  |  |  |  |  |
| Trading account assets | \$ | 2,300 | \$ | 366 | \$ | 2,666 | \$ | 1,575 | \$ | 355 | \$ | 1,930 |
| Debt securities carried at fair value |  | - |  | 126 |  | 126 |  | - |  | 483 |  | 483 |
| Loans and leases |  | 3,317 |  | 3,389 |  | 6,706 |  | 4,020 |  | 2,693 |  | 6,713 |
| Allowance for loan and lease losses |  | (9) |  | (23) |  | (32) |  | (6) |  | - |  | (6) |
| Loans held-for-sale |  | 284 |  | 1,025 |  | 1,309 |  | 1,267 |  | 814 |  | 2,081 |
| All other assets |  | 664 |  | 6,925 |  | 7,589 |  | 1,646 |  | 6,658 |  | 8,304 |
| Total | \$ | 6,556 | \$ | 11,808 | \$ | 18,364 | \$ | 8,502 | \$ | 11,003 | \$ | 19,505 |
| On-balance sheet liabilities |  |  |  |  |  |  |  |  |  |  |  |  |
| Long-term debt ${ }^{(1)}$ | \$ | 3,025 | \$ | - | \$ | 3,025 | \$ | 1,834 | \$ | - | \$ | 1,834 |
| All other liabilities |  | 5 |  | 2,697 |  | 2,702 |  | 105 |  | 2,643 |  | 2,748 |
| Total | \$ | 3,030 | \$ | 2,697 | \$ | 5,727 | \$ | 1,939 | \$ | 2,643 | \$ | 4,582 |
| Total assets of VIEs | \$ | 6,556 | \$ | 49,190 | \$ | 55,746 | \$ | 8,502 | \$ | 50,366 | \$ | 58,868 |

${ }^{11}$ Includes $\$ 2.8$ billion and $\$ 1.4$ billion of long-term debt at December 31, 2015 and 2014 issued by other consolidated VIEs, which has recourse to the general credit of the Corporation.

During 2015, the Corporation consolidated certain customer vehicles after redeeming long-term debt owed to the vehicles and acquiring a controlling financial interest in the vehicles. The Corporation also deconsolidated certain investment vehicles following the sale or disposition of variable interests. These actions resulted in a net decrease in long-term debt of $\$ 1.2$ billion which represents a non-cash financing activity and, accordingly, is not reflected on the Consolidated Statement of Cash Flows. No gain or loss was recorded as a result of the consolidation or deconsolidation of these VIEs.

## Customer Vehicles

Customer vehicles include credit-linked, equity-linked and commodity-linked note vehicles, repackaging vehicles, and asset acquisition vehicles, which are typically created on behalf of customers who wish to obtain market or credit exposure to a specific company, index, commodity or financial instrument. The Corporation may transfer assets to and invest in securities issued by these vehicles. The Corporation typically enters into credit, equity, interest rate, commodity or foreign currency derivatives to synthetically create or alter the investment profile of the issued securities.

The Corporation's maximum loss exposure to consolidated and unconsolidated customer vehicles totaled $\$ 3.9$ billion and $\$ 4.7$ billion at December 31, 2015 and 2014, including the notional amount of derivatives to which the Corporation is a counterparty,
net of losses previously recorded, and the Corporation's investment, if any, in securities issued by the vehicles. The maximum loss exposure has not been reduced to reflect the benefit of offsetting swaps with the customers or collateral arrangements. The Corporation also had liquidity commitments, including written put options and collateral value guarantees, with certain unconsolidated vehicles of $\$ 691$ million and $\$ 658$ million at December 31, 2015 and 2014, that are included in the table above.

## Collateralized Debt Obligation Vehicles

The Corporation receives fees for structuring CDO vehicles, which hold diversified pools of fixed-income securities, typically corporate debt or ABS, which the CDO vehicles fund by issuing multiple tranches of debt and equity securities. Synthetic CDOs enter into a portfolio of CDS to synthetically create exposure to fixed-income securities. CLOs, which are a subset of CDOs, hold pools of loans, typically corporate loans. CDOs are typically managed by thirdparty portfolio managers. The Corporation typically transfers assets to these CDOs, holds securities issued by the CDOs and may be a derivative counterparty to the CDOs, including a CDS counterparty for synthetic CDOs. The Corporation has also entered into total return swaps with certain CDOs whereby the Corporation absorbs the economic returns generated by specified assets held by the CDO.

The Corporation's maximum loss exposure to consolidated and unconsolidated CDOs totaled $\$ 543$ million and $\$ 780$ million at December 31, 2015 and 2014. This exposure is calculated on a gross basis and does not reflect any benefit from insurance purchased from third parties.

At December 31, 2015, the Corporation had $\$ 922$ million of aggregate liquidity exposure, included in the Other VIEs table net of previously recorded losses, to unconsolidated CDOs which hold senior CDO debt securities or other debt securities on the Corporation's behalf. For additional information, see Note 12 Commitments and Contingencies.

## Investment Vehicles

The Corporation sponsors, invests in or provides financing, which may be in connection with the sale of assets, to a variety of investment vehicles that hold loans, real estate, debt securities or other financial instruments and are designed to provide the desired investment profile to investors or the Corporation. At December 31, 2015 and 2014, the Corporation's consolidated investment vehicles had total assets of \$397 million and \$1.1 billion. The Corporation also held investments in unconsolidated vehicles with total assets of $\$ 14.7$ billion and $\$ 11.2$ billion at December 31, 2015 and 2014. The Corporation's maximum loss exposure associated with both consolidated and unconsolidated investment vehicles totaled $\$ 5.1$ billion at both December 31, 2015 and 2014 comprised primarily of on-balance sheet assets less non-recourse liabilities.

The Corporation transferred servicing advance receivables to independent third parties in connection with the sale of MSRs. Portions of the receivables were transferred into unconsolidated securitization trusts. The Corporation retained senior interests in such receivables with a maximum loss exposure and funding obligation of $\$ 150$ million and $\$ 660$ million, including a funded
balance of \$122 million and \$431 million at December 31, 2015 and 2014, which were classified in other debt securities carried at fair value.

## Leveraged Lease Trusts

The Corporation's net investment in consolidated leveraged lease trusts totaled $\$ 2.8$ billion and $\$ 3.3$ billion at December 31, 2015 and 2014. The trusts hold long-lived equipment such as rail cars, power generation and distribution equipment, and commercial aircraft. The Corporation structures the trusts and holds a significant residual interest. The net investment represents the Corporation's maximum loss exposure to the trusts in the unlikely event that the leveraged lease investments become worthless. Debt issued by the leveraged lease trusts is non-recourse to the Corporation.

## Real Estate Vehicles

The Corporation held investments in unconsolidated real estate vehicles with total assets of $\$ 6.6$ billion and $\$ 6.2$ billion at December 31, 2015 and 2014, which primarily consisted of investments in unconsolidated limited partnerships that construct, own and operate affordable rental housing and commercial real estate projects. An unrelated third party is typically the general partner and has control over the significant activities of the partnership. The Corporation earns a return primarily through the receipt of tax credits allocated to the real estate projects. The Corporation's risk of loss is mitigated by policies requiring that the project qualify for the expected tax credits prior to making its investment. The Corporation may from time to time be asked to invest additional amounts to support a troubled project. Such additional investments have not been and are not expected to be significant.

## NOTE 7 Representations and Warranties Obligations and Corporate Guarantees

## Background

The Corporation securitizes first-lien residential mortgage loans generally in the form of RMBS guaranteed by the GSEs or by GNMA in the case of FHA-insured, VA-guaranteed and Rural Housing Service-guaranteed mortgage loans, and sells pools of first-lien residential mortgage loans in the form of whole loans. In addition, in prior years, legacy companies and certain subsidiaries sold pools of first-lien residential mortgage loans and home equity loans as private-label securitizations (in certain of these securitizations, monoline insurers or other financial guarantee providers insured all or some of the securities) or in the form of whole loans. In connection with these transactions, the Corporation or certain of its subsidiaries or legacy companies made various representations and warranties. These representations and warranties, as set forth in the agreements, related to, among other things, the ownership of the loan, the validity of the lien securing the loan, the absence of delinquent taxes or liens against the property securing the loan, the process used to select the loan for inclusion in a transaction, the loan's compliance with any applicable loan criteria, including underwriting standards, and the loan's compliance with applicable federal, state and local laws. Breaches of these representations and warranties have resulted in and may continue to result in the requirement to repurchase mortgage loans or to otherwise make whole or provide other remedies to the GSEs, U.S. Department of Housing and Urban Development (HUD) with respect to FHA-insured loans, VA, wholeloan investors, securitization trusts, monoline insurers or other financial guarantors as applicable (collectively, repurchases). In all such cases, subsequent to repurchasing the loan, the Corporation would be exposed to any credit loss on the repurchased mortgage loans after accounting for any mortgage insurance (MI) or mortgage guarantee payments that it may receive.

The liability for representations and warranties exposures and the corresponding estimated range of possible loss are based upon currently available information, significant judgment, and a number of factors and assumptions, including those discussed in Liability for Representations and Warranties and Corporate Guarantees in this Note, that are subject to change. Changes to any one of these factors could significantly impact the liability for representations and warranties exposures and the corresponding estimated range of possible loss and could have a material adverse impact on the Corporation's results of operations for any particular period. Given that these factors vary by counterparty, the Corporation analyzes representations and warranties obligations based on the specific counterparty, or type of counterparty, with whom the sale was made.

## Settlement Actions

The Corporation has vigorously contested any request for repurchase where it has concluded that a valid basis for repurchase does not exist and will continue to do so in the future. However, in an effort to resolve legacy mortgage-related issues, the Corporation has reached bulk settlements, including various
settlements with the GSEs, and including settlement amounts which have been significant, with counterparties in lieu of a loan-by-loan review process. These bulk settlements generally did not cover all transactions with the relevant counterparties or all potential claims that may arise, including in some instances securities law, fraud and servicing claims, which may be addressed separately. The Corporation's liability in connection with the transactions and claims not covered by these settlements could be material to the Corporation's results of operations or liquidity for any particular reporting period. The Corporation may reach other settlements in the future if opportunities arise on terms it believes to be advantageous. However, there can be no assurance that the Corporation will reach future settlements or, if it does, that the terms of past settlements can be relied upon to predict the terms of future settlements. The following provides a summary of the settlement with The Bank of New York Mellon (BNY Mellon); the conditions of the settlement have now been fully satisfied.

Settlement with the Bank of New York Mellon, as Trustee On April 22, 2015, the New York County Supreme Court entered final judgment approving the BNY Mellon Settlement. In October 2015, BNY Mellon obtained certain state tax opinions and an IRS private letter ruling confirming that the settlement will not impact the real estate mortgage investment conduit tax status of the trusts. The final conditions of the settlement have been satisfied and, accordingly, the Corporation made the settlement payment to BNY Mellon of $\$ 8.5$ billion in February 2016. Pursuant to the settlement agreement, allocation and distribution of the $\$ 8.5$ billion settlement payment is the responsibility of the RMBS trustee, BNY Mellon. On February 5, 2016, BNY Mellon filed an Article 77 proceeding in the New York County Supreme Court asking the court for instruction with respect to certain issues concerning the distribution of each trust's allocable share of the settlement payment and asking that the settlement payment be ordered to be held in escrow pending the outcome of this Article 77 proceeding. The Corporation is not a party to this proceeding.

## Unresolved Repurchase Claims

Unresolved representations and warranties repurchase claims represent the notional amount of repurchase claims made by counterparties, typically the outstanding principal balance or the unpaid principal balance at the time of default. In the case of firstlien mortgages, the claim amount is often significantly greater than the expected loss amount due to the benefit of collateral and, in some cases, MI or mortgage guarantee payments. Claims received from a counterparty remain outstanding until the underlying loan is repurchased, the claim is rescinded by the counterparty, the Corporation determines that the applicable statute of limitations has expired, or representations and warranties claims with respect to the applicable trust are settled, and fully and finally released. When a claim is denied and the Corporation does not receive a response from the counterparty, the claim remains in the unresolved repurchase claims balance until resolution in one of the ways described above. Certain of the claims that have been received are duplicate claims which represent more than one claim outstanding related to a particular loan, typically as the result of bulk claims submitted without individual file reviews.

The table below presents unresolved repurchase claims at December 31, 2015 and 2014. The unresolved repurchase claims include only claims where the Corporation believes that the counterparty has the contractual right to submit claims. The unresolved repurchase claims predominantly relate to subprime and pay option first-lien loans and home equity loans. For additional information, see Private-label Securitizations and Whole-loan Sales Experience in this Note and Note 12 - Commitments and Contingencies.

Unresolved Repurchase Claims by Counterparty, net of
duplicate claims

|  | December 31 |  |
| :--- | ---: | ---: |
| (Dollars in millions) | 2015 | $2014{ }^{(1)}$ |
| By counterparty <br> Private-label securitization trustees, whole-loan <br> investors, including third-party securitization |  |  |
| sponsors and other ${ }^{(2,3)}$ |  |  |
| Monolines (4) | 16,748 | $\$ 21,276$ |
| GSEs | 1,599 | 1,511 |
| Total unresolved repurchase claims by counterparty, | 18 | 59 |
| net of duplicate claims | $\$ 18,364$ | $\$ 22,846$ |

(1) The December 31, 2014 amounts have been updated to reflect additional claims submitted in the fourth quarter of 2014 from a single monoline, currently pursuing litigation, and addressed by the Corporation in 2015 pursuant to an existing litigation schedule. For more information on bond insurance litigation, see Note 12 - Commitments and Contingencies.
${ }^{(2)}$ Includes $\$ 11.9$ billion and $\$ 13.8$ billion of claims based on individual file reviews and $\$ 4.8$ billion and $\$ 7.5$ billion of claims submitted without individual file reviews at December 31, 2015 and 2014.
(3) The total notional amount of unresolved repurchase claims does not include repurchase claims related to the trusts covered by the BNY Mellon Settlement.
${ }^{(4)}$ At December 31, 2015, substantially all of the unresolved monoline claims are currently the subject of litigation with a single monoline insurer and predominately pertain to second-lien loans.

During 2015, the Corporation received $\$ 3.7$ billion in new repurchase claims including $\$ 2.9$ billion of claims submitted without individual loan file reviews. During 2015, $\$ 8.1$ billion in claims were resolved, including $\$ 7.4$ billion which are deemed resolved as a result of the New York Court of Appeals decision in Ace Securities Corp. v. DB Structure Products, Inc. (ACE). Of the remaining unresolved monoline claims, substantially all of the claims pertain to second-lien loans and are currently the subject of litigation with a single monoline insurer. There may be additional claims or file requests in the future.

In addition to the unresolved repurchase claims in the Unresolved Repurchase Claims by Counterparty, net of duplicate claims table, the Corporation has received notifications from sponsors of third-party securitizations with whom the Corporation engaged in whole-loan transactions indicating that the Corporation may have indemnity obligations with respect to loans for which the Corporation has not received a repurchase request. These outstanding notifications totaled $\$ 1.4$ billion and $\$ 2.0$ billion at December 31, 2015 and 2014.

The Corporation also from time to time receives correspondence purporting to raise representations and warranties breach issues from entities that do not have contractual standing or ability to bring such claims. The Corporation believes such communications to be procedurally and/or substantively invalid, and generally does not respond.

The presence of repurchase claims on a given trust, receipt of notices of indemnification obligations and receipt of other communications, as discussed above, are all factors that inform the Corporation's liability for representations and warranties and the corresponding estimated range of possible loss.

## Government-sponsored Enterprises Experience

As a result of various bulk settlements with the GSEs, the Corporation has resolved substantially all outstanding and potential representations and warranties repurchase claims on whole loans sold by legacy Bank of America and Countrywide to FNMA and FHLMC through June 30, 2012 and December 31, 2009, respectively. As of December 31, 2015, the notional amount of unresolved repurchase claims submitted by the GSEs was $\$ 14$ million for loans originated prior to 2009.

## Private-label Securitizations and Whole-loan Sales Experience

Prior to 2009, legacy companies and certain subsidiaries sold pools of first-lien residential mortgage loans and home equity loans as private-label securitizations or in the form of whole loans. In connection with these transactions, the Corporation or certain of its subsidiaries or legacy companies made various representations and warranties. When the Corporation provided representations and warranties in connection with the sale of whole loans, the whole-loan investors may retain the right to make repurchase claims even when the loans were aggregated with other collateral into private-label securitizations sponsored by the wholeloan investors. In other third-party securitizations, the whole-loan investors' rights to enforce the representations and warranties were transferred to the securitization trustees. Private-label securitization investors generally do not have the contractual right to demand repurchase of loans directly or the right to access loan files directly.

In private-label securitizations, the applicable contracts provide that investors meet certain presentation thresholds to issue a binding direction to a trustee to assert repurchase claims. However, in certain circumstances, the Corporation believes that trustees have presented repurchase claims without requiring investors to meet contractual voting rights thresholds. New privatelabel claims are primarily related to repurchase requests received from trustees for private-label securitization transactions not included in the BNY Mellon Settlement.

On June 11, 2015, the New York Court of Appeals, New York's highest appellate court, issued its opinion in the ACE case, holding that, under New York law the six-year statute of limitations starts to run at the time the representations and warranties are made, not the date when the repurchase demand was denied. In addition, the Court of Appeals held that compliance with the contractual notice and cure period was a pre-condition to filing suit, and claims that did not comply with such contractual requirements prior to the expiration of the statute of limitations period were invalid. While no entity affiliated with the Corporation was a party to this litigation, the vast majority of the private-label RMBS trusts into which entities affiliated with the Corporation sold loans and made representations and warranties are governed by New York law, and the ACE decision should therefore apply to representations and warranties claims and litigation brought on those RMBS trusts. A significant number of representations and warranties claims and lawsuits brought against the Corporation have involved claims where the statute of limitations has expired under the ACE decision and are therefore time-barred. The Corporation treats time-barred claims as resolved and no longer outstanding; however, while postACE case law is in early stages, investors or trustees have sought to distinguish certain aspects of the ACE decision or to assert other claims against other RMBS counterparties seeking to avoid or circumvent the impact of the ACE decision. For example,
institutional investors have filed lawsuits against trustees based upon alleged contractual, statutory and tort theories of liability and alleging failure to pursue representations and warranties claims and servicer defaults. The potential impact on the Corporation, if any, of such alternative legal theories or assertions, judicial limitations on the ACE decision, or claims seeking to distinguish or avoid the ACE decision is unclear at this time. For more information on repurchase demands, see Unresolved Repurchase Claims in this Note.

The private-label securitization agreements generally require that counterparties have the ability to both assert a representations and warranties claim and to actually prove that a loan has an actionable defect under the applicable contracts. While the Corporation believes the agreements for private-label securitizations generally contain less rigorous representations and warranties and place higher burdens on claimants seeking repurchases than the express provisions of comparable agreements with the GSEs, the agreements generally include a representation that underwriting practices were prudent and customary. In the case of private-label securitization trustees and third-party sponsors, there is currently no established process in place for the parties to reach a conclusion on an individual loan if there is a disagreement on the resolution of the claim. Privatelabel securitization investors generally do not have the contractual right to demand repurchase of loans directly or the right to access loan files directly. For more information on repurchase demands, see Unresolved Repurchase Claims in this Note.

At December 31, 2015 and 2014, for loans originated between 2004 and 2008, the notional amount of unresolved repurchase claims, net of duplicated claims, submitted by private-label securitization trustees, whole-loan investors, including third-party securitization sponsors, and others was $\$ 16.7$ billion and $\$ 21.2$ billion. These repurchase claims at December 31, 2015 exclude claims in the amount of $\$ 7.4$ billion where the statute of limitations has expired without litigation being commenced. At December 31, 2014, time-barred claims of $\$ 5.2$ billion were included in unresolved repurchase claims. The notional amount of unresolved repurchase claims at both December 31, 2015 and 2014 includes $\$ 3.5$ billion of claims related to loans in specific private-label securitization groups or tranches where the Corporation owns substantially all of the outstanding securities.

The overall decrease in the notional amount of outstanding unresolved repurchase claims in 2015 is primarily due to the impact of time-barred claims under the ACE decision, partially offset by new claims from private-label securitization trustees. Outstanding repurchase claims remain unresolved primarily due to (1) the level of detail, support and analysis accompanying such claims, which impact overall claim quality and, therefore, claims resolution and (2) the lack of an established process to resolve disputes related to these claims.

The Corporation reviews properly presented repurchase claims on a loan-by-loan basis. Claims that are time-barred are treated as resolved. If, after the Corporation's review of timely claims, it does not believe a claim is valid, it will deny the claim and generally indicate a reason for the denial. When the counterparty agrees with the Corporation's denial of the claim, the counterparty may rescind the claim. When there is disagreement as to the resolution of the claim, meaningful dialogue and negotiation between the parties are generally necessary to reach a resolution on an individual claim. When a claim has been denied and the Corporation does not hear from the counterparty for six months, the Corporation views these claims as inactive; however, they remain in the outstanding claims balance until resolution in one of the manners described above. In the case of private-label securitization trustees and third-party sponsors, there is currently no established process in place for the parties to reach a conclusion on an individual loan if there is a disagreement on the resolution of the claim. The Corporation has performed an initial review with respect to substantially all of these claims and, although the Corporation does not believe a valid basis for repurchase has been established by the claimant, it considers such claims activity in the computation of its liability for representations and warranties.

## Monoline Insurers Experience

During 2015, the Corporation had limited loan-level representations and warranties repurchase claims experience with the monoline insurers due to settlements with several monoline insurers and ongoing litigation with a single monoline insurer. To the extent the Corporation received repurchase claims from the monolines that were properly presented, it generally reviewed them on a loan-by-loan basis. Where the Corporation agrees that there has been a breach of representations and warranties given by the Corporation or subsidiaries or legacy companies that meets contractual requirements for repurchase, settlement is generally reached as to that loan within 60 to 90 days. For more information related to the monolines, see Note 12 - Commitments and Contingencies.

## Liability for Representations and Warranties and Corporate Guarantees

The liability for representations and warranties and corporate guarantees is included in accrued expenses and other liabilities on the Consolidated Balance Sheet and the related provision is included in mortgage banking income in the Consolidated Statement of Income. The liability for representations and warranties is established when those obligations are both probable and reasonably estimable.

The Corporation's representations and warranties liability and the corresponding estimated range of possible loss at December 31, 2015 considers, among other things, implied repurchase experience based on the BNY Mellon Settlement, adjusted to reflect differences between the trusts covered by the settlement and the remainder of the population of private-label securitizations where the statute of limitations for representations and warranties claims has not expired. Since the securitization trusts that were included in the BNY Mellon Settlement differ from those that were not included in the BNY Mellon Settlement, the Corporation adjusted the repurchase experience implied in the settlement in order to determine the representations and warranties liability and the corresponding estimated range of possible loss.

The table below presents a rollforward of the liability for representations and warranties and corporate guarantees.

Representations and Warranties and Corporate Guarantees


The representations and warranties liability represents the Corporation's estimate of probable incurred losses as of December 31, 2015. However, it is reasonably possible that future representations and warranties losses may occur in excess of the amounts recorded for these exposures.

## Estimated Range of Possible Loss

The Corporation currently estimates that the range of possible loss for representations and warranties exposures could be up to $\$ 2$ billion over existing accruals at December 31, 2015. The Corporation treats claims that are time-barred as resolved and does not consider such claims in the estimated range of possible loss. The estimated range of possible loss reflects principally exposures related to loans in private-label securitization trusts. It
represents a reasonably possible loss, but does not represent a probable loss, and is based on currently available information, significant judgment and a number of assumptions that are subject to change.

The liability for representations and warranties exposures and the corresponding estimated range of possible loss do not consider certain losses related to servicing (except as such losses are included as potential costs of the BNY Mellon Settlement), including foreclosure and related costs, fraud, indemnity, or claims (including for RMBS) related to securities law or monoline insurance litigation. Losses with respect to one or more of these matters could be material to the Corporation's results of operations or liquidity for any particular reporting period.

Future provisions and/or ranges of possible loss for representations and warranties may be significantly impacted if actual experiences are different from the Corporation's assumptions in predictive models, including, without limitation, the actual repurchase rates on loans in trusts not settled as part of the BNY Mellon settlement which may be different than the implied repurchase experience, estimated MI rescission rates, economic conditions, estimated home prices, consumer and counterparty behavior, the applicable statute of limitations, potential indemnity obligations to third parties to whom the Corporation has sold loans subject to representations and warranties and a variety of other judgmental factors. Adverse developments with respect to one or more of the assumptions underlying the liability for representations and warranties and the corresponding estimated range of possible loss could result in significant increases to future provisions and/or the estimated range of possible loss.

## Cash Payments

During 2015 and 2014, excluding amounts paid in bulk settlements, the Corporation made loan repurchases and indemnification payments totaling \$229 million and \$496 million, respectively for first-lien and home equity loan repurchases and indemnification payments to reimburse investors or securitization trusts. The payments resulted in realized losses of $\$ 128$ million and $\$ 334$ million in 2015 and 2014 on unpaid principal amounts of $\$ 587$ million and $\$ 857$ million, respectively.

In February 2016, the Corporation made an $\$ 8.5$ billion settlement payment to BNY Mellon as part of the BNY Mellon Settlement.

## NOTE 8 Goodwill and Intangible Assets

## Goodwill

The table below presents goodwill balances by business segment at December 31, 2015 and 2014. The reporting units utilized for goodwill impairment testing are the operating segments or one level below.

| Goodwill |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | December 31 |  |  |  |
| (Dollars in millions) | 2015 |  | 2014 |  |
| Consumer Banking | \$ | 30,123 | \$ | 30,123 |
| Global Wealth \& Investment Management |  | 9,698 |  | 9,698 |
| Global Banking |  | 23,923 |  | 23,923 |
| Global Markets |  | 5,197 |  | 5,197 |
| All Other |  | 820 |  | 836 |
| Total goodwill | \$ | 69,761 | \$ | 69,777 |

For purposes of goodwill impairment testing, the Corporation utilizes allocated equity as a proxy for the carrying value of its reporting units. Allocated equity in the reporting units is comprised of allocated capital plus capital for the portion of goodwill and intangibles specifically assigned to the reporting unit. The goodwill impairment test involves comparing the fair value of each reporting unit to its carrying value, including goodwill, as measured by allocated equity.

## Annual Impairment Tests

The Corporation completed its annual goodwill impairment tests as of June 30, 2015 and 2014 for all applicable reporting units. Based on the results of the annual goodwill impairment test, the Corporation determined there was no impairment.

Effective January 1, 2015, the Corporation changed its basis of presentation related to its business segments. The realignment triggered a test for goodwill impairment, which was performed both immediately before and after the realignment. The fair value of the affected reporting units exceeded their carrying value and, accordingly, no goodwill impairment resulted from the realignment.

## Intangible Assets

The table below presents the gross and net carrying values and accumulated amortization for intangible assets at December 31, 2015 and 2014.

Intangible Assets (1, 2)

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  |  |  |  |  | 2014 |  |  |  |  |  |
|  | Gross Carrying Value |  | Accumulated Amortization |  | Net Carrying Value |  | Gross <br> Carrying Value |  | Accumulated Amortization |  | Net Carrying Value |  |
| Purchased credit card relationships | \$ | 5,450 | \$ | 4,755 | \$ | 695 | \$ | 5,504 | \$ | 4,527 | \$ | 977 |
| Core deposit intangibles |  | 1,779 |  | 1,505 |  | 274 |  | 1,779 |  | 1,382 |  | 397 |
| Customer relationships |  | 3,927 |  | 2,990 |  | 937 |  | 4,025 |  | 2,648 |  | 1,377 |
| Affinity relationships |  | 1,556 |  | 1,356 |  | 200 |  | 1,565 |  | 1,283 |  | 282 |
| Other intangibles ${ }^{(3)}$ |  | 2,143 |  | 481 |  | 1,662 |  | 2,045 |  | 466 |  | 1,579 |
| Total intangible assets | \$ | 14,855 | \$ | 11,087 | \$ | 3,768 | \$ | 14,918 | \$ | 10,306 | \$ | 4,612 |

1) Excludes fully amortized intangible assets.
(2) At December 31, 2015 and 2014, none of the intangible assets were impaired.
${ }^{(3)}$ Includes intangible assets associated with trade names that have an indefinite life and, accordingly, are not amortized.

The tables below present intangible asset amortization expense for 2015, 2014 and 2013, and estimated future intangible asset amortization expense as of December 31, 2015.

## Amortization Expense

| (Dollars in millions) | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Purchased credit card and affinity relationships | \$ | 356 | \$ | 415 | \$ | 475 |
| Core deposit intangibles |  | 122 |  | 140 |  | 197 |
| Customer relationships |  | 340 |  | 355 |  | 371 |
| Other intangibles |  | 16 |  | 26 |  | 43 |
| Total amortization expense | \$ | 834 | \$ | 936 | \$ | 1,086 |

## Estimated Future Amortization Expense

| (Dollars in millions) | 2016 |  | 2017 |  | 2018 |  | 2019 |  | 2020 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Purchased credit card and affinity relationships | \$ | 298 | \$ | 237 | \$ | 179 | \$ | 121 | \$ | 60 |
| Core deposit intangibles |  | 104 |  | 90 |  | 80 |  | - |  | - |
| Customer relationships |  | 325 |  | 310 |  | 302 |  | - |  | - |
| Other intangibles |  | 10 |  | 6 |  | 4 |  | 2 |  | - |
| Total estimated future amortization expense | \$ | 737 | \$ | 643 | \$ | 565 | \$ | 123 | \$ | 60 |

62 Bank of America 2015

## NOTE 9 Deposits

The Corporation had U.S. certificates of deposit and other U.S. time deposits of $\$ 100$ thousand or more totaling $\$ 28.3$ billion and $\$ 32.4$ billion at December 31, 2015 and 2014. Non-U.S. certificates of deposit and other non-U.S. time deposits of $\$ 100$ thousand or more totaled $\$ 14.1$ billion and $\$ 14.0$ billion at December 31, 2015 and 2014. The Corporation also had
aggregate time deposits of $\$ 14.2$ billion in denominations that met or exceeded the Federal Deposit Insurance Corporation (FDIC) insurance limit at December 31, 2015. The table below presents the contractual maturities for time deposits of $\$ 100$ thousand or more at December 31, 2015.

Time Deposits of \$100 Thousand or More

| (Dollars in millions) | Three Months or Less |  | Over Three Months to Twelve Months |  | Thereafter |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| U.S. certificates of deposit and other time deposits | \$ | 12,836 | \$ | 12,834 | \$ | 2,677 | \$ | 28,347 |
| Non-U.S. certificates of deposit and other time deposits |  | 12,352 |  | 1,517 |  | 277 |  | 14,146 |

The scheduled contractual maturities for total time deposits at December 31, 2015 are presented in the table below.

## Contractual Maturities of Total Time Deposits

| (Dollars in millions) | U.S. |  | Non-U.S. |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Due in 2016 | \$ | 51,319 | \$ | 14,248 | \$ | 65,567 |
| Due in 2017 |  | 4,166 |  | 103 |  | 4,269 |
| Due in 2018 |  | 937 |  | 1 |  | 938 |
| Due in 2019 |  | 874 |  | 5 |  | 879 |
| Due in 2020 |  | 1,380 |  | 258 |  | 1,638 |
| Thereafter |  | 683 |  | - |  | 683 |
| Total time deposits | \$ | 59,359 | \$ | 14,615 | \$ | 73,974 |

## NOTE 10 Federal Funds Sold or Purchased, Securities Financing Agreements and Short-term Borrowings

The table below presents federal funds sold or purchased, securities financing agreements, which include securities borrowed or purchased under agreements to resell and securities loaned or sold under agreements to repurchase, and short-term borrowings. The Corporation elects to account for certain securities financing agreements and short-term borrowings under the fair value option. For more information on the election of the fair value option, see Note 21 - Fair Value Option.

| (Dollars in millions) | 2015 |  |  | 2014 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Amount | Rate |  | Amount | Rate |
| Federal funds sold and securities borrowed or purchased under agreements to resell |  |  |  |  |  |  |
| At December 31 | \$ | 192,482 | 0.44\% | \$ | 191,823 | 0.47\% |
| Average during year |  | 211,471 | 0.47 |  | 222,483 | 0.47 |
| Maximum month-end balance during year |  | 226,502 | n/a |  | 240,122 | n/a |
| Federal funds purchased and securities loaned or sold under agreements to repurchase |  |  |  |  |  |  |
| At December 31 |  | 174,291 | 0.82 |  | 201,277 | 0.98 |
| Average during year |  | 213,497 | 0.89 |  | 215,792 | 0.99 |
| Maximum month-end balance during year |  | 235,232 | n/a |  | 240,154 | n/a |
| Short-term borrowings |  |  |  |  |  |  |
| At December 31 |  | 28,098 | 1.61 |  | 31,172 | 1.47 |
| Average during year |  | 32,798 | 1.49 |  | 41,886 | 1.08 |
| Maximum month-end balance during year |  | 40,110 | n/a |  | 51,409 | n/a |

n/a = not applicable

Bank of America, N.A. maintains a global program to offer up to a maximum of $\$ 75$ billion outstanding at any one time, of bank notes with fixed or floating rates and maturities of at least seven days from the date of issue. Short-term bank notes outstanding under this program totaled $\$ 16.8$ billion and $\$ 14.6$ billion at

December 31, 2015 and 2014. These short-term bank notes, along with Federal Home Loan Bank (FHLB) advances, U.S. Treasury tax and loan notes, and term federal funds purchased, are included in short-term borrowings on the Consolidated Balance Sheet.

## Offsetting of Securities Financing Agreements

Substantially all of the Corporation's securities financing activities are transacted under legally enforceable master repurchase agreements or legally enforceable master securities lending agreements that give the Corporation, in the event of default by the counterparty, the right to liquidate securities held and to offset receivables and payables with the same counterparty. The Corporation offsets securities financing transactions with the same counterparty on the Consolidated Balance Sheet where it has such a legally enforceable master netting agreement and the transactions have the same maturity date.

The Securities Financing Agreements table presents securities financing agreements included on the Consolidated Balance Sheet in federal funds sold and securities borrowed or purchased under agreements to resell, and in federal funds purchased and securities loaned or sold under agreements to repurchase at December 31, 2015 and 2014. Balances are presented on a gross basis, prior to the application of counterparty netting. Gross assets and liabilities are adjusted on an aggregate basis to take into consideration the effects of legally enforceable master netting agreements. For more information on the offsetting of derivatives, see Note 2 - Derivatives.

The "Other" amount in the table, which is included on the Consolidated Balance Sheet in accrued expenses and other liabilities, relates to transactions where the Corporation acts as the lender in a securities lending agreement and receives securities that can be pledged as collateral or sold. In these transactions, the Corporation recognizes an asset at fair value, representing the securities received, and a liability, representing the obligation to return those securities.

Gross assets and liabilities in the table include activity where uncertainty exists as to the enforceability of certain master netting agreements under bankruptcy laws in some countries or industries and, accordingly, these are reported on a gross basis.

The column titled "Financial Instruments" in the table includes securities collateral received or pledged under repurchase or securities lending agreements where there is a legally enforceable master netting agreement. These amounts are not offset on the Consolidated Balance Sheet, but are shown as a reduction to the net balance sheet amount in this table to derive a net asset or liability. Securities collateral received or pledged where the legal enforceability of the master netting agreements is not certain is not included.

## Securities Financing Agreements

(Dollars in millions)
Securities borrowed or purchased under agreements to resell (1)

| Securities loaned or sold under agreements to repurchase | \$ | 329,078 | \$ | $(154,799)$ | \$ | 174,279 | \$ | $(135,737)$ | \$ | 38,542 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Other | 13,235 |  |  | - |  | 13,235 |  | $(13,235)$ |  | - |
| Total | \$ | 342,313 | \$ | $(154,799)$ | \$ | 187,514 | \$ | $(148,972)$ | \$ | 38,542 |


| Securities borrowed or purchased under agreements to resell (1) | December 31, 2014 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | 316,567 | \$ | (124,744) | \$ | 191,823 | \$ | $(145,573)$ | \$ | 46,250 |
| Securities loaned or sold under agreements to repurchase | \$ | 326,007 | \$ | $(124,744)$ | \$ | 201,263 | \$ | $(164,306)$ | \$ | 36,957 |
| Other |  | 11,641 |  | - |  | 11,641 |  | $(11,641)$ |  | - |
| Total | \$ | 337,648 | \$ | (124,744) | \$ | 212,904 | \$ | $(175,947)$ | \$ | 36,957 |

${ }^{(1)}$ Excludes repurchase activity of $\$ 9.3$ billion and $\$ 5.6$ billion reported in loans and leases on the Consolidated Balance Sheet at December 31, 2015 and 2014.

## Repurchase Agreements and Securities Loaned Transactions Accounted for as Secured Borrowings

The tables below present securities sold under agreements to repurchase and securities loaned by remaining contractual term to maturity and class of collateral pledged. Included in "Other" are transactions where the Corporation acts as the lender in a securities lending agreement and receives securities that can be
pledged as collateral or sold. Certain agreements contain a right to substitute collateral and/or terminate the agreement prior to maturity at the option of the Corporation or the counterparty. Such agreements are included in the table below based on the remaining contractual term to maturity. At December 31, 2015, the Corporation had no outstanding repurchase-to-maturity transactions.

Remaining Contractual Maturity

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Overnight and Continuous |  | 30 Days or Less |  | After 30 Days Through 90 Days |  | Greater than 90 Days ${ }^{(1)}$ |  | Total |  |
| Securities sold under agreements to repurchase | \$ | 126,694 | \$ | 86,879 | \$ | 43,216 | \$ | 27,514 | \$ | 284,303 |
| Securities loaned |  | 39,772 |  | 363 |  | 2,352 |  | 2,288 |  | 44,775 |
| Other |  | 13,235 |  | - |  | - |  | - |  | 13,235 |
| Total | \$ | 179,701 | \$ | 87,242 | \$ | 45,568 | \$ | 29,802 | \$ | 342,313 |

Class of Collateral Pledged


The Corporation is required to post collateral with a market value equal to or in excess of the principal amount borrowed under repurchase agreements. For securities loaned transactions, the Corporation receives collateral in the form of cash, letters of credit or other securities. To ensure that the market value of the underlying collateral remains sufficient, collateral is generally valued daily and the Corporation may be required to deposit
additional collateral or may receive or return collateral pledged when appropriate. Repurchase agreements and securities loaned transactions are generally either overnight, continuous (i.e., no stated term) or short-term. The Corporation manages liquidity risks related to these agreements by sourcing funding from a diverse group of counterparties, providing a range of securities collateral and pursuing longer durations, when appropriate.

## NOTE 11 Long-term Debt

Long-term debt consists of borrowings having an original maturity of one year or more. The table below presents the balance of longterm debt at December 31, 2015 and 2014, and the related contractual rates and maturity dates as of December 31, 2015.

| (Dollars in millions) | December 31 |  |  |
| :---: | :---: | :---: | :---: |
|  |  | 2015 | 2014 |
| Notes issued by Bank of America Corporation |  |  |  |
| Senior notes: |  |  |  |
| Fixed, with a weighted-average rate of 4.55\%, ranging from 1.25\% to 8.40\%, due 2016 to 2045 | \$ | 109,861 | \$ 113,037 |
| Floating, with a weighted-average rate of 1.38\%, ranging from 0.11\% to 5.07\%, due 2016 to 2044 |  | 13,900 | 14,590 |
| Senior structured notes |  | 17,548 | 22,168 |
| Subordinated notes: |  |  |  |
| Fixed, with a weighted-average rate of 5.19\%, ranging from $2.40 \%$ to 8.57\%, due 2016 to 2045 |  | 27,216 | 23,246 |
| Floating, with a weighted-average rate of 0.94\%, ranging from 0.43\% to 2.68\%, due 2016 to 2026 |  | 5,029 | 5,455 |
| Junior subordinated notes (related to trust preferred securities): |  |  |  |
| Fixed, with a weighted-average rate of 6.78\%, ranging from 5.25\% to 8.05\%, due 2027 to 2067 |  | 5,295 | 6,722 |
| Floating, with a weighted-average rate of 1.08\%, ranging from 0.87\% to 1.53\%, due 2027 to 2056 |  | 553 | 553 |
| Total notes issued by Bank of America Corporation |  | 179,402 | 185,771 |
| Notes issued by Bank of America, N.A. |  |  |  |
| Senior notes: |  |  |  |
| Fixed, with a weighted-average rate of 1.57\%, ranging from 1.13\% to 2.05\%, due 2016 to 2018 |  | 7,483 | 2,740 |
| Floating, with a weighted-average rate of 1.13\%, ranging from $0.43 \%$ to $3.30 \%$, due 2016 to 2041 |  | 4,942 | 3,028 |
| Subordinated notes: |  |  |  |
| Fixed, with a weighted-average rate of 5.68\%, ranging from 5.30\% to 6.10\%, due 2016 to 2036 |  | 4,815 | 4,921 |
| Floating, with a weighted-average rate of 0.80\%, ranging from 0.79\% to 0.81\%, due 2016 to 2019 |  | 1,401 | 1,401 |
| Advances from Federal Home Loan Banks: |  |  |  |
| Fixed, with a weighted-average rate of 5.34\%, ranging from 0.01\% to 7.72\%, due 2016 to 2034 |  | 172 | 183 |
| Floating, with a weighted-average rate of 0.41\%, ranging from $0.35 \%$ to $0.63 \%$, due 2016 |  | 6,000 | 10,500 |
| Securitizations and other BANA VIEs |  | 9,756 | 9,882 |
| Other |  | 2,985 | 2,811 |
| Total notes issued by Bank of America, N.A. |  | 37,554 | 35,466 |
| Other debt |  |  |  |
| Senior notes: |  |  |  |
| Fixed, with a rate of 5.50\%, due 2017 to 2021 |  | 30 | 1 |
| Floating |  | - | 21 |
| Structured liabilities |  | 14,974 | 15,971 |
| Junior subordinated notes (related to trust preferred securities): |  |  |  |
| Fixed |  | - | 340 |
| Floating |  | - | 66 |
| Nonbank VIEs |  | 4,317 | 3,425 |
| Other |  | 487 | 2,078 |
| Total other debt |  | 19,808 | 21,902 |
| Total long-term debt | \$ | 236,764 | \$ 243,139 |

Bank of America Corporation and Bank of America, N.A. maintain various U.S. and non-U.S. debt programs to offer both senior and subordinated notes. The notes may be denominated in U.S. Dollars or foreign currencies. At December 31, 2015 and 2014, the amount of foreign currency-denominated debt translated into U.S. Dollars included in total long-term debt was $\$ 46.4$ billion and $\$ 51.9$ billion. Foreign currency contracts may be used to convert certain foreign currency-denominated debt into U.S. Dollars.

At December 31, 2015, long-term debt of consolidated VIEs in the table above included debt of credit card, home equity and all other VIEs of $\$ 9.6$ billion, $\$ 183$ million and $\$ 4.3$ billion, respectively. Long-term debt of VIEs is collateralized by the assets of the VIEs. For additional information, see Note 6 - Securitizations and Other Variable Interest Entities.

The weighted-average effective interest rates for total long-term debt (excluding senior structured notes), total fixed-rate debt and total floating-rate debt were 3.80 percent, 4.61 percent and 0.96 percent, respectively, at December 31, 2015 and 3.81 percent, 4.83 percent and 0.80 percent, respectively, at December 31,
2014. The Corporation's ALM activities maintain an overall interest rate risk management strategy that incorporates the use of interest rate contracts to manage fluctuations in earnings that are caused by interest rate volatility. The Corporation's goal is to manage interest rate sensitivity so that movements in interest rates do not significantly adversely affect earnings and capital. The weighted-average rates are the contractual interest rates on the debt and do not reflect the impacts of derivative transactions.

Certain senior structured notes and structured liabilities are accounted for under the fair value option. For more information on these notes, see Note 21 - Fair Value Option.

The table below shows the carrying value for aggregate annual contractual maturities of long-term debt as of December 31,2015. Included in the table are certain structured notes issued by the Corporation that contain provisions whereby the borrowings are redeemable at the option of the holder (put options) at specified dates prior to maturity. Other structured notes have coupon or repayment terms linked to the performance of debt or equity securities, indices, currencies or commodities, and the maturity may be accelerated based on the value of a referenced index or
security. In both cases, the Corporation or a subsidiary may be required to settle the obligation for cash or other securities prior to the contractual maturity date. These borrowings are reflected in the table as maturing at their contractual maturity date.

During 2015, the Corporation had total long-term debt maturities and redemptions in the aggregate of $\$ 40.4$ billion
consisting of $\$ 25.3$ billion for Bank of America Corporation, $\$ 6.6$ billion for Bank of America, N.A. and $\$ 8.5$ billion of other debt. During 2014, the Corporation had total long-term debt maturities and redemptions in the aggregate of $\$ 53.7$ billion consisting of $\$ 33.9$ billion for Bank of America Corporation, $\$ 8.9$ billion for Bank of America, N.A. and $\$ 10.9$ billion of other debt.

Long-term Debt by Maturity

| (Dollars in millions) | 2016 |  | 2017 |  | 2018 |  | 2019 |  | 2020 |  | Thereafter |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bank of America Corporation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Senior notes | \$ | 16,777 | \$ | 18,303 | \$ | 20,211 | \$ | 16,820 | \$ | 11,351 | \$ | 40,299 | \$ | 123,761 |
| Senior structured notes |  | 4,230 |  | 2,352 |  | 1,942 |  | 1,374 |  | 955 |  | 6,695 |  | 17,548 |
| Subordinated notes |  | 4,861 |  | 4,885 |  | 2,677 |  | 1,479 |  | 3 |  | 18,340 |  | 32,245 |
| Junior subordinated notes |  | - |  | - |  | - |  | - |  | - |  | 5,848 |  | 5,848 |
| Total Bank of America Corporation |  | 25,868 |  | 25,540 |  | 24,830 |  | 19,673 |  | 12,309 |  | 71,182 |  | 179,402 |
| Bank of America, N.A. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Senior notes |  | 3,048 |  | 3,648 |  | 5,709 |  | - |  | - |  | 20 |  | 12,425 |
| Subordinated notes |  | 1,056 |  | 3,447 |  | - |  | 1 |  | - |  | 1,712 |  | 6,216 |
| Advances from Federal Home Loan Banks |  | 6,003 |  | 10 |  | 10 |  | 15 |  | 12 |  | 122 |  | 6,172 |
| Securitizations and other Bank VIEs ${ }^{(1)}$ |  | 1,290 |  | 3,550 |  | 2,300 |  | 2,450 |  | - |  | 166 |  | 9,756 |
| Other |  | 53 |  | 2,713 |  | 76 |  | 85 |  | 30 |  | 28 |  | 2,985 |
| Total Bank of America, N.A. |  | 11,450 |  | 13,368 |  | 8,095 |  | 2,551 |  | 42 |  | 2,048 |  | 37,554 |
| Other debt |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Senior notes |  | - |  | 1 |  | - |  | - |  | - |  | 29 |  | 30 |
| Structured liabilities |  | 3,110 |  | 2,029 |  | 1,175 |  | 882 |  | 1,034 |  | 6,744 |  | 14,974 |
| Nonbank VIEs ${ }^{(1)}$ |  | 2,506 |  | 240 |  | 42 |  | 22 |  | - |  | 1,507 |  | 4,317 |
| Other |  | 400 |  | 57 |  | - |  | - |  | - |  | 30 |  | 487 |
| Total other debt |  | 6,016 |  | 2,327 |  | 1,217 |  | 904 |  | 1,034 |  | 8,310 |  | 19,808 |
| Total long-term debt | \$ | 43,334 | \$ | 41,235 | \$ | 34,142 | \$ | 23,128 | \$ | 13,385 | \$ | 81,540 | \$ | 236,764 |

${ }^{(1)}$ Represents the total long-term debt included in the liabilities of consolidated VIEs on the Consolidated Balance Sheet.

## Trust Preferred and Hybrid Securities

Trust preferred securities (Trust Securities) are primarily issued by trust companies (the Trusts) that are not consolidated. These Trust Securities are mandatorily redeemable preferred security obligations of the Trusts. The sole assets of the Trusts generally are junior subordinated deferrable interest notes of the Corporation or its subsidiaries (the Notes). The Trusts generally are 100 percent-owned finance subsidiaries of the Corporation. Obligations associated with the Notes are included in the longterm debt table on page 66.

Certain of the Trust Securities were issued at a discount and may be redeemed prior to maturity at the option of the Corporation. The Trusts generally have invested the proceeds of such Trust Securities in the Notes. Each issue of the Notes has an interest rate equal to the corresponding Trust Securities distribution rate. The Corporation has the right to defer payment of interest on the Notes at any time or from time to time for a period not exceeding five years provided that no extension period may extend beyond the stated maturity of the relevant Notes. During any such extension period, distributions on the Trust Securities will also be deferred and the Corporation's ability to pay dividends on its common and preferred stock will be restricted.

The Trust Securities generally are subject to mandatory redemption upon repayment of the related Notes at their stated
maturity dates or their earlier redemption at a redemption price equal to their liquidation amount plus accrued distributions to the date fixed for redemption and the premium, if any, paid by the Corporation upon concurrent repayment of the related Notes.

Periodic cash payments and payments upon liquidation or redemption with respect to Trust Securities are guaranteed by the Corporation or its subsidiaries to the extent of funds held by the Trusts (the Preferred Securities Guarantee). The Preferred Securities Guarantee, when taken together with the Corporation's other obligations including its obligations under the Notes, generally will constitute a full and unconditional guarantee, on a subordinated basis, by the Corporation of payments due on the Trust Securities.

On December 29, 2015, the Corporation provided notice of the redemption, which settled on January 29, 2016, of all trust preferred securities of Merrill Lynch Preferred Capital Trust III, Merrill Lynch Preferred Capital Trust IV and Merrill Lynch Preferred Capital Trust V with a total carrying value in the aggregate of \$2.0 billion. In connection with the Corporation's acquisition of Merrill Lynch \& Co., Inc. (Merrill Lynch) in 2009, the Corporation recorded a discount to par value as purchase accounting adjustments associated with these Trust Preferred Securities. The Corporation recorded a charge to net interest income of \$612 million in 2015 related to the discount on the securities.

The Trust Securities Summary table details the outstanding Trust Securities and the related Notes previously issued which remained outstanding at December 31, 2015.

Trust Securities Summary
(Dollars in millions)

| Issuer | Issuance Date | December 31, 2015 |  |  |  | Stated Maturity of the Trust Securities | Per Annum Interest Rate of the Notes | Interest Payment Dates | Redemption Period |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | egate <br> cipal <br> ount <br> Trust <br> urities |  | gate <br> cipal ount the es |  |  |  |  |
| Bank of America |  |  |  |  |  |  |  |  |  |
| Capital Trust VI | March 2005 | \$ | 27 | \$ | 27 | March 2035 | 5.63\% | Semi-Annual | Any time |
| Capital Trust VII ${ }^{(1)}$ | August 2005 |  | 6 |  | 7 | August 2035 | 5.25 | Semi-Annual | Any time |
| Capital Trust VIII | August 2005 |  | 524 |  | 540 | August 2035 | 6.00 | Quarterly | On or after 8/25/10 |
| Capital Trust XI | May 2006 |  | 658 |  | 678 | May 2036 | 6.63 | Semi-Annual | Any time |
| Capital Trust XV | May 2007 |  | 1 |  | 1 | June 2056 | 3-mo. LIBOR + 80 bps | Quarterly | On or after 6/01/37 |
| NationsBank |  |  |  |  |  |  |  |  |  |
| Capital Trust III | February 1997 |  | 131 |  | 136 | January 2027 | 3-mo. LIBOR + 55 bps | Quarterly | On or after 1/15/07 |
| BankAmerica |  |  |  |  |  |  |  |  |  |
| Capital III | January 1997 |  | 103 |  | 106 | January 2027 | 3-mo. LIBOR + 57 bps | Quarterly | On or after 1/15/02 |
| Fleet |  |  |  |  |  |  |  |  |  |
| Capital Trust V | December 1998 |  | 79 |  | 82 | December 2028 | 3-mo. LIBOR + 100 bps | Quarterly | On or after 12/18/03 |
| BankBoston |  |  |  |  |  |  |  |  |  |
| Capital Trust III | June 1997 |  | 53 |  | 55 | June 2027 | 3-mo. $\mathrm{LIBOR}+75 \mathrm{bps}$ | Quarterly | On or after 6/15/07 |
| Capital Trust IV | June 1998 |  | 102 |  | 106 | June 2028 | 3-mo. LIBOR + 60 bps | Quarterly | On or after 6/08/03 |
| MBNA |  |  |  |  |  |  |  |  |  |
| Capital Trust B | January 1997 |  | 70 |  | 73 | February 2027 | 3-mo. LIBOR + 80 bps | Quarterly | On or after 2/01/07 |
| Countrywide |  |  |  |  |  |  |  |  |  |
| Capital III | June 1997 |  | 200 |  | 206 | June 2027 | 8.05 | Semi-Annual | Only under special event |
| Capital IV | April 2003 |  | 500 |  | 515 | April 2033 | 6.75 | Quarterly | On or after 4/11/08 |
| Capital V | November 2006 |  | 1,495 |  | 1,496 | November 2036 | 7.00 | Quarterly | On or after 11/01/11 |
| Merrill Lynch ${ }^{(2)}$ |  |  |  |  |  |  |  |  |  |
| Capital Trust I | December 2006 |  | 1,050 |  | 1,051 | December 2066 | 6.45 | Quarterly | On or after 12/11 |
| Capital Trust II | May 2007 |  | 950 |  | 951 | June 2067 | 6.45 | Quarterly | On or after 6/12 |
| Capital Trust III | August 2007 |  | 750 |  | 751 | September 2067 | 7.375 | Quarterly | On or after 9/12 |
| Total |  | \$ | 6,699 | \$ | 6,781 |  |  |  |  |

(1) Notes are denominated in British Pound. Presentation currency is U.S. Dollar.
(2) Call notices for Merrill Lynch Preferred Capital Trust III, IV and V were sent on December 29, 2015 and settled on January $29,2016$.

## NOTE 12 Commitments and Contingencies

In the normal course of business, the Corporation enters into a number of off-balance sheet commitments. These commitments expose the Corporation to varying degrees of credit and market risk and are subject to the same credit and market risk limitation reviews as those instruments recorded on the Consolidated Balance Sheet.

## Credit Extension Commitments

The Corporation enters into commitments to extend credit such as loan commitments, SBLCs and commercial letters of credit to meet the financing needs of its customers. The table below includes the notional amount of unfunded legally binding lending commitments net of amounts distributed (e.g., syndicated) to other financial institutions of $\$ 14.3$ billion and $\$ 15.7$ billion at December 31, 2015 and 2014. At December 31, 2015, the carrying value of these commitments, excluding commitments
accounted for under the fair value option, was $\$ 664$ million, including deferred revenue of $\$ 18$ million and a reserve for unfunded lending commitments of $\$ 646$ million. At December 31, 2014, the comparable amounts were $\$ 546$ million, $\$ 18$ million and $\$ 528$ million, respectively. The carrying value of these commitments is classified in accrued expenses and other liabilities on the Consolidated Balance Sheet.

The table below also includes the notional amount of commitments of $\$ 10.9$ billion and $\$ 9.9$ billion at December 31, 2015 and 2014 that are accounted for under the fair value option. However, the table below excludes cumulative net fair value of $\$ 658$ million and $\$ 405$ million on these commitments, which is classified in accrued expenses and other liabilities. For more information regarding the Corporation's loan commitments accounted for under the fair value option, see Note 21 - Fair Value Option.

## Credit Extension Commitments

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Expire in One <br> Year or Less |  | Expire After One <br> Year Through Three Years |  | Expire After Three Years Through Five Years |  | Expire After <br> Five Years |  | Total |  |
| Notional amount of credit extension commitments |  |  |  |  |  |  |  |  |  |  |
| Loan commitments | \$ | 84,884 | \$ | 119,272 | \$ | 158,920 | \$ | 37,112 | \$ | 400,188 |
| Home equity lines of credit |  | 7,074 |  | 18,438 |  | 5,126 |  | 19,697 |  | 50,335 |
| Standby letters of credit and financial guarantees ${ }^{(1)}$ |  | 19,584 |  | 9,903 |  | 3,385 |  | 1,218 |  | 34,090 |
| Letters of credit |  | 1,650 |  | 165 |  | 258 |  | 54 |  | 2,127 |
| Legally binding commitments |  | 113,192 |  | 147,778 |  | 167,689 |  | 58,081 |  | 486,740 |
| Credit card lines ${ }^{(2)}$ |  | 370,127 |  | - |  | - |  | - |  | 370,127 |
| Total credit extension commitments | \$ | 483,319 | \$ | 147,778 | \$ | 167,689 | \$ | 58,081 | \$ | 856,867 |


| Notional amount of credit extension commitments | December 31, 2014 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |
| Loan commitments | \$ | 79,897 | \$ | 97,583 | \$ | 146,743 | \$ | 18,942 | \$ | 343,165 |
| Home equity lines of credit |  | 6,292 |  | 19,679 |  | 12,319 |  | 15,417 |  | 53,707 |
| Standby letters of credit and financial guarantees ${ }^{(1)}$ |  | 19,259 |  | 9,106 |  | 4,519 |  | 1,807 |  | 34,691 |
| Letters of credit |  | 1,883 |  | 157 |  | 35 |  | 88 |  | 2,163 |
| Legally binding commitments |  | 107,331 |  | 126,525 |  | 163,616 |  | 36,254 |  | 433,726 |
| Credit card lines ${ }^{(2)}$ |  | 363,989 |  | - |  | - |  | - |  | 363,989 |
| Total credit extension commitments | \$ | 471,320 | \$ | 126,525 | \$ | 163,616 | \$ | 36,254 | \$ | 797,715 |

${ }^{(1)}$ The notional amounts of SBLCs and financial guarantees classified as investment grade and non-investment grade based on the credit quality of the underlying reference name within the instrument were $\$ 25.5$ billion and $\$ 8.4$ billion at December 31, 2015, and $\$ 26.1$ billion and $\$ 8.2$ billion at December 31, 2014. Amounts in the table include consumer SBLCs of $\$ 164$ million and $\$ 396$ million at December 31, 2015 and 2014
(2) Includes business card unused lines of credit.

Legally binding commitments to extend credit generally have specified rates and maturities. Certain of these commitments have adverse change clauses that help to protect the Corporation against deterioration in the borrower's ability to pay.

## Other Commitments

At December 31, 2015 and 2014, the Corporation had commitments to purchase loans (e.g., residential mortgage and commercial real estate) of $\$ 729$ million and $\$ 1.8$ billion, which upon settlement will be included in loans or LHFS.

At December 31, 2015 and 2014, the Corporation had commitments to purchase commodities, primarily liquefied natural gas of $\$ 1.9$ billion and $\$ 241$ million, which upon settlement will be included in trading account assets.

At December 31, 2015 and 2014, the Corporation had commitments to enter into resale and forward-dated resale and securities borrowing agreements of $\$ 88.6$ billion and $\$ 73.2$ billion, and commitments to enter into forward-dated repurchase and securities lending agreements of $\$ 53.7$ billion and $\$ 55.8$ billion. These commitments expire within the next 12 months.

The Corporation is a party to operating leases for certain of its premises and equipment. Commitments under these leases are approximately $\$ 2.5$ billion, $\$ 2.1$ billion, $\$ 1.7$ billion, $\$ 1.5$ billion and $\$ 1.3$ billion for 2016 through 2020, respectively, and $\$ 4.6$ billion in the aggregate for all years thereafter.

## Other Guarantees

## Bank-owned Life Insurance Book Value Protection

The Corporation sells products that offer book value protection to insurance carriers who offer group life insurance policies to corporations, primarily banks. The book value protection is provided on portfolios of intermediate investment-grade fixedincome securities and is intended to cover any shortfall in the event that policyholders surrender their policies and market value is below book value. These guarantees are recorded as derivatives and carried at fair value in the trading portfolio. At December 31, 2015 and 2014, the notional amount of these guarantees totaled $\$ 13.8$ billion and $\$ 13.6$ billion. At both December 31, 2015 and 2014, the Corporation's maximum exposure related to these guarantees totaled $\$ 3.1$ billion with estimated maturity dates between 2031 and 2039. The net fair value including the fee receivable associated with these guarantees was $\$ 12$ million and $\$ 25$ million at December 31, 2015 and 2014, and reflects the probability of surrender as well as the multiple structural protection features in the contracts.

## Indemnifications

In the ordinary course of business, the Corporation enters into various agreements that contain indemnifications, such as tax indemnifications, whereupon payment may become due if certain external events occur, such as a change in tax law. The indemnification clauses are often standard contractual terms and were entered into in the normal course of business based on an assessment that the risk of loss would be remote. These agreements typically contain an early termination clause that permits the Corporation to exit the agreement upon these events. The maximum potential future payment under indemnification agreements is difficult to assess for several reasons, including the occurrence of an external event, the inability to predict future changes in tax and other laws, the difficulty in determining how such laws would apply to parties in contracts, the absence of exposure limits contained in standard contract language and the timing of the early termination clause. Historically, any payments made under these guarantees have been de minimis. The Corporation has assessed the probability of making such payments in the future as remote.

## Merchant Services

In accordance with credit and debit card association rules, the Corporation sponsors merchant processing servicers that process credit and debit card transactions on behalf of various merchants. In connection with these services, a liability may arise in the event of a billing dispute between the merchant and a cardholder that is ultimately resolved in the cardholder's favor. If the merchant defaults on its obligation to reimburse the cardholder, the cardholder, through its issuing bank, generally has until six months after the date of the transaction to present a chargeback to the merchant processor, which is primarily liable for any losses on covered transactions. However, if the merchant processor fails to
meet its obligation to reimburse the cardholder for disputed transactions, then the Corporation, as the sponsor, could be held liable for the disputed amount. In 2015 and 2014, the sponsored entities processed and settled $\$ 669.0$ billion and $\$ 647.1$ billion of transactions and recorded losses of $\$ 22$ million and $\$ 16$ million. A significant portion of this activity was processed by a joint venture in which the Corporation holds a 49 percent ownership. At December 31, 2015 and 2014, the sponsored merchant processing servicers held as collateral \$181 million and \$130 million of merchant escrow deposits which may be used to offset amounts due from the individual merchants.

The Corporation believes the maximum potential exposure for chargebacks would not exceed the total amount of merchant transactions processed through Visa and MasterCard for the last six months, which represents the claim period for the cardholder, plus any outstanding delayed-delivery transactions. As of December 31, 2015 and 2014, the maximum potential exposure for sponsored transactions totaled $\$ 277.1$ billion and $\$ 269.3$ billion. However, the Corporation believes that the maximum potential exposure is not representative of the actual potential loss exposure and does not expect to make material payments in connection with these guarantees.

## Exchange and Clearing House Member Guarantees

The Corporation is a member of various securities and derivative exchanges and clearinghouses, both in the U.S. and other countries. As a member, the Corporation may be required to pay a pro-rata share of the losses incurred by some of these organizations as a result of another member default and under other loss scenarios. The Corporation's potential obligations may be limited to its membership interests in such exchanges and clearinghouses, to the amount (or multiple) of the Corporation's contribution to the guarantee fund or, in limited instances, to the full pro-rata share of the residual losses after applying the guarantee fund. The Corporation's maximum potential exposure under these membership agreements is difficult to estimate; however, the potential for the Corporation to be required to make these payments is remote.

## Prime Brokerage and Securities Clearing Services

In connection with its prime brokerage and clearing businesses, the Corporation performs securities clearance and settlement services with other brokerage firms and clearinghouses on behalf of its clients. Under these arrangements, the Corporation stands ready to meet the obligations of its clients with respect to securities transactions. The Corporation's obligations in this respect are secured by the assets in the clients' accounts and the accounts of their customers as well as by any proceeds received from the transactions cleared and settled by the firm on behalf of clients or their customers. The Corporation's maximum potential exposure under these arrangements is difficult to estimate; however, the potential for the Corporation to incur material losses pursuant to these arrangements is remote.

## Other Derivative Contracts

The Corporation funds selected assets, including securities issued by CDOs and CLOs, through derivative contracts, typically total return swaps, with third parties and VIEs that are not consolidated by the Corporation. The total notional amount of these derivative contracts was $\$ 371$ million and $\$ 527$ million with commercial banks and $\$ 922$ million and $\$ 1.2$ billion with VIEs at December 31,2015 and 2014. The underlying securities are senior securities and substantially all of the Corporation's exposures are insured. Accordingly, the Corporation's exposure to loss consists principally of counterparty risk to the insurers. In certain circumstances, generally as a result of ratings downgrades, the Corporation may be required to purchase the underlying assets, which would not result in additional gain or loss to the Corporation as such exposure is already reflected in the fair value of the derivative contracts.

## Other Guarantees

The Corporation has entered into additional guarantee agreements and commitments, including sold risk participation swaps, liquidity facilities, lease-end obligation agreements, partial credit guarantees on certain leases, real estate joint venture guarantees, divested business commitments and sold put options that require gross settlement. The maximum potential future payment under these agreements was approximately $\$ 6.0$ billion and $\$ 6.2$ billion at December 31, 2015 and 2014. The estimated maturity dates of these obligations extend up to 2040. The Corporation has made no material payments under these guarantees.

In the normal course of business, the Corporation periodically guarantees the obligations of its affiliates in a variety of transactions including ISDA-related transactions and non-ISDA related transactions such as commodities trading, repurchase agreements, prime brokerage agreements and other transactions.

## Payment Protection Insurance Claims Matter

In the U.K., the Corporation previously sold payment protection insurance (PPI) through its international card services business to credit card customers and consumer loan customers. PPI covers a consumer's loan or debt repayment if certain events occur such as loss of job or illness. In response to an elevated level of customer complaints across the industry, heightened media coverage and pressure from consumer advocacy groups, the Prudential Regulation Authority and the Financial Conduct Authority (FCA) investigated and raised concerns about the way some companies have handled complaints related to the sale of these insurance policies. In November 2015, the FCA issued proposed guidance on the treatment of certain PPI claims.

The reserve was $\$ 360$ million and $\$ 378$ million at December 31, 2015 and 2014. The Corporation recorded expense of $\$ 319$ million and $\$ 621$ million in 2015 and 2014. It is possible that the Corporation will incur additional expense related to PPI claims; however, the amount of such additional expense cannot be reasonably estimated.

## Litigation and Regulatory Matters

In the ordinary course of business, the Corporation and its subsidiaries are routinely defendants in or parties to many pending and threatened legal, regulatory and governmental actions and proceedings.

In view of the inherent difficulty of predicting the outcome of such matters, particularly where the claimants seek very large or indeterminate damages or where the matters present novel legal
theories or involve a large number of parties, the Corporation generally cannot predict what the eventual outcome of the pending matters will be, what the timing of the ultimate resolution of these matters will be, or what the eventual loss, fines or penalties related to each pending matter may be.

In accordance with applicable accounting guidance, the Corporation establishes an accrued liability when those matters present loss contingencies that are both probable and estimable. In such cases, there may be an exposure to loss in excess of any amounts accrued. As a matter develops, the Corporation, in conjunction with any outside counsel handling the matter, evaluates on an ongoing basis whether such matter presents a loss contingency that is probable and estimable. Once the loss contingency is deemed to be both probable and estimable, the Corporation will establish an accrued liability and record a corresponding amount of litigation-related expense. The Corporation continues to monitor the matter for further developments that could affect the amount of the accrued liability that has been previously established. Excluding expenses of internal and external legal service providers, litigation-related expense of $\$ 1.2$ billion was recognized for 2015 compared to $\$ 16.4$ billion for 2014.

For a limited number of the matters disclosed in this Note, for which a loss, whether in excess of a related accrued liability or where there is no accrued liability, is reasonably possible in future periods, the Corporation is able to estimate a range of possible loss. In determining whether it is possible to estimate a range of possible loss, the Corporation reviews and evaluates its matters on an ongoing basis, in conjunction with any outside counsel handling the matter, in light of potentially relevant factual and legal developments. In cases in which the Corporation possesses sufficient appropriate information to estimate a range of possible loss, that estimate is aggregated and disclosed below. There may be other disclosed matters for which a loss is probable or reasonably possible but such an estimate of the range of possible loss may not be possible. For those matters where an estimate of the range of possible loss is possible, management currently estimates the aggregate range of possible loss is $\$ 0$ to $\$ 2.4$ billion in excess of the accrued liability (if any) related to those matters. This estimated range of possible loss is based upon currently available information and is subject to significant judgment and a variety of assumptions, and known and unknown uncertainties. The matters underlying the estimated range will change from time to time, and actual results may vary significantly from the current estimate. Therefore, this estimated range of possible loss represents what the Corporation believes to be an estimate of possible loss only for certain matters meeting these criteria. It does not represent the Corporation's maximum loss exposure.

Information is provided below regarding the nature of all of these contingencies and, where specified, the amount of the claim associated with these loss contingencies. Based on current knowledge, management does not believe that loss contingencies arising from pending matters, including the matters described herein, will have a material adverse effect on the consolidated financial position or liquidity of the Corporation. However, in light of the inherent uncertainties involved in these matters, some of which are beyond the Corporation's control, and the very large or indeterminate damages sought in some of these matters, an adverse outcome in one or more of these matters could be material to the Corporation's results of operations or liquidity for any particular reporting period.

## Bond Insurance Litigation

## Ambac Countrywide Litigation

The Corporation, Countrywide and other Countrywide entities are named as defendants in an action filed on September 29, 2010, and as amended on May 28, 2013, by Ambac Assurance Corporation and the Segregated Account of Ambac Assurance Corporation (together, Ambac), entitled Ambac Assurance Corporation and The Segregated Account of Ambac Assurance Corporation v. Countrywide Home Loans, Inc., et al. This action, currently pending in New York Supreme Court, relates to bond insurance policies provided by Ambac on certain securitized pools of second-lien (and in one pool, first-lien) HELOCs, first-lien subprime home equity loans and fixed-rate second-lien mortgage loans. Plaintiffs allege that they have paid claims as a result of defaults in the underlying loans and assert that the Countrywide defendants misrepresented the characteristics of the underlying loans and breached certain contractual representations and warranties regarding the underwriting and servicing of the loans. Plaintiffs also allege that the Corporation is liable based on successor liability theories. Damages claimed by Ambac are in excess of $\$ 2.2$ billion and include the amount of payments for current and future claims it has paid or claims it will be obligated to pay under the policies, increasing over time as it pays claims under relevant policies, plus unspecified punitive damages.

On October 22, 2015, the New York Supreme Court granted in part and denied in part Countrywide's motion for summary judgment and Ambac's motion for partial summary judgment. Among other things, the court granted summary judgment dismissing Ambac's claim for rescissory damages and denied summary judgment regarding Ambac's claims for fraud and breach of the insurance agreements. The court also denied the Corporation's motion for summary judgment and granted in part Ambac's motion for partial summary judgment on Ambac's successor-liability claims with respect to a single element of its de facto merger claim. The court denied summary judgment on the other elements of Ambac's de facto merger claim and the other successor-liability claims. Ambac filed its notice of appeal on October 27, 2015. The Corporation filed its notice of appeal on November 16, 2015. Countrywide filed its notice of cross-appeal on November 18, 2015.

On December 30, 2014, Ambac filed a second complaint in the same New York Supreme Court against the same defendants, entitled Ambac Assurance Corporation and The Segregated Account of Ambac Assurance Corporation v. Countrywide Home Loans, Inc., et al., claiming fraudulent inducement against Countrywide, and successor and vicarious liability against the Corporation relating to eight partially Ambac-insured RMBS transactions that closed between 2005 and 2007, all backed by negative amortization pay option adjustable-rate mortgage (ARM) loans that were originated in whole or in part by Countrywide. Seven of the eight securitizations were issued and underwritten by non-parties to the litigation. Ambac claims damages in excess of $\$ 600$ million consisting of all alleged past and future claims against its policies, plus other unspecified compensatory and punitive damages.

Also on December 30, 2014, Ambac filed a third action in Wisconsin Circuit Court, Dane County, against Countrywide Home Loans, Inc., entitled The Segregated Account of Ambac Assurance

Corporation and Ambac Assurance Corporation v. Countrywide Home Loans, Inc., claiming that Ambac was fraudulently induced to insure portions of five securitizations issued and underwritten in 2005 by a non-party that included Countrywide-originated firstlien negative amortization pay option ARM loans. The complaint seeks damages in excess of $\$ 350$ million for all alleged past and future Ambac insured claims payment obligations, plus other unspecified compensatory and punitive damages. Countrywide filed a motion to dismiss the complaint on February 20, 2015. On July 2, 2015, the court dismissed the complaint for lack of personal jurisdiction. Ambac appealed the dismissal to the Court of Appeals of Wisconsin, District IV, on July 21, 2015. The appeal remains under consideration.

On July 21, 2015, Ambac filed a fourth action in New York Supreme Court against Countrywide Home Loans, Inc., entitled Ambac Assurance Corporation and The Segregated Account of Ambac Assurance Corporation v. Countrywide Home Loans, Inc. asserting the same claims for fraudulent inducement that were asserted in the Wisconsin complaint. Ambac simultaneously moved to stay the action pending resolution of its appeal in the Wisconsin action. Countrywide opposed the motion to stay and on August 10, 2015, moved to dismiss the complaint. The court heard argument on the motions on November 18, 2015. Both motions remain under consideration.

## Ambac First Franklin Litigation

On April 16, 2012, Ambac sued First Franklin Financial Corporation (First Franklin), BANA, Merrill Lynch, Pierce, Fenner \& Smith, Inc. (MLPF\&S), Merrill Lynch Mortgage Lending, Inc. (MLML), and Merrill Lynch Mortgage Investors, Inc. (MLMI) in New York Supreme Court. Ambac's claims relate to guaranty insurance Ambac provided on a First Franklin securitization (Franklin Mortgage Loan Trust, Series 2007-FFC). MLML sponsored and Ambac insured certain certificates in the securitization. The complaint alleges that defendants breached representations and warranties concerning, among other things, First Franklin's lending practices, the characteristics of the underlying mortgage loans, the underwriting guidelines followed in originating those loans, and the due diligence conducted with respect to those loans. The complaint asserts claims for fraudulent inducement, breach of contract, indemnification and attorneys' fees. Ambac also asserts breach of contract claims against BANA based upon its servicing of the loans in the securitization. The complaint alleges that Ambac has paid hundreds of millions of dollars in claims and has accrued and continues to accrue tens of millions of dollars in additional claims, and Ambac seeks as damages the total claims it has paid and its projected future claims payment obligations, as well as specific performance of defendants' contractual repurchase obligations.

On July 19, 2013, the court denied defendants' motion to dismiss Ambac's contract and fraud causes of action but dismissed Ambac's indemnification cause of action. In addition, the court denied defendants' motion to dismiss Ambac's claims for attorneys' fees and punitive damages. On September 17,2015, the court denied Ambac's motion to strike defendants' affirmative defense of in pari delicto and granted Ambac's motion to strike defendants' affirmative defense of unclean hands.

## European Commission - Credit Default Swaps Antitrust Investigation

On July 1, 2013, the European Commission (Commission) announced that it had addressed a Statement of Objections (SO) to the Corporation, BANA and Banc of America Securities LLC (together, the Bank of America Entities), a number of other financial institutions, Markit Group Limited, and the International Swaps and Derivatives Association (together, the Parties). The SO set forth the Commission's preliminary conclusion that the Parties infringed European Union competition law by participating in alleged collusion to prevent exchange trading of CDS and futures. According to the SO, the conduct of the Bank of America Entities took place between August 2007 and April 2009. On December 4, 2015, the Commission announced that it was closing its investigation against the Bank of America Entities and the other financial institutions involved in the investigation.

## Interchange and Related Litigation

In 2005, a group of merchants filed a series of putative class actions and individual actions directed at interchange fees associated with Visa and MasterCard payment card transactions. These actions, which were consolidated in the U.S. District Court for the Eastern District of New York under the caption In Re Payment Card Interchange Fee and Merchant Discount Anti-Trust Litigation (Interchange), named Visa, MasterCard and several banks and BHCs, including the Corporation, as defendants. Plaintiffs allege that defendants conspired to fix the level of default interchange rates and that certain rules of Visa and MasterCard related to merchant acceptance of payment cards at the point of sale were unreasonable restraints of trade. Plaintiffs sought unspecified damages and injunctive relief. On October 19, 2012, defendants settled the matter.

The settlement provided for, among other things, (i) payments by defendants to the class and individual plaintiffs totaling approximately $\$ 6.6$ billion, allocated proportionately to each defendant based upon various loss-sharing agreements; (ii) distribution to class merchants of an amount equal to 10 basis points (bps) of default interchange across all Visa and MasterCard credit card transactions for a period of eight consecutive months, which otherwise would have been paid to issuers and which effectively reduces credit interchange for that period of time; and (iii) modifications to certain Visa and MasterCard rules regarding merchant point of sale practices.

The court granted final approval of the class settlement agreement on December 13, 2013. Several class members appealed to the U.S. Court of Appeals for the Second Circuit and the court held oral argument on September 28, 2015.

On July 28, 2015, certain objectors to the class settlement filed motions asking the district court to vacate or set aside its final judgment approving the settlement, or in the alternative, to grant further discovery, in light of communications between one of MasterCard's former lawyers and one of the lawyers for the class plaintiffs. The defendants and the class plaintiffs filed responses to the motions on August 18, 2015 and the objectors filed replies on September 2, 2015. The court has not set oral argument.

Following approval of the class settlement agreement, a number of class members opted out of the settlement. As a result of various loss-sharing agreements from the main Interchange litigation, the Corporation remains liable for any settlement or judgment in opt-out suits where it is not named as a defendant.

The Corporation has pending one opt-out suit, as well as an action brought by cardholders. All of the opt-out suits filed to date have been consolidated in the U.S. District Court for the Eastern District of New York. On July 18, 2014, the court denied defendants' motion to dismiss opt-out complaints filed by merchants, and on November 26, 2014, the court granted defendants' motion to dismiss the Sherman Act claim in the cardholder complaint. In the cardholder action, the parties have moved for reconsideration of the court's November 26, 2014 decision dismissing the Sherman Act claim, and have also appealed the decision to the U.S. Court of Appeals for the Second Circuit.

## LIBOR, Other Reference Rate and Foreign Exchange (FX) Inquiries and Litigation

Government authorities in the Americas, Europe and the Asia Pacific region continue to conduct investigations and make inquiries of a significant number of FX market participants, including the Corporation, regarding FX market participants' conduct and systems and controls. Government authorities in these regions also continue to conduct investigations concerning submissions made by panel banks in connection with the setting of LIBOR and other reference rates. The Corporation is responding to and cooperating with these investigations.

In addition, the Corporation, BANA and certain Merrill Lynch affiliates have been named as defendants along with most of the other LIBOR panel banks in a series of individual and putative class actions relating to defendants' U.S. Dollar LIBOR contributions. All cases naming the Corporation and its affiliates relating to U.S. Dollar LIBOR have been or are in the process of being consolidated for pre-trial purposes in the U.S. District Court for the Southern District of New York by the Judicial Panel on Multidistrict Litigation. The Corporation expects that any future U.S. Dollar LIBOR cases naming it or its affiliates will similarly be consolidated for pre-trial purposes. Plaintiffs allege that they held or transacted in U.S. Dollar LIBOR-based financial instruments and sustained losses as a result of collusion or manipulation by defendants regarding the setting of U.S. Dollar LIBOR. Plaintiffs assert a variety of claims, including antitrust, Commodity Exchange Act (CEA), Racketeer Influenced and Corrupt Organizations (RICO), common law fraud, and breach of contract claims, and seek compensatory, treble and punitive damages, and injunctive relief.

In a series of rulings, the court dismissed antitrust, RICO and certain state law claims, and substantially limited the scope of CEA and various other claims. As to the Corporation and BANA, the court also dismissed manipulation claims based on alleged trader conduct. Some claims against the Corporation, BANA and certain Merrill Lynch affiliates remain pending, however, and the court is continuing to consider motions regarding them. Certain plaintiffs are also pursuing an appeal in the Second Circuit of the dismissal of their antitrust claims.

In addition, in a consolidated amended complaint filed on March 31, 2014, the Corporation and BANA were named as defendants along with other FX market participants in a putative class action filed in the U.S. District Court for the Southern District of New York on behalf of plaintiffs and a putative class who allegedly transacted in FX and are domiciled in the U.S. or transacted in FX in the U.S. The complaint alleges that class members sustained losses as a result of the defendants' alleged conspiracy to manipulate the WM/Reuters Closing Spot Rates. Plaintiffs assert a single claim for violations of Sections 1 and 3
of the Sherman Act and seek compensatory and treble damages, as well as declaratory and injunctive relief.

On January 28, 2015, the court denied defendants' motion to dismiss. In April 2015, the Corporation and BANA agreed to settle the class action for $\$ 180$ million. On September 21, 2015, plaintiffs filed a second consolidated amended complaint, in which they named additional defendants, including MLPF\&S, added claims for violations of the CEA, and expanded the scope of the FX transactions purportedly affected by the alleged conspiracy to include additional over-the-counter FX transactions and FX transactions on an exchange. On October 1,2015, the Corporation, BANA and MLPF\&S executed a final settlement agreement, which included the previously-referenced $\$ 180$ million settlement for persons who transacted in FX over-the-counter and a $\$ 7.5$ million settlement for persons who transacted in FX on an exchange only. The settlement is subject to final court approval.

## Montgomery

The Corporation, several current and former officers and directors, Banc of America Securities LLC (BAS), MLPF\&S and other unaffiliated underwriters have been named as defendants in a putative class action filed in the U.S. District Court for the Southern District of New York entitled Montgomery v. Bank of America, et al. Plaintiff filed an amended complaint on January 14, 2011. Plaintiff seeks to represent all persons who acquired certain series of preferred stock offered by the Corporation pursuant to a shelf registration statement dated May 5, 2006. Plaintiff's claims arise from three offerings dated January 24, 2008, January 28, 2008 and May 20, 2008, from which the Corporation allegedly received proceeds of $\$ 15.8$ billion. The amended complaint asserts claims under Sections 11, 12(a)(2) and 15 of the Securities Act of 1933, and alleges that the prospectus supplements associated with the offerings: (i) failed to disclose that the Corporation's loans, leases, CDOs and commercial MBS were impaired to a greater extent than disclosed; (ii) misrepresented the extent of the impaired assets by failing to establish adequate reserves or properly record losses for its impaired assets; (iii) misrepresented the adequacy of the Corporation's internal controls in light of the alleged impairment of its assets; (iv) misrepresented the Corporation's capital base and Tier 1 leverage ratio for risk-based capital in light of the allegedly impaired assets; and (v) misrepresented the thoroughness and adequacy of the Corporation's due diligence in connection with its acquisition of Countrywide. The amended complaint seeks rescission, compensatory and other damages. On March 16, 2012, the court granted defendants' motion to dismiss the first amended complaint. On December 3, 2013, the court denied plaintiffs' motion to file a second amended complaint.

On June 15, 2015, the U.S. Court of Appeals for the Second Circuit affirmed the district court's denial of plaintiff's motion to amend. On June 29, 2015, plaintiff filed a petition for rehearing en banc.

On July 31, 2015, the U.S. Court of Appeals denied plaintiff's petition for rehearing en banc. On January 11, 2016, the U.S. Supreme Court denied plaintiff's petition for a writ of certiorari, thereby exhausting plaintiff's appellate options.

## Mortgage-backed Securities Litigation

The Corporation and its affiliates, Countrywide entities and their affiliates, and Merrill Lynch entities and their affiliates have been named as defendants in a number of cases relating to their various roles as issuer, originator, seller, depositor, sponsor, underwriter
and/or controlling entity in MBS offerings, pursuant to which the MBS investors were entitled to a portion of the cash flow from the underlying pools of mortgages. These cases generally include purported class action suits and actions by individual MBS purchasers. Although the allegations vary by lawsuit, these cases generally allege that the registration statements, prospectuses and prospectus supplements for securities issued by securitization trusts contained material misrepresentations and omissions, in violation of the Securities Act of 1933 and/or state securities laws and other state statutory and common laws.

These cases generally involve allegations of false and misleading statements regarding: (i) the process by which the properties that served as collateral for the mortgage loans underlying the MBS were appraised; (ii) the percentage of equity that mortgage borrowers had in their homes; (iii) the borrowers' ability to repay their mortgage loans; (iv) the underwriting practices by which those mortgage loans were originated; (v) the ratings given to the different tranches of MBS by rating agencies; and (vi) the validity of each issuing trust's title to the mortgage loans comprising the pool for that securitization (collectively, MBS Claims). Plaintiffs in these cases generally seek unspecified compensatory damages, unspecified costs and legal fees and, in some instances, seek rescission.

The Corporation, Countrywide, Merrill Lynch and their affiliates may have claims for or may be subject to claims for contractual indemnification in connection with their various roles in regard to MBS. Certain of these entities have received claims for indemnification related to MBS securities actions, including claims from underwriters of MBS that were issued by these entities, and from underwriters and issuers of MBS backed by loans originated by these entities.

## FHLB Seattle Litigation

On December 23, 2009, the Federal Home Loan Bank of Seattle (FHLB Seattle) filed four separate complaints, each against different defendants, including the Corporation and its affiliates, Countrywide and its affiliates, and MLPF\&S and its affiliates, as well as certain other defendants, in the Superior Court of Washington for King County entitled Federal Home Loan Bank of Seattle v. UBS Securities LLC, et al.; Federal Home Loan Bank of Seattle v. Countrywide Securities Corp., et al.; Federal Home Loan Bank of Seattle v. Banc of America Securities LLC, et al. and Federal Home Loan Bank of Seattle v. Merrill Lynch, Pierce, Fenner \& Smith, Inc., et al. FHLB Seattle asserts certain MBS Claims pertaining to its alleged purchases in 12 MBS offerings between 2005 and 2007. In those complaints, FHLB Seattle seeks, among other relief, unspecified damages under the Securities Act of Washington. On July 19, 2011, the Court denied the defendants' motions to dismiss the complaints. In November 2015, the Court denied motions for summary judgment filed by all defendants that addressed certain common issues, including the method for calculating pre-judgment interest in the event an award of interest is ultimately made under the Securities Act of Washington. Motions for summary judgment filed by defendants addressing issues specific to each complaint and defendant, as well as additional issues common to all defendants, remain pending.

## Luther Class Action Litigation and Related Actions

Beginning in 2007, a number of pension funds and other investors filed putative class action lawsuits alleging certain MBS Claims against Countrywide, several of its affiliates, MLPF\&S, the

Corporation, NB Holdings Corporation and certain other defendants. Those class action lawsuits concerned a total of 429 MBS offerings involving over $\$ 350$ billion in securities issued by subsidiaries of Countrywide between 2005 and 2007. The actions, entitled Luther v. Countrywide Financial Corporation, et al., Maine State Retirement System v. Countrywide Financial Corporation, et al., Western Conference of Teamsters Pension Trust Fund v. Countrywide Financial Corporation, et al., and Putnam Bank v. Countrywide Financial Corporation, et al., were all assigned to the Countrywide RMBS MDL court. On December 6, 2013, the court granted final approval to a settlement of these actions in the amount of $\$ 500$ million. Beginning on January 14,2014 , a number of class members appealed to the U.S. Court of Appeals for the Ninth Circuit. Oral argument is expected to be held in the second quarter of 2016.

## Mortgage Repurchase Litigation

## U.S. Bank Litigation

On August 29, 2011, U.S. Bank, National Association (U.S. Bank), as trustee for the HarborView Mortgage Loan Trust 2005-10 (the Trust), a mortgage pool backed by loans originated by Countrywide Home Loans, Inc. (CHL), filed a complaint in New York Supreme Court, in a case entitled U.S. Bank National Association, as Trustee for HarborView Mortgage Loan Trust, Series 2005-10 v. Countrywide Home Loans, Inc. (dba Bank of America Home Loans), Bank of America Corporation, Countrywide Financial Corporation, Bank of America, N.A. and NB Holdings Corporation. U.S. Bank asserts that, as a result of alleged misrepresentations by CHL in connection with its sale of the loans, defendants must repurchase all the loans in the pool, or in the alternative that it must repurchase a subset of those loans as to which U.S. Bank alleges that defendants have refused specific repurchase demands. U.S. Bank asserts claims for breach of contract and seeks specific performance of defendants' alleged obligation to repurchase the entire pool of loans (alleged to have an original aggregate principal balance of $\$ 1.75$ billion) or alternatively the aforementioned subset (alleged to have an aggregate principal balance of "over $\$ 100$ million"), together with reimbursement of costs and expenses and other unspecified relief. On May 29, 2013, the New York Supreme Court dismissed U.S. Bank's claim for repurchase of all the mortgage loans in the Trust. The court granted U.S. Bank leave to amend this claim. On June 18, 2013, U.S. Bank filed its second amended complaint seeking to replead its claim for repurchase of all loans in the Trust.

On February 13, 2014, the court granted defendants' motion to dismiss the repleaded claim seeking repurchase of all mortgage loans in the Trust; plaintiff appealed that order. On November 13, 2014, the court granted U.S. Bank's motion for leave to amend the complaint; defendants appealed that order. The amended complaint alleges breach of contract based upon defendants' failure to repurchase loans that were the subject of specific repurchase demands and also alleges breach of contract based upon defendants' discovery, during origination and servicing, of loans with material breaches of representations and warranties.

On September 16, 2015, defendants (i) withdrew the appeal that had been noticed, but not briefed, regarding the court's November 13, 2014 order that had granted U.S. Bank's motion for leave to amend, and (ii) moved, on the ground of failure to perfect, for dismissal of U.S. Bank's appeal from the court's February 13, 2014 order that had dismissed a claim seeking
repurchase of all mortgage loans and sought clarification of a prior dismissal order. On September 30, 2015, U.S. Bank advised the court that it did not oppose dismissal of its appeal from the February 13, 2014 order. On December 15, 2015, defendants' motion to dismiss U.S. Bank's appeal was granted.

## U.S. Bank Summonses with Notice

On August 29, 2014 and September 2, 2014, U.S. Bank National Association (U.S. Bank), solely in its capacity as Trustee for seven securitization trusts (the Trusts), served seven summonses with notice commencing actions against First Franklin Financial Corporation, Merrill Lynch Mortgage Lending, Inc., Merrill Lynch Mortgage Investors, Inc. (MLMI), and Ownit Mortgage Solutions Inc. in New York Supreme Court. The summonses advance breach of contract claims alleging that defendants breached representations and warranties related to loans securitized in the Trusts. The summonses allege that defendants failed to repurchase breaching mortgage loans from the Trusts, and seek specific performance of defendants' alleged obligation to repurchase breaching loans, declaratory judgment, compensatory, rescissory and other damages, and indemnity.
U.S. Bank has served complaints on four of the seven Trusts. On December 7, 2015, the court granted in part and denied in part defendants' motion to dismiss the complaints. The court dismissed claims for breach of representations and warranties against MLMI, dismissed U.S. Bank's claims for indemnity and attorneys' fees, and deferred a ruling regarding defendants' alleged failure to provide notice of alleged representation and warranty breaches, but upheld the complaints in all other respects. Defendants have until June 8, 2016 to demand complaints relating to the remaining three Trusts.

## O'Donnell Litigation

On February 24, 2012, Edward O'Donnell filed a sealed qui tam complaint under the False Claims Act against the Corporation, individually, and as successor to Countrywide, CHL and a Countrywide business division known as Full Spectrum Lending. On October 24, 2012, the Department of Justice filed a complaint-in-intervention to join the matter, adding a claim under the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA) and adding BANA as a defendant. The action is entitled United States of America, ex rel, Edward O'Donnell, appearing Qui Tam v. Bank of America Corp., et al., and was filed in the U.S. District Court for the Southern District of New York. The complaint-inintervention asserted certain fraud claims in connection with the sale of loans to FNMA and FHLMC by Full Spectrum Lending and by the Corporation and BANA. On January 11, 2013, the government filed an amended complaint which added Countrywide Bank, FSB (CFSB) and a former officer of the Corporation as defendants. The court dismissed False Claims Act counts on May 8, 2013. On September 6, 2013, the government filed a second amended complaint alleging claims under FIRREA concerning allegedly fraudulent loan sales to the GSEs between August 2007 and May 2008. On September 24, 2013, the government dismissed the Corporation as a defendant. Following a trial, on October 23, 2013, a verdict of liability was returned against CHL, CFSB, BANA and the former officer. On July 30, 2014, the court imposed a civil penalty of $\$ 1.3$ billion on BANA. On February 3, 2015, the court denied the Corporation's motions for judgment as a matter of law, or in the alternative, a new trial.

On February 20, 2015, CHL, CFSB and BANA filed an appeal. The Second Circuit held oral argument on December 16, 2015, but has not issued a decision on the appeal.

## Pennsylvania Public School Employees' Retirement System

The Corporation and several current and former officers were named as defendants in a putative class action filed in the U.S. District Court for the Southern District of New York entitled Pennsylvania Public School Employees' Retirement System v. Bank of America, et al.

Following the filing of a complaint on February 2, 2011, plaintiff subsequently filed an amended complaint on September 23, 2011 in which plaintiff sought to sue on behalf of all persons who acquired the Corporation's common stock between February 27, 2009 and October 19, 2010 and "Common Equivalent Securities" sold in a December 2009 offering. The amended complaint asserted claims under Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 and Sections 11 and 15 of the Securities Act of 1933, and alleged that the Corporation's public statements: (i) concealed problems in the Corporation's mortgage servicing business resulting from the widespread use of the Mortgage Electronic Recording System; (ii) failed to disclose the Corporation's exposure to mortgage repurchase claims; (iii) misrepresented the adequacy of internal controls; and (iv) violated certain Generally Accepted Accounting Principles. The amended complaint sought unspecified damages.

On July 11, 2012, the court granted in part and denied in part defendants' motions to dismiss the amended complaint. All claims under the Securities Act were dismissed against all defendants, with prejudice. The motion to dismiss the claim against the Corporation under Section 10(b) of the Exchange Act was denied. All claims under the Exchange Act against the officers were dismissed, with leave to replead. Defendants moved to dismiss a second amended complaint in which plaintiff sought to replead claims against certain current and former officers under Sections 10(b) and 20(a). On April 17, 2013, the court granted in part and
denied in part the motion to dismiss, sustaining Sections 10(b) and 20(a) claims against the current and former officers.

On August 12, 2015, the parties agreed to settle the claims for $\$ 335$ million. The agreement is subject to final documentation and court approval.

## Takefuji Litigation

In April 2010, Takefuji Corporation (Takefuji) filed a claim against Merrill Lynch International and Merrill Lynch Japan Securities (MLJS) in Tokyo District Court. The claim concerns Takefuji's purchase in 2007 of credit-linked notes structured and sold by defendants that resulted in a loss to Takefuji of approximately JPY29.0 billion (approximately $\$ 270$ million) following an event of default. Takefuji alleges that defendants failed to meet certain disclosure obligations concerning the notes.

On July 19, 2013, the Tokyo District Court issued a judgment in defendants' favor, a decision that Takefuji subsequently appealed to the Tokyo High Court. On August 27, 2014, the Tokyo High Court vacated the decision of the District Court and issued a judgment awarding Takefuji JPY14.5 billion (approximately $\$ 135$ million) in damages, plus interest at a rate of five percent from March 18, 2008. On September 10, 2014, defendants filed an appeal with the Japanese Supreme Court. The appeal hearing occurred on February 16, 2016. The Corporation expects a judgment to be issued in the coming months.

## U.S. Securities and Exchange Commission (SEC) Investigations

The SEC has been conducting investigations of the Corporation's U.S. broker-dealer subsidiary, MLPF\&S, regarding compliance with SEC Rule $15 \mathrm{c} 3-3$. The Corporation is cooperating with these investigations and is in discussions with the SEC regarding the possibility of resolving these matters. There can be no assurances that these discussions will lead to a resolution or whether the SEC will institute administrative or civil proceedings. The timing, amount and impact of these matters is uncertain.

## NOTE 13 Shareholders' Equity

## Common Stock

Declared Quarterly Cash Dividends on Common Stock (1)

| Declaration Date | Record Date | Payment Date | Dividend <br> Per Share |
| :--- | :--- | :--- | :--- |
| January 21, 2016 | March 4, 2016 | March 25, 2016 | $\$$ |
| October 22, 2015 | December 4, 2015 | December 24, 2015 | 0.05 |
| July 23, 2015 | September 4, 2015 | September 25, 2015 | 0.05 |
| April 16, 2015 | June 5, 2015 | June 26, 2015 | 0.05 |
| February 10, 2015 | March 6, 2015 | March 27, 2015 | 0.05 |
| (1) $\operatorname{In} 2015$ and through February 24, 2016. |  |  |  |

On March 11, 2015, the Corporation announced that the Federal Reserve completed its 2015 Comprehensive Capital Analysis and Review (CCAR) and advised that it did not object to the 2015 capital plan but gave a conditional non-objection under which the Corporation was required to resubmit its CCAR capital plan by September 30, 2015 and address certain weaknesses the Federal Reserve identified in the Corporation's capital planning process. The requested capital actions included a request to repurchase $\$ 4.0$ billion of common stock over five quarters beginning in the second quarter of 2015 , and to maintain the quarterly common stock dividend at the current rate of $\$ 0.05$ per share. The Corporation resubmitted its CCAR capital plan on September 30, 2015 and on December 10, 2015, the Federal Reserve announced that it did not object to the resubmitted CCAR capital plan.

In 2015, the Corporation repurchased and retired 140.3 million shares of common stock in connection with the 2015 capital plan, which reduced shareholders' equity by $\$ 2.4$ billion. In 2014 and 2013, the Corporation repurchased and retired 101.1 million and 231.7 million shares of common stock, which reduced shareholders' equity by $\$ 1.7$ billion and $\$ 3.2$ billion.

At December 31, 2015, the Corporation had warrants outstanding and exercisable to purchase 121.8 million shares of
its common stock at an exercise price of $\$ 30.79$ per share expiring on October 28, 2018, and warrants outstanding and exercisable to purchase 150.4 million shares of common stock at an exercise price of $\$ 13.107$ per share expiring on January 16,2019 . These warrants were originally issued in connection with preferred stock issuances to the U.S. Department of the Treasury in 2009 and 2008, and are listed on the New York Stock Exchange. The exercise price of the warrants expiring on January 16, 2019 is subject to continued adjustment each time the quarterly cash dividend is in excess of $\$ 0.01$ per common share to compensate the holders of the warrants for dilution resulting from an increased dividend. The Corporation had cash dividends of $\$ 0.05$ per share per quarter, or $\$ 0.20$ per share for the year, in 2015 resulting in an adjustment to the exercise price of these warrants in each quarter. As a result of the Corporation's 2015 dividends of $\$ 0.20$ per common share, the exercise price of these warrants was adjusted to $\$ 13.107$. The warrants expiring on October 28, 2018 also contain this antidilution provision except the adjustment is triggered only when the Corporation declares quarterly dividends at a level greater than $\$ 0.32$ per common share.

In connection with the issuance of the Corporation's 6\% Cumulative Perpetual Preferred Stock, Series T (the Series T Preferred Stock), the Corporation issued a warrant to purchase 700 million shares of the Corporation's common stock. The warrant is exercisable at the holder's option at any time, in whole or in part, until September 1, 2021, at an exercise price of $\$ 7.142857$ per share of common stock. The warrant may be settled in cash or by exchanging all or a portion of the Series $T$ Preferred Stock. For more information on the Series T Preferred Stock, see Preferred Stock in this Note.

In connection with employee stock plans, in 2015, the Corporation issued approximately 7 million shares and repurchased approximately 3 million shares of its common stock to satisfy tax withholding obligations. At December 31, 2015, the Corporation had reserved 1.6 billion unissued shares of common stock for future issuances under employee stock plans, common stock warrants, convertible notes and preferred stock.

## Preferred Stock

The cash dividends declared on preferred stock were $\$ 1.5$ billion, $\$ 1.0$ billion and $\$ 1.2$ billion for 2015, 2014 and 2013, respectively.

On January 29, 2016, the Corporation issued 44,000 shares of its 6.200\% Non-Cumulative Preferred Stock, Series CC for \$1.1 billion. Dividends are paid quarterly commencing on April 29, 2016. Series CC preferred stock has a liquidation preference of $\$ 25,000$ per share and is subject to certain restrictions in the event that the Corporation fails to declare and pay full dividends.

On January 27, 2015, the Corporation issued 44,000 shares of its 6.500\% Non-Cumulative Preferred Stock, Series Y for \$1.1 billion. Dividends are paid quarterly commencing on April 27, 2015. On March 17, 2015, the corporation issued 76,000 shares of its Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series AA for $\$ 1.9$ billion. Dividends are paid semi-annually commencing on September 17, 2015. Series Y and AA preferred stock have a liquidation preference of $\$ 25,000$ per share and are subject to certain restrictions in the event that the Corporation fails to declare and pay full dividends.

At the Corporation's annual meeting of stockholders on May 7, 2014, the stockholders approved an amendment to the Series T Preferred Stock such that it qualifies as Tier 1 capital, and the amendment became effective in the three months ended June 30, 2014. The more significant changes to the terms of the Series $T$ Preferred Stock in the amendment were: (1) dividends are no longer cumulative; (2) the dividend rate is fixed at 6\%; and (3) the

Corporation may redeem the Series T Preferred Stock only after the fifth anniversary of the effective date of the amendment.

In 2014, the Corporation issued $\$ 6.0$ billion of its Preferred Stock, Series V, X, W and Z. On June 17, 2014, the Corporation issued 60,000 shares of its Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series V for $\$ 1.5$ billion. Dividends are paid semiannually commencing on December 17, 2014. On September 5, 2014, the Corporation issued 80,000 shares of its Fixed-toFloating Rate Non-Cumulative Preferred Stock, Series X for \$2.0 billion. Dividends are paid semi-annually commencing on March 5, 2015. On September 9, 2014, the Corporation issued 44,000 shares of its $6.625 \%$ Non-Cumulative Preferred Stock, Series W for $\$ 1.1$ billion. Dividends are paid quarterly commencing on December 9, 2014. On October 23, 2014, the Corporation issued 56,000 shares of its Fixed-to-Floating Rate Non-Cumulative Preferred Stock, Series Z for $\$ 1.4$ billion. Dividends are paid semiannually commencing on April 23, 2015. Series V, X, W and Z preferred stock have a liquidation preference of $\$ 25,000$ per share and are subject to certain restrictions in the event that the Corporation fails to declare and pay full dividends.

In 2013, the Corporation redeemed for $\$ 6.6$ billion its NonCumulative Preferred Stock, Series H, J, 6, 7 and 8. The \$100 million difference between the carrying value of $\$ 6.5$ billion and the redemption price of the preferred stock was recorded as a preferred stock dividend. In addition, the Corporation issued \$1.0 billion of its Fixed-to-Floating Rate Semi-annual Non-Cumulative Preferred Stock, Series U.

The table below presents a summary of perpetual preferred stock outstanding at December 31, 2015.

## Preferred Stock Summary

(Dollars in millions, except as noted)

| Series | Description | Initial Issuance Date | Total Shares Outstanding |  | Liquidation Preference per Share (in dollars) |  | rying <br> ue ${ }^{(1)}$ | Per Annum Dividend Rate | Redemption Period ${ }^{(2)}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Series B | 7\% Cumulative Redeemable | $\begin{array}{r} \text { June } \\ 1997 \end{array}$ | 7,571 | \$ | 100 | \$ | 1 | 7.00\% | n/a |
| Series D ${ }^{(3)}$ | 6.204\% Non-Cumulative | September 2006 | 26,174 |  | 25,000 |  | 654 | 6.204\% | On or after <br> September 14, 2011 |
| Series E ${ }^{(3)}$ | Floating Rate NonCumulative | November 2006 | 12,691 |  | 25,000 |  | 317 | 3-mo. LIBOR + 35 bps ${ }^{(4)}$ | On or after <br> November 15, 2011 |
| Series F | Floating Rate NonCumulative | March 2012 | 1,409 |  | 100,000 |  | 141 | 3-mo. LIBOR + 40 bps ${ }^{(4)}$ | On or after <br> March 15, 2012 |
| Series G | Adjustable Rate NonCumulative | $\begin{aligned} & \text { March } \\ & 2012 \end{aligned}$ | 4,926 |  | 100,000 |  | 493 | 3-mo. LIBOR + 40 bps ${ }^{(4)}$ | On or after <br> March 15, 2012 |
| Series I ${ }^{(3)}$ | 6.625\% Non-Cumulative | September 2007 | 14,584 |  | 25,000 |  | 365 | 6.625\% | On or after October 1, 2017 |
| Series K ${ }^{(5)}$ | Fixed-to-Floating Rate NonCumulative | January 2008 | 61,773 |  | 25,000 |  | 1,544 | 8.00\% to, but excluding, 1/30/18; 3-mo. LIBOR +363 bps thereafter | On or after January 30, 2018 |
| Series L | 7.25\% Non-Cumulative Perpetual Convertible | January 2008 | 3,080,182 |  | 1,000 |  | 3,080 | 7.25\% | n/a |
| Series M ${ }^{(5)}$ | Fixed-to-Floating Rate NonCumulative | $\begin{gathered} \text { April } \\ 2008 \end{gathered}$ | 52,399 |  | 25,000 |  | 1,310 | 8.125\% to, but excluding, 5/15/18; 3-mo. LIBOR + 364 bps thereafter | On or after May 15, 2018 |
| Series T | 6\% Non-Cumulative | September 2011 | 50,000 |  | 100,000 |  | 2,918 | 6.00\% | See description in Preferred Stock in this Note |
| Series U ${ }^{(5)}$ | Fixed-to-Floating Rate NonCumulative | $\begin{array}{r} \text { May } \\ 2013 \end{array}$ | 40,000 |  | 25,000 |  | 1,000 | $5.2 \%$ to, but excluding, 6/1/23; 3-mo. LIBOR +313.5 bps thereafter | On or after June 1, 2023 |
| Series V ${ }^{(5)}$ | Fixed-to-Floating Rate NonCumulative | $\begin{gathered} \text { June } \\ 2014 \end{gathered}$ | 60,000 |  | 25,000 |  | 1,500 | $5.125 \%$ to, but excluding, $6 / 17 / 19$; 3-mo. LIBOR +338.7 bps thereafter | On or after <br> June 17, 2019 |
| Series W ${ }^{(3)}$ | 6.625\% Non-Cumulative | September 2014 | 44,000 |  | 25,000 |  | 1,100 | 6.625\% | On or after <br> September 9, 2019 |
| Series X ${ }^{(5)}$ | Fixed-to-Floating Rate NonCumulative | September $2014$ | 80,000 |  | 25,000 |  | 2,000 | 6.250\% to, but excluding, 9/5/24; 3-mo. LIBOR +370.5 bps thereafter | On or after <br> September 5, 2024 |
| Series Y ${ }^{(3)}$ | 6.500\% Non-Cumulative | January 2015 | 44,000 |  | 25,000 |  | 1,100 | 6.500\% | On or after January 27, 2020 |
| Series Z ${ }^{(5)}$ | Fixed-to-Floating Rate NonCumulative | October $2014$ | 56,000 |  | 25,000 |  | 1,400 | $6.500 \%$ to, but excluding, $10 / 23 / 24$; 3-mo. LIBOR +417.4 bps thereafter | On or after October 23, 2024 |
| Series AA (5) | Fixed-to-Floating Rate NonCumulative | March $2015$ | 76,000 |  | 25,000 |  | 1,900 | $6.100 \%$ to, but excluding, $3 / 17 / 25$; 3-mo. LIBOR +389.8 bps thereafter | On or after <br> March 17, 2025 |
| Series $1{ }^{(6)}$ | Floating Rate NonCumulative | November $2004$ | 3,275 |  | 30,000 |  | 98 | 3-mo. LIBOR + $75 \mathrm{bps}{ }^{(7)}$ | On or after <br> November 28, 2009 |
| Series $2{ }^{(6)}$ | Floating Rate NonCumulative | March $2005$ | 9,967 |  | 30,000 |  | 299 | 3-mo. LIBOR + $65 \mathrm{bps}{ }^{(7)}$ | On or after <br> November 28, 2009 |
| Series $3{ }^{(6)}$ | 6.375\% Non-Cumulative | $\begin{array}{r} \text { November } \\ 2005 \\ \hline \end{array}$ | 21,773 |  | 30,000 |  | 653 | 6.375\% | On or after <br> November 28, 2010 |
| Series $4{ }^{(6)}$ | Floating Rate NonCumulative | $\begin{array}{r} \text { November } \\ 2005 \end{array}$ | 7,010 |  | 30,000 |  | 210 | 3-mo. LIBOR + $75 \mathrm{bps}{ }^{(4)}$ | On or after <br> November 28, 2010 |
| Series $5{ }^{(6)}$ | Floating Rate NonCumulative | March $2007$ | 14,056 |  | 30,000 |  | 422 | 3-mo. LIBOR + $50 \mathrm{bps}{ }^{(4)}$ | On or after <br> May 21, 2012 |
| Total |  |  | 3,767,790 |  |  | \$ | 22,505 |  |  |

(1) Amounts shown are before third-party issuance costs and certain book value adjustments of $\$ 232$ million.
 and Series L Preferred Stock do not have early redemption/call rights.
${ }^{(3)}$ Ownership is held in the form of depositary shares, each representing a $1 / 1,000$ th interest in a share of preferred stock, paying a quarterly cash dividend, if and when declared.
(4) Subject to $4.00 \%$ minimum rate per annum.
 redemption date at which time, it adjusts to a quarterly cash dividend, if and when declared, thereafter.
${ }^{(6)}$ Ownership is held in the form of depositary shares, each representing a $1 / 1,200$ th interest in a share of preferred stock, paying a quarterly cash dividend, if and when declared. ${ }^{(7)}$ Subject to $3.00 \%$ minimum rate per annum.
$\mathrm{n} / \mathrm{a}=$ not applicable

The 7.25\% Non-Cumulative Perpetual Convertible Preferred Stock, Series L (Series L Preferred Stock) listed in the Preferred Stock Summary table does not have early redemption/call rights. Each share of the Series L Preferred Stock may be converted at any time, at the option of the holder, into 20 shares of the Corporation's common stock plus cash in lieu of fractional shares. The Corporation may cause some or all of the Series L Preferred Stock, at its option, at any time or from time to time, to be converted into shares of common stock at the then-applicable conversion rate if, for 20 trading days during any period of 30 consecutive trading days, the closing price of common stock exceeds 130 percent of the then-applicable conversion price of the Series L Preferred Stock. If a conversion of Series L Preferred Stock occurs at the option of the holder, subsequent to a dividend record date but prior to the dividend payment date, the Corporation will still pay any accrued dividends payable.

All series of preferred stock in the Preferred Stock Summary table have a par value of $\$ 0.01$ per share, are not subject to the operation of a sinking fund, have no participation rights, and with the exception of the Series L Preferred Stock, are not convertible.

The holders of the Series B Preferred Stock and Series 1 through 5 Preferred Stock have general voting rights, and the holders of the other series included in the table have no general voting rights. All outstanding series of preferred stock of the Corporation have preference over the Corporation's common stock with respect to the payment of dividends and distribution of the Corporation's assets in the event of a liquidation or dissolution. With the exception of the Series B, F, G and T Preferred Stock, if any dividend payable on these series is in arrears for three or more semi-annual or six or more quarterly dividend periods, as applicable (whether consecutive or not), the holders of these series and any other class or series of preferred stock ranking equally as to payment of dividends and upon which equivalent voting rights have been conferred and are exercisable (voting as a single class) will be entitled to vote for the election of two additional directors. These voting rights terminate when the Corporation has paid in full dividends on these series for at least two semi-annual or four quarterly dividend periods, as applicable, following the dividend arrearage.

NOTE 14 Accumulated Other Comprehensive Income (Loss)
The table below presents the changes in accumulated OCI after-tax for 2013, 2014 and 2015.

| (Dollars in millions) <br> Balance, December 31, 2012 | Available-forSale Debt Securities |  | Available-forSale Marketable Equity Securities |  | Debit Valuation Adjustments ${ }^{(1)}$ |  | Derivatives |  | Employee Benefit Plans |  | Foreign Currency (2) |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | 4,443 | \$ | 462 |  | n/a | \$ | $(2,869)$ | \$ | $(4,456)$ | \$ | (377) | \$ | $(2,797)$ |
| Net change |  | $(7,700)$ |  | (466) |  | n/a |  | 592 |  | 2,049 |  | (135) |  | $(5,660)$ |
| Balance, December 31, 2013 | \$ | $(3,257)$ | \$ | (4) |  | n/a | \$ | $(2,277)$ | \$ | $(2,407)$ | \$ | (512) | \$ | $(8,457)$ |
| Net change |  | 4,600 |  | 21 |  | n/a |  | 616 |  | (943) |  | (157) |  | 4,137 |
| Balance, December 31, 2014 | \$ | 1,343 | \$ | 17 |  | n/a | \$ | $(1,661)$ | \$ | $(3,350)$ | \$ | (669) | \$ | $(4,320)$ |
| Cumulative adjustment for accounting change |  | - |  | - | \$ | $(1,226)$ |  | - |  | - |  | - |  | $(1,226)$ |
| Net change |  | $(1,643)$ |  | 45 |  | 615 |  | 584 |  | 394 |  | (123) |  | (128) |
| Balance, December 31, 2015 | \$ | (300) | \$ | 62 | \$ | (611) | \$ | $(1,077)$ | \$ | $(2,956)$ | \$ | (792) | \$ | $(5,674)$ |

(1) For information on the impact of early adoption of new accounting guidance on recognition and measurement of financial instruments, see Note 1 - Summary of Significant Accounting Principles. ${ }^{(2)}$ The net change in fair value represents the impact of changes in spot foreign exchange rates on the Corporation's net investment in non-U.S. operations and related hedges. $\mathrm{n} / \mathrm{a}=$ not applicable

The table below presents the net change in fair value recorded in accumulated OCI , net realized gains and losses reclassified into earnings and other changes for each component of OCI before- and after-tax for 2015, 2014 and 2013.

## Changes in OCI Components Before- and After-tax

| (Dollars in millions) | 2015 |  |  |  |  |  | 2014 |  |  |  |  |  | 2013 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Before-tax |  | Tax effect |  | After-tax |  | Before-tax |  | Tax effect |  | After-tax |  | Before-tax | Tax effect |  | After-tax |
| Available-for-sale debt securities: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net increase (decrease) in fair value | \$ | $(1,644)$ | \$ | 627 |  | $(1,017)$ | \$ | 8,698 | \$ | $(3,268)$ | \$ | 5,430 | \$ (10,989) | \$ | 4,077 | \$ (6,912) |
| Net realized gains reclassified into earnings |  | $(1,010)$ |  | 384 |  | (626) |  | $(1,338)$ |  | 508 |  | (830) | $(1,251)$ |  | 463 | (788) |
| Net change |  | $(2,654)$ |  | 1,011 |  | $(1,643)$ |  | 7,360 |  | $(2,760)$ |  | 4,600 | $(12,240)$ |  | 4,540 | $(7,700)$ |
| Available-for-sale marketable equity securities: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net increase in fair value |  | 72 |  | (27) |  | 45 |  | 34 |  | (13) |  | 21 | 32 |  | (12) | 20 |
| Net realized gains reclassified into earnings |  | - |  | - |  | - |  | - |  | - |  | - | (771) |  | 285 | (486) |
| Net change |  | 72 |  | (27) |  | 45 |  | 34 |  | (13) |  | 21 | (739) |  | 273 | (466) |
| Debit valuation adjustments: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net increase in fair value |  | 436 |  | (166) |  | 270 |  | n/a |  | n/a |  | n/a | n/a |  | n/a | n/a |
| Net realized losses reclassified into earnings |  | 556 |  | (211) |  | 345 |  | n/a |  | n/a |  | n/a | n/a |  | n/a | n/a |
| Net change |  | 992 |  | (377) |  | 615 |  | n/a |  | n/a |  | n/a | n/a |  | n/a | n/a |
| Derivatives: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net increase in fair value |  | 55 |  | (22) |  | 33 |  | 195 |  | (54) |  | 141 | 156 |  | (51) | 105 |
| Net realized losses reclassified into earnings |  | 883 |  | (332) |  | 551 |  | 760 |  | (285) |  | 475 | 773 |  | (286) | 487 |
| Net change |  | 938 |  | (354) |  | 584 |  | 955 |  | (339) |  | 616 | 929 |  | (337) | 592 |
| Employee benefit plans: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net increase (decrease) in fair value |  | 408 |  | (121) |  | 287 |  | $(1,629)$ |  | 614 |  | $(1,015)$ | 2,985 |  | $(1,128)$ | 1,857 |
| Net realized losses reclassified into earnings |  | 169 |  | (62) |  | 107 |  | 55 |  | (23) |  | 32 | 237 |  | (79) | 158 |
| Settlements, curtailments and other |  | 1 |  | (1) |  | - |  | (1) |  | 41 |  | 40 | 46 |  | (12) | 34 |
| Net change |  | 578 |  | (184) |  | 394 |  | $(1,575)$ |  | 632 |  | (943) | 3,268 |  | $(1,219)$ | 2,049 |
| Foreign currency: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Net decrease in fair value |  | 600 |  | (723) |  | (123) |  | 714 |  | (879) |  | (165) | 244 |  | (384) | (140) |
| Net realized losses reclassified into earnings |  | (38) |  | 38 |  | - |  | 20 |  | (12) |  | 8 | 138 |  | (133) | 5 |
| Net change |  | 562 |  | (685) |  | (123) |  | 734 |  | (891) |  | (157) | 382 |  | (517) | (135) |
| Total other comprehensive income (loss) | \$ | 488 | \$ | (616) | \$ | (128) | \$ | 7,508 | \$ | $(3,371)$ | \$ | 4,137 | \$ $(8,400)$ | \$ | 2,740 | \$ (5,660) |

n/a = not applicable

The table below presents impacts on net income of significant amounts reclassified out of each component of accumulated OCl before- and after-tax for 2015, 2014 and 2013.

## Reclassifications Out of Accumulated OCI

(Dollars in millions)

| Accumulated OCI Components | Income Statement Line Item Impacted | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Available-for-sale debt securities: |  |  |  |  |  |  |  |
|  | Gains on sales of debt securities | \$ | 1,091 | \$ | 1,354 | \$ | 1,271 |
|  | Other loss |  | (81) |  | (16) |  | (20) |
|  | Income before income taxes |  | 1,010 |  | 1,338 |  | 1,251 |
|  | Income tax expense |  | 384 |  | 508 |  | 463 |
|  | Reclassification to net income |  | 626 |  | 830 |  | 788 |
| Available-for-sale marketable equity securities: |  |  |  |  |  |  |  |
|  | Equity investment income |  | - |  | - |  | 771 |
|  | Income before income taxes |  | - |  | - |  | 771 |
|  | Income tax expense |  | - |  | - |  | 285 |
|  | Reclassification to net income |  | - |  | - |  | 486 |
| Debit valuation adjustments: |  |  |  |  |  |  |  |
|  | Other loss |  | (556) |  | n/a |  | n/a |
|  | Loss before income taxes |  | (556) |  | n/a |  | n/a |
|  | Income tax benefit |  | (211) |  | n/a |  | n/a |
|  | Reclassification to net income |  | (345) |  | n/a |  | n/a |
| Derivatives: |  |  |  |  |  |  |  |
| Interest rate contracts | Net interest income |  | (974) |  | $(1,119)$ |  | $(1,119)$ |
| Commodity contracts | Trading account losses |  | - |  | - |  | (1) |
| Interest rate contracts | Other income |  | - |  | - |  | 18 |
| Equity compensation contracts | Personnel |  | 91 |  | 359 |  | 329 |
|  | Loss before income taxes |  | (883) |  | (760) |  | (773) |
|  | Income tax benefit |  | (332) |  | (285) |  | (286) |
|  | Reclassification to net income |  | (551) |  | (475) |  | (487) |
| Employee benefit plans: |  |  |  |  |  |  |  |
| Prior service cost | Personnel |  | (5) |  | (5) |  | (4) |
| Net actuarial losses | Personnel |  | (164) |  | (50) |  | (225) |
| Settlements and curtailments | Personnel |  | - |  | - |  | (8) |
|  | Loss before income taxes |  | (169) |  | (55) |  | (237) |
|  | Income tax benefit |  | (62) |  | (23) |  | (79) |
|  | Reclassification to net income |  | (107) |  | (32) |  | (158) |
| Foreign currency: |  |  |  |  |  |  |  |
|  | Other income (loss) |  | 38 |  | (20) |  | (138) |
|  | Income (loss) before income taxes |  | 38 |  | (20) |  | (138) |
|  | Income tax expense (benefit) |  | 38 |  | (12) |  | (133) |
|  | Reclassification to net income |  | - |  | (8) |  | (5) |
| Total reclassification adjustments |  | \$ | (377) | \$ | 315 | \$ | 624 | $n / a=$ not applicable

## NOTE 15 Earnings Per Common Share

The calculation of earnings per common share (EPS) and diluted EPS for 2015, 2014 and 2013 is presented below. For more information on the calculation of EPS, see Note 1 - Summary of Significant Accounting Principles.

| (Dollars in millions, except per share information; shares in thousands) | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Earnings per common share |  |  |  |  |  |  |
| Net income | \$ | 15,888 | \$ | 4,833 | \$ | 11,431 |
| Preferred stock dividends |  | $(1,483)$ |  | $(1,044)$ |  | $(1,349)$ |
| Net income applicable to common shareholders |  | 14,405 |  | 3,789 |  | 10,082 |
| Dividends and undistributed earnings allocated to participating securities |  | - |  | - |  | (2) |
| Net income allocated to common shareholders | \$ | 14,405 | \$ | 3,789 | \$ | 10,080 |
| Average common shares issued and outstanding |  | 462,282 |  | 27,818 |  | 31,165 |
| Earnings per common share | \$ | 1.38 | \$ | 0.36 | \$ | 0.94 |
|  |  |  |  |  |  |  |
| Diluted earnings per common share |  |  |  |  |  |  |
| Net income applicable to common shareholders | \$ | 14,405 | \$ | 3,789 | \$ | 10,082 |
| Add preferred stock dividends due to assumed conversions |  | 300 |  | - |  | 300 |
| Dividends and undistributed earnings allocated to participating securities |  | - |  | - |  | (2) |
| Net income allocated to common shareholders | \$ | 14,705 | \$ | 3,789 | \$ | 10,380 |
| Average common shares issued and outstanding |  | 462,282 |  | 27,818 |  | 31,165 |
| Dilutive potential common shares ${ }^{(1)}$ |  | 751,710 |  | 56,717 |  | 60,253 |
| Total diluted average common shares issued and outstanding |  | 213,992 |  | 84,535 |  | ,91,418 |
| Diluted earnings per common share | \$ | 1.31 | \$ | 0.36 | \$ | 0.90 |

The Corporation previously issued a warrant to purchase 700 million shares of the Corporation's common stock to the holder of the Series T Preferred Stock. The warrant may be exercised, at the option of the holder, through tendering the Series T Preferred Stock or paying cash. For 2015 and 2013 , the 700 million average dilutive potential common shares were included in the diluted share count under the "if-converted" method. For 2014, the 700 million average dilutive potential common shares were not included in the diluted share count because the result would have been antidilutive under the "if-converted" method. For additional information, see Note 13 - Shareholders' Equity.

For 2015, 2014 and 2013, 62 million average dilutive potential common shares associated with the Series L Preferred Stock were not included in the diluted share count because the result would have been antidilutive under the "if-converted" method. For 2015,

2014 and 2013, average options to purchase 66 million, 91 million and 126 million shares of common stock, respectively, were outstanding but not included in the computation of EPS because the result would have been antidilutive under the treasury stock method. For 2015 and 2014, average warrants to purchase 122 million shares of common stock were outstanding but not included in the computation of EPS because the result would have been antidilutive under the treasury stock method compared to 272 million shares for 2013 . For 2015 and 2014, average warrants to purchase 150 million shares of common stock were included in the diluted EPS calculation under the treasury stock method.

In connection with the preferred stock actions described in Note 13 - Shareholders'Equity, the Corporation recorded a $\$ 100$ million non-cash preferred stock dividend in 2013, which is included in the calculation of net income allocated to common shareholders.

## NOTE 16 Regulatory Requirements and

## Restrictions

The Federal Reserve, Office of the Comptroller of the Currency (OCC) and FDIC (collectively, U.S. banking regulators) jointly establish regulatory capital adequacy guidelines for U.S. banking organizations. As a financial holding company, the Corporation is subject to capital adequacy rules issued by the Federal Reserve, and its banking entity affiliates, including BANA and Bank of America California, N.A., are subject to capital adequacy rules issued by their respective primary regulators.

On January 1, 2014, the Corporation and its affiliates became subject to Basel 3, which includes certain transition provisions through January 1, 2019. The Corporation and its primary banking entity affiliate, BANA, are Advanced approaches institutions under Basel 3.

Basel 3 updated the composition of capital and established a Common equity tier 1 capital ratio. Common equity tier 1 capital primarily includes common stock, retained earnings and accumulated OCI . Basel 3 revised minimum capital ratios and buffer requirements, added a supplementary leverage ratio, and addressed the adequately capitalized minimum requirements under the PCA framework. Finally, Basel 3 established two methods
of calculating risk-weighted assets, the Standardized approach and the Advanced approaches.

As an Advanced approaches institution, under Basel 3, the Corporation was required to complete a qualification period (parallel run) to demonstrate compliance with the Basel 3 Advanced approaches to the satisfaction of U.S. banking regulators. The Corporation received approval to begin using the Advanced approaches capital framework to determine risk-based capital requirements in the fourth quarter of 2015. Having exited parallel run on October 1, 2015, the Corporation is required to report regulatory risk-based capital ratios and risk-weighted assets under both the Standardized and Advanced approaches. The approach that yields the lower ratio is used to assess capital adequacy including under the PCA framework, and was the Advanced approaches in the fourth quarter of 2015. Prior to the fourth quarter of 2015, the Corporation was required to report its capital adequacy under the Standardized approach only.

The table below presents capital ratios and related information in accordance with Basel 3 Standardized and Advanced approaches - Transition as measured at December 31, 2015 and 2014 for the Corporation and BANA.

Regulatory Capital under Basel 3 - Transition (1)

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Bank of America Corporation |  |  |  |  |  | Bank of America, N.A. |  |  |  |  |  |
|  | Standardized Approach |  | Advanced Approaches |  | Regulatory Minimum | Wellcapitalized ${ }^{(2)}$ | Standardized Approach |  | Advanced Approaches |  | Regulatory Minimum | Wellcapitalized ${ }^{(2)}$ |
| Risk-based capital metrics: |  |  |  |  |  |  |  |  |  |  |  |  |
| Common equity tier 1 capital | \$ | 163,026 |  | 163,026 |  |  | \$ | 144,869 |  | 144,869 |  |  |
| Tier 1 capital |  | 180,778 |  | 180,778 |  |  |  | 144,869 |  | 144,869 |  |  |
| Total capital ${ }^{(3)}$ |  | 220,676 |  | 210,912 |  |  |  | 159,871 |  | 150,624 |  |  |
| Risk-weighted assets (in billions) |  | 1,403 |  | 1,602 |  |  |  | 1,183 |  | 1,104 |  |  |
| Common equity tier 1 capital ratio |  | 11.6\% |  | 10.2\% | 4.5\% | n/a |  | 12.2\% |  | 13.1\% | 4.5\% | 6.5\% |
| Tier 1 capital ratio |  | 12.9 |  | 11.3 | 6.0 | 6.0\% |  | 12.2 |  | 13.1 | 6.0 | 8.0 |
| Total capital ratio |  | 15.7 |  | 13.2 | 8.0 | 10.0 |  | 13.5 |  | 13.6 | 8.0 | 10.0 |
| Leverage-based metrics: |  |  |  |  |  |  |  |  |  |  |  |  |
| Adjusted quarterly average assets (in billions) (4) | \$ | 2,103 | \$ | 2,103 |  |  | \$ | 1,575 | \$ | 1,575 |  |  |
| Tier 1 leverage ratio |  | 8.6\% |  | 8.6\% | 4.0 | n/a |  | 9.2\% |  | 9.2\% | 4.0 | 5.0 |


|  | December 31, 2014 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Risk-based capital metrics: |  |  |  |  |  |  |  |  |  |  |  |  |
| Common equity tier 1 capital |  | 155,361 |  | n/a |  |  |  | 145,150 |  | $\mathrm{n} / \mathrm{a}$ |  |  |
| Tier 1 capital |  | 168,973 |  | n/a |  |  |  | 145,150 |  | $\mathrm{n} / \mathrm{a}$ |  |  |
| Total capital (3) |  | 208,670 |  | n/a |  |  |  | 161,623 |  | n/a |  |  |
| Risk-weighted assets (in billions) |  | 1,262 |  | n/a |  |  |  | 1,105 |  | n/a |  |  |
| Common equity tier 1 capital ratio |  | 12.3\% |  | n/a | 4.0\% | n/a |  | 13.1\% |  | n/a | 4.0\% | n/a |
| Tier 1 capital ratio |  | 13.4 |  | $\mathrm{n} / \mathrm{a}$ | 5.5 | 6.0\% |  | 13.1 |  | $\mathrm{n} / \mathrm{a}$ | 5.5 | 6.0\% |
| Total capital ratio |  | 16.5 |  | n/a | 8.0 | 10.0 |  | 14.6 |  | n/a | 8.0 | 10.0 |
| Leverage-based metrics: |  |  |  |  |  |  |  |  |  |  |  |  |
| Adjusted quarterly average assets (in billions) ${ }^{(4)}$ | + | 2,060 | \$ | 2,060 |  |  | \$ | 1,509 | \$ | 1,509 |  |  |
| Tier 1 leverage ratio |  | 8.2\% |  | 8.2\% | 4.0 | n/a |  | 9.6\% |  | 9.6\% | 4.0 | 5.0 |

 parallel run, the Corporation is required to report regulatory capital risk-weighted assets and ratios under both the Standardized and Advanced approaches. The approach that yields the lower ratio is to be used to assess capital adequacy and was the Advanced approaches at December 31,2015. Prior to exiting parallel run, the Corporation was required to report regulatory capital risk-weighted assets and ratios under the Standardized approach only. As previously disclosed, with the approval to exit parallel run, U.S. banking regulators requested modifications to certain internal analytical models including the wholesale (e.g., commercial) credit models which increased the Corporation's risk-weighted assets in the fourth quarter of 2015.
${ }^{(2)}$ To be "well capitalized" under the current U.S. banking regulatory agency definitions, a bank holding company or national bank must maintain these or higher ratios and not be subject to a Federal Reserve order or directive to maintain higher capital levels.
${ }^{(3)}$ Total capital under the Advanced approaches differs from the Standardized approach due to differences in the amount permitted in Tier 2 capital related to the qualifying allowance for credit losses. ${ }^{(4)}$ Reflects adjusted average assets for the three months ended December 31, 2015 and 2014.
$\mathrm{n} / \mathrm{a}=$ not applicable

The capital adequacy rules issued by the U.S. banking regulators require institutions to meet the established minimums outlined in the Regulatory Capital under Basel 3 - Transition table. Failure to meet the minimum requirements can lead to certain mandatory and discretionary actions by regulators that could have a material adverse impact on the Corporation's financial position. At December 31, 2015 and 2014, the Corporation and its banking entity affiliates were "well capitalized."

## Other Regulatory Matters

On February 18, 2014, the Federal Reserve approved a final rule implementing certain enhanced supervisory and prudential requirements established under the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act. The final rule formalizes risk management requirements primarily related to governance and liquidity risk management and reiterates the provisions of previously issued final rules related to risk-based and leverage capital and stress test requirements. Also, a debt-to-equity limit may be enacted for an individual BHC if it is determined to pose a grave threat to the financial stability of the U.S. Such limit is at the discretion of the Financial Stability Oversight Council (FSOC) or the Federal Reserve on behalf of the FSOC.

The Federal Reserve requires the Corporation's banking subsidiaries to maintain reserve requirements based on a
percentage of certain deposits. The average daily reserve balance requirements, in excess of vault cash, maintained by the Corporation with the Federal Reserve were $\$ 9.8$ billion and $\$ 9.1$ billion for 2015 and 2014. At December 31, 2015 and 2014, the Corporation had cash in the amount of $\$ 12.1$ billion and $\$ 7.7$ billion, and securities with a fair value of $\$ 17.5$ billion and $\$ 19.2$ billion that were segregated in compliance with securities regulations or deposited with clearing organizations.

The primary sources of funds for cash distributions by the Corporation to its shareholders are capital distributions received from its banking subsidiaries, BANA and Bank of America California, N.A. In 2015, the Corporation received dividends of $\$ 18.8$ billion from BANA and none from Bank of America California, N.A. The amount of dividends that a subsidiary bank may declare in a calendar year is the subsidiary bank's net profits for that year combined with its retained net profits for the preceding two years. Retained net profits, as defined by the OCC, consist of net income less dividends declared during the period. In 2016, BANA can declare and pay dividends of approximately $\$ 5.0$ billion to the Corporation plus an additional amount equal to its retained net profits for 2016 up to the date of any such dividend declaration. Bank of America California, N.A. can pay dividends of $\$ 895$ million in 2016 plus an additional amount equal to its retained net profits for 2016 up to the date of any such dividend declaration.

## NOTE 17 Employee Benefit Plans

## Pension and Postretirement Plans

The Corporation sponsors a qualified noncontributory trusteed pension plan, a number of noncontributory nonqualified pension plans, and postretirement health and life plans that cover eligible employees. Non-U.S. pension plans sponsored by the Corporation vary based on the country and local practices.

In 2013, the Corporation merged a defined benefit pension plan, which covered eligible employees of certain legacy companies, into the legacy Bank of America Pension Plan (the Pension Plan). This merged plan is referred to as the Qualified Pension Plan. The merger resulted in a remeasurement of the qualified pension obligations and plan assets at fair value as of the merger date which increased accumulated OCI by $\$ 2.0$ billion, net-of-tax. The benefit structures under the merged legacy plans have not changed and remain intact in the Qualified Pension Plan.

Benefits earned under the Qualified Pension Plan have been frozen. Thereafter, the cash balance accounts continue to earn investment credits or interest credits in accordance with the terms of the plan document.

It is the policy of the Corporation to fund no less than the minimum funding amount required by the Employee Retirement Income Security Act of 1974 (ERISA).

The Pension Plan has a balance guarantee feature for account balances with participant-selected earnings, applied at the time a benefit payment is made from the plan that effectively provides principal protection for participant balances transferred and certain compensation credits. The Corporation is responsible for funding any shortfall on the guarantee feature.

The Corporation has an annuity contract that guarantees the payment of benefits vested under a terminated U.S. pension plan (the Other Pension Plan). The Corporation, under a supplemental agreement, may be responsible for, or benefit from actual experience and investment performance of the annuity assets. The Corporation made no contribution under this agreement in 2015 or 2014. Contributions may be required in the future under this agreement.

The Corporation's noncontributory, nonqualified pension plans are unfunded and provide supplemental defined pension benefits to certain eligible employees.

In addition to retirement pension benefits, certain benefits eligible to employees may become eligible to continue participation as retirees in health care and/or life insurance plans sponsored by the Corporation. Based on the other provisions of the individual plans, certain retirees may also have the cost of these benefits partially paid by the Corporation. These plans are referred to as the Postretirement Health and Life Plans.

The Pension and Postretirement Plans table summarizes the changes in the fair value of plan assets, changes in the projected benefit obligation (PBO), the funded status of both the accumulated benefit obligation (ABO) and the PBO, and the weighted-average assumptions used to determine benefit obligations for the pension plans and postretirement plans at December 31, 2015 and 2014. Amounts recognized at December 31, 2015 and 2014 are reflected in other assets, and in accrued expenses and other liabilities on the Consolidated Balance Sheet. The estimate of the Corporation's PBO associated with these plans considers various actuarial assumptions, including assumptions for mortality rates and discount rates. As of December 31, 2014, the Corporation adopted mortality assumptions published by the Society of Actuaries in October 2014, adjusted to reflect observed and anticipated future mortality experience of the participants in the Corporation's U.S. plans. The adoption of the new mortality assumptions resulted in an increase of the PBO of approximately $\$ 580$ million at December 31, 2014. The discount rate assumptions are derived from a cash flow matching technique that utilizes rates that are based on Aa-rated corporate bonds with cash flows that match estimated benefit payments of each of the plans. The increase in the weighted-average discount rates in 2015 resulted in a decrease to the PBO of approximately $\$ 930$ million at December 31, 2015. The decrease in the weighted-average discount rates in 2014 resulted in an increase to the PBO of approximately $\$ 1.9$ billion at December 31, 2014.

The Corporation's best estimate of its contributions to be made to the Non-U.S. Pension Plans, Nonqualified and Other Pension Plans, and Postretirement Health and Life Plans in 2016 is $\$ 50$ million, $\$ 103$ million and $\$ 108$ million, respectively. The Corporation does not expect to make a contribution to the Qualified Pension Plan in 2016.

Pension and Postretirement Plans

| (Dollars in millions) | Qualified Pension Plan (1) |  |  |  | Non-U.S. <br> Pension Plans ${ }^{(1)}$ |  |  |  | Nonqualified and Other Pension Plans ${ }^{(1)}$ |  |  |  | Postretirement Health and Life Plans ${ }^{(1)}$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |
| Change in fair value of plan assets |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Fair value, January 1 | \$ | 18,614 | \$ | 18,276 | \$ | 2,564 | \$ | 2,457 | \$ | 2,927 | \$ | 2,720 | \$ | 28 | \$ | 72 |
| Actual return on plan assets |  | 199 |  | 1,261 |  | 342 |  | 256 |  | 14 |  | 336 |  | - |  | 6 |
| Company contributions |  | - |  | - |  | 58 |  | 84 |  | 97 |  | 97 |  | 79 |  | 53 |
| Plan participant contributions |  | - |  | - |  | 1 |  | 1 |  | - |  | - |  | 127 |  | 129 |
| Settlements and curtailments |  | - |  | - |  | (7) |  | (5) |  | - |  | - |  | - |  | - |
| Benefits paid |  | (851) |  | (923) |  | (78) |  | (68) |  | (233) |  | (226) |  | (247) |  | (248) |
| Federal subsidy on benefits paid |  | n/a |  | n/a |  | n/a |  | n/a |  | n/a |  | $\mathrm{n} / \mathrm{a}$ |  | 13 |  | 16 |
| Foreign currency exchange rate changes |  | n/a |  | n/a |  | (142) |  | (161) |  | n/a |  | n/a |  | n/a |  | n/a |
| Fair value, December 31 | \$ | 17,962 | \$ | 18,614 | \$ | 2,738 | \$ | 2,564 | \$ | 2,805 | \$ | 2,927 | \$ | - | \$ | 28 |
| Change in projected benefit obligation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Projected benefit obligation, January 1 | \$ | 15,508 | \$ | 14,145 | \$ | 2,688 | \$ | 2,580 | \$ | 3,329 | \$ | 3,070 | \$ | 1,346 | \$ | 1,356 |
| Service cost |  | - |  | - |  | 27 |  | 29 |  | - |  | 1 |  | 8 |  | 8 |
| Interest cost |  | 621 |  | 665 |  | 93 |  | 109 |  | 122 |  | 133 |  | 48 |  | 58 |
| Plan participant contributions |  | - |  | - |  | 1 |  | 1 |  | - |  | - |  | 127 |  | 129 |
| Plan amendments |  | - |  | - |  | (1) |  | 1 |  | - |  | - |  | - |  | - |
| Settlements and curtailments |  | - |  | - |  | (7) |  | (6) |  | - |  | - |  | - |  | - |
| Actuarial loss (gain) |  | (817) |  | 1,621 |  | (2) |  | 208 |  | (165) |  | 351 |  | (141) |  | 29 |
| Benefits paid |  | (851) |  | (923) |  | (78) |  | (68) |  | (233) |  | (226) |  | (247) |  | (248) |
| Federal subsidy on benefits paid |  | n/a |  | n/a |  | n/a |  | n/a |  | n/a |  | n/a |  | 13 |  | 16 |
| Foreign currency exchange rate changes |  | n/a |  | n/a |  | (141) |  | (166) |  | n/a |  | n/a |  | (2) |  | (2) |
| Projected benefit obligation, December 31 | \$ | 14,461 | \$ | 15,508 | \$ | 2,580 | \$ | 2,688 | \$ | 3,053 | \$ | 3,329 | \$ | 1,152 | \$ | 1,346 |
| Amount recognized, December 31 | \$ | 3,501 | \$ | 3,106 | \$ | 158 | \$ | (124) | \$ | (248) | \$ | (402) | \$ | $(1,152)$ | \$ | $(1,318)$ |
| Funded status, December 31 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Accumulated benefit obligation | \$ | 14,461 | \$ | 15,508 | \$ | 2,479 | \$ | 2,582 | \$ | 3,052 | \$ | 3,329 |  | n/a |  | $\mathrm{n} / \mathrm{a}$ |
| Overfunded (unfunded) status of ABO |  | 3,501 |  | 3,106 |  | 259 |  | (18) |  | (247) |  | (402) |  | n/a |  | n/a |
| Provision for future salaries |  | - |  | - |  | 101 |  | 106 |  | 1 |  | - |  | n/a |  | $\mathrm{n} / \mathrm{a}$ |
| Projected benefit obligation |  | 14,461 |  | 15,508 |  | 2,580 |  | 2,688 |  | 3,053 |  | 3,329 | \$ | 1,152 | \$ | 1,346 |
| Weighted-average assumptions, December 31 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Discount rate |  | 4.51\% |  | 4.12\% |  | 3.59\% |  | 3.56\% |  | 4.34\% |  | 3.80\% |  | 4.32\% |  | 3.75\% |
| Rate of compensation increase |  | n/a |  | $\mathrm{n} / \mathrm{a}$ |  | 4.64 |  | 4.70 |  | 4.00 |  | 4.00 |  | n/a |  | $\mathrm{n} / \mathrm{a}$ |
| (1) The measurement date for the Qualified Pension Plan, Non-U.S. Pension Plans, Nonqualified and Other Pension Plans, and Postretirement Health and Life Plans was December 31 of each year reported. <br> $\mathrm{n} / \mathrm{a}=$ not applicable |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Amounts recognized on the Consolidated Balance Sheet at December 31, 2015 and 2014 are presented in the table below.

## Amounts Recognized on Consolidated Balance Sheet

|  | Qualified Pension Plan |  |  |  | Non-U.S. <br> Pension Plans |  |  |  | Nonqualified and Other Pension Plans |  |  |  | Postretirement Health and Life Plans |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (Dollars in millions) | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| Other assets | \$ | 3,501 | \$ | 3,106 | \$ | 548 | \$ | 252 | \$ | 825 | \$ | 786 | \$ | - | \$ | - |
| Accrued expenses and other liabilities |  | - |  | - |  | (390) |  | (376) |  | $(1,073)$ |  | $(1,188)$ |  | $(1,152)$ |  | $(1,318)$ |
| Net amount recognized at December 31 | \$ | 3,501 | \$ | 3,106 | \$ | 158 | \$ | (124) | \$ | (248) | \$ | (402) | \$ | $(1,152)$ | \$ | $(1,318)$ |

Pension Plans with ABO and PBO in excess of plan assets as of December 31, 2015 and 2014 are presented in the table below. For the non-qualified plans not subject to ERISA or non-U.S. pension plans, funding strategies vary due to legal requirements and local practices.

Plans with PBO and ABO in Excess of Plan Assets

| (Dollars in millions) | Non-U.S. Pension Plans |  |  |  | Nonqualified and Other Pension Plans |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| PBO | \$ | 574 | \$ | 583 | \$ | 1,075 | \$ | 1,190 |
| ABO |  | 551 |  | 563 |  | 1,074 |  | 1,190 |
| Fair value of plan assets |  | 183 |  | 206 |  | 1 |  | 2 |

Net periodic benefit cost of the Corporation's plans for 2015, 2014 and 2013 included the following components.

## Components of Net Periodic Benefit Cost

## (Dollars in millions)

| Components of net periodic benefit cost (income) |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Service cost | \$ | - | \$ | - | \$ | - | \$ | 27 | \$ | 29 | \$ | 32 |
| Interest cost |  | 621 |  | 665 |  | 623 |  | 93 |  | 109 |  | 98 |
| Expected return on plan assets |  | $(1,045)$ |  | $(1,018)$ |  | $(1,024)$ |  | (133) |  | (137) |  | (121) |
| Amortization of prior service cost |  | - |  | - |  | - |  | 1 |  | 1 |  | - |
| Amortization of net actuarial loss |  | 170 |  | 111 |  | 242 |  | 6 |  | 3 |  | 2 |
| Recognized loss (gain) due to settlements and curtailments |  | - |  | - |  | 17 |  | - |  | 2 |  | (7) |
| Net periodic benefit cost (income) | \$ | (254) | \$ | (242) | \$ | (142) | \$ | (6) | \$ | 7 | \$ | 4 |
| Weighted-average assumptions used to determine net cost for years ended December 31 |  |  |  |  |  |  |  |  |  |  |  |  |
| Discount rate |  | 4.12\% |  | 4.85\% |  | 4.00\% |  | 3.56\% |  | 4.30\% |  | 4.23\% |
| Expected return on plan assets |  | 6.00 |  | 6.00 |  | 6.50 |  | 5.27 |  | 5.52 |  | 5.50 |
| Rate of compensation increase |  | n/a |  | n/a |  | n/a |  | 4.70 |  | 4.91 |  | 4.37 |


| (Dollars in millions) | Nonqualified and Other Pension Plans |  |  |  |  |  | Postretirement Health and Life Plans |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  | 2013 |  | 2015 |  | 2014 |  | 2013 |  |
| Components of net periodic benefit cost (income) |  |  |  |  |  |  |  |  |  |  |  |  |
| Service cost | \$ | - | \$ | 1 | \$ | 1 | \$ | 8 | \$ | 8 | \$ | 9 |
| Interest cost |  | 122 |  | 133 |  | 120 |  | 48 |  | 58 |  | 54 |
| Expected return on plan assets |  | (92) |  | (124) |  | (109) |  | (1) |  | (4) |  | (5) |
| Amortization of prior service cost |  | - |  | - |  | - |  | 4 |  | 4 |  | 4 |
| Amortization of net actuarial loss (gain) |  | 34 |  | 25 |  | 25 |  | (46) |  | (89) |  | (42) |
| Recognized loss due to settlements and curtailments |  | - |  | - |  | 2 |  | - |  | - |  | 6 |
| Net periodic benefit cost (income) | \$ | 64 | \$ | 35 | \$ | 39 | \$ | 13 | \$ | (23) | \$ | 26 |
| Weighted-average assumptions used to determine net cost for years ended December 31 |  |  |  |  |  |  |  |  |  |  |  |  |
| Discount rate |  | 3.80\% |  | 4.55\% |  | 3.65\% |  | 3.75\% |  | 4.50\% |  | 3.65\% |
| Expected return on plan assets |  | 3.26 |  | 4.60 |  | 3.75 |  | 6.00 |  | 6.00 |  | 6.50 |
| Rate of compensation increase |  | 4.00 |  | 4.00 |  | 4.00 |  | n/a |  | n/a |  | n/a |

The asset valuation method used to calculate the expected return on plan assets component of net period benefit cost for the Qualified Pension Plan recognizes 60 percent of the prior year's market gains or losses at the next measurement date with the remaining 40 percent spread equally over the subsequent four years.

Net periodic postretirement health and life expense was determined using the "projected unit credit" actuarial method. Gains and losses for all benefit plans except postretirement health care are recognized in accordance with the standard amortization provisions of the applicable accounting guidance. For the Postretirement Health Care Plans, 50 percent of the unrecognized gain or loss at the beginning of the fiscal year (or at subsequent remeasurement) is recognized on a level basis during the year.

Assumed health care cost trend rates affect the postretirement benefit obligation and benefit cost reported for the Postretirement Health and Life Plans. The assumed health care cost trend rate used to measure the expected cost of benefits covered by the Postretirement Health and Life Plans is 7.00 percent for 2016, reducing in steps to 5.00 percent in 2021 and later years. A one-percentage-point increase in assumed health care cost trend rates would have increased the service and interest costs, and the benefit obligation by $\$ 2$ million and $\$ 34$ million in 2015. A one-percentage-point decrease in assumed health care cost trend rates would have lowered the service and interest costs, and the benefit obligation by $\$ 2$ million and $\$ 29$ million in 2015.

The Corporation's net periodic benefit cost (income) recognized for the plans is sensitive to the discount rate and expected return
on plan assets. With all other assumptions held constant, a 25 basis point (bp) decline in the discount rate and expected return on plan asset assumptions would have resulted in an increase in the net periodic benefit cost for the Qualified Pension Plan recognized in 2015 of approximately $\$ 9$ million and $\$ 44$ million, and to be recognized in 2016 of approximately $\$ 9$ million and $\$ 43$ million. For the Postretirement Health and Life Plans, a 25 bp decline in the discount rate would have resulted in an increase in the net periodic benefit cost recognized in 2015 of approximately
$\$ 9$ million, and to be recognized in 2016 of approximately $\$ 8$ million. For the Non-U.S. Pension Plans and the Nonqualified and Other Pension Plans, a 25 bp decline in discount rates would not have a significant impact on the net periodic benefit cost for 2015 and 2016.

Pretax amounts included in accumulated OCI for employee benefit plans at December 31, 2015 and 2014 are presented in the table below.

## Pretax Amounts Included in Accumulated OCI

| (Dollars in millions) | Qualified Pension Plan |  | Non-U.S. <br> Pension Plans |  |  |  | Nonqualified and Other Pension Plans |  |  |  | Postretirement Health and Life Plans |  |  |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 | 2014 |  | 015 |  | 014 |  | 15 |  | 14 |  | 015 |  |  | 2015 | 2014 |
| Net actuarial loss (gain) | \$ 3,920 | \$ 4,061 | \$ | 137 | \$ | 355 | \$ | 848 | \$ | 968 | \$ | (150) | \$ | (56) | \$ 4,755 | \$ 5,328 |
| Prior service cost (credits) | - | - |  | (10) |  | (9) |  | - |  | - |  | 16 |  | 20 | 6 | 11 |
| Amounts recognized in accumulated OCI | \$ 3,920 | \$ 4,061 | \$ | 127 | \$ | 346 | \$ | 848 | \$ | 968 | \$ | (134) | \$ | (36) | \$ 4,761 | \$ 5,339 |

Pretax amounts recognized in OCI for employee benefit plans in 2015 included the following components.

## Pretax Amounts Recognized in OCI

|  | Qualified Pension Plan |  |  | Non-U.S. <br> Pension Plans |  |  |  | Nonqualified and Other Pension Plans |  |  |  | Postretirement Health and Life Plans |  |  |  | Total |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (Dollars in millions) | 2015 |  | 2014 | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |  | 2015 |  | 2014 |
| Current year actuarial loss (gain) | \$ | 29 | \$ 1,378 | \$ | (211) | \$ | 87 | \$ | (86) | \$ | 138 | \$ | (140) | \$ | 26 | \$ | (408) | \$ 1,629 |
| Amortization of actuarial gain (loss) |  | (170) | (111) |  | (6) |  | (3) |  | (34) |  | (25) |  | 46 |  | 89 |  | (164) | (50) |
| Current year prior service cost (credit) |  | - | - |  | (1) |  | 1 |  | - |  | - |  | - |  | - |  | (1) | 1 |
| Amortization of prior service cost |  | - | - |  | (1) |  | (1) |  | - |  | - |  | (4) |  | (4) |  | (5) | (5) |
| Amounts recognized in OCI | \$ | (141) | \$ 1,267 | \$ | (219) | \$ | 84 | \$ | (120) | \$ | 113 | \$ | (98) | \$ | 111 | \$ | (578) | \$ 1,575 |

The estimated pretax amounts that will be amortized from accumulated OCI into expense in 2016 are presented in the table below.

Estimated Pretax Amounts Amortized from Accumulated OCI into Period Cost in 2016

| (Dollars in millions) | Qualified Pension Plan |  | Non-U.S. Pension Plans |  | Nonqualified and Other Pension Plans |  | Postretirement Health and Life Plans |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Net actuarial loss (gain) | \$ | 136 | \$ | 6 | \$ | 25 | \$ | (67) | \$ | 100 |
| Prior service cost |  | - |  | 1 |  | - |  | 4 |  | 5 |
| Total amounts amortized from accumulated OCI | \$ | 136 | \$ | 7 | \$ | 25 | \$ | (63) | \$ | 105 |

## Plan Assets

The Qualified Pension Plan has been established as a retirement vehicle for participants, and trusts have been established to secure benefits promised under the Qualified Pension Plan. The Corporation's policy is to invest the trust assets in a prudent manner for the exclusive purpose of providing benefits to participants and defraying reasonable expenses of administration. The Corporation's investment strategy is designed to provide a total return that, over the long term, increases the ratio of assets to liabilities. The strategy attempts to maximize the investment return on assets at a level of risk deemed appropriate by the Corporation while complying with ERISA and any applicable regulations and laws. The investment strategy utilizes asset allocation as a principal determinant for establishing the risk/ return profile of the assets. Asset allocation ranges are established, periodically reviewed and adjusted as funding levels
and liability characteristics change. Active and passive investment managers are employed to help enhance the risk/return profile of the assets. An additional aspect of the investment strategy used to minimize risk (part of the asset allocation plan) includes matching the equity exposure of participant-selected investment measures. For example, the common stock of the Corporation held in the trust is maintained as an offset to the exposure related to participants who elected to receive an investment measure based on the return performance of common stock of the Corporation. No plan assets are expected to be returned to the Corporation during 2016.

The assets of the Non-U.S. Pension Plans are primarily attributable to a U.K. pension plan. This U.K. pension plan's assets are invested prudently so that the benefits promised to members are provided with consideration given the nature and the duration of the plan's liabilities. The current investment strategy was set following an asset-liability study and advice from the trustee's
investment advisors. The selected asset allocation strategy is designed to achieve a higher return than the lowest risk strategy while maintaining a prudent approach to meeting the plan's liabilities.

The expected return on plan assets assumption was developed through analysis of historical market returns, historical asset class volatility and correlations, current market conditions, anticipated future asset allocations, the funds' past experience, and expectations on potential future market returns. The expected return on plan assets assumption is determined using the calculated market-related value for the Qualified Pension Plan and the Other Pension Plan and the fair value for the Non-U.S. Pension Plans and Postretirement Health and Life Plans. The expected
return on plan assets assumption represents a long-term average view of the performance of the assets in the Qualified Pension Plan, the Non-U.S. Pension Plans, the Other Pension Plan, and Postretirement Health and Life Plans, a return that may or may not be achieved during any one calendar year. The terminated Other U.S. Pension Plan is invested solely in an annuity contract which is primarily invested in fixed-income securities structured such that asset maturities match the duration of the plan's obligations.

The target allocations for 2016 by asset category for the Qualified Pension Plan, Non-U.S. Pension Plans, Nonqualified and Other Pension Plans, and Postretirement Health and Life Plans are presented in the table below.

2016 Target Allocation

|  | Percentage |  |  |
| :---: | :---: | :---: | :---: |
| Asset Category | Qualified Pension Plan | Non-U.S. <br> Pension Plans | Nonqualified and Other Pension Plans |
| Equity securities | 20-60 | 10-35 | 0-5 |
| Debt securities | 40-80 | 40-80 | 95-100 |
| Real estate | 0-10 | 0-15 | 0-5 |
| Other | 0-5 | 0-15 | 0-5 |

Equity securities for the Qualified Pension Plan include common stock of the Corporation in the amounts of \$189 million (1.05 percent of total plan assets) and $\$ 215$ million ( 1.15 percent of total plan assets) at December 31, 2015 and 2014.

## Fair Value Measurements

For information on fair value measurements, including descriptions of Level 1, 2 and 3 of the fair value hierarchy and the valuation methods employed by the Corporation, see Note 1 - Summary of Significant Accounting Principles and Note 20 - Fair Value Measurements.

Combined plan investment assets measured at fair value by level and in total at December 31, 2015 and 2014 are summarized in the Fair Value Measurements table.

## Fair Value Measurements

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Level 1 |  | Level 2 |  | Level 3 |  | Total |  |
| Cash and short-term investments |  |  |  |  |  |  |  |  |
| Money market and interest-bearing cash | \$ | 3,061 | \$ | - | \$ | - | \$ | 3,061 |
| Cash and cash equivalent commingled/mutual funds |  | - |  | 4 |  | - |  | 4 |
| Fixed income |  |  |  |  |  |  |  |  |
| U.S. government and agency securities |  | 2,723 |  | 881 |  | 11 |  | 3,615 |
| Corporate debt securities |  | - |  | 1,795 |  | - |  | 1,795 |
| Asset-backed securities |  | - |  | 1,939 |  | - |  | 1,939 |
| Non-U.S. debt securities |  | 632 |  | 662 |  | - |  | 1,294 |
| Fixed income commingled/mutual funds |  | 551 |  | 1,421 |  | - |  | 1,972 |
| Equity |  |  |  |  |  |  |  |  |
| Common and preferred equity securities |  | 6,735 |  | - |  | - |  | 6,735 |
| Equity commingled/mutual funds |  | 3 |  | 1,503 |  | - |  | 1,506 |
| Public real estate investment trusts |  | 138 |  | - |  | - |  | 138 |
| Real estate |  |  |  |  |  |  |  |  |
| Private real estate |  | - |  | - |  | 144 |  | 144 |
| Real estate commingled/mutual funds |  | - |  | 12 |  | 731 |  | 743 |
| Limited partnerships |  | - |  | 121 |  | 49 |  | 170 |
| Other investments ${ }^{(1)}$ |  | - |  | 287 |  | 102 |  | 389 |
| Total plan investment assets, at fair value | \$ | 13,843 | \$ | 8,625 | \$ | 1,037 | \$ | 23,505 |


| Cash and short-term investments | December 31, 2014 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ |  | \$ | - | \$ | - | \$ | 3,814 |
| Money market and interest-bearing cash |  | 3,814 |  |  |  |  |  |  |
| Cash and cash equivalent commingled/mutual funds |  | - |  | 4 |  | - |  | 4 |
| Fixed income |  |  |  |  |  |  |  |  |
| U.S. government and agency securities |  | 2,004 |  | 2,151 |  | 11 |  | 4,166 |
| Corporate debt securities |  | - |  | 1,454 |  | - |  | 1,454 |
| Asset-backed securities |  | - |  | 1,930 |  | - |  | 1,930 |
| Non-U.S. debt securities |  | 627 |  | 487 |  | - |  | 1,114 |
| Fixed income commingled/mutual funds |  | 101 |  | 1,397 |  | - |  | 1,498 |
| Equity |  |  |  |  |  |  |  |  |
| Common and preferred equity securities |  | 6,628 |  | - |  | - |  | 6,628 |
| Equity commingled/mutual funds |  | 16 |  | 1,817 |  | - |  | 1,833 |
| Public real estate investment trusts |  | 124 |  | - |  | - |  | 124 |
| Real estate |  |  |  |  |  |  |  |  |
| Private real estate |  | - |  | - |  | 127 |  | 127 |
| Real estate commingled/mutual funds |  | - |  | 4 |  | 632 |  | 636 |
| Limited partnerships |  | - |  | 122 |  | 65 |  | 187 |
| Other investments (1) |  | 1 |  | 490 |  | 127 |  | 618 |
| Total plan investment assets, at fair value | \$ | 13,315 | \$ | 9,856 | \$ | 962 | \$ | 24,133 |

(1) Other investments include interest rate swaps of $\$ 114$ million and $\$ 297$ million, participant loans of $\$ 58$ million and $\$ 78$ million, commodity and balanced funds of $\$ 165$ million and $\$ 178$ million and other various investments of $\$ 52$ million and $\$ 65$ million at December 31, 2015 and 2014.

The Level 3 Fair Value Measurements table presents a reconciliation of all plan investment assets measured at fair value using significant unobservable inputs (Level 3) during 2015, 2014 and 2013.

## Level 3 Fair Value Measurements

| (Dollars in millions) | 2015 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Balance January 1 |  | Actual Return on Plan Assets Still Held at the Reporting Date |  | Purchases, Sales and Settlements |  | Transfers out of Level 3 |  | Balance December 31 |  |
| Fixed income |  |  |  |  |  |  |  |  |  |  |
| U.S. government and agency securities | \$ | 11 | \$ | - | \$ | - | \$ | - | \$ | 11 |
| Real estate |  |  |  |  |  |  |  |  |  |  |
| Private real estate |  | 127 |  | 14 |  | 3 |  | - |  | 144 |
| Real estate commingled/mutual funds |  | 632 |  | 37 |  | 62 |  | - |  | 731 |
| Limited partnerships |  | 65 |  | (1) |  | (15) |  | - |  | 49 |
| Other investments |  | 127 |  | (5) |  | (20) |  | - |  | 102 |
| Total | \$ | 962 | \$ | 45 | \$ | 30 | \$ | - | \$ | 1,037 |
|  |  |  |  |  |  |  |  |  |  |  |
| Fixed income |  |  |  |  |  |  |  |  |  |  |
| U.S. government and agency securities | \$ | 12 | \$ | - | \$ | (1) | \$ | - | \$ | 11 |
| Non-U.S. debt securities |  | 6 |  | - |  | (2) |  | (4) |  | - |
| Real estate |  |  |  |  |  |  |  |  |  |  |
| Private real estate |  | 119 |  | 5 |  | 3 |  | - |  | 127 |
| Real estate commingled/mutual funds |  | 462 |  | 20 |  | 150 |  | - |  | 632 |
| Limited partnerships |  | 145 |  | 5 |  | (85) |  | - |  | 65 |
| Other investments |  | 135 |  | 1 |  | (9) |  | - |  | 127 |
| Total | \$ | 879 | \$ | 31 | \$ | 56 | \$ | (4) | \$ | 962 |
|  |  |  |  |  |  |  |  |  |  |  |
| Fixed income |  |  |  |  |  |  |  |  |  |  |
| U.S. government and agency securities | \$ | 13 | \$ | - | \$ | (1) | \$ | - | \$ | 12 |
| Non-U.S. debt securities |  | 10 |  | (2) |  | (2) |  | - |  | 6 |
| Real estate |  |  |  |  |  |  |  |  |  |  |
| Private real estate |  | 110 |  | 4 |  | 5 |  | - |  | 119 |
| Real estate commingled/mutual funds |  | 324 |  | 15 |  | 123 |  | - |  | 462 |
| Limited partnerships |  | 231 |  | 8 |  | (66) |  | (28) |  | 145 |
| Other investments |  | 129 |  | (6) |  | 12 |  | - |  | 135 |
| Total | \$ | 817 | \$ | 19 | \$ | 71 | \$ | (28) | \$ | 879 |

## Projected Benefit Payments

Benefit payments projected to be made from the Qualified Pension Plan, Non-U.S. Pension Plans, Nonqualified and Other Pension Plans, and Postretirement Health and Life Plans are presented in the table below.

## Projected Benefit Payments

| (Dollars in millions) | Qualified <br> Pension Plan (1) |  | Non-U.S. <br> Pension Plans ${ }^{(2)}$ |  | Nonqualified and Other Pension Plans ${ }^{(2)}$ |  | Postretirement Health and Life Plans |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Net Payments ${ }^{(3)}$ | Medicare Subsidy |  |
| 2016 | \$ | 915 |  |  | \$ | 56 | \$ | 246 | \$ | 121 | \$ | 13 |
| 2017 |  | 900 |  | 59 |  |  |  | 238 |  | 115 |  | 13 |
| 2018 |  | 902 |  | 62 |  | 240 |  | 111 |  | 13 |
| 2019 |  | 894 |  | 68 |  | 237 |  | 105 |  | 12 |
| 2020 |  | 903 |  | 71 |  | 236 |  | 101 |  | 12 |
| 2021-2025 |  | 4,409 |  | 463 |  | 1,110 |  | 450 |  | 52 |

[^6]${ }^{(2)}$ Benefit payments expected to be made from a combination of the plans' and the Corporation's assets.
${ }^{(3)}$ Benefit payments (net of retiree contributions) expected to be made from a combination of the plans' and the Corporation's assets.

## Defined Contribution Plans

The Corporation maintains qualified defined contribution retirement plans and nonqualified defined contribution retirement plans. The Corporation recorded expense of $\$ 1.0$ billion, $\$ 1.0$ billion and $\$ 1.1$ billion in 2015, 2014 and 2013, respectively, related to the qualified defined contribution plans. At December 31, 2015 and 2014, 236 million and 238 million shares of the Corporation's common stock were held by these plans. Payments to the plans for dividends on common stock were $\$ 48$ million, $\$ 29$ million and $\$ 10$ million in 2015, 2014 and 2013, respectively.

Certain non-U.S. employees are covered under defined contribution pension plans that are separately administered in accordance with local laws.

## NOTE 18 Stock-based Compensation Plans

The Corporation administers a number of equity compensation plans, with awards being granted predominantly from the Bank of America Corporation 2003 Key Associate Stock Plan (KASP). Grants in 2015 from the KASP included restricted stock units (RSUs) which generally vest in three equal annual installments beginning one year from the grant date, and awards which will vest subject to the attainment of specified performance criteria. During 2015, the Corporation issued 131 million RSUs to certain employees under the KASP. RSUs may be settled in cash or in shares of common stock depending on the terms of the applicable award. In 2015, two million of these RSUs were authorized to be settled in shares of common stock with the remainder in cash. Certain awards contain cancellation and clawback provisions which permit the Corporation to cancel or recoup all or a portion of the award under specified circumstances. The compensation cost for these awards is accrued over the vesting period and adjusted to fair value based upon changes in the share price of the Corporation's common stock.

For most awards, expense is generally recognized ratably over the vesting period net of estimated forfeitures, unless the employee meets certain retirement eligibility criteria. For awards to employees that meet retirement eligibility criteria, the Corporation records the expense upon grant. For employees that become retirement eligible during the vesting period, the Corporation recognizes expense from the grant date to the date on which the employee becomes retirement eligible, net of estimated forfeitures. The compensation cost for the stock-based
plans was $\$ 2.17$ billion, $\$ 2.30$ billion and $\$ 2.28$ billion in 2015 , 2014 and 2013, respectively. The related income tax benefit was $\$ 824$ million, $\$ 854$ million and $\$ 842$ million for 2015, 2014 and 2013, respectively.

From time to time, the Corporation enters into equity total return swaps to hedge a portion of RSUs granted to certain employees as part of their compensation in prior periods in order to minimize the change in the expense to the Corporation driven by fluctuations in the fair value of the RSUs. Certain of these derivatives are designated as cash flow hedges of unrecognized unvested awards with the changes in fair value of the hedge recorded in accumulated OCl and reclassified into earnings in the same period as the RSUs affect earnings. The remaining derivatives are used to hedge the price risk of cash-settled awards with changes in fair value recorded in personnel expense. For information on amounts recognized on equity total return swaps used to hedge the Corporation's outstanding RSUs, see Note 2 - Derivatives.

On May 6, 2015, Bank of America shareholders approved the amendment and restatement of the KASP, and renamed it the Bank of America Corporation Key Employee Equity Plan (KEEP). Under the amendment and restatement of the KEEP, 450 million shares of the Corporation's common stock and any shares that were subject to an award as of December 31, 2014 under the KASP, if such award is canceled, terminates, expires, lapses or is settled in cash for any reason from and after January 1, 2015, are authorized to be used for grants of awards.

## Restricted Stock/Units

The table below presents the status at December 31, 2015 of the share-settled restricted stock/units and changes during 2015.

Stock-settled Restricted Stock/Units
$\left.\begin{array}{lrrr} & & \begin{array}{c}\text { Weighted- } \\ \text { average Grant }\end{array} \\ \text { Date Fair Value }\end{array}\right]$

The table below presents the status at December 31, 2015 of the cash-settled RSUs granted under the KASP and changes during 2015.

|  |  |
| :--- | ---: |
| Cash-settled Restricted Units |  |
|  | Units |
| Outstanding at January 1, 2015 | $316,956,435$ |
| Granted | $128,748,571$ |
| Vested | $(176,407,854)$ |
| Canceled | $(13,942,138)$ |
| Outstanding at December 31, 2015 | $255,355,014$ |

At December 31, 2015, there was an estimated $\$ 1.2$ billion of total unrecognized compensation cost related to certain sharebased compensation awards that is expected to be recognized over a period of up to four years, with a weighted-average period of 1.7 years. The total fair value of restricted stock vested in 2015, 2014 and 2013 was $\$ 145$ million, $\$ 704$ million and $\$ 906$ million, respectively. In 2015, 2014 and 2013, the amount of cash paid to settle equity-based awards for all equity compensation plans was $\$ 3.0$ billion, $\$ 2.7$ billion and $\$ 1.7$ billion, respectively.

## Stock Options

The table below presents the status of all option plans at December 31, 2015 and changes during 2015.

## Stock Options

$\left.\begin{array}{lccc} & & \begin{array}{c}\text { Weighted- } \\ \text { average }\end{array} \\ \text { Exercise Price }\end{array}\right]$

All options outstanding as of December 31, 2015 were vested and exercisable with a weighted-average remaining contractual term of 1.1 years and have no aggregate intrinsic value. No options have been granted since 2008.

NOTE 19 Income Taxes
The components of income tax expense for 2015, 2014 and 2013 are presented in the table below.

## Income Tax Expense

| (Dollars in millions) | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Current income tax expense |  |  |  |  |  |  |
| U.S. federal | \$ | 2,387 | \$ | 443 | \$ | 180 |
| U.S. state and local |  | 210 |  | 340 |  | 786 |
| Non-U.S. |  | 561 |  | 513 |  | 513 |
| Total current expense |  | 3,158 |  | 1,296 |  | 1,479 |
| Deferred income tax expense (benefit) |  |  |  |  |  |  |
| U.S. federal |  | 1,992 |  | 583 |  | 2,056 |
| U.S. state and local |  | 519 |  | 85 |  | (94) |
| Non-U.S. |  | 597 |  | 58 |  | 1,300 |
| Total deferred expense |  | 3,108 |  | 726 |  | 3,262 |
| Total income tax expense | \$ | 6,266 | \$ | 2,022 | \$ | 4,741 |

Total income tax expense does not reflect the tax effects of items that are included in accumulated OCI. For additional information, see Note 14 - Accumulated Other Comprehensive Income (Loss). These tax effects resulted in an expense of \$616 million in 2015 and $\$ 3.4$ billion in 2014 , and a benefit of $\$ 2.7$ billion in 2013, recorded in accumulated OCI. In addition, total income tax expense does not reflect tax effects associated with the Corporation's employee stock plans which decreased common stock and additional paid-in capital $\$ 44$ million, $\$ 35$ million and $\$ 128$ million in 2015, 2014 and 2013, respectively.

Income tax expense for 2015, 2014 and 2013 varied from the amount computed by applying the statutory income tax rate to income before income taxes. A reconciliation of the expected U.S. federal income tax expense, calculated by applying the federal statutory tax rate of 35 percent, to the Corporation's actual income tax expense, and the effective tax rates for 2015, 2014 and 2013 are presented in the table below.

## Reconciliation of Income Tax Expense

(Dollars in millions)
Expected U.S. federal income tax expense
Increase (decrease) in taxes resulting from:
State tax expense, net of federal benefit
Affordable housing credits/other credits
Non-U.S. tax rate differential
Tax-exempt income, including dividends
Changes in prior period UTBs, including interest
Non-U.S. tax law changes
Nondeductible expenses Other
Total income tax expense

The reconciliation of the beginning unrecognized tax benefits (UTB) balance to the ending balance is presented in the table below.

## Reconciliation of the Change in Unrecognized Tax Benefits

(Dollars in millions)
Balance, January 1
Increases related to positions taken during the current year
Increases related to positions taken during prior years ${ }^{(1)}$
Decreases related to positions taken during prior years ${ }^{(1)}$
Settlements
Expiration of statute of limitations

| 2015 |  |  | 2014 |  |  | 2013 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Amount |  | $\begin{array}{r} \text { Percent } \\ 35.0 \% \end{array}$ | Amount |  | $\begin{aligned} & \text { Percent } \\ & 35.0 \% \end{aligned}$ | Amount |  | $\begin{array}{r} \text { Percent } \\ 35.0 \% \end{array}$ |
| \$ | 7,754 |  | \$ | 2,399 |  | \$ | 5,660 |  |
|  | 474 | 2.1 |  | 276 | 4.0 |  | 450 | 2.8 |
|  | $(1,087)$ | (4.9) |  | (950) | (13.8) |  | (863) | (5.3) |
|  | (559) | (2.5) |  | (507) | (7.4) |  | (940) | (5.8) |
|  | (539) | (2.4) |  | (533) | (7.8) |  | (524) | (3.2) |
|  | (85) | (0.4) |  | (741) | (10.8) |  | (255) | (1.6) |
|  | 289 | 1.3 |  | - | - |  | 1,133 | 7.0 |
|  | 40 | 0.2 |  | 1,982 | 28.9 |  | 104 | 0.6 |
|  | (21) | (0.1) |  | 96 | 1.4 |  | (24) | (0.2) |
| \$ | 6,266 | 28.3\% | \$ | 2,022 | 29.5\% | \$ | 4,741 | 29.3\% |

Balance, December $31 \quad$ \$ 1,095 $\quad \$ \quad 1,068 \quad \$ \quad 3,068$
(1) The sum per year of positions taken during prior years differs from the $\$ 85$ million, $\$ 741$ million and $\$ 255$ million in the Reconciliation of Income Tax Expense table due to temporary items, state items and jurisdictional offsets, as well as the inclusion of interest in the Reconciliation of Income Tax Expense table.

At December 31, 2015, 2014 and 2013, the balance of the Corporation's UTBs which would, if recognized, affect the Corporation's effective tax rate was $\$ 0.7$ billion, $\$ 0.7$ billion and $\$ 2.5$ billion, respectively. Included in the UTB balance are some items the recognition of which would not affect the effective tax rate, such as the tax effect of certain temporary differences, the portion of gross state UTBs that would be offset by the tax benefit of the associated federal deduction and the portion of gross nonU.S. UTBs that would be offset by tax reductions in other jurisdictions.

The Corporation files income tax returns in more than 100 state and non-U.S. jurisdictions each year. The IRS and other tax authorities in countries and states in which the Corporation has significant business operations examine tax returns periodically (continuously in some jurisdictions). The Tax Examination Status table summarizes the status of significant examinations (U.S. federal unless otherwise noted) for the Corporation and various subsidiaries as of December 31, 2015.

## Tax Examination Status

|  | Years under <br> Examination | Status at <br> December 31 <br> 2015 |
| :--- | ---: | ---: |
| U.S. | $2010-2011$ | IRS Appeals |
| U.S. | $2012-2013$ | Field examination |
| New York | $2008-2014$ | Field examination |
| U.K. | 2012 | Field examination |

During 2015, the Corporation and IRS Appeals arrived at final agreement on the audit of Bank of America Corporation for the 2010 through 2011 tax years. While subject to review by the Joint Committee on Taxation of the U.S. Congress, the Corporation expects this examination will be concluded early in 2016.

It is reasonably possible that the UTB balance may decrease by as much as $\$ 0.1$ billion during the next 12 months, since resolved items will be removed from the balance whether their resolution results in payment or recognition.

The Corporation recognized benefits of $\$ 82$ million during 2015 and $\$ 196$ million in 2014, and an expense of $\$ 127$ million in 2013 for interest and penalties, net-of-tax, in income tax expense. At December 31, 2015 and 2014, the Corporation's accrual for interest and penalties that related to income taxes, net of taxes and remittances, was $\$ 288$ million and $\$ 455$ million.

Significant components of the Corporation's net deferred tax assets and liabilities at December 31, 2015 and 2014 are presented in the table below.

| Deferred Tax Assets and Liabilities |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| (Dollars in millions) | December 31 |  |  |  |
|  | 2015 |  | 2014 |  |
| Deferred tax assets |  |  |  |  |
| Net operating loss carryforwards | \$ | 9,494 | \$ | 10,955 |
| Accrued expenses |  | 6,340 |  | 6,309 |
| Allowance for credit losses |  | 4,649 |  | 5,478 |
| Security, loan and debt valuations |  | 4,084 |  | 5,385 |
| Employee compensation and retirement benefits |  | 3,585 |  | 3,899 |
| Tax credit carryforwards |  | 2,707 |  | 5,614 |
| Available-for-sale securities |  | 152 |  | - |
| Other |  | 2,333 |  | 1,800 |
| Gross deferred tax assets |  | 33,344 |  | 39,440 |
| Valuation allowance |  | $(1,149)$ |  | $(1,111)$ |
| Total deferred tax assets, net of valuation allowance |  | 32,195 |  | 38,329 |
| Deferred tax liabilities |  |  |  |  |
| Equipment lease financing |  | 3,016 |  | 3,105 |
| Intangibles |  | 1,306 |  | 1,513 |
| Fee income |  | 864 |  | 881 |
| Mortgage servicing rights |  | 466 |  | 1,094 |
| Long-term borrowings |  | 327 |  | 630 |
| Available-for-sale securities |  | - |  | 828 |
| Other |  | 1,752 |  | 2,024 |
| Gross deferred tax liabilities |  | 7,731 |  | 10,075 |
| Net deferred tax assets, net of valuation allowance | \$ | 24,464 | \$ | 28,254 |

The table below summarizes the deferred tax assets and related valuation allowances recognized for the net operating loss (NOL) and tax credit carryforwards at December 31, 2015.

## Net Operating Loss and Tax Credit Carryforward Deferred Tax Assets

| (Dollars in millions) | Deferred <br> Tax Asset |  | Valuation <br> Allowance |  | Net Deferred Tax Asset |  | First Year Expiring |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Net operating losses - U.S. | \$ | 2,507 | \$ | - | \$ | 2,507 | After 2027 |
| Net operating losses - U.K. |  | 5,657 |  | - |  | 5,657 | None ${ }^{(1)}$ |
| Net operating losses other non-U.S. |  | 432 |  | (323) |  | 109 | Various |
| Net operating losses - U.S. states ${ }^{(2)}$ |  | 898 |  | (405) |  | 493 | Various |
| General business credits |  | 2,635 |  | - |  | 2,635 | After 2031 |
| Foreign tax credits |  | 72 |  | (72) |  | - | n/a |

${ }^{(1)}$ The U.K. net operating losses may be carried forward indefinitely.
${ }^{(2)}$ The net operating losses and related valuation allowances for U.S. states before considering the benefit of federal deductions were $\$ 1.4$ billion and $\$ 623$ million.
$\mathrm{n} / \mathrm{a}=$ not applicable

Management concluded that no valuation allowance was necessary to reduce the U.K. NOL carryforwards and U.S. NOL and general business credit carryforwards since estimated future taxable income will be sufficient to utilize these assets prior to their expiration. The majority of the Corporation's U.K. net deferred tax assets, which consist primarily of NOLs, are expected to be realized by certain subsidiaries over an extended number of years. Management's conclusion is supported by financial results and forecasts, the reorganization of certain business activities and the indefinite period to carry forward NOLs. However, significant changes to those estimates, such as changes that would be caused by a substantial and prolonged worsening of the condition of Europe's capital markets, or a change in applicable laws, could lead management to reassess its U.K. valuation allowance conclusions.

At December 31, 2015, U.S. federal income taxes had not been provided on $\$ 18.0$ billion of undistributed earnings of non-U.S. subsidiaries that management has determined have been reinvested for an indefinite period of time. If the Corporation were to record a deferred tax liability associated with these undistributed earnings, the amount would be approximately $\$ 5.0$ billion at December 31, 2015.

## NOTE 20 Fair Value Measurements

Under applicable accounting guidance, fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The Corporation determines the fair values of its financial instruments based on the fair value hierarchy established under applicable accounting guidance which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. There are three levels of inputs used to measure fair value. The Corporation conducts a review of its fair value hierarchy classifications on a quarterly basis. Transfers into or out of fair value hierarchy classifications are made if the significant inputs used in the financial models measuring the fair values of the assets and liabilities became unobservable or observable, respectively, in the current marketplace. These transfers are considered to be effective as of the beginning of the quarter in which they occur. For more information regarding the fair value hierarchy and how the Corporation measures fair value, see Note 1 - Summary of Significant Accounting Principles. The Corporation accounts for certain financial instruments under the fair value option. For additional information, see Note 21 - Fair Value Option.

## Valuation Processes and Techniques

The Corporation has various processes and controls in place to ensure that fair value is reasonably estimated. A model validation policy governs the use and control of valuation models used to estimate fair value. This policy requires review and approval of models by personnel who are independent of the front office, and periodic reassessments of models to ensure that they are continuing to perform as designed. In addition, detailed reviews of trading gains and losses are conducted on a daily basis by personnel who are independent of the front office. A price verification group, which is also independent of the front office, utilizes available market information including executed trades, market prices and market-observable valuation model inputs to ensure that fair values are reasonably estimated. The Corporation performs due diligence procedures over third-party pricing service providers in order to support their use in the valuation process. Where market information is not available to support internal valuations, independent reviews of the valuations are performed and any material exposures are escalated through a management review process.

While the Corporation believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date.

During 2015, there were no changes to the valuation techniques that had, or are expected to have, a material impact on the Corporation's consolidated financial position or results of operations.

## Level 1, 2 and 3 Valuation Techniques

Financial instruments are considered Level 1 when the valuation is based on quoted prices in active markets for identical assets or liabilities. Level 2 financial instruments are valued using quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or models using inputs that are observable or
can be corroborated by observable market data for substantially the full term of the assets or liabilities. Financial instruments are considered Level 3 when their values are determined using pricing models, discounted cash flow methodologies or similar techniques, and at least one significant model assumption or input is unobservable and when determination of the fair value requires significant management judgment or estimation.

## Trading Account Assets and Liabilities and Debt Securities

The fair values of trading account assets and liabilities are primarily based on actively traded markets where prices are based on either direct market quotes or observed transactions. The fair values of debt securities are generally based on quoted market prices or market prices for similar assets. Liquidity is a significant factor in the determination of the fair values of trading account assets and liabilities and debt securities. Market price quotes may not be readily available for some positions, or positions within a market sector where trading activity has slowed significantly or ceased. Some of these instruments are valued using a discounted cash flow model, which estimates the fair value of the securities using internal credit risk, interest rate and prepayment risk models that incorporate management's best estimate of current key assumptions such as default rates, loss severity and prepayment rates. Principal and interest cash flows are discounted using an observable discount rate for similar instruments with adjustments that management believes a market participant would consider in determining fair value for the specific security. Other instruments are valued using a net asset value approach which considers the value of the underlying securities. Underlying assets are valued using external pricing services, where available, or matrix pricing based on the vintages and ratings. Situations of illiquidity generally are triggered by the market's perception of credit uncertainty regarding a single company or a specific market sector. In these instances, fair value is determined based on limited available market information and other factors, principally from reviewing the issuer's financial statements and changes in credit ratings made by one or more rating agencies.

## Derivative Assets and Liabilities

The fair values of derivative assets and liabilities traded in the OTC market are determined using quantitative models that utilize multiple market inputs including interest rates, prices and indices to generate continuous yield or pricing curves and volatility factors to value the position. The majority of market inputs are actively quoted and can be validated through external sources, including brokers, market transactions and third-party pricing services. When third-party pricing services are used, the methods and assumptions are reviewed by the Corporation. Estimation risk is greater for derivative asset and liability positions that are either option-based or have longer maturity dates where observable market inputs are less readily available, or are unobservable, in which case, quantitative-based extrapolations of rate, price or index scenarios are used in determining fair values. The fair values of derivative assets and liabilities include adjustments for market liquidity, counterparty credit quality and other instrument-specific factors, where appropriate. In addition, the Corporation incorporates within its fair value measurements of OTC derivatives a valuation adjustment to reflect the credit risk associated with the net position. Positions are netted by counterparty, and fair value for net long exposures is adjusted for counterparty credit risk while the fair value for net short exposures is adjusted for the

Corporation's own credit risk. The Corporation also incorporates FVA within its fair value measurements to include funding costs on uncollateralized derivatives and derivatives where the Corporation is not permitted to use the collateral it receives. An estimate of severity of loss is also used in the determination of fair value, primarily based on market data.

## Loans and Loan Commitments

The fair values of loans and loan commitments are based on market prices, where available, or discounted cash flow analyses using market-based credit spreads of comparable debt instruments or credit derivatives of the specific borrower or comparable borrowers. Results of discounted cash flow analyses may be adjusted, as appropriate, to reflect other market conditions or the perceived credit risk of the borrower.

## Mortgage Servicing Rights

The fair values of MSRs are determined using models that rely on estimates of prepayment rates, the resultant weighted-average lives of the MSRs and the option-adjusted spread levels. For more information on MSRs, see Note 23 - Mortgage Servicing Rights.

## Loans Held-for-sale

The fair values of LHFS are based on quoted market prices, where available, or are determined by discounting estimated cash flows using interest rates approximating the Corporation's current origination rates for similar loans adjusted to reflect the inherent credit risk. The borrower-specific credit risk is embedded within the quoted market prices or is implied by considering loan performance when selecting comparables.

## Private Equity Investments

Private equity investments consist of direct investments and fund investments which are initially valued at their transaction price. Thereafter, the fair value of direct investments is based on an assessment of each individual investment using methodologies that include publicly-traded comparables derived by multiplying a key performance metric (e.g., earnings before interest, taxes, depreciation and amortization) of the portfolio company by the relevant valuation multiple observed for comparable companies, acquisition comparables, entry level multiples and discounted cash flow analyses, and are subject to appropriate discounts for lack of liquidity or marketability. After initial recognition, the fair value of fund investments is based on the Corporation's proportionate interest in the fund's capital as reported by the respective fund managers.

## Short-term Borrowings and Long-term Debt

The Corporation issues structured liabilities that have coupons or repayment terms linked to the performance of debt or equity securities, indices, currencies or commodities. The fair values of these structured liabilities are estimated using quantitative models for the combined derivative and debt portions of the notes. These models incorporate observable and, in some instances, unobservable inputs including security prices, interest rate yield curves, option volatility, currency, commodity or equity rates and correlations among these inputs. The Corporation also considers the impact of its own credit spreads in determining the discount rate used to value these liabilities. The credit spread is determined by reference to observable spreads in the secondary bond market.

## Securities Financing Agreements

The fair values of certain reverse repurchase agreements, repurchase agreements and securities borrowed transactions are determined using quantitative models, including discounted cash flow models that require the use of multiple market inputs including interest rates and spreads to generate continuous yield or pricing curves, and volatility factors. The majority of market inputs are actively quoted and can be validated through external sources, including brokers, market transactions and third-party pricing services.

## Deposits

The fair values of deposits are determined using quantitative models, including discounted cash flow models that require the use of multiple market inputs including interest rates and spreads to generate continuous yield or pricing curves, and volatility factors. The majority of market inputs are actively quoted and can be validated through external sources, including brokers, market transactions and third-party pricing services. The Corporation considers the impact of its own credit spreads in the valuation of these liabilities. The credit risk is determined by reference to observable credit spreads in the secondary cash market.

## Asset-backed Secured Financings

The fair values of asset-backed secured financings are based on external broker bids, where available, or are determined by discounting estimated cash flows using interest rates approximating the Corporation's current origination rates for similar loans adjusted to reflect the inherent credit risk.

## Recurring Fair Value

Assets and liabilities carried at fair value on a recurring basis at December 31, 2015 and 2014, including financial instruments which the Corporation accounts for under the fair value option, are summarized in the following tables.

| (Dollars in millions) | December 31, 2015 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fair Value Measurements |  |  |  |  |  | Netting Adjustments ${ }^{(1)}$ |  | Assets/Liabilities at Fair Value |  |
|  | Level 1 |  | Level 2 |  | Level 3 |  |  |  |  |  |
| Assets |  |  |  |  |  |  |  |  |  |  |
| Federal funds sold and securities borrowed or purchased under agreements to resell | \$ | - | \$ | 55,143 | \$ | - | \$ | - | \$ | 55,143 |
| Trading account assets: |  |  |  |  |  |  |  |  |  |  |
| U.S. government and agency securities (2) |  | 33,034 |  | 15,501 |  | - |  | - |  | 48,535 |
| Corporate securities, trading loans and other |  | 325 |  | 22,738 |  | 2,838 |  | - |  | 25,901 |
| Equity securities |  | 41,735 |  | 20,887 |  | 407 |  | - |  | 63,029 |
| Non-U.S. sovereign debt |  | 15,651 |  | 12,915 |  | 521 |  | - |  | 29,087 |
| Mortgage trading loans and ABS |  | - |  | 8,107 |  | 1,868 |  | - |  | 9,975 |
| Total trading account assets |  | 90,745 |  | 80,148 |  | 5,634 |  | - |  | 176,527 |
| Derivative assets ${ }^{(3)}$ |  | 5,149 |  | 678,355 |  | 5,134 |  | $(638,648)$ |  | 49,990 |
| AFS debt securities: |  |  |  |  |  |  |  |  |  |  |
| U.S. Treasury and agency securities |  | 23,374 |  | 1,903 |  | - |  | - |  | 25,277 |
| Mortgage-backed securities: |  |  |  |  |  |  |  |  |  |  |
| Agency |  | - |  | 228,947 |  | - |  | - |  | 228,947 |
| Agency-collateralized mortgage obligations |  | - |  | 10,985 |  | - |  | - |  | 10,985 |
| Non-agency residential |  | - |  | 3,073 |  | 106 |  | - |  | 3,179 |
| Commercial |  | - |  | 7,165 |  | - |  | - |  | 7,165 |
| Non-U.S. securities |  | 2,768 |  | 2,999 |  | - |  | - |  | 5,767 |
| Corporate/Agency bonds |  | - |  | 243 |  | - |  | - |  | 243 |
| Other taxable securities |  | - |  | 9,445 |  | 757 |  | - |  | 10,202 |
| Tax-exempt securities |  | - |  | 13,439 |  | 569 |  | - |  | 14,008 |
| Total AFS debt securities |  | 26,142 |  | 278,199 |  | 1,432 |  | - |  | 305,773 |
| Other debt securities carried at fair value: |  |  |  |  |  |  |  |  |  |  |
| Mortgage-backed securities: |  |  |  |  |  |  |  |  |  |  |
| Agency-collateralized mortgage obligations |  | - |  | 7 |  | - |  | - |  | 7 |
| Non-agency residential |  | - |  | 3,460 |  | 30 |  | - |  | 3,490 |
| Non-U.S. securities |  | 11,691 |  | 1,152 |  | - |  | - |  | 12,843 |
| Other taxable securities |  | - |  | 267 |  | - |  | - |  | 267 |
| Total other debt securities carried at fair value |  | 11,691 |  | 4,886 |  | 30 |  | - |  | 16,607 |
| Loans and leases |  | - |  | 5,318 |  | 1,620 |  | - |  | 6,938 |
| Mortgage servicing rights |  | - |  | - |  | 3,087 |  | - |  | 3,087 |
| Loans held-for-sale |  | - |  | 4,031 |  | 787 |  | - |  | 4,818 |
| Other assets (4) |  | 11,923 |  | 2,023 |  | 374 |  | - |  | 14,320 |
| Total assets | \$ | 145,650 | \$ | 1,108,103 | \$ | 18,098 | \$ | $(638,648)$ | \$ | 633,203 |
| Liabilities |  |  |  |  |  |  |  |  |  |  |
| Interest-bearing deposits in U.S. offices | \$ | - | \$ | 1,116 | \$ | - | \$ | - | \$ | 1,116 |
| Federal funds purchased and securities loaned or sold under agreements to repurchase |  | - |  | 24,239 |  | 335 |  | - |  | 24,574 |
| Trading account liabilities: |  |  |  |  |  |  |  |  |  |  |
| U.S. government and agency securities |  | 14,803 |  | 169 |  | - |  | - |  | 14,972 |
| Equity securities |  | 27,898 |  | 2,392 |  | - |  | - |  | 30,290 |
| Non-U.S. sovereign debt |  | 13,589 |  | 1,951 |  | - |  | - |  | 15,540 |
| Corporate securities and other |  | 193 |  | 5,947 |  | 21 |  | - |  | 6,161 |
| Total trading account liabilities |  | 56,483 |  | 10,459 |  | 21 |  | - |  | 66,963 |
| Derivative liabilities ${ }^{(3)}$ |  | 4,941 |  | 670,600 |  | 5,575 |  | $(642,666)$ |  | 38,450 |
| Short-term borrowings |  | - |  | 1,295 |  | 30 |  | - |  | 1,325 |
| Accrued expenses and other liabilities |  | 11,656 |  | 2,234 |  | 9 |  | - |  | 13,899 |
| Long-term debt |  | - |  | 28,584 |  | 1,513 |  | - |  | 30,097 |
| Total liabilities | \$ | 73,080 | \$ | 738,527 | \$ | 7,483 | \$ | $(642,666)$ | \$ | 176,424 |

${ }^{1)}$ Amounts represent the impact of legally enforceable master netting agreements and also cash collateral held or placed with the same counterparties.
(2) Includes $\$ 14.8$ billion of government-sponsored enterprise obligations.
${ }^{(3)}$ During 2015, $\$ 6.6$ billion of derivative assets and $\$ 6.7$ billion of derivative liabilities were transferred from Level 1 to Level 2 based on inputs used to measure fair value. Additionally, $\$ 6.4$ billion of derivative assets and $\$ 6.2$ billion of derivative liabilities were transferred from Level 2 to Level 1 due to additional information related to certain options. For further disaggregation of derivative assets and liabilities, see Note 2 - Derivatives
${ }^{(4)}$ During 2015, approximately $\$ 327$ million of assets were transferred from Level 2 to Level 1 due to a restriction that was lifted for an equity investment.

| (Dollars in millions) | December 31, 2014 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fair Value Measurements |  |  |  |  |  | Netting <br> Adjustments ${ }^{(1)}$ |  | Assets/Liabilities at Fair Value |  |
|  | Level 1 |  | Level 2 |  | Level 3 |  |  |  |  |  |
| Assets |  |  |  |  |  |  |  |  |  |  |
| Federal funds sold and securities borrowed or purchased under agreements to resell | \$ | - | \$ | 62,182 | \$ | - | \$ | - | \$ | 62,182 |
| Trading account assets: |  |  |  |  |  |  |  |  |  |  |
| U.S. government and agency securities (2) |  | 33,470 |  | 17,549 |  | - |  | - |  | 51,019 |
| Corporate securities, trading loans and other |  | 243 |  | 31,699 |  | 3,270 |  | - |  | 35,212 |
| Equity securities |  | 33,518 |  | 22,488 |  | 352 |  | - |  | 56,358 |
| Non-U.S. sovereign debt |  | 20,348 |  | 15,332 |  | 574 |  | - |  | 36,254 |
| Mortgage trading loans and ABS |  | - |  | 10,879 |  | 2,063 |  | - |  | 12,942 |
| Total trading account assets |  | 87,579 |  | 97,947 |  | 6,259 |  | - |  | 191,785 |
| Derivative assets ${ }^{(3)}$ |  | 4,957 |  | 968,857 |  | 6,851 |  | $(927,983)$ |  | 52,682 |
| AFS debt securities: |  |  |  |  |  |  |  |  |  |  |
| U.S. Treasury and agency securities |  | 67,413 |  | 2,182 |  | - |  | - |  | 69,595 |
| Mortgage-backed securities: |  |  |  |  |  |  |  |  |  |  |
| Agency |  | - |  | 165,039 |  | - |  | - |  | 165,039 |
| Agency-collateralized mortgage obligations |  | - |  | 14,248 |  | - |  | - |  | 14,248 |
| Non-agency residential |  | - |  | 4,175 |  | 279 |  | - |  | 4,454 |
| Commercial |  | - |  | 4,000 |  | - |  | - |  | 4,000 |
| Non-U.S. securities |  | 3,191 |  | 3,029 |  | 10 |  | - |  | 6,230 |
| Corporate/Agency bonds |  | - |  | 368 |  | - |  | - |  | 368 |
| Other taxable securities |  | 20 |  | 9,104 |  | 1,667 |  | - |  | 10,791 |
| Tax-exempt securities |  | - |  | 8,950 |  | 599 |  | - |  | 9,549 |
| Total AFS debt securities |  | 70,624 |  | 211,095 |  | 2,555 |  | - |  | 284,274 |
| Other debt securities carried at fair value: |  |  |  |  |  |  |  |  |  |  |
| U.S. Treasury and agency securities |  | 1,541 |  | - |  | - |  | - |  | 1,541 |
| Mortgage-backed securities: |  |  |  |  |  |  |  |  |  |  |
| Agency |  | - |  | 15,704 |  | - |  | - |  | 15,704 |
| Non-agency residential |  | - |  | 3,745 |  | - |  | - |  | 3,745 |
| Non-U.S. securities |  | 13,270 |  | 1,862 |  | - |  | - |  | 15,132 |
| Other taxable securities |  | - |  | 299 |  | - |  | - |  | 299 |
| Total other debt securities carried at fair value |  | 14,811 |  | 21,610 |  | - |  | - |  | 36,421 |
| Loans and leases |  | - |  | 6,698 |  | 1,983 |  | - |  | 8,681 |
| Mortgage servicing rights |  | - |  | - |  | 3,530 |  | - |  | 3,530 |
| Loans held-for-sale |  | - |  | 6,628 |  | 173 |  | - |  | 6,801 |
| Other assets (4) |  | 11,581 |  | 1,381 |  | 911 |  | - |  | 13,873 |
| Total assets | \$ | 189,552 | \$ | 1,376,398 | \$ | 22,262 | \$ | $(927,983)$ | \$ | 660,229 |
| Liabilities |  |  |  |  |  |  |  |  |  |  |
| Interest-bearing deposits in U.S. offices | \$ | - | \$ | 1,469 | \$ | - | \$ | - | \$ | 1,469 |
| Federal funds purchased and securities loaned or sold under agreements to repurchase |  | - |  | 35,357 |  | - |  | - |  | 35,357 |
| Trading account liabilities: |  |  |  |  |  |  |  |  |  |  |
| U.S. government and agency securities |  | 18,514 |  | 446 |  | - |  | - |  | 18,960 |
| Equity securities |  | 24,679 |  | 3,670 |  | - |  | - |  | 28,349 |
| Non-U.S. sovereign debt |  | 16,089 |  | 3,625 |  | - |  | - |  | 19,714 |
| Corporate securities and other |  | 189 |  | 6,944 |  | 36 |  | - |  | 7,169 |
| Total trading account liabilities |  | 59,471 |  | 14,685 |  | 36 |  | - |  | 74,192 |
| Derivative liabilities ${ }^{(3)}$ |  | 4,493 |  | 965,416 |  | 7,771 |  | $(930,771)$ |  | 46,909 |
| Short-term borrowings |  | - |  | 2,697 |  | - |  | - |  | 2,697 |
| Accrued expenses and other liabilities |  | 10,795 |  | 1,250 |  | 10 |  | - |  | 12,055 |
| Long-term debt |  | - |  | 34,042 |  | 2,362 |  | - |  | 36,404 |
| Total liabilities | \$ | 74,759 | \$ | 1,054,916 | \$ | 10,179 | \$ | $(930,771)$ | \$ | 209,083 |

${ }^{(1)}$ Amounts represent the impact of legally enforceable master netting agreements and also cash collateral held or placed with the same counterparties.
${ }^{(2)}$ Includes $\$ 17.2$ billion of government-sponsored enterprise obligations.
(3) For further disaggregation of derivative assets and liabilities, see Note 2 - Derivatives.
${ }^{\text {(4) }}$ During 2014, the Corporation reclassified certain assets and liabilities within its fair value hierarchy based on a review of its inputs used to measure fair value. Accordingly, approximately $\$ 4.1$ billion of assets related to U.S. government and agency securities, non-U.S. government securities and equity derivatives, and $\$ 570$ million of liabilities related to equity derivatives were transferred from Level 1 to Level 2.

The following tables present a reconciliation of all assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) during 2015, 2014 and 2013, including net realized and unrealized gains (losses) included in earnings and accumulated OCI.

Level 3 - Fair Value Measurements (1)

| (Dollars in millions) | 2015 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Balance January 1 2015 | $\begin{gathered} \text { Gains } \\ \text { (Losses) } \\ \text { in Earnings } \end{gathered}$ | Gains (Losses) in OCI ${ }^{(2)}$ | Purchases | Grorer |  | Issuances |  | Settlements |  | $\begin{aligned} & \text { Gross } \\ & \text { Transfers } \\ & \text { into } \\ & \text { Level } 3 \end{aligned}$ |  | GrossTransfers out of Level 3 |  | $\begin{aligned} & \text { Balance } \\ & \text { December } 31 \\ & 2015 \end{aligned}$ |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trading account assets: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Corporate securities, trading loans and other | \$ 3,270 | \$ (31) | \$ (11) | \$ 1,540 | \$ | $(1,616)$ | \$ | - | \$ | $(1,122)$ | \$ | 1,570 | \$ | (762) | \$ | 2,838 |
| Equity securities | 352 | 9 | - | 49 |  | (11) |  | - |  | (11) |  | 41 |  | (22) |  | 407 |
| Non-U.S. sovereign debt | 574 | 114 | (179) | 185 |  | (1) |  | - |  | (145) |  | - |  | (27) |  | 521 |
| Mortgage trading loans and ABS | 2,063 | 154 | 1 | 1,250 |  | $(1,117)$ |  | - |  | (493) |  | 50 |  | (40) |  | 1,868 |
| Total trading account assets | 6,259 | 246 | (189) | 3,024 |  | $(2,745)$ |  | - |  | $(1,771)$ |  | 1,661 |  | (851) |  | 5,634 |
| Net derivative assets ${ }^{(3)}$ | (920) | 1,335 | (7) | 273 |  | (863) |  | - |  | (261) |  | (40) |  | 42 |  | (441) |
| AFS debt securities: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Non-agency residential MBS | 279 | (12) | - | 134 |  | - |  | - |  | (425) |  | 167 |  | (37) |  | 106 |
| Non-U.S. securities | 10 | - | - | - |  | - |  | - |  | (10) |  | - |  | - |  | - |
| Other taxable securities | 1,667 | - | - | 189 |  | - |  | - |  | (160) |  | - |  | (939) |  | 757 |
| Tax-exempt securities | 599 | - | - | - |  | - |  | - |  | (30) |  | - |  | - |  | 569 |
| Total AFS debt securities | 2,555 | (12) | - | 323 |  | - |  | - |  | (625) |  | 167 |  | (976) |  | 1,432 |
| Other debt securities carried at fair value - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Loans and leases (4,5) | 1,983 | (23) | - | - |  | (4) |  | 57 |  | (237) |  | 144 |  | (300) |  | 1,620 |
| Mortgage servicing rights ${ }^{(5)}$ | 3,530 | 187 | - | - |  | (393) |  | 637 |  | (874) |  | - |  | - |  | 3,087 |
| Loans held-for-sale ${ }^{(4)}$ | 173 | (51) | (8) | 771 |  | (203) |  | 61 |  | (61) |  | 203 |  | (98) |  | 787 |
| Other assets ${ }^{(6)}$ | 911 | (55) | - | 11 |  | (130) |  | - |  | (51) |  | 10 |  | (322) |  | 374 |
| Federal funds purchased and securities loaned or sold under agreements to repurchase ${ }^{(4)}$ | - | (11) | - | - |  | - |  | (131) |  | 217 |  | (411) |  | 1 |  | (335) |
| Trading account liabilities - Corporate securities and other | (36) | 19 | - | 30 |  | (34) |  | - |  | - |  | - |  | - |  | (21) |
| Short-term borrowings ${ }^{(4)}$ | - | 17 | - | - |  | - |  | (52) |  | 10 |  | (24) |  | 19 |  | (30) |
| Accrued expenses and other liabilities | (10) | 1 | - | - |  | - |  | - |  | - |  | - |  | - |  | (9) |
| Long-term debt (4) | $(2,362)$ | 287 | 19 | 616 |  | - |  | (188) |  | 273 |  | $(1,592)$ |  | 1,434 |  | $(1,513)$ |

(1) Assets (liabilities). For assets, increase (decrease) to Level 3 and for liabilities, (increase) decrease to Level 3.
${ }^{(2)}$ Includes unrealized gains (losses) on AFS debt securities, foreign currency translation adjustments and the impact on structured liabilities of changes in the Corporation's credit spreads. For more information, see Note 1 - Summary of Significant Accounting Principles.
${ }^{(3)}$ Net derivatives include derivative assets of $\$ 5.1$ billion and derivative liabilities of $\$ 5.6$ billion.
${ }^{(4)}$ Amounts represent instruments that are accounted for under the fair value option.
${ }^{(5)}$ Issuances represent loan originations and MSRs retained following securitizations or whole-loan sales
${ }^{(6)}$ Other assets is primarily comprised of certain private equity investments.

Significant transfers into Level 3, primarily due to decreased price observability, during 2015 included:

- $\$ 1.7$ billion of trading account assets
- \$167 million of AFS debt securities
- \$144 million of loans and leases
- $\$ 203$ million of LHFS
- $\$ 411$ million of federal funds purchased and securities loaned or sold under agreements to repurchase
- $\$ 1.6$ billion of long-term debt. Transfers occur on a regular basis for these long-term debt instruments due to changes in the impact of unobservable inputs on the value of the embedded derivative in relation to the instrument as a whole.

Significant transfers out of Level 3, primarily due to increased price observability unless otherwise noted, during 2015 included:

- $\$ 851$ million of trading account assets, primarily the result of increased market liquidity
- $\$ 976$ million of AFS debt securities
- $\$ 300$ million of loans and leases
- \$322 million of other assets
- $\$ 1.4$ billion of long-term debt

Level 3 - Fair Value Measurements ${ }^{(1)}$

(1) Assets (liabilities). For assets, increase (decrease) to Level 3 and for liabilities, (increase) decrease to Level 3.
${ }^{(2)}$ Net derivatives include derivative assets of $\$ 6.9$ billion and derivative liabilities of $\$ 7.8$ billion.
${ }^{(3)}$ Amounts represent instruments that are accounted for under the fair value option.
${ }^{(4)}$ Issuances represent loan originations and MSRs retained following securitizations or whole-loan sales.
${ }^{(5)}$ Other assets is primarily comprised of certain long-term fixed-rate margin loans that are accounted for under the fair value option and certain private equity investments.

Significant transfers into Level 3, primarily due to decreased price observability, during 2014 included:

- $\$ 1.5$ billion of trading account assets
- \$399 million of AFS debt securities
- $\$ 1.6$ billion of long-term debt. Transfers occur on a regular basis for these long-term debt instruments due to changes in the impact of unobservable inputs on the value of the embedded derivative in relation to the instrument as a whole.

Significant transfers out of Level 3, primarily due to increased price observability unless otherwise noted, during 2014 included:

- $\$ 4.4$ billion of trading account assets, primarily the result of increased market liquidity
- \$160 million of net derivative assets
- $\$ 1.2$ billion of AFS debt securities
- $\$ 273$ million of loans and leases
- $\$ 1.1$ billion of long-term debt

Level 3 - Fair Value Measurements ${ }^{(1)}$

| (Dollars in millions) | 2013 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Balance January 1 2013 | $\begin{gathered} \text { Gains } \\ \text { (Losses) } \\ \text { in Earnings } \end{gathered}$ | Gains (Losses) in OCl | Gross |  |  |  |  |  |  | GrossTransfersintoLevel 3 | Gross Transfers out of Level 3 |  | $\begin{aligned} & \text { Balance } \\ & \text { December } 31 \\ & 2013 \end{aligned}$ |  |
|  |  |  |  | Purchases | Sales |  | Issuances |  | Settlements |  |  |  |  |  |  |
| Trading account assets: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Corporate securities, trading loans and other | \$ 3,726 | \$ 242 | \$ | \$ 3,848 | \$ | $(3,110)$ | \$ | 59 | \$ | (651) | \$ 890 | \$ | $(1,445)$ | \$ | 3,559 |
| Equity securities | 545 | 74 | - | 96 |  | (175) |  | - |  | (100) | 70 |  | (124) |  | 386 |
| Non-U.S. sovereign debt | 353 | 50 | - | 122 |  | (18) |  | - |  | (36) | 2 |  | (5) |  | 468 |
| Mortgage trading loans and ABS | 4,935 | 53 | - | 2,514 |  | $(1,993)$ |  | - |  | (868) | 20 |  | (30) |  | 4,631 |
| Total trading account assets | 9,559 | 419 | - | 6,580 |  | $(5,296)$ |  | 59 |  | $(1,655)$ | 982 |  | $(1,604)$ |  | 9,044 |
| Net derivative assets ${ }^{(2)}$ | 1,468 | (304) | - | 824 |  | $(1,467)$ |  | - |  | $(1,362)$ | (10) |  | 627 |  | (224) |
| AFS debt securities: |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Commercial MBS | 10 | - | - | - |  | - |  | - |  | (10) | - |  | - |  | - |
| Non-U.S. securities | - | 5 | 2 | 1 |  | (1) |  | - |  | - | 100 |  | - |  | 107 |
| Corporate/Agency bonds | 92 | - | 4 | - |  | - |  | - |  | - | - |  | (96) |  | - |
| Other taxable securities | 3,928 | 9 | 15 | 1,055 |  | - |  | - |  | $(1,155)$ | - |  | (5) |  | 3,847 |
| Tax-exempt securities | 1,061 | 3 | 19 | - |  | - |  | - |  | (109) | - |  | (168) |  | 806 |
| Total AFS debt securities | 5,091 | 17 | 40 | 1,056 |  | (1) |  | - |  | $(1,274)$ | 100 |  | (269) |  | 4,760 |
| Loans and leases (3, 4) | 2,287 | 98 | - | 310 |  | (128) |  | 1,252 |  | (757) | 19 |  | (24) |  | 3,057 |
| Mortgage servicing rights ${ }^{(4)}$ | 5,716 | 1,941 | - | - |  | $(2,044)$ |  | 472 |  | $(1,043)$ | - |  | - |  | 5,042 |
| Loans held-for-sale ${ }^{(3)}$ | 2,733 | 62 | - | 8 |  | (402) |  | 4 |  | $(1,507)$ | 34 |  | (3) |  | 929 |
| Other assets ${ }^{(5)}$ | 3,129 | (288) | - | 46 |  | (383) |  | - |  | $(1,019)$ | 239 |  | (55) |  | 1,669 |
| Trading account liabilities - Corporate securities and other | (64) | 10 | - | 43 |  | (54) |  | (5) |  | - | (9) |  | 44 |  | (35) |
| Accrued expenses and other liabilities ${ }^{(3)}$ | (15) | 30 | - | - |  | - |  | (751) |  | 724 | (1) |  | 3 |  | (10) |
| Long-term debt (3) | $(2,301)$ | 13 | - | 358 |  | (4) |  | (172) |  | 258 | $(1,331)$ |  | 1,189 |  | $(1,990)$ |

(1) Assets (liabilities). For assets, increase (decrease) to Level 3 and for liabilities, (increase) decrease to Level 3.
${ }^{\text {2) }}$ Net derivatives include derivative assets of $\$ 7.3$ billion and derivative liabilities of $\$ 7.5$ billion.
(3) Amounts represent instruments that are accounted for under the fair value option
${ }^{(4)}$ Issuances represent loan originations and MSRs retained following securitizations or whole-loan sales.
${ }^{5)}$ Other assets is primarily comprised of certain long-term fixed-rate margin loans that are accounted for under the fair value option and certain private equity investments.

Significant transfers into Level 3, primarily due to decreased price observability, during 2013 included:

- $\$ 982$ million of trading account assets
- \$100 million of AFS debt securities
- $\$ 239$ million of other assets
- $\$ 1.3$ billion of long-term debt. Transfers occur on a regular basis for these long-term debt instruments due to changes in the impact of unobservable inputs on the value of the embedded derivative in relation to the instrument as a whole.

Significant transfers out of Level 3, primarily due to increased price observability unless otherwise noted, during 2013 included:

- \$1.6 billion of trading account assets
- $\$ 627$ million of net derivative assets
- $\$ 269$ million of AFS debt securities, primarily due to increased market liquidity
- $\$ 1.2$ billion of long-term debt

The following tables summarize gains (losses) due to changes in fair value, including both realized and unrealized gains (losses), recorded in earnings for Level 3 assets and liabilities during 2015, 2014 and 2013. These amounts include gains (losses) on loans, LHFS, Ioan commitments and structured liabilities that are accounted for under the fair value option.

## Level 3 - Total Realized and Unrealized Gains (Losses) Included in Earnings

|  |  |  |
| :--- | ---: | ---: | ---: | ---: |
|  |  |  |

[^7]Level 3 - Total Realized and Unrealized Gains (Losses) Included in Earnings (continued)

|  |  |  |
| :--- | ---: | ---: | ---: | ---: |
|  | Trading <br> Account <br> Profits <br> (Losses) | Mortgage <br> Banking <br> Income <br> (Loss) (1) |

The table below summarizes changes in unrealized gains (losses) recorded in earnings during 2015, 2014 and 2013 for Level 3 assets and liabilities that were still held at December 31, 2015, 2014 and 2013. These amounts include changes in fair value on loans, LHFS, loan commitments and structured liabilities that are accounted for under the fair value option.
Level 3 - Changes in Unrealized Gains (Losses) Relating to Assets and Liabilities Still Held at Reporting Date

| (Dollars in millions) | 2015 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Trading Account Profits (Losses) |  | Mortgage Banking Income (Loss) ${ }^{(1)}$ |  | Other |  | Total |  |
| Trading account assets: |  |  |  |  |  |  |  |  |
| Corporate securities, trading loans and other | \$ | (123) | \$ | - | \$ | - | \$ | (123) |
| Equity securities |  | 3 |  | - |  | - |  | 3 |
| Non-U.S. sovereign debt |  | 74 |  | - |  | - |  | 74 |
| Mortgage trading loans and ABS |  | (93) |  | - |  | - |  | (93) |
| Total trading account assets |  | (139) |  | - |  | - |  | (139) |
| Net derivative assets |  | 507 |  | 36 |  | 62 |  | 605 |
| Loans and leases ${ }^{(2)}$ |  | (3) |  | - |  | 16 |  | 13 |
| Mortgage servicing rights |  | 73 |  | (158) |  | - |  | (85) |
| Loans held-for-sale ${ }^{(2)}$ |  | (1) |  | - |  | (38) |  | (39) |
| Other assets |  | - |  | (41) |  | (20) |  | (61) |
| Trading account liabilities - Corporate securities and other |  | (3) |  | - |  | - |  | (3) |
| Short-term borrowings ${ }^{(2)}$ |  | 1 |  | - |  | - |  | 1 |
| Accrued expenses and other liabilities |  | - |  | - |  | 1 |  | 1 |
| Long-term debt (2) |  | 277 |  | - |  | (22) |  | 255 |
| Total | \$ | 712 | \$ | (163) | \$ | (1) | \$ | 548 |



|  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: |
|  |  |  |  |

${ }^{(1)}$ Mortgage banking income (loss) does not reflect the impact of Level 1 and Level 2 hedges on MSRs.
${ }^{(2)}$ Amounts represent instruments that are accounted for under the fair value option.

The following tables present information about significant unobservable inputs related to the Corporation's material categories of Level 3 financial assets and liabilities at December 31, 2015 and 2014.

Quantitative Information about Level 3 Fair Value Measurements at December 31, 2015

| Financial Instrument | Fair Value | Valuation Technique | Inputs |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Significant Unobservable Inputs | Ranges of Inputs | Weighted Average |
| Loans and Securities ${ }^{(1)}$ |  |  |  |  |  |
| Instruments backed by residential real estate assets <br> Trading account assets - Mortgage trading loans and ABS <br> Loans and leases <br> Loans held-for-sale | $\begin{array}{rr} \hline \$ & \mathbf{2 , 0 1 7} \\ & 400 \\ & 1,520 \\ & 97 \end{array}$ | Discounted cash flow, Market comparables | Yield <br> Prepayment speed <br> Default rate <br> Loss severity | $0 \%$ to $25 \%$ $0 \%$ to $27 \%$ CPR $0 \%$ to $10 \%$ CDR $0 \%$ to $90 \%$ | $6 \%$ $11 \%$ $4 \%$ $40 \%$ |
| Instruments backed by commercial real estate assets <br> Trading account assets - Mortgage trading loans and ABS <br> Loans held-for-sale | $\$$ <br>  <br>  <br>  <br>  <br>  <br>  <br>  | Discounted cash flow, Market comparables | Yield <br> Price | $\begin{gathered} 0 \% \text { to } 25 \% \\ \$ 0 \text { to } \$ 100 \end{gathered}$ | $\begin{array}{r} 8 \% \\ \$ 73 \end{array}$ |
| Commercial loans, debt securities and other <br> Trading account assets - Corporate securities, trading loans and other <br> Trading account assets - Non-U.S. sovereign debt <br> Trading account assets - Mortgage trading loans and ABS <br> AFS debt securities - Other taxable securities <br> Loans and leases | $\$ 4,558$  <br> 2,503  <br>  521 <br>  1,306 <br>  128 <br>  100 | Discounted cash flow, Market comparables | Yield <br> Prepayment speed <br> Default rate <br> Loss severity <br> Duration <br> Price | 0\% to 37\% <br> 5\% to 20\% <br> 2\% to 5\% <br> 25\% to 50\% <br> 0 to 5 years <br> \$0 to \$258 | $13 \%$ $16 \%$ $4 \%$ $37 \%$ 3 years $\$ 64$ |
| Auction rate securities <br> Trading account assets - Corporate securities, trading loans and other <br> AFS debt securities - Other taxable securities <br> AFS debt securities - Tax-exempt securities | \$ $\mathbf{1 , 5 3 3}$ <br>  335 <br>  629 <br>  569 | Discounted cash flow, Market comparables | Price | \$10 to \$100 | \$94 |
| Structured liabilities |  |  |  |  |  |
| Long-term debt | \$ (1,513) | Industry standard derivative pricing ${ }^{(2,3)}$ | Equity correlation <br> Long-dated equity volatilities | 25\% to $100 \%$ 4\% to 101\% | $\begin{aligned} & 67 \% \\ & 28 \% \end{aligned}$ |
| Net derivative assets |  |  |  |  |  |
| Credit derivatives | \$ (75) | Discounted cash flow, Stochastic recovery correlation model | Yield <br> Upfront points <br> Credit spreads <br> Credit correlation <br> Prepayment speed <br> Default rate <br> Loss severity | 6\% to 25\% <br> 0 to 100 points 0 bps to 447 bps 31\% to 99\% 10\% to 20\% CPR 1\% to 4\% CDR $35 \%$ to $40 \%$ | $16 \%$ 60 points 111 bps $38 \%$ $19 \%$ $3 \%$ $35 \%$ |
| Equity derivatives | \$ (1,037) | Industry standard derivative pricing ${ }^{(2)}$ | Equity correlation <br> Long-dated equity volatilities | $\begin{array}{r} 25 \% \text { to } 100 \% \\ 4 \% \text { to } 101 \% \end{array}$ | $\begin{aligned} & \hline 67 \% \\ & 28 \% \end{aligned}$ |
| Commodity derivatives | \$ 169 | Discounted cash flow, Industry standard derivative pricing ${ }^{(2)}$ | Natural gas forward price <br> Propane forward price <br> Correlation <br> Volatilities | \$1/MMBtu to \$6/MMBtu \$0/Gallon to \$1/Gallon 66\% to 93\% 18\% to $125 \%$ | $\begin{array}{r} \hline \$ 4 / \text { MMBtu } \\ \$ 1 / \text { Gallon } \\ 84 \% \\ 39 \% \end{array}$ |
| Interest rate derivatives | \$ 502 | Industry standard derivative pricing ${ }^{(3)}$ | Correlation (IR/IR) <br> Correlation (FX/IR) <br> Long-dated inflation rates <br> Long-dated inflation volatilities | $\begin{array}{r} 17 \% \text { to } 99 \% \\ -15 \% \text { to } 40 \% \\ 0 \% \text { to } 7 \% \\ 0 \% \text { to } 2 \% \end{array}$ | $48 \%$ $-9 \%$ $3 \%$ $1 \%$ |
| Total net derivative assets | \$ (441) |  |  |  |  |
| ${ }^{(1)}$ The categories are aggregated based upon product type which differs from assets - Corporate securities, trading loans and other of $\$ 2.8$ billion, Tra of $\$ 1.9$ billion, AFS debt securities - Other taxable securities of $\$ 757$ milli <br> ${ }^{(2)}$ Includes models such as Monte Carlo simulation and Black-Scholes. <br> ${ }^{(3)}$ Includes models such as Monte Carlo simulation, Black-Scholes and othe <br> CPR $=$ Constant Prepayment Rate <br> CDR $=$ Constant Default Rate <br> MMBtu = Million British thermal units <br> IR = Interest Rate <br> FX $=$ Foreign Exchange | ancial statem g account a AFS debt s methods that | ent classification. The fo sets - Non-U.S. sovereig urities - Tax-exempt sec <br> model the joint dynamics | owing is a reconciliation to the lin debt of $\$ 521$ million, Trading ac rities of \$569 million, Loans and <br> of interest, inflation and foreign | ms in the table on page 99: assets - Mortgage trading s of $\$ 1.6$ billion and LHFS <br> nge rates. | ading account oans and ABS $\$ 787$ million. |

Quantitative Information about Level 3 Fair Value Measurements at December 31, 2014

| (Dollars in millions) | Inputs |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Financial Instrument | Fair Value | Valuation Technique | Significant Unobservable Inputs | Ranges of Inputs | Weighted Average |
| Loans and Securities ${ }^{(1)}$ |  |  |  |  |  |
| Instruments backed by residential real estate assets <br> Trading account assets - Mortgage trading loans and ABS <br> Loans and leases <br> Loans held-for-sale | $\begin{array}{\|rr\|} \hline \$ & 2,030 \\ & 483 \\ & 1,374 \\ & 173 \end{array}$ | Discounted cash flow, Market comparables | Yield <br> Prepayment speed <br> Default rate <br> Loss severity | $0 \%$ to $25 \%$ $0 \%$ to $35 \%$ CPR $2 \%$ to $15 \%$ CDR $26 \%$ to $100 \%$ | $6 \%$ $14 \%$ $7 \%$ $34 \%$ |
| Commercial loans, debt securities and other <br> Trading account assets - Corporate securities, trading loans and other <br> Trading account assets - Non-U.S. sovereign debt <br> Trading account assets - Mortgage trading loans and ABS <br> AFS debt securities - Other taxable securities <br> Loans and leases |  | Discounted cash flow, Market comparables | Yield <br> Enterprise value/EBITDA multiple <br> Prepayment speed <br> Default rate <br> Loss severity <br> Duration <br> Price | $\begin{array}{r} \hline 0 \% \text { to } 40 \% \\ 0 x \text { to } 30 x \\ 1 \% \text { to } 30 \% \\ 1 \% \text { to } 5 \% \\ 25 \% \text { to } 40 \% \\ 0 \text { to } 5 \text { years } \\ \$ 0 \text { to } \$ 107 \end{array}$ | $9 \%$ $6 x$ $12 \%$ $4 \%$ $38 \%$ 3 years $\$ 76$ |
| Auction rate securities <br> Trading account assets - Corporate securities, trading loans and other <br> AFS debt securities - Other taxable securities <br> AFS debt securities - Tax-exempt securities | $\begin{array}{\|lr\|} \hline \$ & 1,096 \\ & 46 \\ & 451 \\ & 599 \end{array}$ | Discounted cash flow, Market comparables | Price | \$60 to \$100 | \$95 |
| Structured liabilities |  |  |  |  |  |
| Long-term debt | \$ (2,362) | Industry standard derivative pricing ${ }^{(2,3)}$ | Equity correlation Long-dated equity volatilities Long-dated volatilities (IR) | $\begin{array}{r} 20 \% \text { to } 98 \% \\ 6 \% \text { to } 69 \% \\ 0 \% \text { to } 2 \% \end{array}$ | $65 \%$ $24 \%$ $1 \%$ |
| Net derivative assets |  |  |  |  |  |
| Credit derivatives | \$ 22 | Discounted cash flow, Stochastic recovery correlation model | Yield <br> Upfront points <br> Spread to index <br> Credit correlation <br> Prepayment speed <br> Default rate <br> Loss severity | $0 \%$ to $25 \%$ 0 to 100 points 25 bps to 450 bps $24 \%$ to $99 \%$ $3 \%$ to $20 \% \mathrm{CPR}$ $4 \% \mathrm{CDR}$ $35 \%$ | $14 \%$ 65 points 119 bps $51 \%$ $11 \%$ n/a n/a |
| Equity derivatives | \$ (1,560) | Industry standard derivative pricing ${ }^{(2)}$ | Equity correlation <br> Long-dated equity volatilities | $\begin{array}{r} 20 \% \text { to } 98 \% \\ 6 \% \text { to } 69 \% \end{array}$ | $65 \%$ $24 \%$ |
| Commodity derivatives | \$ 141 | Discounted cash flow, Industry standard derivative pricing ${ }^{(2)}$ | Natural gas forward price Correlation Volatilities | $\$ 2 /$ MMBtu to $\$ 7 /$ MMBtu $82 \%$ to $93 \%$ $16 \%$ to $98 \%$ | \$5/MMBtu <br> 90\% <br> 35\% |
| Interest rate derivatives | \$ 477 | Industry standard derivative pricing ${ }^{(3)}$ | Correlation (IR/IR) <br> Correlation (FX/IR) <br> Long-dated inflation rates <br> Long-dated inflation volatilities | $\begin{array}{r} 11 \% \text { to } 99 \% \\ -48 \% \text { to } 40 \% \\ 0 \% \text { to } 3 \% \\ 0 \% \text { to } 2 \% \end{array}$ | $55 \%$ $-5 \%$ $1 \%$ $1 \%$ |
| Total net derivative assets | \$ (920) |  |  |  |  |

${ }^{(1)}$ The categories are aggregated based upon product type which differs from financial statement classification. The following is a reconciliation to the line items in the table on page 100: Trading account assets - Corporate securities, trading loans and other of $\$ 3.3$ billion, Trading account assets - Non-U.S. sovereign debt of $\$ 574$ million, Trading account assets - Mortgage trading loans and ABS of $\$ 2.1$ billion, AFS debt securities - Other taxable securities of $\$ 1.7$ billion, AFS debt securities - Tax-exempt securities of $\$ 599$ million, Loans and leases of $\$ 2.0$ billion and LHFS of $\$ 173$ million.
2) Includes models such as Monte Carlo simulation and Black-Scholes.
${ }^{(3)}$ Includes models such as Monte Carlo simulation, Black-Scholes and other methods that model the joint dynamics of interest, inflation and foreign exchange rates.
CPR $=$ Constant Prepayment Rate
CDR $=$ Constant Default Rate
EBITDA = Earnings before interest, taxes, depreciation and amortization
MMBtu = Million British thermal units
IR = Interest Rate
FX = Foreign Exchange
$\mathrm{n} / \mathrm{a}=$ not applicable

In the tables above, instruments backed by residential and commercial real estate assets include RMBS, commercial mortgage-backed securities, whole loans and mortgage CDOs. Commercial loans, debt securities and other include corporate CLOs and CDOs, commercial loans and bonds, and securities backed by non-real estate assets. Structured liabilities primarily include equity-linked notes that are accounted for under the fair value option.

The Corporation uses multiple market approaches in valuing certain of its Level 3 financial instruments. For example, market comparables and discounted cash flows are used together. For a given product, such as corporate debt securities, market comparables may be used to estimate some of the unobservable inputs and then these inputs are incorporated into a discounted cash flow model. Therefore, the balances disclosed encompass both of these techniques.

The level of aggregation and diversity within the products disclosed in the tables result in certain ranges of inputs being wide and unevenly distributed across asset and liability categories.

For more information on the inputs and techniques used in the valuation of MSRs, see Note 23 - Mortgage Servicing Rights.

## Sensitivity of Fair Value Measurements to Changes in Unobservable Inputs

## Loans and Securities

For instruments backed by residential real estate assets, commercial real estate assets and commercial loans, debt securities and other, a significant increase in market yields, default rates, loss severities or duration would result in a significantly lower fair value for long positions. Short positions would be impacted in a directionally opposite way. The impact of changes in prepayment speeds would have differing impacts depending on the seniority of the instrument and, in the case of CLOs, whether prepayments can be reinvested.

For auction rate securities, a significant increase in price would result in a significantly higher fair value.

## Structured Liabilities and Derivatives

For credit derivatives, a significant increase in market yield, including spreads to indices, upfront points (i.e., a single upfront payment made by a protection buyer at inception), credit spreads, default rates or loss severities would result in a significantly lower fair value for protection sellers and higher fair value for protection buyers. The impact of changes in prepayment speeds would have differing impacts depending on the seniority of the instrument and, in the case of CLOs, whether prepayments can be reinvested.

Structured credit derivatives, which include tranched portfolio CDS and derivatives with derivative product company (DPC) and monoline counterparties, are impacted by credit correlation, including default and wrong-way correlation. Default correlation is a parameter that describes the degree of dependence among credit default rates within a credit portfolio that underlies a credit derivative instrument. The sensitivity of this input on the fair value varies depending on the level of subordination of the tranche. For senior tranches that are net purchases of protection, a significant increase in default correlation would result in a significantly higher fair value. Net short protection positions would be impacted in a directionally opposite way. Wrong-way correlation is a parameter that describes the probability that as exposure to a counterparty increases, the credit quality of the counterparty decreases. A significantly higher degree of wrong-way correlation between a DPC counterparty and underlying derivative exposure would result in a significantly lower fair value.

For equity derivatives, commodity derivatives, interest rate derivatives and structured liabilities, a significant change in longdated rates and volatilities and correlation inputs (e.g., the degree of correlation between an equity security and an index, between two different commodities, between two different interest rates, or between interest rates and foreign exchange rates) would result in a significant impact to the fair value; however, the magnitude and direction of the impact depends on whether the Corporation is long or short the exposure.

## Nonrecurring Fair Value

The Corporation holds certain assets that are measured at fair value, but only in certain situations (e.g., impairment) and these measurements are referred to herein as nonrecurring. The amounts below represent assets still held as of the reporting date for which a nonrecurring fair value adjustment was recorded during 2015, 2014 and 2013.

## Assets Measured at Fair Value on a Nonrecurring Basis

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  |  |  | 2014 |  |  |  |
|  | Level 2 |  | Level 3 |  | Level 2 |  | Level 3 |  |
| Assets |  |  |  |  |  |  |  |  |
| Loans held-for-sale | \$ | 9 | \$ | 33 | \$ | 156 | \$ | 30 |
| Loans and leases ${ }^{(1)}$ |  | - |  | 2,739 |  | 5 |  | 4,636 |
| Foreclosed properties $(2,3)$ |  | - |  | 172 |  | - |  | 208 |
| Other assets |  | 88 |  | - |  | 111 |  | - |


(1) Includes $\$ 174$ million of losses on loans that were written down to a collateral value of zero during 2015 compared to losses of $\$ 370$ million and $\$ 365$ million in 2014 and 2013.
2) Amounts are included in other assets on the Consolidated Balance Sheet and represent the carrying value of foreclosed properties that were written down subsequent to their initial classification as foreclosed properties. Losses on foreclosed properties include losses taken during the first 90 days after transfer of a loan to foreclosed properties.
${ }^{(3)}$ Excludes $\$ 1.4$ billion and $\$ 1.1$ billion of properties acquired upon foreclosure of certain government-guaranteed loans (principally FHA-insured loans) as of December 31, 2015 and 2014.
The table below presents information about significant unobservable inputs related to the Corporation's nonrecurring Level 3 financial assets and liabilities at December 31, 2015 and 2014. Instruments backed by residential real estate assets represent residential mortgages where the loan has been written down to the fair value of the underlying collateral.

Quantitative Information about Nonrecurring Level 3 Fair Value Measurements

| (Dollars in millions) | December 31, 2015 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Inputs |  |  |  |  |
| Financial Instrument | Fair Value | Valuation Technique | Significant Unobservable Inputs | Ranges of Inputs | Weighted Average |
| Loans and leases backed by residential real estate assets | \$ 2,739 | Market comparables | OREO discount Cost to sell | $7 \%$ to $55 \%$ $8 \%$ to $45 \%$ | $\begin{aligned} & 20 \% \\ & 10 \% \end{aligned}$ |
|  | December 31, 2014 |  |  |  |  |
| Loans and leases backed by residential real estate assets | \$ 4,636 | Market comparables | OREO discount Cost to sell | 0\% to 28\% $7 \%$ to $14 \%$ | $8 \%$ $8 \%$ |

## NOTE 21 Fair Value Option

## Loans and Loan Commitments

The Corporation elects to account for certain commercial loans and loan commitments that exceed the Corporation's single name credit risk concentration guidelines under the fair value option. Lending commitments, both funded and unfunded, are actively managed and monitored and, as appropriate, credit risk for these lending relationships may be mitigated through the use of credit derivatives, with the Corporation's public side credit view and market perspectives determining the size and timing of the hedging activity. These credit derivatives do not meet the requirements for designation as accounting hedges and therefore are carried at fair value with changes in fair value recorded in other income (loss). Electing the fair value option allows the Corporation to carry these loans and loan commitments at fair value, which is more consistent with management's view of the underlying economics and the manner in which they are managed. In addition, election of the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the financial instruments at historical cost and the credit derivatives at fair value. The Corporation also elected the fair value option for certain loans held in consolidated VIEs.

## Loans Held-for-sale

The Corporation elects to account for residential mortgage LHFS, commercial mortgage LHFS and certain other LHFS under the fair value option with interest income on these LHFS recorded in other interest income. These loans are actively managed and monitored and, as appropriate, certain market risks of the loans may be mitigated through the use of derivatives. The Corporation has elected not to designate the derivatives as qualifying accounting hedges and therefore they are carried at fair value with changes in fair value recorded in other income (loss). The changes in fair value of the loans are largely offset by changes in the fair value of the derivatives. Election of the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the financial instruments at the lower of cost or fair value and the derivatives at fair value. The Corporation has not elected to account for certain other LHFS under the fair value option primarily because these loans are floating-rate loans that are not hedged using derivative instruments.

## Loans Reported as Trading Account Assets

The Corporation elects to account for certain loans that are held for the purpose of trading and are risk-managed on a fair value basis under the fair value option.

## Other Assets

The Corporation elects to account for certain private equity investments that are not in an investment company under the fair value option as this measurement basis is consistent with applicable accounting guidance for similar investments that are in an investment company. The Corporation also elects to account for certain long-term fixed-rate margin loans that are hedged with derivatives under the fair value option. Election of the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the financial instruments at historical cost and the derivatives at fair value.

## Securities Financing Agreements

The Corporation elects to account for certain securities financing agreements, including resale and repurchase agreements, under the fair value option based on the tenor of the agreements, which reflects the magnitude of the interest rate risk. The majority of securities financing agreements collateralized by U.S. government securities are not accounted for under the fair value option as these contracts are generally short-dated and therefore the interest rate risk is not significant.

## Long-term Deposits

The Corporation elects to account for certain long-term fixed-rate and rate-linked deposits that are hedged with derivatives that do not qualify for hedge accounting under the fair value option. Election of the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the financial instruments at historical cost and the derivatives at fair value. The Corporation has not elected to carry other long-term deposits at fair value because they were not hedged using derivatives.

## Short-term Borrowings

The Corporation elects to account for certain short-term borrowings, primarily short-term structured liabilities, under the fair value option because this debt is risk-managed on a fair value basis.

The Corporation elects to account for certain asset-backed secured financings, which are also classified in short-term borrowings, under the fair value option. Election of the fair value option allows the Corporation to reduce the accounting volatility that would otherwise result from the asymmetry created by accounting for the asset-backed secured financings at historical cost and the corresponding mortgage LHFS securing these financings at fair value.

## Long-term Debt

The Corporation elects to account for certain long-term debt, primarily structured liabilities, under the fair value option. This longterm debt is either risk-managed on a fair value basis or the related hedges do not qualify for hedge accounting.

The table below provides information about the fair value carrying amount and the contractual principal outstanding of assets and liabilities accounted for under the fair value option at December 31, 2015 and 2014.

Fair Value Option Elections

| (Dollars in millions) | December 31 |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  |  |  |  |  | 2014 |  |  |  |  |  |
|  | Fair Value Carrying Amount |  | Contractual <br> Principal <br> Outstanding |  | Fair Value Carrying Amount Less Unpaid Principal |  | Fair Value Carrying Amount |  | Contractual <br> Principal Outstanding |  | Fair Value Carrying Amount Less Unpaid Principal |  |
| Federal funds sold and securities borrowed or purchased under agreements to resell | \$ | 55,143 | \$ | 54,999 | \$ | 144 | \$ | 62,182 | \$ | 61,902 | \$ | 280 |
| Loans reported as trading account assets ${ }^{(1)}$ |  | 4,995 |  | 9,214 |  | $(4,219)$ |  | 4,607 |  | 8,487 |  | $(3,880)$ |
| Trading inventory - other |  | 8,149 |  | n/a |  | n/a |  | 6,865 |  | n/a |  | n/a |
| Consumer and commercial loans |  | 6,938 |  | 7,293 |  | (355) |  | 8,681 |  | 8,925 |  | (244) |
| Loans held-for-sale |  | 4,818 |  | 6,157 |  | $(1,339)$ |  | 6,801 |  | 8,072 |  | $(1,271)$ |
| Other assets |  | 275 |  | 270 |  | 5 |  | 253 |  | 270 |  | (17) |
| Long-term deposits |  | 1,116 |  | 1,021 |  | 95 |  | 1,469 |  | 1,361 |  | 108 |
| Federal funds purchased and securities loaned or sold under agreements to repurchase |  | 24,574 |  | 24,718 |  | (144) |  | 35,357 |  | 35,332 |  | 25 |
| Short-term borrowings |  | 1,325 |  | 1,325 |  | - |  | 2,697 |  | 2,697 |  | - |
| Unfunded loan commitments |  | 658 |  | n/a |  | n/a |  | 405 |  | n/a |  | n/a |
| Long-term debt (2) |  | 30,097 |  | 30,593 |  | (496) |  | 36,404 |  | 35,815 |  | 589 |

 near contractual principal outstanding.
${ }^{(2)}$ Includes structured liabilities with a fair value of $\$ 29.0$ billion and $\$ 35.3$ billion, and contractual principal outstanding of $\$ 29.4$ billion and $\$ 34.6$ billion at December 31 , 2015 and 2014 $\mathrm{n} / \mathrm{a}=$ not applicable

The following tables provide information about where changes in the fair value of assets and liabilities accounted for under the fair value option are included in the Consolidated Statement of Income for 2015, 2014 and 2013.

Gains (Losses) Relating to Assets and Liabilities Accounted for Under the Fair Value Option

| (Dollars in millions) | 2015 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Trading Account Profits (Losses) |  | Mortgage Banking Income (Loss) |  | Other Income (Loss) |  | Total |  |
| Federal funds sold and securities borrowed or purchased under agreements to resell | \$ | (195) | \$ | - | \$ | - | \$ | (195) |
| Loans reported as trading account assets |  | (199) |  | - |  | - |  | (199) |
| Trading inventory - other (1) |  | 1,284 |  | - |  | - |  | 1,284 |
| Consumer and commercial loans |  | 52 |  | - |  | (295) |  | (243) |
| Loans held-for-sale ${ }^{(2)}$ |  | (36) |  | 673 |  | 63 |  | 700 |
| Other assets |  | - |  | - |  | 10 |  | 10 |
| Long-term deposits |  | 1 |  | - |  | 13 |  | 14 |
| Federal funds purchased and securities loaned or sold under agreements to repurchase |  | 33 |  | - |  | - |  | 33 |
| Short-term borrowings |  | 3 |  | - |  | - |  | 3 |
| Unfunded loan commitments |  | - |  | - |  | (210) |  | (210) |
| Long-term debt (3, 4) |  | 2,107 |  | - |  | (633) |  | 1,474 |
| Total | \$ | 3,050 | \$ | 673 | \$ | $(1,052)$ | \$ | 2,671 |
|  | 2014 |  |  |  |  |  |  |  |
| Federal funds sold and securities borrowed or purchased under agreements to resell | \$ | (114) | \$ | - | \$ | - | \$ | (114) |
| Loans reported as trading account assets |  | (87) |  | - |  | - |  | (87) |
| Trading inventory - other (1) |  | 1,091 |  | - |  | - |  | 1,091 |
| Consumer and commercial loans |  | (24) |  | - |  | 69 |  | 45 |
| Loans held-for-sale ${ }^{(2)}$ |  | (56) |  | 798 |  | 83 |  | 825 |
| Long-term deposits |  | 23 |  | - |  | (26) |  | (3) |
| Federal funds purchased and securities loaned or sold under agreements to repurchase |  | 4 |  | - |  | - |  | 4 |
| Short-term borrowings |  | 52 |  | - |  | - |  | 52 |
| Unfunded loan commitments |  | - |  | - |  | (64) |  | (64) |
| Long-term debt (3) |  | 239 |  | - |  | 407 |  | 646 |
| Total | \$ | 1,128 | \$ | 798 | \$ | 469 | \$ | 2,395 |
|  | 2013 |  |  |  |  |  |  |  |
| Federal funds sold and securities borrowed or purchased under agreements to resell | \$ | (44) | \$ | - | \$ | - | \$ | (44) |
| Loans reported as trading account assets |  | 83 |  | - |  | - |  | 83 |
| Trading inventory - other ${ }^{(1)}$ |  | 1,355 |  | - |  | - |  | 1,355 |
| Consumer and commercial loans |  | (28) |  | (38) |  | 240 |  | 174 |
| Loans held-for-sale ${ }^{(2)}$ |  | 7 |  | 966 |  | 75 |  | 1,048 |
| Other assets |  | - |  | - |  | (77) |  | (77) |
| Long-term deposits |  | 30 |  | - |  | 84 |  | 114 |
| Federal funds purchased and securities loaned or sold under agreements to repurchase |  | (36) |  | - |  | - |  | (36) |
| Asset-backed secured financings |  | - |  | (91) |  | - |  | (91) |
| Short-term borrowings |  | (70) |  | - |  | - |  | (70) |
| Unfunded loan commitments |  | - |  | - |  | 180 |  | 180 |
| Long-term debt (3) |  | (602) |  | - |  | (649) |  | $(1,251)$ |
| Total | \$ | 695 | \$ | 837 | \$ | (147) | \$ | 1,385 |

1) The gains (losses) in trading account profits (losses) are primarily offset by gains (losses) on trading liabilities that hedge these assets.
${ }^{(2)}$ Includes the value of IRLCs on funded loans, including those sold during the period.
${ }^{(3)}$ The majority of the net gains (losses) in trading account profits relate to the embedded derivative in structured liabilities and are offset by gains (losses) on derivatives and securities that hedge these liabilities. In connection with the implementation of new accounting guidance relating to DVA on structured liabilities accounted for at fair value under the fair value option, unrealized DVA gains (losses) in 2015 are recorded in accumulated OCI while realized gains (losses) are recorded in other income (loss); for years prior to 2015, the realized and unrealized gains (losses) are reflected in other income (loss). For more information on the implementation of new accounting guidance, see Note 1 - Summary of Significant Accounting Principles.
${ }^{(4)}$ For the cumulative impact of changes in the Corporation's credit spreads and the amount recognized in OCI, see Note 14 - Accumulated Other Comprehensive Income (Loss). For more information on how the Corporation's own credit spread is determined, see Note 20 - Fair Value Measurements.

## Gains (Losses) Related to Borrower-specific Credit Risk for Assets Accounted for Under the Fair Value Option

(Dollars in millions)
Loans reported as trading account assets
Consumer and commercial loans
Loans held-for-sale

| December 31 |  |  |  |  |  |  |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  | 2015 | 2014 |  | 2013 |  |  |
| $\$$ | 37 | $\$$ | 28 | $\$$ | 56 |  |
|  | $(200)$ |  | 32 |  | 148 |  |
|  | 37 |  | 84 |  | 225 |  |
|  |  |  |  |  |  |  |

## NOTE 22 Fair Value of Financial Instruments

Financial instruments are classified within the fair value hierarchy using the methodologies described in Note 20 - Fair Value Measurements. The following disclosures include financial instruments where only a portion of the ending balance at December 31, 2015 and 2014 was carried at fair value on the Consolidated Balance Sheet.

## Short-term Financial Instruments

The carrying value of short-term financial instruments, including cash and cash equivalents, time deposits placed and other shortterm investments, federal funds sold and purchased, certain resale and repurchase agreements, customer and other receivables, customer payables (within accrued expenses and other liabilities on the Consolidated Balance Sheet), and shortterm borrowings approximates the fair value of these instruments. These financial instruments generally expose the Corporation to limited credit risk and have no stated maturities or have shortterm maturities and carry interest rates that approximate market. The Corporation elected to account for certain resale and repurchase agreements under the fair value option.

Under the fair value hierarchy, cash and cash equivalents are classified as Level 1. Time deposits placed and other short-term investments, such as U.S. government securities and short-term commercial paper, are classified as Level 1 and Level 2. Federal funds sold and purchased are classified as Level 2. Resale and repurchase agreements are classified as Level 2 because they are generally short-dated and/or variable-rate instruments collateralized by U.S. government or agency securities. Customer and other receivables primarily consist of margin loans, servicing advances and other accounts receivable and are classified as Level 2 and Level 3. Customer payables and short-term borrowings are classified as Level 2.

## Held-to-maturity Debt Securities

HTM debt securities, which consist primarily of U.S. agency debt securities, are classified as Level 2 using the same methodologies as AFS U.S. agency debt securities. For more information on HTM debt securities, see Note 3 - Securities.

## Loans

The fair values for commercial and consumer loans are generally determined by discounting both principal and interest cash flows expected to be collected using a discount rate for similar instruments with adjustments that the Corporation believes a market participant would consider in determining fair value. The Corporation estimates the cash flows expected to be collected using internal credit risk, interest rate and prepayment risk models that incorporate the Corporation's best estimate of current key assumptions, such as default rates, loss severity and prepayment speeds for the life of the loan. The carrying value of loans is presented net of the applicable allowance for loan losses and excludes leases. The Corporation accounts for certain commercial loans and residential mortgage loans under the fair value option.

## Deposits

The fair value for certain deposits with stated maturities was determined by discounting contractual cash flows using current market rates for instruments with similar maturities. The carrying
value of non-U.S. time deposits approximates fair value. For deposits with no stated maturities, the carrying value was considered to approximate fair value and does not take into account the significant value of the cost advantage and stability of the Corporation's long-term relationships with depositors. The Corporation accounts for certain long-term fixed-rate deposits under the fair value option.

## Long-term Debt

The Corporation uses quoted market prices, when available, to estimate fair value for its long-term debt. When quoted market prices are not available, fair value is estimated based on current market interest rates and credit spreads for debt with similar terms and maturities. The Corporation accounts for certain structured liabilities under the fair value option.

## Fair Value of Financial Instruments

The carrying values and fair values by fair value hierarchy of certain financial instruments where only a portion of the ending balance was carried at fair value at December 31, 2015 and 2014 are presented in the table below.

Fair Value of Financial Instruments

| (Dollars in millions) | December 31, 2015 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Carrying Value | Fair Value |  |  |
|  |  | Level 2 | Level 3 | Total |
| Financial assets |  |  |  |  |
| Loans | \$ 863,561 | \$ 70,223 | \$ 805,371 | \$ 875,594 |
| Loans held-for-sale | 7,453 | 5,347 | 2,106 | 7,453 |
| Financial liabilities |  |  |  |  |
| Deposits | 1,197,259 | 1,197,577 | - | 1,197,577 |
| Long-term debt | 236,764 | 239,596 | 1,513 | 241,109 |


|  | December 31, 2014 |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
|  |  |  |  |  |  |  |
| Financial assets | $\$ 842,259$ | $\$$ | 87,174 | $\$$ | 776,370 | $\$ 863,544$ |
| $\quad$ Loans | 12,836 |  | 12,236 |  | 618 | 12,854 |
| $\quad$ Loans held-for-sale |  |  |  |  |  |  |
| Financial liabilities | $1,118,936$ | $1,119,427$ |  | $1,119,427$ |  |  |
| $\quad$ Deposits | 243,139 | 249,692 |  | 2,362 | 252,054 |  |
| Long-term debt |  |  |  |  |  |  |

## Commercial Unfunded Lending Commitments

Fair values were generally determined using a discounted cash flow valuation approach which is applied using market-based CDS or internally developed benchmark credit curves. The Corporation accounts for certain loan commitments under the fair value option.

The carrying values and fair values of the Corporation's commercial unfunded lending commitments were $\$ 1.3$ billion and $\$ 6.3$ billion at December 31, 2015, and $\$ 932$ million and $\$ 3.8$ billion at December 31, 2014. Commercial unfunded lending commitments are primarily classified as Level 3 . The carrying value of these commitments is classified in accrued expenses and other liabilities.

The Corporation does not estimate the fair values of consumer unfunded lending commitments because, in many instances, the Corporation can reduce or cancel these commitments by providing notice to the borrower. For more information on commitments, see Note 12 - Commitments and Contingencies.

## NOTE 23 Mortgage Servicing Rights

The Corporation accounts for consumer MSRs at fair value with changes in fair value primarily recorded in mortgage banking income in the Consolidated Statement of Income. The Corporation manages the risk in these MSRs with derivatives such as options and interest rate swaps, which are not designated as accounting hedges, as well as securities including MBS and U.S. Treasury securities. The securities used to manage the risk in the MSRs are classified in other assets with changes in the fair value of the securities and the related interest income recorded in mortgage banking income.

The table below presents activity for residential mortgage and home equity MSRs for 2015 and 2014.

## Rollforward of Mortgage Servicing Rights

| (Dollars in millions) | 2015 |  | 2014 |  |
| :---: | :---: | :---: | :---: | :---: |
| Balance, January 1 | \$ | 3,530 | \$ | 5,042 |
| Additions |  | 637 |  | 707 |
| Sales |  | (393) |  | (61) |
| Amortization of expected cash flows ${ }^{(1)}$ |  | (874) |  | (927) |
| Impact of changes in interest rates and other market factors ${ }^{(2)}$ |  | 41 |  | $(1,191)$ |
| Model and other cash flow assumption changes: ${ }^{(3)}$ |  |  |  |  |
| Projected cash flows, including changes in costs to service loans |  | 100 |  | (163) |
| Impact of changes in the Home Price Index |  | (13) |  | (25) |
| Impact of changes to the prepayment model |  | (10) |  | 243 |
| Other model changes ${ }^{(4)}$ |  | 69 |  | (95) |
| Balance, December $31{ }^{(5)}$ | \$ | 3,087 | \$ | 3,530 |
| Mortgage loans serviced for investors (in billions) | \$ | 394 | \$ | 490 |

(1) Represents the net change in fair value of the MSR asset due to the recognition of modeled cash flows.
${ }^{(2)}$ These amounts reflect the changes in modeled MSR fair value primarily due to observed changes in interest rates, volatility, spreads and the shape of the forward swap curve and periodic adjustments to valuation based on third-party discovery.
${ }^{(3)}$ These amounts reflect periodic adjustments to the valuation model to reflect changes in the modeled relationship between inputs and their impact on projected cash flows as well as changes in certain cash flow assumptions such as cost to service and ancillary income per loan.
${ }^{(4)}$ These amounts include the impact of periodic recalibrations of the model to reflect changes in the relationship between market interest rate spreads and projected cash flows. Also included is a decrease of $\$ 127$ million for 2014 due to changes in option-adjusted spread rate assumptions.
${ }^{(5)}$ At December 31, 2015, includes $\$ 2.7$ billion of U.S. and $\$ 407$ million of non-U.S. consumer MSR balances compared to $\$ 3.3$ billion and $\$ 259$ million at December 31, 2014.

The Corporation primarily uses an option-adjusted spread (OAS) valuation approach which factors in prepayment risk to determine the fair value of MSRs. This approach consists of projecting servicing cash flows under multiple interest rate scenarios and discounting these cash flows using risk-adjusted discount rates. In addition to updating the valuation model for interest, discount and prepayment rates, periodic adjustments are made to recalibrate the valuation model for factors used to project cash flows. The changes to the factors capture the effect of variances related to actual versus estimated servicing proceeds.

Significant economic assumptions in estimating the fair value of MSRs at December 31, 2015 and 2014 are presented below. The change in fair value as a result of changes in OAS rates is included within "Model and other cash flow assumption changes" in the Rollforward of Mortgage Servicing Rights table. The weightedaverage life is not an input in the valuation model but is a product of both changes in market rates of interest and changes in model and other cash flow assumptions. The weighted-average life represents the average period of time that the MSRs' cash flows are expected to be received. Absent other changes, an increase (decrease) to the weighted-average life would generally result in an increase (decrease) in the fair value of the MSRs.

## Significant Economic Assumptions

|  | December 31 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  |
|  | Fixed | Adjustable | Fixed | Adjustable |
| Weighted-average OAS | 4.62\% | 7.61\% | 4.52\% | 7.61\% |
| Weighted-average life, in years | 4.46 | 3.43 | 4.53 | 2.95 |

The table below presents the sensitivity of the weightedaverage lives and fair value of MSRs to changes in modeled assumptions. These sensitivities are hypothetical and should be used with caution. As the amounts indicate, changes in fair value based on variations in assumptions generally cannot be extrapolated because the relationship of the change in assumption to the change in fair value may not be linear. Also, the effect of a variation in a particular assumption on the fair value of MSRs that continue to be held by the Corporation is calculated without changing any other assumption. In reality, changes in one factor may result in changes in another, which might magnify or counteract the sensitivities. The below sensitivities do not reflect any hedge strategies that may be undertaken to mitigate such risk.

## Sensitivity Impacts

| (Dollars in millions) | December 31, 2015 |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Change in Weighted-average Lives |  | Change in Fair Value |  |
|  | Fixed | Adjustable |  |  |
| Prepayment rates |  |  |  |  |
| Impact of 10\% decrease | 0.30 years | 0.26 years | \$ | 183 |
| Impact of 20\% decrease | 0.64 | 0.55 |  | 389 |
| Impact of 10\% increase | (0.26) | (0.23) |  | (163) |
| Impact of 20\% increase | (0.50) | (0.43) |  | (310) |
| OAS level |  |  |  |  |
| Impact of 100 bps decrease |  |  | \$ | 124 |
| Impact of 200 bps decrease |  |  |  | 259 |
| Impact of 100 bps increase |  |  |  | (115) |
| Impact of 200 bps increase |  |  |  | (221) |

## NOTE 24 Business Segment Information

Effective April 1, 2016, to align the segments with how the Corporation manages the businesses, the Corporation changed its basis of presentation, and following such change, reports its results of operations through the following four business segments: Consumer Banking, GWIM, Global Banking and Global Markets, with the remaining operations recorded in All Other. For more information on the Corporation's segment realignment, see Note 1 - Summary of Significant Accounting Principles.

## Consumer Banking

Consumer Banking offers a diversified range of credit, banking and investment products and services to consumers and small businesses. Consumer Banking product offerings include traditional savings accounts, money market savings accounts, CDs and IRAs, noninterest- and interest-bearing checking accounts, investment accounts and products, as well as credit and debit cards, residential mortgages and home equity loans, and direct and indirect loans to consumers and small businesses in the U.S. Consumer Banking includes the impact of servicing residential mortgages and home equity loans in the core portfolio. Customers and clients have access to a franchise network that stretches coast to coast through 33 states and the District of Columbia. The franchise network includes approximately 4,700 financial centers, 16,000 ATMs, nationwide call centers, and online and mobile platforms.

## Global Wealth \& Investment Management

GWIM provides a high-touch client experience through a network of financial advisors focused on clients with over \$250,000 in total investable assets, including tailored solutions to meet clients' needs through a full set of investment management, brokerage, banking and retirement products. GWIM also provides comprehensive wealth management solutions targeted to high net worth and ultra high net worth clients, as well as customized solutions to meet clients' wealth structuring, investment management, trust and banking needs, including specialty asset management services.

## Global Banking

Global Banking provides a wide range of lending-related products and services, integrated working capital management and treasury solutions to clients, and underwriting and advisory services through the Corporation's network of offices and client relationship teams. Global Banking's lending products and services include commercial loans, leases, commitment facilities, trade finance,
real estate lending and asset-based lending. Global Banking's treasury solutions business includes treasury management, foreign exchange and short-term investing options. Global Banking also provides investment banking products to clients such as debt and equity underwriting and distribution, and merger-related and other advisory services. The economics of most investment banking and underwriting activities are shared primarily between Global Banking and Global Markets based on the activities performed by each segment. Global Banking clients generally include middle-market companies, commercial real estate firms, not-for-profit companies, large global corporations, financial institutions, leasing clients, and mid-sized U.S.-based businesses requiring customized and integrated financial advice and solutions.

## Global Markets

Global Markets offers sales and trading services, including research, to institutional clients across fixed-income, credit, currency, commodity and equity businesses. Global Markets product coverage includes securities and derivative products in both the primary and secondary markets. Global Markets provides market-making, financing, securities clearing, settlement and custody services globally to institutional investor clients in support of their investing and trading activities. Global Markets also works with commercial and corporate clients to provide risk management products using interest rate, equity, credit, currency and commodity derivatives, foreign exchange, fixed-income and mortgage-related products. As a result of market-making activities in these products, Global Markets may be required to manage risk in a broad range of financial products including government securities, equity and equity-linked securities, high-grade and high-yield corporate debt securities, syndicated loans, MBS, commodities and ABS. In addition, the economics of most investment banking and underwriting activities are shared primarily between Global Markets and Global Banking based on the activities performed by each segment.

## All Other

All Other consists of ALM activities, equity investments, the international consumer card business, non-core mortgage loans and servicing activities, liquidating businesses, residual expense allocations and other. ALM activities encompass certain residential mortgages, debt securities, interest rate and foreign currency risk management activities including the residual net interest income allocation, the impact of certain allocation methodologies and accounting hedge ineffectiveness. The results of certain ALM activities are allocated to the business segments.

## Basis of Presentation

The management accounting and reporting process derives segment and business results by utilizing allocation methodologies for revenue and expense. The net income derived for the businesses is dependent upon revenue and cost allocations using an activity-based costing model, funds transfer pricing, and other methodologies and assumptions management believes are appropriate to reflect the results of the business.

Total revenue, net of interest expense, includes net interest income on an FTE basis and noninterest income. The adjustment of net interest income to an FTE basis results in a corresponding increase in income tax expense. The segment results also reflect certain revenue and expense methodologies that are utilized to determine net income. The net interest income of the businesses includes the results of a funds transfer pricing process that matches assets and liabilities with similar interest rate sensitivity and maturity characteristics. In segments where the total of liabilities and equity exceeds assets, which are generally deposittaking segments, the Corporation allocates assets to match liabilities. Net interest income of the business segments also includes an allocation of net interest income generated by certain of the Corporation's ALM activities. Further, net interest income on an FTE basis includes market-related adjustments, which are adjustments to net interest income to reflect the impact of changes in long-term interest rates on the estimated lives of mortgagerelated debt securities thereby impacting premium amortization. Also included in market-related adjustments is hedge ineffectiveness that impacts net interest income.

In addition, the business segments are impacted by the migration of customers and clients and their deposit, loan and brokerage balances between businesses. Subsequent to the date of migration, the associated net interest income, noninterest income and noninterest expense are recorded in the business to which the customers or clients migrated.

The Corporation's ALM activities include an overall interest rate risk management strategy that incorporates the use of various derivatives and cash instruments to manage fluctuations in earnings and capital that are caused by interest rate volatility. The Corporation's goal is to manage interest rate sensitivity so that movements in interest rates do not significantly adversely affect earnings and capital. The results of a majority of the Corporation's ALM activities are allocated to the business segments and fluctuate based on the performance of the ALM activities. ALM activities include external product pricing decisions including deposit pricing strategies, the effects of the Corporation's internal funds transfer pricing process and the net effects of other ALM activities.

Certain expenses not directly attributable to a specific business segment are allocated to the segments. The most significant of these expenses include data and item processing costs and certain centralized or shared functions. Data processing costs are allocated to the segments based on equipment usage. Item processing costs are allocated to the segments based on the volume of items processed for each segment. The costs of certain other centralized or shared functions are allocated based on methodologies that reflect utilization.

The table below presents net income (loss) and the components thereto (with net interest income on an FTE basis) for 2015, 2014 and 2013, and total assets at December 31, 2015 and 2014 for each business segment, as well as All Other.

Results for Business Segments and All Other

| At and for the Year Ended December 31 | Total Corporation ${ }^{(1)}$ |  |  |  |  |  | Consumer Banking |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (Dollars in millions) | 2015 |  | 2014 |  | 2013 |  | 2015 |  | 2014 |  | 2013 |  |
| Net interest income (FTE basis) | \$ | 39,989 | \$ | 40,640 | \$ | 43,124 | \$ | 20,331 | \$ | 20,742 | \$ | 21,209 |
| Noninterest income |  | 43,951 |  | 44,997 |  | 46,677 |  | 11,096 |  | 11,038 |  | 11,820 |
| Total revenue, net of interest expense (FTE basis) |  | 83,940 |  | 85,637 |  | 89,801 |  | 31,427 |  | 31,780 |  | 33,029 |
| Provision for credit losses |  | 3,161 |  | 2,275 |  | 3,556 |  | 2,346 |  | 2,470 |  | 2,957 |
| Noninterest expense |  | 57,735 |  | 75,657 |  | 69,214 |  | 18,716 |  | 19,392 |  | 20,711 |
| Income before income taxes (FTE basis) |  | 23,044 |  | 7,705 |  | 17,031 |  | 10,365 |  | 9,918 |  | 9,361 |
| Income tax expense (FTE basis) |  | 7,156 |  | 2,872 |  | 5,600 |  | 3,777 |  | 3,698 |  | 3,430 |
| Net income | \$ | 15,888 | \$ | 4,833 | \$ | 11,431 | \$ | 6,588 | \$ | 6,220 | \$ | 5,931 |
| Year-end total assets | \$ | 2,144,316 | \$ | 104,534 |  |  | \$ | 645,427 | \$ | 599,066 |  |  |


|  | Global Wealth \& Investment Management |  |  |  |  |  | Global Banking |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  | 2013 |  | 2015 |  | 2014 |  | 2013 |  |
| Net interest income (FTE basis) | \$ | 5,486 | \$ | 5,813 | \$ | 6,061 | \$ | 9,050 | \$ | 9,586 | \$ | 9,673 |
| Noninterest income |  | 12,506 |  | 12,573 |  | 11,734 |  | 8,377 |  | 8,514 |  | 7,745 |
| Total revenue, net of interest expense (FTE basis) |  | 17,992 |  | 18,386 |  | 17,795 |  | 17,427 |  | 18,100 |  | 17,418 |
| Provision for credit losses |  | 51 |  | 14 |  | 56 |  | 685 |  | 322 |  | 1,142 |
| Noninterest expense |  | 13,938 |  | 13,830 |  | 13,217 |  | 8,481 |  | 8,807 |  | 8,148 |
| Income before income taxes (FTE basis) |  | 4,003 |  | 4,542 |  | 4,522 |  | 8,261 |  | 8,971 |  | 8,128 |
| Income tax expense (FTE basis) |  | 1,459 |  | 1,694 |  | 1,658 |  | 3,041 |  | 3,292 |  | 2,982 |
| Net income | \$ | 2,544 | \$ | 2,848 | \$ | 2,864 | \$ | 5,220 | \$ | 5,679 | \$ | 5,146 |
| Year-end total assets | \$ | 296,271 | \$ | 274,954 |  |  | \$ | 381,975 | \$ | 353,637 |  |  |


|  | Global Markets |  |  |  |  |  | All Other |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  | 2013 |  | 2015 |  | 2014 |  | 2013 |  |
| Net interest income (FTE basis) | \$ | 4,183 | \$ | 3,848 | \$ | 4,114 | \$ | 939 | \$ | 651 | \$ | 2,067 |
| Noninterest income |  | 10,823 |  | 12,279 |  | 11,322 |  | 1,149 |  | 593 |  | 4,056 |
| Total revenue, net of interest expense (FTE basis) |  | 15,006 |  | 16,127 |  | 15,436 |  | 2,088 |  | 1,244 |  | 6,123 |
| Provision for credit losses |  | 99 |  | 110 |  | 140 |  | (20) |  | (641) |  | (739) |
| Noninterest expense |  | 11,373 |  | 11,989 |  | 12,225 |  | 5,227 |  | 21,639 |  | 14,913 |
| Income (loss) before income taxes (FTE basis) |  | 3,534 |  | 4,028 |  | 3,071 |  | $(3,119)$ |  | $(19,754)$ |  | $(8,051)$ |
| Income tax expense (benefit) (FTE basis) |  | 1,115 |  | 1,440 |  | 2,033 |  | $(2,236)$ |  | $(7,252)$ |  | $(4,503)$ |
| Net income (loss) | \$ | 2,419 | \$ | 2,588 | \$ | 1,038 | \$ | (883) | \$ | $(12,502)$ | \$ | $(3,548)$ |
| Year-end total assets | \$ | 548,790 | \$ | 576,552 |  |  | \$ | 271,853 | \$ | 300,325 |  |  |

(1) There were no material intersegment revenues.

The table below presents a reconciliation of the four business segments' total revenue, net of interest expense, on an FTE basis, and net income to the Consolidated Statement of Income, and total assets to the Consolidated Balance Sheet. The adjustments presented in the table below include consolidated income, expense and asset amounts not specifically allocated to individual business segments.

## Business Segment Reconciliations

| (Dollars in millions) | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Segments' total revenue, net of interest expense (FTE basis) | \$ | 81,852 | \$ | 84,393 | \$ | 83,678 |
| Adjustments: |  |  |  |  |  |  |
| ALM activities |  | 77 |  | $(1,008)$ |  | $(1,658)$ |
| Equity investment income |  | 261 |  | 1,130 |  | 2,901 |
| Liquidating businesses and other |  | 1,750 |  | 1,122 |  | 4,880 |
| FTE basis adjustment |  | (890) |  | (850) |  | (859) |
| Consolidated revenue, net of interest expense | \$ | 83,050 | \$ | 84,787 | \$ | 88,942 |
| Segments' total net income | \$ | 16,771 | \$ | 17,335 | \$ | 14,979 |
| Adjustments, net-of-taxes: |  |  |  |  |  |  |
| ALM activities |  | (518) |  | (894) |  | $(1,558)$ |
| Equity investment income |  | 162 |  | 706 |  | 1,828 |
| Liquidating businesses and other |  | (527) |  | $(12,314)$ |  | $(3,818)$ |
| Consolidated net income | \$ | 15,888 | \$ | 4,833 | \$ | 11,431 |


|  | December 31 |  |  |
| :---: | :---: | :---: | :---: |
|  |  | 2015 | 2014 |
| Segments' total assets |  | \$ 1,872,463 | \$ 1,804,209 |
| Adjustments: |  |  |  |
| ALM activities, including securities portfolio |  | 616,568 | 573,426 |
| Equity investments |  | 4,297 | 4,871 |
| Liquidating businesses and other |  | 139,995 | 171,420 |
| Elimination of segment asset allocations to match liabilities |  | $(489,007)$ | $(449,392)$ |
| Consolidated total assets |  | \$ 2,144,316 | \$ 2,104,534 |

## NOTE 25 Parent Company Information

The following tables present the Parent Company-only financial information. This financial information is presented in accordance with bank regulatory reporting requirements.

## Condensed Statement of Income

| (Dollars in millions) | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Income |  |  |  |  |  |  |
| Dividends from subsidiaries: |  |  |  |  |  |  |
| Bank holding companies and related subsidiaries | \$ | 18,970 | \$ | 12,400 | \$ | 8,532 |
| Nonbank companies and related subsidiaries |  | 53 |  | 149 |  | 357 |
| Interest from subsidiaries |  | 2,004 |  | 1,836 |  | 2,087 |
| Other income (loss) |  | (623) |  | 72 |  | 233 |
| Total income |  | 20,404 |  | 14,457 |  | 11,209 |
| Expense |  |  |  |  |  |  |
| Interest on borrowed funds from related subsidiaries |  | 1,169 |  | 1,661 |  | 1,730 |
| Other interest expense |  | 5,098 |  | 5,552 |  | 6,379 |
| Noninterest expense |  | 4,747 |  | 4,471 |  | 10,938 |
| Total expense |  | 11,014 |  | 11,684 |  | 19,047 |
| Income (loss) before income taxes and equity in undistributed earnings of subsidiaries |  | 9,390 |  | 2,773 |  | $(7,838)$ |
| Income tax benefit |  | $(3,574)$ |  | $(4,079)$ |  | $(7,227)$ |
| Income (loss) before equity in undistributed earnings of subsidiaries |  | 12,964 |  | 6,852 |  | (611) |
| Equity in undistributed earnings (losses) of subsidiaries: |  |  |  |  |  |  |
| Bank holding companies and related subsidiaries |  | 3,120 |  | 3,613 |  | 14,150 |
| Nonbank companies and related subsidiaries |  | (196) |  | $(5,632)$ |  | $(2,108)$ |
| Total equity in undistributed earnings (losses) of subsidiaries |  | 2,924 |  | $(2,019)$ |  | 12,042 |
| Net income | \$ | 15,888 | \$ | 4,833 | \$ | 11,431 |

## Condensed Balance Sheet

| (Dollars in millions) | December 31 |  |  |
| :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |
| Assets |  |  |  |
| Cash held at bank subsidiaries ${ }^{(1)}$ | \$ | 98,024 | \$ 100,304 |
| Securities |  | 937 | 932 |
| Receivables from subsidiaries: |  |  |  |
| Bank holding companies and related subsidiaries |  | 23,594 | 23,356 |
| Banks and related subsidiaries |  | 569 | 2,395 |
| Nonbank companies and related subsidiaries |  | 56,426 | 52,251 |
| Investments in subsidiaries: |  |  |  |
| Bank holding companies and related subsidiaries |  | 272,596 | 270,441 |
| Nonbank companies and related subsidiaries |  | 2,402 | 2,139 |
| Other assets |  | 9,360 | 14,599 |
| Total assets | \$ | 463,908 | \$ 466,417 |
| Liabilities and shareholders' equity |  |  |  |
| Short-term borrowings | \$ | 15 | \$ 46 |
| Accrued expenses and other liabilities |  | 13,900 | 16,872 |
| Payables to subsidiaries: |  |  |  |
| Banks and related subsidiaries |  | 465 | 2,559 |
| Nonbank companies and related subsidiaries |  | 13,921 | 17,698 |
| Long-term debt |  | 179,402 | 185,771 |
| Total liabilities |  | 207,703 | 222,946 |
| Shareholders' equity |  | 256,205 | 243,471 |
| Total liabilities and shareholders' equity | \$ | 463,908 | \$ 466,417 |

[^8]Condensed Statement of Cash Flows

| (Dollars in millions) | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Operating activities |  |  |  |  |  |  |
| Net income | \$ | 15,888 | \$ | 4,833 | \$ | 11,431 |
| Reconciliation of net income to net cash provided by (used in) operating activities: |  |  |  |  |  |  |
| Equity in undistributed (earnings) losses of subsidiaries |  | $(2,924)$ |  | 2,019 |  | $(12,042)$ |
| Other operating activities, net |  | $(2,509)$ |  | 2,143 |  | $(10,422)$ |
| Net cash provided by (used in) operating activities |  | 10,455 |  | 8,995 |  | $(11,033)$ |
| Investing activities |  |  |  |  |  |  |
| Net sales (purchases) of securities |  | 15 |  | (142) |  | 459 |
| Net payments from (to) subsidiaries |  | $(7,944)$ |  | $(5,902)$ |  | 39,336 |
| Other investing activities, net |  | 70 |  | 19 |  | 3 |
| Net cash provided by (used in) investing activities |  | $(7,859)$ |  | $(6,025)$ |  | 39,798 |
| Financing activities |  |  |  |  |  |  |
| Net increase (decrease) in short-term borrowings |  | (221) |  | (55) |  | 178 |
| Net increase (decrease) in other advances |  | (770) |  | 1,264 |  | $(14,378)$ |
| Proceeds from issuance of long-term debt |  | 26,492 |  | 29,324 |  | 30,966 |
| Retirement of long-term debt |  | $(27,393)$ |  | $(33,854)$ |  | $(39,320)$ |
| Proceeds from issuance of preferred stock |  | 2,964 |  | 5,957 |  | 1,008 |
| Redemption of preferred stock |  | - |  | - |  | $(6,461)$ |
| Common stock repurchased |  | $(2,374)$ |  | $(1,675)$ |  | $(3,220)$ |
| Cash dividends paid |  | $(3,574)$ |  | $(2,306)$ |  | $(1,677)$ |
| Net cash used in financing activities |  | $(4,876)$ |  | $(1,345)$ |  | $(32,904)$ |
| Net increase (decrease) in cash held at bank subsidiaries |  | $(2,280)$ |  | 1,625 |  | $(4,139)$ |
| Cash held at bank subsidiaries at January 1 |  | 100,304 |  | 98,679 |  | 102,818 |
| Cash held at bank subsidiaries at December 31 | \$ | 98,024 | \$ | 100,304 | \$ | 98,679 |

## NOTE 26 Performance by Geographical Area

Since the Corporation's operations are highly integrated, certain asset, liability, income and expense amounts must be allocated to arrive at total assets, total revenue, net of interest expense, income before income taxes and net income (loss) by geographic area. The Corporation identifies its geographic performance based on the business unit structure used to manage the capital or expense deployed in the region as applicable. This requires certain judgments related to the allocation of revenue so that revenue can be appropriately matched with the related capital or expense deployed in the region.

| (Dollars in millions) | Year | December 31 |  | Year Ended December 31 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total Assets ${ }^{(1)}$ |  | Total Revenue, Net of Interest Expense ${ }^{(2)}$ |  | Income Before Income Taxes |  | Net Income (Loss) |  |
|  | 2015 | \$ | 1,849,128 | \$ | 72,202 | \$ | 20,148 | \$ | 14,689 |
|  | 2014 |  | 1,792,719 |  | 73,500 |  | 4,643 |  | 3,305 |
|  | 2013 |  |  |  | 76,612 |  | 13,221 |  | 10,588 |
| Asia (4) | 2015 |  | 86,994 |  | 3,524 |  | 726 |  | 457 |
|  | 2014 |  | 92,005 |  | 3,605 |  | 759 |  | 473 |
|  | 2013 |  |  |  | 4,442 |  | 1,382 |  | 887 |
| Europe, Middle East and Africa | 2015 |  | 178,899 |  | 6,081 |  | 938 |  | 516 |
|  | 2014 |  | 190,365 |  | 6,409 |  | 1,098 |  | 813 |
|  | 2013 |  |  |  | 6,353 |  | 1,003 |  | (403) |
| Latin America and the Caribbean | 2015 |  | 29,295 |  | 1,243 |  | 342 |  | 226 |
|  | 2014 |  | 29,445 |  | 1,273 |  | 355 |  | 242 |
|  | 2013 |  |  |  | 1,535 |  | 566 |  | 359 |
| Total Non-U.S. | 2015 |  | 295,188 |  | 10,848 |  | 2,006 |  | 1,199 |
|  | 2014 |  | 311,815 |  | 11,287 |  | 2,212 |  | 1,528 |
|  | 2013 |  |  |  | 12,330 |  | 2,951 |  | 843 |
| Total Consolidated | 2015 | \$ | 2,144,316 | \$ | 83,050 | \$ | 22,154 | \$ | 15,888 |
|  | 2014 |  | 2,104,534 |  | 84,787 |  | 6,855 |  | 4,833 |
|  | 2013 |  |  |  | 88,942 |  | 16,172 |  | 11,431 |

(1) Total assets include long-lived assets, which are primarily located in the U.S.
${ }^{2)}$ There were no material intercompany revenues between geographic regions for any of the periods presented.
3) Substantially reflects the U.S.
(4) Amounts include pretax gains of $\$ 753$ million ( $\$ 474$ million net-of-tax) on the sale of common shares of CCB during 2013.


[^0]:    For footnotes see page 11.

[^1]:    ${ }^{1)}$ Outstandings include pay option loans of $\$ 2.3$ billion and $\$ 3.2$ billion at December 31, 2015 and 2014. We no longer originate pay option loans.

[^2]:    ${ }^{(1)}$ Level 3 total assets and liabilities are shown before the impact of cash collateral and counterparty netting related to derivative positions.

[^3]:    For footnotes see page 102.

[^4]:    ${ }^{(1)}$ Amounts are recorded in interest expense on long-term debt and in other income (loss).

[^5]:    ${ }^{1)}$ Amounts related to cash flow hedges represent hedge ineffectiveness and amounts related to net investment hedges represent amounts excluded from effectiveness testing.

[^6]:    1) Benefit payments expected to be made from the plan's assets.
[^7]:    ${ }^{(1)}$ Mortgage banking income (loss) does not reflect the impact of Level 1 and Level 2 hedges on MSRs.
    ${ }^{(2)}$ Amounts represent instruments that are accounted for under the fair value option.

[^8]:    (1) Balance includes third-party cash held of \$28 million and \$29 million at December 31, 2015 and 2014

