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This Annual Report, including the Financial Review and the Financial Statements and related Notes, contains forward-looking statements, which may include forecasts of our financial results and condition, expectations for our operations and business, and our assumptions for those forecasts and expectations. Do not unduly rely on forward-looking statements. Actual results may differ materially from our forward-looking statements due to several factors. Factors that could cause our actual results to differ materially from our forward-looking statements are described in this Report, including in the “Forward-Looking Statements” and “Risk Factors” sections, and in the “Regulation and Supervision” section of our Annual Report on Form 10-K for the year ended December 31, 2018 (2018 Form 10-K).

When we refer to “Wells Fargo,” “the Company,” “we,” “our,” or “us” in this Report, we mean Wells Fargo & Company and Subsidiaries (consolidated). When we refer to the “Parent,” we mean Wells Fargo & Company. See the Glossary of Acronyms for terms used throughout this Report.

Financial Review¹

Overview

Wells Fargo & Company is a diversified, community-based financial services company with \$1.90 trillion in assets. Founded in 1852 and headquartered in San Francisco, we provide banking, investment and mortgage products and services, as well as consumer and commercial finance, through 7,800 locations, more than 13,000 ATMs, digital (online, mobile and social), and contact centers (phone, email and correspondence), and we have offices in 37 countries and territories to support customers who conduct business in the global economy. With approximately 259,000 active, full-time equivalent team members, we serve one in three households in the United States and ranked No. 26 on *Fortune’s* 2018 rankings of America’s largest corporations. We ranked fourth in assets and third in the market value of our common stock among all U.S. banks at December 31, 2018.

We use our *Vision, Values & Goals* to guide us toward growth and success. Our vision is to satisfy our customers’ financial needs and help them succeed financially. We aspire to create deep and enduring relationships with our customers by providing them with an exceptional experience and by understanding their needs and delivering the most relevant products, services, advice, and guidance.

We have five primary values, which are based on our vision and guide the actions we take. First, we place customers at the center of everything we do. We want to exceed customer expectations and build relationships that last a lifetime. Second, we value and support our people as a competitive advantage and strive to attract, develop, motivate, and retain the best team members. Third, we strive for the highest ethical standards of integrity, transparency, and principled performance. Fourth, we value and promote diversity and inclusion in all aspects of business and at all levels. Fifth, we look to each of our team members to be a leader in establishing, sharing, and communicating our vision for our customers, communities, team members, and shareholders. In addition to our five primary values, one of our key day-to-day priorities is to make risk management a competitive advantage by working hard to ensure that appropriate controls are in place to reduce risks to our customers, maintain and increase our competitive market position, and protect Wells Fargo’s long-term safety, soundness, and reputation.

In keeping with our primary values and risk management priorities, we have six long-term goals for the Company, which entail becoming the financial services leader in the following areas:

- Customer service and advice – provide exceptional service and guidance to our customers to help them succeed financially.
- Team member engagement – be a company where people feel included, valued, and supported; everyone is respected; and we work as a team.
- Innovation – create lasting value for our customers and increased efficiency for our operations through innovative thinking, industry-leading technology, and a willingness to test and learn.
- Risk management – set the global standard in managing all forms of risk.
- Corporate citizenship – make a positive contribution to communities through philanthropy, advancing diversity and inclusion, creating economic opportunity, and promoting environmental sustainability.
- Shareholder value – deliver long-term value for shareholders.

Federal Reserve Board Consent Order Regarding Governance Oversight and Compliance and Operational Risk Management

On February 2, 2018, the Company entered into a consent order with the Board of Governors of the Federal Reserve System (FRB). As required by the consent order, the Board submitted to the FRB a plan to further enhance the Board’s governance and oversight of the Company, and the Company submitted to the FRB a plan to further improve the Company’s compliance and operational risk management program. The consent order requires the Company, following the FRB’s acceptance and approval of the plans and the Company’s adoption and implementation of the plans, to complete third-party reviews of the enhancements and improvements provided for in the plans. Until these third-party reviews are complete and the plans are approved and implemented to the satisfaction of the FRB, the Company’s total consolidated assets will be limited to the level as of December 31, 2017. Compliance with this asset cap will be measured on a two-quarter daily average basis to allow for management of temporary fluctuations. The Company continues to have constructive dialogue with the FRB on an ongoing basis to clarify expectations, receive feedback, and assess progress under the consent order. In order to have enough time to incorporate this feedback into the Company’s plans in a

¹ Financial information for periods prior to 2018 has been revised to reflect presentation changes made in connection with our adoption in first quarter 2018 of Accounting Standards Update (ASU) 2016-01 Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*. See Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report for more information.

thoughtful manner, adopt and implement the final plans as accepted by the FRB, and complete the required third-party reviews, the Company is planning to operate under the asset cap through the end of 2019. As of the end of fourth quarter 2018, our total consolidated assets, as calculated pursuant to the requirements of the consent order, were below our level of total assets as of December 31, 2017. Additionally, after removal of the asset cap, a second third-party review must also be conducted to assess the efficacy and sustainability of the enhancements and improvements.

Consent Orders with the Consumer Financial Protection Bureau and Office of the Comptroller of the Currency Regarding Compliance Risk Management Program, Automobile Collateral Protection Insurance Policies, and Mortgage Interest Rate Lock Extensions

On April 20, 2018, the Company entered into consent orders with the Consumer Financial Protection Bureau (CFPB) and the Office of the Comptroller of the Currency (OCC) to pay an aggregate of \$1 billion in civil money penalties to resolve matters regarding the Company's compliance risk management program and past practices involving certain automobile collateral protection insurance policies and certain mortgage interest rate lock extensions. As required by the consent orders, the Company submitted to the CFPB and OCC an enterprise-wide compliance risk management plan and a plan to enhance the Company's internal audit program with respect to federal consumer financial law and the terms of the consent orders. In addition, as required by the consent orders, the Company submitted for non-objection plans to remediate customers affected by the automobile collateral protection insurance and mortgage interest rate lock matters, as well as a plan for the management of remediation activities conducted by the Company.

Retail Sales Practices Matters

As we have previously reported, in September 2016 we announced settlements with the CFPB, the OCC, and the Office of the Los Angeles City Attorney, and entered into consent orders with the CFPB and the OCC, in connection with allegations that some of our retail customers received products and services they did not request. As a result, it remains our top priority to rebuild trust through a comprehensive action plan that includes making things right for our customers, team members, and other stakeholders, and building a better Company for the future.

Our priority of rebuilding trust has included numerous actions focused on identifying potential financial harm and customer remediation. The Board and management are conducting company-wide reviews of sales practices issues. These reviews are ongoing. In August 2017, a third-party consulting firm completed an expanded data-driven review of retail banking accounts opened from January 2009 to September 2016 to identify financial harm stemming from potentially unauthorized accounts. We have completed financial remediation for the customers identified through the expanded account analysis. Additionally, customer outreach under the \$142 million class action lawsuit settlement concerning improper retail sales practices (*Jabbari v. Wells Fargo Bank, N.A.*), into which the Company entered to provide further remediation to customers, concluded in June 2018 and the period for customers to submit claims closed on July 7, 2018. The settlement administrator will pay claims following the

calculation of compensatory damages and favorable resolution of pending appeals in the case.

For additional information regarding sales practices matters, including related legal matters, see the "Risk Factors" section and Note 16 (Legal Actions) to Financial Statements in this Report.

Additional Efforts to Rebuild Trust

Our priority of rebuilding trust has also included an effort to identify other areas or instances where customers may have experienced financial harm. We are working with our regulatory agencies in this effort, and we have accrued for the reasonably estimable remediation costs related to these matters, which amounts may change based on additional facts and information, as well as ongoing reviews and communications with our regulators. As part of this effort, we are focused on the following key areas:

- **Automobile Lending Business** The Company is reviewing practices concerning the origination, servicing, and/or collection of consumer automobile loans, including matters related to certain insurance products, and is providing remediation to the extent it identifies affected customers. For example:
 - In July 2017, the Company announced it would remediate customers who may have been financially harmed due to issues related to automobile collateral protection insurance (CPI) policies purchased through a third-party vendor on their behalf (based on an understanding that the borrowers did not have physical damage insurance coverage on their automobiles as required during the term of their automobile loans). The practice of placing CPI had been previously discontinued by the Company. The Company is in the process of providing remediation to affected customers and/or letters to affected customers through which they may claim or otherwise receive remediation compensation for policies placed between October 15, 2005, and September 30, 2016.
 - The Company has identified certain issues related to the unused portion of guaranteed automobile protection waiver or insurance agreements between the customer and dealer and, by assignment, the lender, which will result in remediation to customers in certain states. The Company is in the process of providing remediation to affected customers.
- **Mortgage Interest Rate Lock Extensions** In October 2017, the Company announced plans to reach out to all home lending customers who paid fees for mortgage rate lock extensions requested from September 16, 2013, through February 28, 2017, and to provide refunds, with interest, to customers who believe they should not have paid those fees. The plan to issue refunds follows an internal review that determined a rate lock extension policy implemented in September 2013 was, at times, not consistently applied, resulting in some borrowers being charged fees in cases where the Company was primarily responsible for the delays that made the extensions necessary. Effective March 1, 2017, the Company changed how it manages the mortgage rate lock extension process by establishing a centralized review team that reviews all rate lock extension requests for consistent application of the policy. Although the Company believes a substantial number of the rate lock extension fees during the period in question were appropriately charged under its policy, due to

Overview (continued)

our customer-oriented remediation approach, we have issued refunds and interest to substantially all of our customers who paid rate lock extension fees during the period in question. We have substantially completed the remediation process.

- **Add-on Products** The Company is reviewing practices related to certain consumer “add-on” products, including identity theft and debt protection products that were subject to an OCC consent order entered into in June 2015, as well as home and automobile warranty products, and memberships in discount programs. The products were sold to customers through a number of distribution channels and, in some cases, were acquired by the Company in connection with the purchase of loans. Sales of certain of these products have been discontinued over the past few years primarily due to decisions made by the Company in the normal course of business, and by mid-2017, the Company had ceased selling any of these products to consumers. We are in the process of providing remediation where we identify affected customers, and are also providing refunds to customers who purchased certain products. The review of the Company’s historical practices with respect to these products is ongoing, focusing on, among other topics, sales practices, adequacy of disclosures, customer servicing, and volume and type of customer complaints.
- **Consumer Deposit Account Freezing/Closing** The Company is reviewing procedures regarding the freezing (and, in many cases, closing) of consumer deposit accounts after the Company detected suspected fraudulent activity (by third-parties or account holders) that affected those accounts. This review is ongoing.
- **Review of Certain Activities Within Wealth and Investment Management** A review of certain activities within Wealth and Investment Management (WIM) being conducted by the Board, in response to inquiries from federal government agencies, is assessing whether there have been inappropriate referrals or recommendations, including with respect to rollovers for 401(k) plan participants, certain alternative investments, or referrals of brokerage customers to the Company’s investment and fiduciary services business. The Board’s review is substantially completed and has not, to date, uncovered evidence of systemic or widespread issues in these businesses. Federal government agencies continue to review this matter.
- **Fiduciary and Custody Account Fee Calculations** The Company is reviewing fee calculations within certain fiduciary and custody accounts in its investment and fiduciary services business, which is part of the wealth management business in WIM. The Company has determined that there have been instances of incorrect fees being applied to certain assets and accounts, resulting in both overcharges and undercharges to customers. These issues include the incorrect set-up and maintenance in the system of record of the values associated with certain assets. Systems, operations, and account-level reviews are underway to determine the extent of any assets and accounts affected, and root cause analyses are being performed with the assistance of third parties. These reviews are ongoing and, as a result of its reviews to date, the Company has suspended the charging of fees on some assets and accounts, has notified the affected customers, and is continuing its analysis of those assets and accounts. The review of

customer accounts is ongoing to determine the extent of any additional necessary remediation, including with respect to additional accounts not yet reviewed, which may lead to additional accruals and fee suspensions.

- **Foreign Exchange Business** The Company has completed an assessment, with the assistance of a third party, of its policies, practices, and procedures in its foreign exchange (FX) business. The FX business continues to revise and implement new policies, practices, and procedures, including those related to pricing. The Company has begun providing remediation to customers that may have received pricing inconsistent with commitments made to those customers, and rebates to customers where historic pricing, while consistent with contracts entered into with those customers, does not conform to the Company’s recently implemented standards and pricing. The Company’s review of affected customers is ongoing.
- **Mortgage Loan Modifications** An internal review of the Company’s use of a mortgage loan modification underwriting tool identified a calculation error regarding foreclosure attorneys’ fees affecting certain accounts that were in the foreclosure process between April 13, 2010, and October 2, 2015, when the error was corrected. A subsequent expanded review identified related errors regarding the maximum allowable foreclosure attorneys’ fees permitted for certain accounts that were in the foreclosure process between March 15, 2010, and April 30, 2018, when new controls were implemented. Similar to the initial calculation error, these errors caused an overstatement of the attorneys’ fees that were included for purposes of determining whether a customer qualified for a mortgage loan modification or repayment plan pursuant to the requirements of government-sponsored enterprises (such as Fannie Mae and Freddie Mac), the Federal Housing Administration (FHA), and the U.S. Department of Treasury’s Home Affordable Modification Program (HAMP). Customers were not actually charged the incorrect attorneys’ fees. As previously disclosed, the Company has identified customers who, as a result of these errors, were incorrectly denied a loan modification or were not offered a loan modification or repayment plan in cases where they otherwise would have qualified, as well as instances where a foreclosure was completed after the loan modification was denied or the customer was deemed ineligible to be offered a loan modification or repayment plan. The number of previously disclosed customers affected by these errors may change as a result of ongoing validation, but is not expected to have changed materially upon completion of this validation. The Company has contacted substantially all of the identified customers affected by these errors and has provided remediation as well as the option to pursue no-cost mediation with an independent mediator. The Company’s review of its mortgage loan modification practices is ongoing, and we are providing remediation to the extent we identify additional affected customers as a result of this review.

To the extent issues are identified, we will continue to assess any customer harm and provide remediation as appropriate. This effort to identify other instances in which customers may have experienced harm is ongoing, and it is possible that we may identify other areas of potential concern.

For more information, including related legal and regulatory risk, see the “Risk Factors” section and Note 16 (Legal Actions) to Financial Statements in this Report.

Financial Performance

In 2018, we generated \$22.4 billion of net income and diluted earnings per common share (EPS) of \$4.28, compared with \$22.2 billion of net income and EPS of \$4.10 for 2017. We grew average commercial and industrial, and average real estate 1-4 family first mortgage loans compared with 2017, maintained strong capital and liquidity levels, and rewarded our shareholders by increasing our dividend and continuing to repurchase shares of our common stock. Our achievements during 2018 continued to demonstrate the benefit of our diversified business model and our ability to generate consistent financial performance. We remain focused on meeting the financial needs of our customers. Noteworthy financial performance items for 2018 (compared with 2017) included:

- revenue of \$86.4 billion, down from \$88.4 billion, which included net interest income of \$50.0 billion, up \$438 million, or 1%;
- average loans of \$945.2 billion, down 1%;
- average deposits of \$1.3 trillion, down \$28.8 billion, or 2%;
- return on assets (ROA) of 1.19% and return on equity (ROE) of 11.53%, up from 1.15% and 11.35%, respectively, a year ago;
- our credit results improved with a net charge-off rate of 0.29%, compared with 0.31% a year ago;
- nonaccrual loans of \$6.5 billion, down \$1.2 billion, or 15%, from a year ago; and
- \$25.8 billion in capital returned to our shareholders through increased common stock dividends and additional net share repurchases, up 78% from a year ago.

Table 1 presents a six-year summary of selected financial data and Table 2 presents selected ratios and per common share data.

Balance Sheet and Liquidity

Our balance sheet remained strong during 2018 with strong credit quality and solid levels of liquidity and capital. Our total assets were \$1.90 trillion at December 31, 2018. Cash and other short-term investments decreased \$42.5 billion from December 31, 2017, reflecting lower deposit balances. Debt securities grew \$11.3 billion, or 2%, from December 31, 2017. Our loan portfolio declined \$3.7 billion from December 31, 2017. Growth in commercial and industrial loans and real estate 1-4 family first mortgage loans was more than offset by declines in commercial real estate mortgage, real estate 1-4 family junior lien mortgage and automobile loans.

Deposits at December 31, 2018, were down \$49.8 billion, or 4%, from 2017. The decline was driven by a decrease in commercial deposits from financial institutions, which includes actions the Company took in the first half of 2018 in response to the asset cap, and a decline in consumer and small business banking deposits. Our average deposit cost increased 21 basis points from a year ago driven by an increase in Wholesale Banking and Wealth and Investment Management deposit rates.

Credit Quality

Credit quality remained solid in 2018, driven by continued strong performance in the commercial and consumer real estate portfolios. Performance in several of our commercial and consumer loan portfolios remained near historically low loss levels and reflected our long-term risk focus. Net charge-offs were \$2.7 billion, or 0.29% of average loans, in 2018, compared with \$2.9 billion, or 0.31%, in 2017.

Net losses in our commercial portfolio were \$429 million, or 9 basis points of average commercial loans, in 2018, compared with \$446 million, or 9 basis points, in 2017, driven by decreased losses in our commercial and industrial loan portfolio. Net consumer losses decreased to 52 basis points of average consumer loans in 2018, compared with 55 basis points in 2017. Losses in our consumer real estate portfolios declined \$93 million in 2018 to a net recovery position. The consumer loss levels reflected decreased losses in our automobile and other revolving and installment loan portfolios, lower losses in our residential real estate portfolios due to the benefit of the improving housing market, and our continued focus on originating high quality loans.

The allowance for credit losses of \$10.7 billion at December 31, 2018, declined \$1.3 billion from the prior year. Our provision for credit losses in 2018 was \$1.7 billion, compared with \$2.5 billion in 2017, reflecting a release of \$1.0 billion in the allowance for credit losses, compared with a release of \$400 million in 2017. The release in 2018 and 2017 was due to strong underlying credit performance.

Nonperforming assets (NPAs) at the end of 2018 were \$6.9 billion, down 16% from the end of 2017. Nonaccrual loans declined \$1.2 billion from the prior year end while foreclosed assets were down \$191 million from 2017.

Capital

Our financial performance in 2018 allowed us to maintain a solid capital position with total equity of \$197.1 billion at December 31, 2018, compared with \$208.1 billion at December 31, 2017. We returned \$25.8 billion to shareholders in 2018 (\$14.5 billion in 2017) through common stock dividends and net share repurchases, and our net payout ratio (which is the ratio of (i) common stock dividends and share repurchases less issuances and stock compensation-related items, divided by (ii) net income applicable to common stock) was 125%. During 2018 we increased our quarterly common stock dividend from \$0.39 to \$0.43 per share. Our common shares outstanding declined by 310.4 million shares, or 6%, as we continued to reduce our common share count through the repurchase of 375.5 million common shares during the year. We expect our share count to continue to decline in 2019 as a result of anticipated net share repurchases.

We believe an important measure of our capital strength is the Common Equity Tier 1 ratio on a fully phased-in basis, which was 11.74% as of December 31, 2018, down from 11.98% a year ago, but still well above our internal target of 10%. Likewise, our other regulatory capital ratios remained strong. See the “Capital Management” section in this Report for more information regarding our capital, including the calculation of our regulatory capital amounts.

Overview (continued)

Table 1: Six-Year Summary of Selected Financial Data

(in millions, except per share amounts)	2018	2017	2016	2015	2014	2013	% Change 2018/ 2017	Five-year compound growth rate
Income statement								
Net interest income	\$ 49,995	49,557	47,754	45,301	43,527	42,800	1%	3
Noninterest income	36,413	38,832	40,513	40,756	40,820	40,980	(6)	(2)
Revenue	86,408	88,389	88,267	86,057	84,347	83,780	(2)	1
Provision for credit losses	1,744	2,528	3,770	2,442	1,395	2,309	(31)	(5)
Noninterest expense	56,126	58,484	52,377	49,974	49,037	48,842	(4)	3
Net income before noncontrolling interests	22,876	22,460	22,045	23,276	23,608	22,224	2	1
Less: Net income from noncontrolling interests	483	277	107	382	551	346	74	7
Wells Fargo net income	22,393	22,183	21,938	22,894	23,057	21,878	1	—
Earnings per common share	4.31	4.14	4.03	4.18	4.17	3.95	4	2
Diluted earnings per common share	4.28	4.10	3.99	4.12	4.10	3.89	4	2
Dividends declared per common share	1.640	1.540	1.515	1.475	1.350	1.150	6	7
Balance sheet (at year end)								
Debt securities	\$ 484,689	473,366	459,038	394,744	350,661	298,241	2%	10
Loans	953,110	956,770	967,604	916,559	862,551	822,286	—	3
Allowance for loan losses	9,775	11,004	11,419	11,545	12,319	14,502	(11)	(8)
Goodwill	26,418	26,587	26,693	25,529	25,705	25,637	(1)	1
Equity securities	55,148	62,497	49,110	40,266	44,005	32,227	(12)	11
Assets	1,895,883	1,951,757	1,930,115	1,787,632	1,687,155	1,523,502	(3)	4
Deposits	1,286,170	1,335,991	1,306,079	1,223,312	1,168,310	1,079,177	(4)	4
Long-term debt	229,044	225,020	255,077	199,536	183,943	152,998	2	8
Wells Fargo stockholders' equity	196,166	206,936	199,581	192,998	184,394	170,142	(5)	3
Noncontrolling interests	900	1,143	916	893	868	866	(21)	1
Total equity	197,066	208,079	200,497	193,891	185,262	171,008	(5)	3

Table 2: Ratios and Per Common Share Data

	Year ended December 31,		
	2018	2017	2016
Profitability ratios			
Wells Fargo net income to average assets (ROA)	1.19%	1.15	1.16
Wells Fargo net income applicable to common stock to average Wells Fargo common stockholders' equity (ROE)	11.53	11.35	11.49
Return on average tangible common equity (ROTCE) (1)	13.73	13.55	13.85
Efficiency ratio (2)	65.0	66.2	59.3
Capital ratios (3)			
At year end:			
Wells Fargo common stockholders' equity to assets	9.20	9.38	9.14
Total equity to assets	10.39	10.66	10.39
Risk-based capital (4):			
Common Equity Tier 1	11.74	12.28	11.13
Tier 1 capital	13.46	14.14	12.82
Total capital	16.60	17.46	16.04
Tier 1 leverage	9.07	9.35	8.95
Average balances:			
Average Wells Fargo common stockholders' equity to average assets	9.50	9.37	9.40
Average total equity to average assets	10.77	10.64	10.64
Per common share data			
Dividend payout (5)	38.3	37.6	38.0
Book value (6)	\$ 38.06	37.44	35.18

- (1) Tangible common equity is a non-GAAP financial measure and represents total equity less preferred equity, noncontrolling interests, and goodwill and certain identifiable intangible assets (including goodwill and intangible assets associated with certain of our nonmarketable equity securities, but excluding mortgage servicing rights), net of applicable deferred taxes. The methodology of determining tangible common equity may differ among companies. Management believes that return on average tangible common equity, which utilizes tangible common equity, is a useful financial measure because it enables investors and others to assess the Company's use of equity. For additional information, including a corresponding reconciliation to GAAP financial measures, see the "Capital Management – Tangible Common Equity" section in this Report.
- (2) The efficiency ratio is noninterest expense divided by total revenue (net interest income and noninterest income).
- (3) See the "Capital Management" section and Note 28 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report for additional information.
- (4) The risk-based capital ratios were calculated under the lower of Standardized or Advanced Approach determined pursuant to Basel III. Beginning January 1, 2018, the requirements for calculating common equity tier 1 and tier 1 capital, along with risk-weighted assets, became fully phased-in; Accordingly, the information presented reflects fully phased-in common equity tier 1 capital, tier 1 capital and risk-weighted assets but reflects total capital still in accordance with Transition Requirements. See the "Capital Management" section and Note 28 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report for additional information.
- (5) Dividend payout ratio is dividends declared per common share as a percentage of diluted earnings per common share.
- (6) Book value per common share is common stockholders' equity divided by common shares outstanding.

Earnings Performance

Wells Fargo net income for 2018 was \$22.4 billion (\$4.28 diluted earnings per common share), compared with \$22.2 billion (\$4.10 diluted per share) for 2017 and \$21.9 billion (\$3.99 diluted per share) for 2016. Our financial performance in 2018 benefited from a \$438 million increase in net interest income, a \$784 million decrease in our provision for credit losses, and a \$2.4 billion decrease in noninterest expense, partially offset by a \$2.4 billion decrease in noninterest income, and a \$745 million increase in income tax expense.

Revenue, the sum of net interest income and noninterest income, was \$86.4 billion in 2018, compared with \$88.4 billion in 2017 and \$88.3 billion in 2016. The decrease in revenue for 2018 compared with 2017 was predominantly due to a decrease in noninterest income, reflecting decreases in mortgage banking income, insurance income, service charges on deposit accounts, and net gains (losses) from debt and equity securities, partially offset by an increase in all other noninterest income. Our diversified sources of revenue generated by our businesses continued to be balanced between net interest income and noninterest income. In 2018, net interest income of \$50.0 billion represented 58% of revenue, compared with \$49.6 billion (56%) in 2017 and \$47.8 billion (54%) in 2016. Table 3 presents the components of revenue and noninterest expense as a percentage of revenue for year-over-year results.

See later in this section for discussions of net interest income, noninterest income and noninterest expense.

Table 3: Net Interest Income, Noninterest Income and Noninterest Expense as a Percentage of Revenue

(in millions)	Year ended December 31,					
	2018	% of revenue	2017	% of revenue	2016	% of revenue
Interest income (on a taxable-equivalent basis)						
Debt securities	\$ 14,947	17%	\$ 14,084	15%	\$ 12,328	14%
Mortgage loans held for sale (MLHFS)	777	1	786	1	784	1
Loans held for sale (LHFS)	140	—	50	3	38	—
Loans	44,086	51	41,551	47	39,630	45
Equity securities	999	1	821	1	669	1
Other interest income	4,359	5	2,941	3	1,457	2
Total interest income (on a taxable-equivalent basis)	65,308	76	60,233	68	54,906	62
Interest expense (on a taxable-equivalent basis)						
Deposits	5,622	7	3,013	3	1,395	2
Short-term borrowings	1,719	2	761	1	333	—
Long-term debt	6,703	8	5,157	6	3,830	5
Other interest expense	610	1	424	—	354	—
Total interest expense (on a taxable-equivalent basis)	14,654	17	9,355	11	5,912	7
Net interest income (on a taxable-equivalent basis)	50,654	59	50,878	57	48,994	55
Taxable-equivalent adjustment	(659)	(1)	(1,321)	(1)	(1,240)	(1)
Net interest income (A)	49,995	58	49,557	56	47,754	54
Noninterest income						
Service charges on deposit accounts	4,716	5	5,111	6	5,372	6
Trust and investment fees (1)	14,509	17	14,495	16	14,243	16
Card fees	3,907	5	3,960	4	3,936	5
Other fees (1)	3,384	4	3,557	4	3,727	4
Mortgage banking (1)	3,017	3	4,350	5	6,096	7
Insurance	429	—	1,049	1	1,268	2
Net gains from trading activities	602	1	542	1	610	1
Net gains on debt securities	108	—	479	1	942	1
Net gains from equity securities	1,515	2	1,779	2	1,103	1
Lease income	1,753	2	1,907	2	1,927	2
Other (1)	2,473	3	1,603	2	1,289	1
Total noninterest income (B)	36,413	42	38,832	44	40,513	46
Noninterest expense						
Salaries	17,834	21	17,363	20	16,552	19
Commission and incentive compensation	10,264	12	10,442	12	10,247	12
Employee benefits	4,926	6	5,566	6	5,094	6
Equipment	2,444	3	2,237	3	2,154	2
Net occupancy	2,888	3	2,849	3	2,855	3
Core deposit and other intangibles	1,058	1	1,152	1	1,192	1
FDIC and other deposit assessments	1,110	1	1,287	1	1,168	1
Operating losses	3,124	4	5,492	6	1,608	2
Outside professional services	3,306	4	3,813	4	3,138	4
Other (2)	9,172	11	8,283	9	8,369	9
Total noninterest expense	56,126	65	58,484	66	52,377	59
Revenue (A) + (B)	\$ 86,408		\$ 88,389		\$ 88,267	

(1) See Table 7 – Noninterest Income in this Report for additional detail.

(2) See Table 8 – Noninterest Expense in this Report for additional detail.

Earnings Performance (continued)

Net Interest Income

Net interest income is the interest earned on debt securities, loans (including yield-related loan fees) and other interest-earning assets minus the interest paid on deposits, short-term borrowings and long-term debt. Net interest margin is the average yield on earning assets minus the average interest rate paid for deposits and our other sources of funding. Net interest income and the net interest margin are presented on a taxable-equivalent basis in Table 5 to consistently reflect income from taxable and tax-exempt loans and debt and equity securities based on a 21% and 35% federal statutory tax rate for the periods ending December 31, 2018 and 2017, respectively.

Net interest income and the net interest margin in any one period can be significantly affected by a variety of factors including the mix and overall size of our earning assets portfolio and the cost of funding those assets. In addition, some variable sources of interest income, such as resolutions from purchased credit-impaired (PCI) loans, loan fees, periodic dividends, and collection of interest on nonaccrual loans, can vary from period to period.

Net interest income on a taxable-equivalent basis was \$50.7 billion in 2018, compared with \$50.9 billion in 2017, and \$49.0 billion in 2016. The decrease in net interest income in 2018, compared with 2017, was driven by:

- lower loan swap income due to unwinding the receive-fixed loan swap portfolio;
- lower tax-equivalent net interest income from updated tax-equivalent factors reflecting new tax law;
- a smaller balance sheet and unfavorable mix;
- higher premium amortization; and
- unfavorable hedge ineffectiveness accounting results;

partially offset by:

- the net repricing benefit of higher interest rates; and
- higher variable income.

The increase in net interest income for 2017, compared with 2016, was driven by growth in earning assets and the benefit of higher interest rates, partially offset by growth and repricing of long-term debt. Deposit interest expense also increased in 2017, largely due to an increase in wholesale and Wealth and Investment Management (WIM) deposit pricing resulting from higher interest rates.

Net interest margin on a taxable-equivalent basis was 2.91% in 2018, compared with 2.87% in 2017 and 2.86% in 2016. The increase in net interest margin in 2018, compared with 2017, was driven by:

- the net repricing benefit of higher interest rates;
- runoff of lower yielding assets and other favorable mix; and
- higher variable income;

partially offset by:

- lower loan swap income due to unwinding the receive-fixed loan swap portfolio;
- lower tax-equivalent net interest income from updated tax-equivalent factors reflecting new tax law;
- higher premium amortization; and
- unfavorable hedge ineffectiveness accounting results.

The slight increase in net interest margin in 2017, compared with 2016, was due to the repricing benefits of earning assets from higher interest rates exceeding the repricing costs of deposits and market based funding sources.

Table 4 presents the components of earning assets and funding sources as a percentage of earning assets to provide a more meaningful analysis of year-over-year changes that influenced net interest income.

Average earning assets decreased \$38.1 billion in 2018 compared with 2017. The decrease was driven by:

- average loans decreased \$10.9 billion in 2018;
- average interest-earning deposits decreased \$45.5 billion in 2018;

partially offset by:

- average federal funds sold and securities purchased under resale agreements increased \$3.9 billion in 2018;
- average debt securities increased \$13.8 billion in 2018; and
- average equity securities increased \$2.0 billion in 2018.

Deposits are an important low-cost source of funding and affect both net interest income and the net interest margin. Deposits include noninterest-bearing deposits, interest-bearing checking, market rate and other savings, savings certificates, other time deposits, and deposits in foreign offices. Average deposits decreased to \$1.28 trillion in 2018, compared with \$1.30 trillion in 2017, and represented 135% of average loans in 2018, compared with 136% in 2017. Average deposits were 73% of average earning assets in both 2018 and 2017.

Table 5 presents the individual components of net interest income and the net interest margin. The effect on interest income and costs of earning asset and funding mix changes described above, combined with rate changes during 2018, are analyzed in Table 6.

Table 4: Average Earning Assets and Funding Sources as a Percentage of Average Earning Assets

	Year ended December 31,			
	2018		2017	
(in millions)	Average balance	% of earning assets	Average balance	% of earning assets
Earning assets				
Interest-earning deposits with banks	\$ 156,366	9%	\$ 201,864	12%
Federal funds sold, securities purchased under resale agreements	78,547	5	74,697	4
Debt securities:				
Trading debt securities	83,526	5	74,475	4
Available-for-sale debt securities:				
Securities of U.S. Treasury and federal agencies	6,618	—	15,966	1
Securities of U.S. states and political subdivisions	47,884	3	52,658	3
Mortgage-backed securities:				
Federal agencies	156,052	9	145,310	8
Residential and commercial	7,769	—	11,839	1
Total mortgage-backed securities	163,821	9	157,149	9
Other debt securities	46,875	3	48,714	3
Total available-for-sale debt securities	265,198	15	274,487	16
Held-to-maturity debt securities:				
Securities of U.S. Treasury and federal agencies	44,735	3	44,705	3
Securities of U.S. states and political subdivisions	6,253	—	6,268	—
Federal agency mortgage-backed securities	94,216	5	78,330	4
Other debt securities	361	—	2,194	—
Held-to-maturity debt securities	145,565	8	131,497	7
Total debt securities	494,289	28	480,459	27
Mortgage loans held for sale (1)	18,394	1	20,780	1
Loans held for sale (1)	2,526	—	1,487	—
Commercial loans:				
Commercial and industrial – U.S.	275,656	16	272,034	16
Commercial and industrial – Non-U.S.	60,718	4	57,198	3
Real estate mortgage	122,947	7	129,990	7
Real estate construction	23,609	1	24,813	1
Lease financing	19,392	1	19,128	1
Total commercial loans	502,322	29	503,163	28
Consumer loans:				
Real estate 1-4 family first mortgage	284,178	16	277,751	16
Real estate 1-4 family junior lien mortgage	36,687	2	42,780	3
Credit card	36,780	2	35,600	2
Automobile	48,115	3	57,900	3
Other revolving credit and installment	37,115	2	38,935	2
Total consumer loans	442,875	25	452,966	26
Total loans (1)	945,197	54	956,129	54
Equity securities	38,092	2	36,105	2
Other	5,071	1	5,069	—
Total earning assets	\$ 1,738,482	100%	\$ 1,776,590	100%
Funding sources				
Deposits:				
Interest-bearing checking	\$ 63,243	4%	\$ 49,474	3%
Market rate and other savings	684,882	39	682,053	39
Savings certificates	20,653	1	22,190	1
Other time deposits	84,822	5	61,625	3
Deposits in foreign offices	63,945	4	123,816	7
Total interest-bearing deposits	917,545	53	939,158	53
Short-term borrowings	104,267	6	98,922	6
Long-term debt	224,268	13	246,195	14
Other liabilities	27,648	1	21,872	1
Total interest-bearing liabilities	1,273,728	73	1,306,147	74
Portion of noninterest-bearing funding sources	464,754	27	470,443	26
Total funding sources	\$ 1,738,482	100%	\$ 1,776,590	100%
Noninterest-earning assets				
Cash and due from banks	\$ 18,777		18,622	
Goodwill	26,453		26,629	
Other	105,180		111,164	
Total noninterest-earning assets	\$ 150,410		156,415	
Noninterest-bearing funding sources				
Deposits	\$ 358,312		365,464	
Other liabilities	53,496		55,740	
Total equity	203,356		205,654	
Noninterest-bearing funding sources used to fund earning assets	(464,754)		(470,443)	
Net noninterest-bearing funding sources	\$ 150,410		156,415	
Total assets	\$ 1,888,892		1,933,005	

(1) Nonaccrual loans are included in their respective loan categories.

Earnings Performance (continued)

Table 5: Average Balances, Yields and Rates Paid (Taxable-Equivalent Basis) (1)(2)

(in millions)	2018			2017		
	Average balance	Yields/ rates	Interest income/ expense	Average balance	Yields/ rates	Interest income/ expense
Earning assets						
Interest-earning deposits with banks (3)	\$ 156,366	1.82%	\$ 2,854	201,864	1.07%	\$ 2,162
Federal funds sold and securities purchased under resale agreements (3)	78,547	1.82	1,431	74,697	0.98	735
Debt securities (4):						
Trading debt securities	83,526	3.42	2,856	74,475	3.16	2,356
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	6,618	1.70	112	15,966	1.49	239
Securities of U.S. states and political subdivisions	47,884	3.77	1,806	52,658	3.95	2,082
Mortgage-backed securities:						
Federal agencies	156,052	2.79	4,348	145,310	2.60	3,782
Residential and commercial	7,769	4.62	358	11,839	5.33	631
Total mortgage-backed securities	163,821	2.87	4,706	157,149	2.81	4,413
Other debt securities	46,875	4.22	1,980	48,714	3.68	1,794
Total available-for-sale debt securities	265,198	3.24	8,604	274,487	3.11	8,528
Held-to-maturity debt securities:						
Securities of U.S. Treasury and federal agencies	44,735	2.19	980	44,705	2.19	979
Securities of U.S. states and political subdivisions	6,253	4.34	271	6,268	5.32	334
Federal agency and other mortgage-backed securities	94,216	2.36	2,221	78,330	2.34	1,832
Other debt securities	361	4.00	15	2,194	2.50	55
Total held-to-maturity debt securities	145,565	2.40	3,487	131,497	2.43	3,200
Total debt securities	494,289	3.02	14,947	480,459	2.93	14,084
Mortgage loans held for sale (5)	18,394	4.22	777	20,780	3.78	786
Loans held for sale (5)	2,526	5.56	140	1,487	3.40	50
Commercial:						
Commercial and industrial – U.S.	275,656	4.16	11,465	272,034	3.75	10,196
Commercial and industrial – Non-U.S.	60,718	3.53	2,143	57,198	2.86	1,639
Real estate mortgage	122,947	4.29	5,279	129,990	3.74	4,859
Real estate construction	23,609	4.94	1,167	24,813	4.10	1,017
Lease financing	19,392	4.74	919	19,128	3.74	715
Total commercial loans	502,322	4.18	20,973	503,163	3.66	18,426
Consumer:						
Real estate 1-4 family first mortgage	284,178	4.04	11,481	277,751	4.03	11,206
Real estate 1-4 family junior lien mortgage	36,687	5.38	1,975	42,780	4.82	2,062
Credit card	36,780	12.72	4,678	35,600	12.23	4,355
Automobile	48,115	5.18	2,491	57,900	5.34	3,094
Other revolving credit and installment	37,115	6.70	2,488	38,935	6.18	2,408
Total consumer loans	442,875	5.22	23,113	452,966	5.11	23,125
Total loans (5)	945,197	4.66	44,086	956,129	4.35	41,551
Equity securities	38,092	2.62	999	36,105	2.27	821
Other	5,071	1.46	74	5,069	0.85	44
Total earning assets	\$ 1,738,482	3.76%	\$ 65,308	1,776,590	3.40%	\$ 60,233
Funding sources						
Deposits:						
Interest-bearing checking	\$ 63,243	0.96%	\$ 606	49,474	0.49%	\$ 242
Market rate and other savings	684,882	0.31	2,157	682,053	0.14	983
Savings certificates	20,653	0.57	118	22,190	0.30	67
Other time deposits	84,822	2.25	1,906	61,625	1.43	880
Deposits in foreign offices	63,945	1.30	835	123,816	0.68	841
Total interest-bearing deposits	917,545	0.61	5,622	939,158	0.32	3,013
Short-term borrowings	104,267	1.65	1,719	98,922	0.77	761
Long-term debt	224,268	2.99	6,703	246,195	2.09	5,157
Other liabilities	27,648	2.21	610	21,872	1.94	424
Total interest-bearing liabilities	1,273,728	1.15	14,654	1,306,147	0.72	9,355
Portion of noninterest-bearing funding sources	464,754	—	—	470,443	—	—
Total funding sources	\$ 1,738,482	0.85	14,654	1,776,590	0.53	9,355
Net interest margin and net interest income on a taxable-equivalent basis (6)		2.91%	\$ 50,654		2.87%	\$ 50,878
Noninterest-earning assets						
Cash and due from banks	\$ 18,777			18,622		
Goodwill	26,453			26,629		
Other	105,180			111,164		
Total noninterest-earning assets	\$ 150,410			156,415		
Noninterest-bearing funding sources						
Deposits	\$ 358,312			365,464		
Other liabilities	53,496			55,740		
Total equity	203,356			205,654		
Noninterest-bearing funding sources used to fund earning assets	(464,754)			(470,443)		
Net noninterest-bearing funding sources	\$ 150,410			156,415		
Total assets	\$ 1,888,892			1,933,005		

- (1) Our average prime rate was 4.91% for the year ended December 31, 2018, 4.10% for the year ended December 31, 2017, 3.51% for the year ended December 31, 2016, and 3.26% for the year ended December 31, 2015, and 3.25% for the year ended December 31, 2014. The average three-month London Interbank Offered Rate (LIBOR) was 2.31%, 1.26%, 0.74%, 0.32%, and 0.23% for the same years, respectively.
- (2) Yield/rates and amounts include the effects of hedge and risk management activities associated with the respective asset and liability categories.
- (3) Financial information for the prior periods has been revised to reflect the impact of our adoption of Accounting Standards Update (ASU) 2016-18 – Statement of Cash Flows (Topic 230): *Restricted Cash* in which we changed the presentation of our cash and cash equivalents to include both cash and due from banks as well as interest-earning deposits with banks, which are inclusive of any restricted cash.

2016			2015			2014		
Average balance	Yields/ rates	Interest income/ expense	Average balance	Yields/ rates	Interest income/ expense	Average balance	Yields/ rates	Interest income/ expense
\$ 225,955	0.51%	\$ 1,161	222,773	0.27%	\$ 605	209,686	0.26%	\$ 554
61,763	0.48	296	44,059	0.30	133	31,596	0.38	119
70,195	2.97	2,082	51,551	3.16	1,627	43,108	3.23	1,392
29,418	1.56	457	32,093	1.58	505	10,400	1.64	171
52,959	4.20	2,225	47,404	4.23	2,007	43,138	4.29	1,852
110,637	2.50	2,764	100,218	2.73	2,733	114,076	2.84	3,235
18,725	5.49	1,029	22,490	5.73	1,289	26,475	6.03	1,597
129,362	2.93	3,793	122,708	3.28	4,022	140,551	3.44	4,832
52,731	3.36	1,771	48,515	3.32	1,609	45,759	3.57	1,635
264,470	3.12	8,246	250,720	3.25	8,143	239,848	3.54	8,490
44,675	2.19	979	44,173	2.19	968	17,239	2.23	385
2,893	5.32	154	2,087	5.40	113	246	4.93	12
39,330	2.00	786	21,967	2.23	489	5,921	2.55	151
4,043	2.01	81	5,821	1.73	101	5,913	1.85	109
90,941	2.20	2,000	74,048	2.26	1,671	29,319	2.24	657
425,606	2.90	12,328	376,319	3.04	11,441	312,275	3.37	10,539
22,412	3.50	784	21,603	3.63	785	19,018	4.03	767
1,361	2.76	38	1,651	2.59	43	5,585	2.02	113
268,182	3.45	9,243	237,844	3.29	7,836	204,819	3.35	6,869
51,601	2.36	1,219	46,028	1.90	877	42,661	2.03	867
127,232	3.44	4,371	116,893	3.41	3,984	112,710	3.64	4,100
23,197	3.55	824	20,979	3.57	749	17,676	4.21	744
17,950	5.10	916	12,301	4.70	577	12,257	5.63	690
488,162	3.39	16,573	434,045	3.23	14,023	390,123	3.40	13,270
276,712	4.01	11,096	268,560	4.10	11,002	261,620	4.19	10,961
49,735	4.39	2,183	56,242	4.25	2,391	62,510	4.30	2,686
34,178	11.62	3,970	31,307	11.70	3,664	27,491	11.98	3,294
61,566	5.62	3,458	57,766	5.84	3,374	53,854	6.27	3,377
39,607	5.93	2,350	37,512	5.89	2,209	38,834	5.48	2,127
461,798	4.99	23,057	451,387	5.02	22,640	444,309	5.05	22,445
949,960	4.17	39,630	885,432	4.14	36,663	834,432	4.28	35,715
27,417	2.44	669	23,921	2.94	703	21,125	3.08	650
—	—	—	—	—	—	—	—	—
\$ 1,714,474	3.21%	\$ 54,906	1,575,758	3.20%	\$ 50,373	1,433,717	3.39%	\$ 48,457
\$ 42,379	0.14%	\$ 60	38,640	0.05%	\$ 20	39,729	0.07%	\$ 26
663,557	0.07	449	625,549	0.06	367	585,854	0.07	403
25,912	0.35	91	31,887	0.63	201	38,111	0.85	323
55,846	0.91	508	51,790	0.45	232	51,434	0.40	207
103,206	0.28	287	107,138	0.13	143	95,889	0.14	137
890,900	0.16	1,395	855,004	0.11	963	811,017	0.14	1,096
115,187	0.29	333	87,465	0.07	64	60,111	0.10	62
239,471	1.60	3,830	185,078	1.40	2,592	167,420	1.49	2,488
16,702	2.12	354	16,545	2.15	357	14,401	2.65	382
1,262,260	0.47	5,912	1,144,092	0.35	3,976	1,052,949	0.38	4,028
452,214	—	—	431,666	—	—	380,768	—	—
\$ 1,714,474	0.35	5,912	1,575,758	0.25	3,976	1,433,717	0.28	4,028
	2.86%	\$ 48,994		2.95%	\$ 46,397		3.11%	\$ 44,429
\$ 18,617			17,327			16,361		
26,700			25,673			25,687		
125,650			124,161			117,584		
\$ 170,967			167,161			159,632		
\$ 359,666			339,069			303,127		
62,825			68,174			56,985		
200,690			191,584			180,288		
(452,214)			(431,666)			(380,768)		
\$ 170,967			167,161			159,632		
\$ 1,885,441			1,742,919			1,593,349		

(4) Yields and rates are based on interest income/expense amounts for the period. The average balance amounts represent amortized cost for the periods presented.

(5) Nonaccrual loans and related income are included in their respective loan categories.

(6) Includes taxable-equivalent adjustments of \$659 million, \$1.3 billion, \$1.2 billion, \$1.1 billion and \$902 million for the years ended December 31, 2018, 2017, 2016, 2015 and 2014, respectively, predominantly related to tax-exempt income on certain loans and securities. The federal statutory tax rate utilized was 21% for the period ended December 31, 2018, and 35% for the periods ended December 31, 2017, 2016, 2015 and 2014.

Earnings Performance (continued)

Table 6 allocates the changes in net interest income on a taxable-equivalent basis to changes in either average balances or average rates for both interest-earning assets and interest-bearing liabilities. Because of the numerous simultaneous volume and rate changes during any period, it is not possible to precisely allocate such changes between volume and rate. For

this table, changes that are not solely due to either volume or rate are allocated to these categories on a pro-rata basis based on the absolute value of the change due to average volume and average rate.

Table 6: Analysis of Changes in Net Interest Income

(in millions)	2018 over 2017			Year ended December 31,		
	Volume	Rate	Total	Volume	Rate	Total
Increase (decrease) in interest income:						
Interest-earning deposits with banks (1)	\$ (569)	1,261	692	(135)	1,136	1,001
Federal funds sold and securities purchased under resale agreements (1)	40	656	696	73	366	439
Debt securities:						
Trading debt securities	298	202	500	134	140	274
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	(157)	30	(127)	(198)	(20)	(218)
Securities of U.S. states and political subdivisions	(184)	(92)	(276)	(13)	(130)	(143)
Mortgage-backed securities:						
Federal agencies	285	281	566	902	116	1,018
Residential and commercial	(197)	(76)	(273)	(369)	(29)	(398)
Total mortgage-backed securities	88	205	293	533	87	620
Other debt securities	(70)	256	186	(140)	163	23
Total available-for-sale debt securities	(323)	399	76	182	100	282
Held-to-maturity debt securities:						
Securities of U.S. Treasury and federal agencies	1	—	1	—	—	—
Securities of U.S. states and political subdivisions	(1)	(62)	(63)	180	—	180
Federal agency mortgage-backed securities	373	16	389	893	153	1,046
Other debt securities	(62)	22	(40)	(43)	17	(26)
Total held-to-maturity debt securities	311	(24)	287	1,030	170	1,200
Mortgage loans held for sale	(95)	86	(9)	(59)	61	2
Loans held for sale	47	43	90	3	9	12
Commercial loans:						
Commercial and industrial – U.S.	138	1,131	1,269	135	818	953
Commercial and industrial – Non-U.S.	105	399	504	142	278	420
Real estate mortgage	(272)	692	420	97	391	488
Real estate construction	(51)	201	150	59	134	193
Lease financing	10	194	204	57	(258)	(201)
Total commercial loans	(70)	2,617	2,547	490	1,363	1,853
Consumer loans:						
Real estate 1-4 family first mortgage	248	27	275	48	62	110
Real estate 1-4 family junior lien mortgage	(312)	225	(87)	(323)	202	(121)
Credit card	146	177	323	170	215	385
Automobile	(512)	(91)	(603)	(198)	(166)	(364)
Other revolving credit and installment	(116)	196	80	(40)	98	58
Total consumer loans	(546)	534	(12)	(343)	411	68
Total loans	(616)	3,151	2,535	147	1,774	1,921
Equity securities	47	131	178	201	(49)	152
Other	—	30	30	44	—	44
Total increase in interest income (1)	(860)	5,935	5,075	1,620	3,707	5,327
Increase (decrease) in interest expense:						
Deposits:						
Interest-bearing checking	82	282	364	11	171	182
Market rate and other savings	4	1,170	1,174	14	520	534
Savings certificates	(5)	56	51	(12)	(12)	(24)
Other time deposits	407	619	1,026	57	315	372
Deposits in foreign offices	(534)	528	(6)	68	486	554
Total interest-bearing deposits	(46)	2,655	2,609	138	1,480	1,618
Short-term borrowings	43	915	958	(53)	481	428
Long-term debt	(495)	2,041	1,546	111	1,216	1,327
Other liabilities	122	64	186	102	(32)	70
Total increase in interest expense	(376)	5,675	5,299	298	3,145	3,443
Increase (decrease) in net interest income on a taxable-equivalent basis	\$ (484)	260	(224)	1,322	562	1,884

(1) Financial information has been revised to reflect the impact of our adoption in first quarter 2018 of ASU 2016-18 – Statement of Cash Flows (Topic 230): *Restricted Cash* in which we changed the presentation of our cash and cash equivalents to include both cash and due from banks as well as interest-earning deposits with banks, which are inclusive of any restricted cash. See Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report for more information.

Noninterest Income

Table 7: Noninterest Income

(in millions)	Year ended December 31,		
	2018	2017	2016
Service charges on deposit accounts	\$ 4,716	5,111	5,372
Trust and investment fees:			
Brokerage advisory, commissions and other fees	9,436	9,358	9,216
Trust and investment management	3,316	3,372	3,336
Investment banking	1,757	1,765	1,691
Total trust and investment fees	14,509	14,495	14,243
Card fees	3,907	3,960	3,936
Other fees:			
Lending related charges and fees (1)	1,526	1,568	1,562
Cash network fees	481	506	537
Commercial real estate brokerage commissions	468	462	494
Wire transfer and other remittance fees	477	448	401
All other fees (2)	432	573	733
Total other fees	3,384	3,557	3,727
Mortgage banking:			
Servicing income, net	1,373	1,427	1,765
Net gains on mortgage loan origination/sales activities	1,644	2,923	4,331
Total mortgage banking	3,017	4,350	6,096
Insurance	429	1,049	1,268
Net gains from trading activities	602	542	610
Net gains on debt securities	108	479	942
Net gains from equity securities	1,515	1,779	1,103
Lease income	1,753	1,907	1,927
Life insurance investment income	651	594	587
All other	1,822	1,009	702
Total	\$36,413	38,832	40,513

(1) Represents combined amount of previously reported "Charges and fees on loans" and "Letters of credit fees".

(2) All other fees have been revised to include merchant processing fees for the year ended 2016.

Noninterest income of \$36.4 billion represented 42% of revenue for 2018, compared with \$38.8 billion, or 44%, for 2017 and \$40.5 billion, or 46%, for 2016. The decline in noninterest income in 2018 compared with 2017 was predominantly due to lower mortgage banking income, lower insurance income due to the sale of Wells Fargo Insurance Services in fourth quarter 2017, lower service charges on deposit accounts, lower gains on debt securities, and lower deferred compensation plan investment results (offset in employee benefits expense). These decreases were partially offset by higher gains from equity securities and higher all other income. The decline in noninterest income in 2017 compared with 2016 was predominantly driven by lower mortgage banking, impairments on low income housing credits and tax-advantaged renewable energy investments as a result of the Tax Act, and lower service charges on deposit accounts. These decreases in noninterest income were partially offset by growth in trust and investment fees, deferred compensation plan investment results (offset in employee benefits expense), and the net impact of our insurance services business divestiture in November 2017 and gains from the sale of Pick-a-Pay PCI loans. For more information on our performance obligations and the nature of services performed for certain of our revenues discussed below, see Note 21 (Revenue from Contracts with Customers) to Financial Statements in this Report.

Service charges on deposit accounts were \$4.7 billion in 2018, down from \$5.1 billion in 2017 due to lower overdraft and monthly service fees driven by customer-friendly initiatives that help customers minimize monthly service charges and overdraft fees, and the impact of a higher earnings credit rate applied to

commercial accounts due to increased interest rates. Service charges on deposit accounts decreased \$261 million in 2017 from 2016 due to lower consumer and business checking account service charges, lower overdraft fees driven by customer-friendly initiatives including the Overdraft Rewind launched in November 2017, and a higher earnings credit rate applied to commercial accounts due to increased interest rates.

Brokerage advisory, commissions and other fees increased to \$9.44 billion in 2018, from \$9.36 billion in 2017, which increased \$142 million from 2016. The increase in these fees in both 2018 and 2017 was due to higher asset-based fees, partially offset by lower transactional commission revenue. Retail brokerage client assets totaled \$1.49 trillion at December 31, 2018, compared with \$1.65 trillion and \$1.49 trillion at December 31, 2017 and 2016, respectively. All retail brokerage services are provided by our WIM operating segment. For additional information on retail brokerage client assets, see the discussion and Tables 9d and 9e in the "Operating Segment Results – Wealth and Investment Management – Retail Brokerage Client Assets" section in this Report.

Trust and investment management fee income is largely from client assets under management (AUM), for which fees are based on a tiered scale relative to market value of the assets, and client assets under administration (AUA), for which fees are generally based on the extent of services to administer the assets. Trust and investment management fees of \$3.3 billion in 2018 declined slightly from 2017 as a decrease in corporate trust fees due to the sale of Wells Fargo Shareowner Services in first quarter 2018 was only partially offset by growth in management fees for investment advice on mutual funds. Trust and investment management fees of \$3.4 billion in 2017 were relatively stable compared with 2016. Our AUM totaled \$638.3 billion at December 31, 2018, compared with \$690.3 billion and \$652.2 billion at December 31, 2017 and 2016, respectively, with substantially all of our AUM managed by our WIM operating segment. Additional information regarding our WIM operating segment AUM is provided in Table 9f and the related discussion in the "Operating Segment Results – Wealth and Investment Management – Trust and Investment Client Assets Under Management" section in this Report. Our AUA totaled \$1.7 trillion at both December 31, 2018 and 2017, compared with \$1.6 trillion at December 31, 2016.

Investment banking fees of \$1.8 billion in 2018 were relatively stable compared with 2017. Investment banking fees in 2017 increased \$74 million compared with 2016 due to higher equity and debt originations, partially offset by lower advisory fees.

Card fees were \$3.9 billion in 2018, compared with \$4.0 billion in 2017 and \$3.9 billion in 2016. The decrease in 2018 reflected the impact of the new revenue recognition accounting standard, which reduced noninterest expense and lowered card fees in 2018 by an equal amount due to the netting of card payment network charges against related interchange and network revenues in card fees. This decrease in card fees in 2018 was partially offset by higher interchange fees. Card fees increased in 2017, compared with 2016, predominantly due to increased purchase activity.

Other fees were \$3.4 billion in 2018, compared with \$3.6 billion in 2017 and \$3.7 billion in 2016. Other fees declined in both 2018 and 2017 predominantly due to lower all other fees. All other fees were \$432 million in 2018, compared with \$573 million in 2017 and \$733 million in 2016. The decrease in 2018 compared with 2017 was driven by lost fees from discontinued products. The decrease in all other fees in 2017 compared with 2016 was driven by lower fees from discontinued

Earnings Performance (continued)

products and the impact of the sale of our global fund services business in fourth quarter 2016.

Mortgage banking income, consisting of net servicing income and net gains on loan origination/sales activities, totaled \$3.0 billion in 2018, compared with \$4.4 billion in 2017 and \$6.1 billion in 2016. As further discussed below, the decrease in mortgage banking income in both 2018 and 2017 was primarily driven by overall reductions in the size of the residential mortgage market as well as declines in production margins.

In addition to servicing fees, net servicing income includes amortization of commercial mortgage servicing rights (MSRs), changes in the fair value of residential MSRs during the period, as well as changes in the value of derivatives (economic hedges) used to hedge the residential MSRs during the period. Net servicing income of \$1.4 billion for 2018 included a \$112 million net MSR valuation loss (\$960 million increase in the fair value of the MSRs and a \$1.1 billion hedge loss). Net servicing income of \$1.4 billion for 2017 included a \$287 million net MSR valuation gain (\$126 million decrease in the fair value of the MSRs and a \$413 million hedge gain), and net servicing income of \$1.8 billion for 2016 included a \$826 million net MSR valuation gain (\$565 million increase in the fair value of MSRs and a \$261 million hedge gain). The decline in net MSR valuation results in 2018, compared with 2017, was predominantly due to negative MSR valuation adjustments in fourth quarter 2018 for servicing and foreclosure costs, discount rates and prepayment estimates recognized as a result of recent market observations related to an acceleration of prepayments, including for Department of Veterans Affairs (VA) loans. The decrease in net MSR valuation gains in 2017, compared with 2016, was largely due to lower hedge gains in 2017 and MSR valuation adjustments in first quarter 2016 that reflected a reduction in forecasted prepayments due to updated economic, customer data attributes and mortgage market rate inputs. Net servicing income in 2018 was also favorably impacted by lower unreimbursed servicing and foreclosure costs as we continued to reduce our inventory of aged FHA loans in foreclosure.

Our portfolio of loans serviced for others was \$1.71 trillion at December 31, 2018, \$1.70 trillion at December 31, 2017, and \$1.68 trillion at December 31, 2016. At December 31, 2018, the ratio of combined residential and commercial MSRs to related loans serviced for others was 0.94%, compared with 0.88% at December 31, 2017, and 0.85% at December 31, 2016. See the “Risk Management – Asset/Liability Management – Mortgage Banking Interest Rate and Market Risk” section in this Report for additional information regarding our MSRs risks and hedging approach.

Net gains on mortgage loan origination/sales activities was \$1.6 billion in 2018, compared with \$2.9 billion in 2017 and \$4.3 billion in 2016. The decrease in both 2018 and 2017 was driven by decreased origination volumes and margins.

Mortgage loan originations were \$177 billion in 2018, compared with \$212 billion in 2017 and \$249 billion in 2016. The production margin on residential held-for-sale mortgage loan originations, which represents net gains on residential mortgage loan origination/sales activities divided by total residential held-for-sale mortgage loan originations, provides a measure of the profitability of our residential mortgage origination activity. Table 7a presents the information used in determining the production margin.

Table 7a: Selected Mortgage Production Data

		Year ended December 31,		
		2018	2017	2016
Net gains on mortgage loan origination/sales activities (in millions):				
Residential	(A)	\$ 1,174	2,140	3,168
Commercial		265	358	400
Residential pipeline and unsold/repurchased loan management (1)		205	425	763
Total		\$ 1,644	2,923	4,331
Residential real estate originations (in billions):				
Held-for-sale	(B)	\$ 132	160	186
Held-for-investment		45	52	63
Total		\$ 177	212	249
Production margin on residential held-for-sale mortgage originations				
	(A)/(B)	0.89%	1.34	1.71

(1) Predominantly includes the results of Government National Mortgage Association (GNMA) loss mitigation activities, interest rate management activities and changes in estimate to the liability for mortgage loan repurchase losses.

The production margin was 0.89% for 2018, compared with 1.34% for 2017 and 1.71% for 2016. The decline in the production margin in 2018 was due to lower margins in both retail and correspondent production channels and a shift to more correspondent origination volume, which has a lower production margin. The decrease in the production margin in 2017 was due to a shift in origination channel mix from retail to correspondent.

Mortgage applications were \$230 billion in 2018, compared with \$278 billion in 2017 and \$347 billion in 2016. The 1-4 family first mortgage unclosed pipeline was \$18 billion at December 31, 2018, compared with \$23 billion at December 31, 2017, and \$30 billion at December 31, 2016. For additional information about our mortgage banking activities and results, see the “Risk Management – Asset/Liability Management – Mortgage Banking Interest Rate and Market Risk” section and Note 10 (Mortgage Banking Activities) and Note 18 (Fair Values of Assets and Liabilities) to Financial Statements in this Report.

Net gains on mortgage loan origination/sales activities include adjustments to the mortgage repurchase liability. Mortgage loans are repurchased from third parties based on standard representations and warranties, and early payment default clauses in mortgage sale contracts.

Insurance income was \$429 million in 2018 compared with \$1.0 billion in 2017 and \$1.3 billion in 2016. The decrease in both 2018 and 2017 was driven by the sale of Wells Fargo Insurance Services in fourth quarter 2017. The decrease in 2017 was also driven by the divestiture of our crop insurance business in first quarter 2016.

Net gains from trading activities, which reflect unrealized changes in fair value of our trading positions and realized gains and losses, were \$602 million in 2018, compared with \$542 million in 2017 and \$610 million in 2016. The increase in 2018 was due to growth in equity trading driven by market volatility, partially offset by lower foreign exchange trading income. The decrease in 2017, compared with 2016, was driven by lower customer accommodation trading activity. Net gains from trading activities do not include interest and dividend income and expense on trading securities. Those amounts are reported within interest income from trading assets and other interest expense from trading liabilities. For additional information about trading activities, see the “Risk Management – Asset/Liability Management – Market Risk – Trading Activities” section and Note 4 (Trading Activities) to Financial Statements in this Report.

Net gains on debt and equity securities totaled \$1.6 billion for 2018 and \$2.3 billion and \$2.0 billion for 2017 and 2016, respectively, after other-than-temporary impairment (OTTI) write-downs of \$380 million, \$606 million and \$642 million, respectively, for the same periods. The decrease in 2018 was predominantly driven by lower deferred compensation gains (offset in employee benefits expense) and lower net gains on debt securities, partially offset by higher net gains from nonmarketable equity securities and \$313 million of unrealized gains from the impact of the new accounting standard for financial instruments which requires any gain or loss associated with the fair value measurement of equity securities to be reflected in earnings. The decrease in OTTI in 2018 was predominantly driven by lower write-downs in municipal debt securities, commercial mortgage-backed securities and corporate debt securities. The decrease in net gains on debt and equity securities in 2017, compared with 2016, was driven by lower net gains on debt securities, partially offset by higher net gains from nonmarketable equity securities.

Lease income was \$1.8 billion in 2018, compared with \$1.9 billion in 2017, driven by lower rail and equipment lease income. Lease income in 2017 was stable compared with 2016.

All other income was \$1.8 billion in 2018, compared with \$1.0 billion in 2017 and \$702 million in 2016. All other income includes losses on low income housing tax credit investments, foreign currency adjustments, income from investments accounted for under the equity method, hedge accounting results related to hedges of foreign currency risk, and the results of certain economic hedges, any of which can cause decreases and net losses in other income. The increase in other income in 2018, compared with 2017, was predominantly driven by \$2.0 billion higher pre-tax gains from the sales of purchased credit-impaired (PCI) Pick-a-Pay loans, a pre-tax gain from the sale of Wells Fargo Shareowner Services, and gains from the previously announced sale of 52 retail branches. The increase was partially offset by a gain from the sale of our insurance services business in 2017, a realized loss related to the previously announced sale of certain assets and liabilities of Reliable Financial Services, Inc. (a subsidiary of Wells Fargo’s automobile financing business), and a lower benefit from hedge ineffectiveness accounting. The increase in other income in 2017 compared with 2016 was driven by a \$848 million pre-tax gain from the sale of our insurance services business in fourth quarter 2017 and a \$309 million pre-tax gain from the sale of a PCI Pick-a-Pay loan portfolio in second quarter 2017, as well as the impact of our adoption in fourth quarter 2017 of Accounting Standards Update (ASU) 2017-12 – Derivatives and Hedging (Topic 815): *Targeted Improvements to Accounting for Hedging Activities*, partially offset by a gain from the sale of our crop insurance business in first quarter 2016 and a gain from the sale of our health benefit services business in second quarter 2016. All other income in 2017 also included \$284 million of impairments on low income housing investments and \$130 million of impairments on tax-advantaged renewable energy investments in each case due to the 2017 Tax Cuts & Jobs Act (Tax Act).

Earnings Performance (continued)

Noninterest Expense

Table 8: Noninterest Expense

(in millions)	Year ended December 31,		
	2018	2017	2016
Salaries	\$ 17,834	17,363	16,552
Commission and incentive compensation	10,264	10,442	10,247
Employee benefits	4,926	5,566	5,094
Equipment	2,444	2,237	2,154
Net occupancy	2,888	2,849	2,855
Core deposit and other intangibles	1,058	1,152	1,192
FDIC and other deposit assessments	1,110	1,287	1,168
Outside professional services	3,306	3,813	3,138
Operating losses	3,124	5,492	1,608
Contract services (1)	2,192	1,638	1,497
Operating leases	1,334	1,351	1,329
Advertising and promotion	857	614	595
Outside data processing	660	891	888
Travel and entertainment	618	687	704
Postage, stationery and supplies	515	544	622
Telecommunications	361	364	383
Foreclosed assets	188	251	202
Insurance	101	100	179
All other (1)	2,346	1,843	1,970
Total	\$ 56,126	58,484	52,377

(1) The periods prior to 2018 have been revised to conform with the current period presentation whereby temporary help is included in contract services rather than in all other noninterest expense.

Noninterest expense was \$56.1 billion in 2018, down 4% from \$58.5 billion in 2017, which was up 12% from \$52.4 billion in 2016. The decrease in 2018, compared with 2017, was driven by lower operating losses, personnel expenses, outside data processing, and FDIC expense, partially offset by higher advertising and promotion, equipment, and other expense. The increase in 2017, compared with 2016, was predominantly driven by higher operating losses, personnel expenses, and outside professional and contract services, partially offset by lower insurance and postage, stationery and supplies.

Personnel expenses, which include salaries, commissions, incentive compensation and employee benefits, were down \$347 million, or 1% in 2018, compared with 2017, due to lower deferred compensation costs (offset in net gains from equity securities), and lower commission and incentive compensation, partially offset by salary and minimum pay increases, and higher company health plan and retirement plan expenses. Personnel expenses were up \$1.5 billion, or 5% in 2017, compared with 2016, due to annual salary increases, higher deferred compensation costs (offset in net gains from equity securities), and higher employee benefits.

Equipment expense was up 9% in 2018, compared with 2017, due to increased computer purchases and equipment expense related to the Company's migration to Windows 10, higher software license and maintenance expense, as well as higher depreciation expense. Equipment expense was up 4% in 2017, compared with 2016, primarily due to higher depreciation expense.

FDIC and other deposit assessments were down 14% in 2018, compared with 2017, due to the completion of the FDIC temporary surcharge which ended September 30, 2018. FDIC and other deposit assessments were up 10% in 2017, compared

with 2016, due to an increase in deposit assessments as a result of the FDIC temporary surcharge which became effective on July 1, 2016. See the "Regulation and Supervision" section in our 2018 Form 10-K for additional information.

Operating losses were down \$2.4 billion in 2018, compared with 2017, due to lower litigation accruals, partially offset by higher remediation accruals for previously disclosed matters. Operating losses were up \$3.9 billion in 2017, compared with 2016, predominantly due to higher litigation accruals for a variety of matters, including mortgage-related regulatory investigations, sales practices, and other consumer-related matters. Litigation accruals in 2017 included \$3.7 billion that were non tax-deductible.

Outside professional and contract services expense was up 1% in 2018, compared with 2017, driven by higher project and technology spending on regulatory and compliance related initiatives. Outside professional and contract services expense was up 18% in 2017, compared with 2016, driven by higher project and technology spending on regulatory and compliance related initiatives, as well as higher legal expense related to sales practice matters.

Outside data processing expense was down 26% in 2018, compared with 2017, reflecting lower data processing expense related to the GE Capital business acquisitions and the impact of the new revenue recognition accounting standard, which reduced noninterest expense and lowered card fees by an equal amount due to the netting of card payment network charges against related interchange and network revenues in card fees. Outside data processing expense was relatively stable in 2017, compared with 2016.

Advertising and promotion expense was up 40% in 2018, compared with 2017, due to higher advertising expense, including expense for the "Re-Established" advertising campaign launched in second quarter 2018. Advertising and promotion expense was up 3% in 2017, compared with 2016, due to higher advertising expense, including higher media and production expense, partially offset by lower sales promotion expense.

Foreclosed assets expense was down 25% in 2018, compared with 2017, predominantly due to lower operating expenses. Foreclosed assets expense was up 24% in 2017, compared with 2016, due to lower gains on sales of foreclosed properties, partially offset by lower operating expenses.

Insurance expense was relatively stable in 2018, compared with 2017, and was down 44% in 2017, compared with 2016, predominantly driven by the sale of our crop insurance business in first quarter 2016.

All other noninterest expense was up 27% in 2018, compared with 2017, predominantly due to higher charitable donations expense, higher insurance premium payments, a pension plan settlement expense, and lower gains on the sale of corporate properties. All other noninterest expense was down 6% in 2017, compared with 2016, due to lower insurance premium payments and higher gains on the sale of a corporate property, partially offset by higher charitable donations expense. All other noninterest expense in 2018 included a \$305 million contribution to the Wells Fargo Foundation, compared with a \$199 million contribution in 2017 and a \$107 million contribution in 2016.

Our full year 2018 efficiency ratio was 65.0%, compared with 66.2% in 2017 and 59.3% in 2016.

Income Tax Expense

The 2018 annual effective income tax rate was 20.2%, compared with 18.1% in 2017 and 31.5% in 2016. The 2018 effective income tax rate reflected the reduction to the U.S. federal income tax rate from 35% to 21% resulting from the 2017 Tax Act. It also included income tax expense related to non-deductible litigation accruals and the reconsideration of reserves for state income taxes following the U.S. Supreme Court opinion in *South Dakota v. Wayfair, Inc.* In addition, we recognized \$164 million of income tax expense associated with the final re-measurement of our initial estimates for the impacts of the 2017 Tax Act, in accordance with ASC Topic 740, Income Taxes and SEC Accounting Bulletin 118. The 2017 effective income tax rate included an estimated impact of the Tax Act including a benefit of \$3.89 billion resulting from the re-measurement of the Company's estimated net deferred tax liability as of December 31, 2017, partially offset by \$173 million of income tax expense for the estimated deemed repatriation of the Company's previously undistributed foreign earnings. The 2017 effective income tax rate also included income tax expense of \$1.3 billion related to the effect of discrete non tax-deductible items, predominantly consisting of litigation accruals. The effective income tax rate for 2016 included net reductions in reserves for uncertain tax positions resulting from settlements with tax authorities, partially offset by a net increase in tax benefits related to tax credit investments. See Note 23 (Income Taxes) to Financial Statements in this Report for additional information about our income taxes.

Operating Segment Results

We are organized for management reporting purposes into three operating segments: Community Banking; Wholesale Banking; and Wealth and Investment Management (WIM). These segments are defined by product type and customer segment and their results are based on our management accounting process, for which there is no comprehensive, authoritative financial accounting guidance equivalent to generally accepted accounting principles (GAAP). Effective first quarter 2018, we adopted a new funds transfer pricing methodology to allow for better comparability of performance across the Company. Under the new methodology, assets and liabilities now receive a funding charge or credit that considers interest rate risk, liquidity risk, and other product characteristics on a more granular level. This methodology change affects results across all three of our reportable operating segments and operating segment results for periods prior to 2018 have been revised to reflect this methodology change. Our previously reported consolidated financial results were not impacted by the methodology change; however, in connection with our adoption of ASU 2016-01 in first quarter 2018, certain reclassifications have occurred within noninterest income. Table 9 and the following discussion present our results by operating segment. For additional description of our operating segments, including additional financial information and the underlying management accounting process, see Note 26 (Operating Segments) to Financial Statements in this Report.

Table 9: Operating Segment Results – Highlights

	Year ended December 31,				
(in millions, except average balances which are in billions)	Community Banking	Wholesale Banking	Wealth and Investment Management	Other (1)	Consolidated Company
2018					
Revenue	\$ 46,913	28,706	16,376	(5,587)	86,408
Provision (reversal of provision) for credit losses	1,783	(58)	(5)	24	1,744
Net income (loss)	10,394	11,032	2,580	(1,613)	22,393
Average loans	\$ 463.7	465.7	74.6	(58.8)	945.2
Average deposits	757.2	423.7	165.0	(70.0)	1,275.9
2017					
Revenue	\$ 47,018	30,000	17,072	(5,701)	88,389
Provision (reversal of provision) for credit losses	2,555	(19)	(5)	(3)	2,528
Net income (loss)	10,938	9,914	2,770	(1,439)	22,183
Average loans	\$ 475.7	465.6	71.9	(57.1)	956.1
Average deposits	729.6	464.2	189.0	(78.2)	1,304.6
2016					
Revenue	\$ 46,513	31,047	16,278	(5,571)	88,267
Provision (reversal of provision) for credit losses	2,691	1,073	(5)	11	3,770
Net income (loss)	10,818	9,942	2,637	(1,459)	21,938
Average loans	\$ 485.2	451.0	67.3	(53.5)	950.0
Average deposits	703.6	436.2	189.7	(78.9)	1,250.6

(1) Includes the elimination of certain items that are included in more than one business segment, most of which represents products and services for WIM customers served through Community Banking distribution channels.

Earnings Performance (continued)

Community Banking offers a complete line of diversified financial products and services for consumers and small businesses including checking and savings accounts, credit and debit cards, and automobile, student, mortgage, home equity and small business lending, as well as referrals to Wholesale Banking and WIM business partners. The Community Banking segment also includes the results of our Corporate Treasury activities net of allocations (including funds transfer pricing,

capital, liquidity and certain corporate expenses) in support of other segments and results of investments in our affiliated venture capital and private equity partnerships. We continue to wind down the personal insurance business and expect to substantially complete these activities in the first half of 2019. Table 9a provides additional financial information for Community Banking.

Table 9a: Community Banking

(in millions, except average balances which are in billions)	Year ended December 31,				
	2018	2017	% Change	2016	% Change
Net interest income	\$ 29,219	28,658	2%	\$ 27,333	5%
Noninterest income:					
Service charges on deposit accounts	2,641	2,909	(9)	3,111	(6)
Trust and investment fees:					
Brokerage advisory, commissions and other fees (1)	1,887	1,830	3	1,854	(1)
Trust and investment management (1)	910	889	2	849	5
Investment banking (2)	(35)	(59)	41	(141)	58
Total trust and investment fees	2,762	2,660	4	2,562	4
Card fees	3,543	3,613	(2)	3,598	—
Other fees	1,359	1,497	(9)	1,636	(8)
Mortgage banking	2,659	3,895	(32)	5,624	(31)
Insurance	83	139	(40)	112	24
Net gains (losses) from trading activities	28	(251)	111	(148)	(70)
Net gains (losses) on debt securities	(3)	709	NM	933	(24)
Net gains from equity securities (3)	1,505	1,455	3	804	81
Other income of the segment	3,117	1,734	80	948	83
Total noninterest income	17,694	18,360	(4)	19,180	(4)
Total revenue	46,913	47,018	—	46,513	1
Provision for credit losses	1,783	2,555	(30)	2,691	(5)
Noninterest expense:					
Personnel expense	21,252	20,381	4	19,382	5
Equipment	2,356	2,157	9	2,040	6
Net occupancy	2,166	2,111	3	2,114	—
Core deposit and other intangibles	404	446	(9)	505	(12)
FDIC and other deposit assessments	624	715	(13)	651	10
Outside professional services	1,560	1,875	(17)	1,264	48
Operating losses	2,656	5,312	(50)	1,454	265
Other expense of the segment	(527)	(382)	(38)	245	NM
Total noninterest expense	30,491	32,615	(7)	27,655	18
Income before income tax expense and noncontrolling interests	14,639	11,848	24	16,167	(27)
Income tax expense	3,784	634	497	5,213	(88)
Net income from noncontrolling interests (4)	461	276	67	136	103
Net income	\$ 10,394	10,938	(5)	\$ 10,818	1
Average loans	\$ 463.7	475.7	(3)	\$ 485.2	(2)
Average deposits	757.2	729.6	4	703.6	4

NM - Not meaningful

(1) Represents income on products and services for WIM customers served through Community Banking distribution channels and is eliminated in consolidation.

(2) Includes syndication and underwriting fees paid to Wells Fargo Securities which are offset in our Wholesale Banking segment.

(3) Largely represents gains resulting from venture capital investments.

(4) Reflects results attributable to noncontrolling interests predominantly associated with the Company's consolidated venture capital investments.

Community Banking reported net income of \$10.4 billion in 2018, down \$544 million, or 5%, from \$10.9 billion in 2017, which was up \$120 million, or 1%, from 2016. Revenue was \$46.9 billion in 2018, down \$105 million from \$47.0 billion in 2017, which was up \$505 million, or 1%, compared with 2016. The decrease in revenue in 2018 was due to lower mortgage banking revenue driven by lower mortgage loan originations and a decrease in servicing income, lower gains on debt securities, lower service charges on deposit accounts, and lower other fees. These decreases were partially offset by higher other income, including gains from the sales of PCI mortgage loans and the sale of 52 branches, and higher net interest income. The increase in revenue in 2017 was due to higher net interest income, higher gains on equity securities, higher deferred compensation plan investment results (offset in employee benefits expense), and higher other income (including higher net hedge ineffectiveness income and a gain on the sale of PCI mortgage loans), partially offset by lower mortgage banking revenue, lower gains on debt securities, and lower service charges on deposit accounts.

Average deposits increased \$27.6 billion in 2018, or 4%, from 2017, which increased \$26.0 billion, or 4%, from 2016.

Noninterest expense of \$30.5 billion decreased \$2.1 billion in 2018, or 7%, from 2017, which increased \$5.0 billion, or 18%, from 2016. The decrease in 2018 was predominantly driven by lower operating losses due to lower litigation accruals, partially offset by higher outside professional and contract services expense driven by project and technology spending on regulatory and compliance-related initiatives. The increase in 2017 was substantially due to higher operating losses driven by higher litigation accruals, higher personnel expense, and higher outside professional services, partially offset by lower foreclosed assets expense driven by improvement in the residential real estate portfolio, lower telephone and supplies expenses, and lower other expense.

The provision for credit losses in 2018 decreased \$772 million from 2017 due to credit improvement in the consumer real estate and automobile portfolios. The provision for credit losses in 2017 decreased \$136 million from 2016 due to credit improvement in the consumer real estate portfolio.

Income tax expense was \$3.8 billion in 2018, up \$3.2 billion from \$634 million in 2017, which was down \$4.6 billion from 2016. Income tax expense in 2018 included the adverse impact of non-deductible litigation accruals, the reconsideration of reserves for state income taxes following the U.S. Supreme Court opinion in *South Dakota v. Wayfair, Inc.*, and the expense associated with the final re-measurement of our initial estimates for the impacts of the 2017 Tax Act. Income tax expense in 2017 included the estimated net benefit from the impact of the 2017 Tax Act to the Company, partially offset by the impact of discrete non tax-deductible items, predominantly litigation accruals.

Earnings Performance (continued)

Wholesale Banking provides financial solutions to businesses across the United States and globally with annual sales generally in excess of \$5 million. Products and businesses include Commercial Banking, Commercial Real Estate, Corporate and

Investment Banking, Credit Investment Portfolio, Treasury Management, and Commercial Capital. Table 9b provides additional financial information for Wholesale Banking.

Table 9b: Wholesale Banking

(in millions, except average balances which are in billions)	Year ended December 31,				
	2018	2017	% Change	2016	% Change
Net interest income	\$ 18,690	18,810	(1)%	\$ 18,699	1%
Noninterest income:					
Service charges on deposit accounts	2,074	2,201	(6)	2,260	(3)
Trust and investment fees:					
Brokerage advisory, commissions and other fees	317	304	4	368	(17)
Trust and investment management	445	523	(15)	473	11
Investment banking	1,783	1,827	(2)	1,833	—
Total trust and investment fees	2,545	2,654	(4)	2,674	(1)
Card fees	362	345	5	336	3
Other fees	2,019	2,054	(2)	2,085	(1)
Mortgage banking	362	458	(21)	475	(4)
Insurance	312	872	(64)	1,156	(25)
Net gains from trading activities	516	701	(26)	677	4
Net gains (losses) on debt securities	102	(232)	144	8	NM
Net gains from equity securities	293	116	153	199	(42)
Other income of the segment	1,431	2,021	(29)	2,478	(18)
Total noninterest income	10,016	11,190	(10)	12,348	(9)
Total revenue	28,706	30,000	(4)	31,047	(3)
Provision (reversal of provision) for credit losses	(58)	(19)	NM	1,073	NM
Noninterest expense:					
Personnel expense	5,567	6,603	(16)	6,456	2
Equipment	48	55	(13)	68	(19)
Net occupancy	403	425	(5)	423	—
Core deposit and other intangibles	378	414	(9)	385	8
FDIC and other deposit assessments	419	481	(13)	428	12
Outside professional services	958	1,134	(16)	989	15
Operating losses	246	74	232	115	(36)
Other expense of the segment	8,138	7,438	9	7,037	6
Total noninterest expense	16,157	16,624	(3)	15,901	5
Income before income tax expense and noncontrolling interest	12,607	13,395	(6)	14,073	(5)
Income tax expense	1,555	3,496	(56)	4,159	(16)
Net income (loss) from noncontrolling interest	20	(15)	233	(28)	46
Net income	\$ 11,032	9,914	11	\$ 9,942	—
Average loans	\$ 465.7	465.6	—	\$ 451.0	3
Average deposits	423.7	464.2	(9)	436.2	6

NM - Not meaningful

Wholesale Banking reported net income of \$11.0 billion in 2018, up \$1.1 billion from 2017, which was down \$28 million from 2016. The increase in 2018 was due to the reduced U.S. federal statutory income tax rate as well as lower noninterest expense, partially offset by lower revenue. The decrease in 2017 compared with 2016 was due to lower noninterest income and higher noninterest expense, partially offset by higher net interest income and lower loan loss provision. Revenue in 2018 of \$28.7 billion decreased \$1.3 billion, or 4%, from 2017, which decreased \$1.0 billion, or 3%, from 2016. Net interest income of \$18.7 billion in 2018 decreased \$120 million, or 1%, from 2017, which increased \$111 million, or 1%, from 2016. The decrease in net interest income in 2018 was due to lower income on trading assets, debt securities, and loans, partially offset by the impact of higher interest rates and the increased income on leveraged leases related to the basis adjustment in 2017 associated with the Tax Act. The increase in net interest income in 2017 was due to strong deposit growth and the impact of rising interest rates, partially offset by lower income on debt securities and trading assets as well as the 2017 leveraged lease adjustment.

Average loans of \$465.7 billion in 2018 were relatively flat compared with 2017, which increased \$14.6 billion, or 3%, from 2016. Loan growth in 2018 from commercial and industrial loans was substantially offset by declines in commercial real estate loans. Loan growth in 2017 was broad based across many Wholesale Banking businesses and included the impact of the GE Capital business acquisitions in 2016. Average deposits of \$423.7 billion in 2018 decreased \$40.5 billion, or 9%, which increased \$28 billion, or 6%, from 2016. The decline in 2018 was driven by actions taken in the first half of 2018 in response to the asset cap included in the FRB consent order on February 2, 2018, and declines across many businesses as commercial customers allocated more cash to higher-rate alternatives.

Noninterest income of \$10.0 billion in 2018 decreased \$1.2 billion, or 10%, from 2017, which decreased \$1.2 billion, or 9%, from 2016. The decrease in 2018 was driven by the impact of the 2017 sale of Wells Fargo Insurance Services USA (WFIS), as well as lower trading, operating lease income, service charges on deposits and mortgage banking fees, partially offset by losses taken in fourth quarter 2017 from adjustments to tax advantaged businesses due to the Tax Act as well as the gain on the sale of Wells Fargo Shareowner Services in 2018. The decrease in 2017, compared with 2016, was driven by the gains on the sale of our crop insurance and health benefit services businesses in 2016, impairments to low income housing and renewable energy investments as a result of the Tax Act, lower insurance income driven by the 2016 sale of our crop insurance business, and lower gains on debt and equity securities. These declines were partially offset by a gain on the sale of our insurance services business in 2017.

Noninterest expense of \$16.2 billion in 2018 decreased \$467 million, or 3%, compared with 2017, which increased \$723 million, or 5%, compared with 2016. The decrease in 2018 was primarily due to lower personnel expense related to the sale of WFIS and lower variable compensation, lower project related spending, and lower FDIC expense, partially offset by higher operating losses and increased regulatory, risk, cyber and technology expenses. The increase in 2017 was predominantly due to increased project and technology spending on compliance and regulatory requirements. The provision for credit losses in 2018 decreased \$39 million from 2017, from lower losses. The provision for credit losses in 2017 decreased from \$1.1 billion in 2016, predominantly due to lower losses in the oil and gas portfolio.

Wealth and Investment Management provides a full range of personalized wealth management, investment and retirement products and services to clients across U.S. based businesses including Wells Fargo Advisors, The Private Bank, Abbot Downing, Wells Fargo Institutional Retirement and Trust, and Wells Fargo Asset Management. We deliver financial planning, private banking, credit, investment management and fiduciary services to high-net worth and ultra-high-net worth individuals and families. We also serve clients' brokerage needs, supply retirement and trust services to institutional clients and provide investment management capabilities delivered to global institutional clients through separate accounts and the Wells Fargo Funds. Table 9c provides additional financial information for WIM.

Earnings Performance (continued)

Table 9c: Wealth and Investment Management

(in millions, except average balances which are in billions)	Year ended December 31,				
	2018	2017	% Change	2016	% Change
Net interest income	\$ 4,441	4,641	(4)%	\$ 4,249	9%
Noninterest income:					
Service charges on deposit accounts	16	17	(6)	19	(11)
Trust and investment fees:					
Brokerage advisory, commissions and other fees	9,161	9,072	1	8,870	2
Trust and investment management	2,893	2,877	1	2,891	—
Investment banking (1)	9	(2)	550	(1)	(100)
Total trust and investment fees	12,063	11,947	1	11,760	2
Card fees	6	6	—	6	—
Other fees	17	18	(6)	18	—
Mortgage banking	(11)	(10)	(10)	(9)	(11)
Insurance	82	88	(7)	—	NM
Net gains from trading activities	57	92	(38)	81	14
Net gains on debt securities	9	2	350	1	100
Net gains (losses) from equity securities	(283)	208	NM	100	108
Other income of the segment	(21)	63	NM	53	19
Total noninterest income	11,935	12,431	(4)	12,029	3
Total revenue	16,376	17,072	(4)	16,278	5
Reversal of provision for credit losses	(5)	(5)	—	(5)	—
Noninterest expense:					
Personnel expense	8,085	8,126	(1)	7,704	5
Equipment	42	28	50	51	(45)
Net occupancy	440	431	2	436	(1)
Core deposit and other intangibles	276	292	(5)	302	(3)
FDIC and other deposit assessments	116	154	(25)	152	1
Outside professional services	815	834	(2)	916	(9)
Operating losses	232	115	102	50	130
Other expense of the segment	2,932	2,643	11	2,440	8
Total noninterest expense	12,938	12,623	2	12,051	5
Income before income tax expense and noncontrolling interest	3,443	4,454	(23)	4,232	5
Income tax expense	861	1,668	(48)	1,596	5
Net income (loss) from noncontrolling interest	2	16	(88)	(1)	NM
Net income	\$ 2,580	2,770	(7)	\$ 2,637	5
Average loans	\$ 74.6	71.9	4	\$ 67.3	7
Average deposits	165.0	189.0	(13)	189.7	—

NM - Not meaningful

(1) Includes syndication and underwriting fees paid to Wells Fargo Securities which are offset in our Wholesale Banking segment.

WIM reported net income of \$2.6 billion in 2018, down \$190 million, or 7%, from 2017, which was up \$133 million, or 5%, from 2016. Revenue of \$16.4 billion in 2018 decreased \$696 million from 2017, which was up \$794 million from 2016. The decrease in revenue in 2018 was due to lower noninterest income and net interest income. The increase in revenue in 2017 was due to growth in net interest income and asset-based fees. Net interest income decreased 4% in 2018 primarily due to lower deposit balances, partially offset by higher interest rates. Net interest income increased 9% in 2017 predominantly due to higher interest rates. Average loan balances of \$74.6 billion in 2018 increased \$2.7 billion from \$71.9 billion in 2017, which was up 7% from 2016. Average deposits of \$165.0 billion in 2018 decreased 13% from \$189.0 billion in 2017, which was relatively flat compared with 2016. Noninterest income in 2018 decreased 4% from 2017 due to net losses from equity securities on lower deferred compensation plan investment results (offset in employee benefits expense), the impairment on the sale of our ownership stake in RockCreek, and lower transaction revenue, partially offset by higher asset-based fees.

Noninterest income in 2017 increased 3% from 2016 due to higher asset-based fees and gains on deferred compensation plan investments (offset in employee benefits expense), partially offset by lower transaction revenue. Noninterest expense of \$12.9 billion in 2018 increased 2% from \$12.6 billion in 2017 due to higher project and technology spending on compliance and regulatory requirements, higher broker commissions, higher operating losses and higher other personnel expense, partially offset by lower employee benefits from deferred compensation plan expense (offset in deferred compensation plan investments). Noninterest expense of \$12.6 billion in 2017 increased 5% from \$12.1 billion in 2016 due to higher project and technology spending on compliance and regulatory requirements, higher broker commissions, and higher employee benefits from deferred compensation plan expense (offset in deferred compensation plan investments). The provision for credit losses was flat in both 2018 and 2017.

The following discussions provide additional information for client assets we oversee in our retail brokerage advisory and trust and investment management business lines.

Retail Brokerage Client Assets Brokerage advisory, commissions and other fees are received for providing full-service and discount brokerage services predominantly to retail brokerage clients. Offering advisory account relationships to our brokerage clients is an important component of our broader strategy of meeting their financial needs. Although a majority of our retail brokerage client assets are in accounts that earn brokerage commissions, the fees from those accounts generally

represent transactional commissions based on the number and size of transactions executed at the client's direction. Fees earned from advisory accounts are asset-based, are priced at the beginning of the quarter, and depend on changes in the value of the client's assets as well as the level of assets resulting from inflows and outflows. A majority of our brokerage advisory, commissions and other fee income is earned from advisory accounts. Table 9d shows advisory account client assets as a percentage of total retail brokerage client assets at December 31, 2018, 2017 and 2016.

Table 9d: Retail Brokerage Client Assets

(in billions)	Year ended December 31,		
	2018	2017	2016
Retail brokerage client assets	\$ 1,487.6	1,651.3	1,486.1
Advisory account client assets	501.1	542.8	463.8
Advisory account client assets as a percentage of total client assets	34%	33	31

Retail Brokerage advisory accounts include assets that are financial advisor-directed and separately managed by third-party managers, as well as certain client-directed brokerage assets where we earn a fee for advisory and other services, but do not have investment discretion. These advisory accounts generate fees as a percentage of the market value of the assets as of the beginning of the quarter, which vary across the account types based on the distinct

services provided, and are affected by investment performance as well as asset inflows and outflows. For the years ended December 31, 2018, 2017 and 2016, the average fee rate by account type ranged from 80 to 120 basis points. Table 9e presents retail brokerage advisory account client assets activity by account type for the years ended December 31, 2018, 2017 and 2016.

Table 9e: Retail Brokerage Advisory Account Client Assets

					Year ended
(in billions)	Balance, beginning of period	Inflows (1)	Outflows (2)	Market impact (3)	Balance, end of period
December 31, 2018					
Client directed (4)	\$ 170.9	33.6	(41.0)	(12.0)	151.5
Financial advisor directed (5)	147.0	30.0	(32.9)	(2.2)	141.9
Separate accounts (6)	149.1	23.8	(29.1)	(7.4)	136.4
Mutual fund advisory (7)	75.8	12.8	(13.8)	(3.5)	71.3
Total advisory client assets	\$ 542.8	100.2	(116.8)	(25.1)	501.1
December 31, 2017					
Client directed (4)	\$ 159.1	37.1	(39.2)	13.9	170.9
Financial advisor directed (5)	115.7	30.6	(24.5)	25.2	147.0
Separate accounts (6)	125.7	26.1	(23.5)	20.8	149.1
Mutual fund advisory (7)	63.3	13.1	(11.1)	10.5	75.8
Total advisory client assets	\$ 463.8	106.9	(98.3)	70.4	542.8
December 31, 2016					
Client directed (4)	\$ 154.7	36.0	(37.5)	5.9	159.1
Financial advisor directed (5)	91.9	28.6	(18.7)	13.9	115.7
Separate accounts (6)	110.4	26.0	(21.9)	11.2	125.7
Mutual fund advisory (7)	62.9	8.7	(11.6)	3.3	63.3
Total advisory client assets	\$ 419.9	99.3	(89.7)	34.3	463.8

(1) Inflows include new advisory account assets, contributions, dividends and interest.

(2) Outflows include closed advisory account assets, withdrawals and client management fees.

(3) Market impact reflects gains and losses on portfolio investments.

(4) Investment advice and other services are provided to client, but decisions are made by the client and the fees earned are based on a percentage of the advisory account assets, not the number and size of transactions executed by the client.

(5) Professionally managed portfolios with fees earned based on respective strategies and as a percentage of certain client assets.

(6) Professional advisory portfolios managed by Wells Fargo Asset Management advisors or third-party asset managers. Fees are earned based on a percentage of certain client assets.

(7) Program with portfolios constructed of load-waived, no-load and institutional share class mutual funds. Fees are earned based on a percentage of certain client assets.

Earnings Performance (continued)

Trust and Investment Client Assets Under Management

We earn trust and investment management fees from managing and administering assets, including mutual funds, institutional separate accounts, personal trust, employee benefit trust and agency assets through our asset management, wealth and retirement businesses. Our asset management business is conducted by Wells Fargo Asset Management (WFAM), which offers Wells Fargo proprietary mutual funds and manages institutional separate accounts. Our wealth business manages assets for high net worth clients, and our retirement business

provides total retirement management, investments, and trust and custody solutions tailored to meet the needs of institutional clients. Substantially all of our trust and investment management fee income is earned from AUM where we have discretionary management authority over the investments and generate fees as a percentage of the market value of the AUM. Table 9f presents AUM activity for the years ended December 31, 2018, 2017 and 2016.

Table 9f: WIM Trust and Investment – Assets Under Management

(in billions)					Year ended
	Balance, beginning of period	Inflows (1)	Outflows (2)	Market impact (3)	Balance, end of period
December 31, 2018					
Assets managed by WFAM (4):					
Money market funds (5)	\$ 108.2	4.2	—	—	112.4
Other assets managed	395.7	85.5	(120.2)	(7.5)	353.5
Assets managed by Wealth and Retirement (6)	186.2	36.3	(39.5)	(12.3)	170.7
Total assets under management	\$ 690.1	126.0	(159.7)	(19.8)	636.6
December 31, 2017					
Assets managed by WFAM (4):					
Money market funds (5)	\$ 102.6	5.6	—	—	108.2
Other assets managed	379.6	116.0	(130.9)	31.0	395.7
Assets managed by Wealth and Retirement (6)	168.5	41.1	(39.4)	16.0	186.2
Total assets under management	\$ 650.7	162.7	(170.3)	47.0	690.1
December 31, 2016					
Assets managed by WFAM (4):					
Money market funds (5)	\$ 123.6	—	(21.0)	—	102.6
Other assets managed	366.1	114.0	(125.0)	24.5	379.6
Assets managed by Wealth and Retirement (6)	162.1	37.0	(35.9)	5.3	168.5
Total assets under management	\$ 651.8	151.0	(181.9)	29.8	650.7

(1) Inflows include new managed account assets, contributions, dividends and interest.

(2) Outflows include closed managed account assets, withdrawals and client management fees.

(3) Market impact reflects gains and losses on portfolio investments.

(4) Assets managed by WFAM consist of equity, alternative, balanced, fixed income, money market, and stable value, and include client assets that are managed or sub-advised on behalf of other Wells Fargo lines of business.

(5) Money Market funds activity is presented on a net inflow or net outflow basis, because the gross flows are not meaningful nor used by management as an indicator of performance.

(6) Includes \$4.9 billion, \$5.5 billion and \$6.9 billion as of December 31, 2018, 2017 and 2016, respectively, of client assets invested in proprietary funds managed by WFAM.

Balance Sheet Analysis

At December 31, 2018, our assets totaled \$1.9 trillion, down \$55.9 billion from December 31, 2017. Asset decline was predominantly due to interest-earning deposits with banks, which declined \$42.8 billion.

The following discussion provides additional information about the major components of our balance sheet. Information

regarding our capital and changes in our asset mix is included in the “Earnings Performance – Net Interest Income” and “Capital Management” sections and Note 28 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report.

Available-for-Sale and Held-to-Maturity Debt Securities

Table 10: Available-for-Sale and Held-to-Maturity Debt Securities

(in millions)	December 31, 2018			December 31, 2017		
	Amortized Cost	Net unrealized gain (loss)	Fair value	Amortized Cost	Net unrealized gain (loss)	Fair value
Available-for-sale	\$ 272,471	(2,559)	269,912	275,096	1,311	276,407
Held-to-maturity	144,788	(2,673)	142,115	139,335	(350)	138,985
Total (1)	417,259	(5,232)	412,027	414,431	961	415,392

(1) Available-for-sale debt securities are carried on the balance sheet at fair value. Held-to-maturity debt securities are carried on the balance sheet at amortized cost.

Table 10 presents a summary of our available-for-sale and held-to-maturity debt securities, which decreased \$1.0 billion in balance sheet carrying value from December 31, 2017, largely due to higher net unrealized losses, partially offset by purchases outpacing paydowns and maturities.

The total net unrealized losses on available-for-sale debt securities were \$2.6 billion at December 31, 2018, down from net unrealized gains of \$1.3 billion at December 31, 2017, primarily due to higher interest rates and wider credit spreads.

The size and composition of our available-for-sale and held-to-maturity debt securities is largely dependent upon the Company’s liquidity and interest rate risk management objectives. Our business generates assets and liabilities, such as loans, deposits and long-term debt, which have different maturities, yields, re-pricing, prepayment characteristics and other provisions that expose us to interest rate and liquidity risk.

The available-for-sale debt securities portfolio predominantly consists of liquid, high quality U.S. Treasury and federal agency debt, agency mortgage-backed securities (MBS), privately-issued residential and commercial MBS, securities issued by U.S. states and political subdivisions, corporate debt securities, and highly rated collateralized loan obligations. Due to its highly liquid nature, the available-for-sale debt securities portfolio can be used to meet funding needs that arise in the normal course of business or due to market stress. Changes in our interest rate risk profile may occur due to changes in overall economic or market conditions, which could influence loan origination demand, prepayment speeds, or deposit balances and mix. In response, the available-for-sale debt securities portfolio can be rebalanced to meet the Company’s interest rate risk management objectives. In addition to meeting liquidity and interest rate risk management objectives, the available-for-sale debt securities portfolio may provide yield enhancement over other short-term assets. See the “Risk Management – Asset/Liability Management” section in this Report for more information on liquidity and interest rate risk.

The held-to-maturity debt securities portfolio consists of high quality U.S. Treasury debt, securities issued by U.S. states and political subdivisions, agency MBS, asset-backed securities (ABS) primarily collateralized by automobile loans and leases and cash, and collateralized loan obligations where our intent is to hold these securities to maturity and collect the contractual cash flows. The held-to-maturity debt securities portfolio may also provide yield enhancement over short-term assets.

We analyze debt securities for other-than-temporary impairment (OTTI) quarterly or more often if a potential loss-triggering event occurs. In 2018, we recognized \$28 million of OTTI write-downs on debt securities. For a discussion of our OTTI accounting policies and underlying considerations and analysis, see Note 1 (Summary of Significant Accounting Policies) and Note 5 (Available-for-Sale and Held-to-Maturity Debt Securities) to Financial Statements in this Report.

At December 31, 2018, debt securities included \$55.6 billion of municipal bonds, of which 93.4% were rated “A-” or better based predominantly on external and, in some cases, internal ratings. Additionally, some of the debt securities in our total municipal bond portfolio are guaranteed against loss by bond insurers. These guaranteed bonds are predominantly investment grade and were generally underwritten in accordance with our own investment standards prior to the determination to purchase, without relying on the bond insurer’s guarantee in making the investment decision. The credit quality of our municipal bond holdings are monitored as part of our ongoing impairment analysis.

The weighted-average expected maturity of debt securities available-for-sale was 6.2 years at December 31, 2018. The expected remaining maturity is shorter than the remaining contractual maturity for the 59.4% of this portfolio that is MBS because borrowers generally have the right to prepay obligations before the underlying mortgages mature. The estimated effects of a 200 basis point increase or decrease in interest rates on the fair value and the expected remaining maturity of the MBS available-for-sale portfolio are shown in Table 11.

Balance Sheet Analysis (continued)

Table 11: Mortgage-Backed Securities Available for Sale

(in billions)	Fair value	Net unrealized gain (loss)	Expected remaining maturity (in years)
At December 31, 2018			
Actual	160.2	(2.6)	5.8
Assuming a 200 basis point:			
Increase in interest rates	143.3	(19.5)	7.8
Decrease in interest rates	171.7	8.9	3.1

The weighted-average expected maturity of debt securities held-to-maturity was 5.6 years at December 31, 2018. See Note 5 (Available-for-Sale and Held-to-Maturity Debt Securities) to Financial Statements in this Report for a summary of debt securities by security type.

Table 12: Loan Portfolios

(in millions)	December 31, 2018	December 31, 2017
Commercial	\$ 513,405	503,388
Consumer	439,705	453,382
Total loans	953,110	956,770
Change from prior year	\$ (3,660)	(10,834)

A discussion of average loan balances and a comparative detail of average loan balances is included in Table 5 under “Earnings Performance – Net Interest Income” earlier in this Report. Additional information on total loans outstanding by portfolio segment and class of financing receivable is included in the “Risk Management – Credit Risk Management” section in this Report. Period-end balances and other loan related

Loan Portfolios

Table 12 provides a summary of total outstanding loans by portfolio segment. Total loans decreased \$3.7 billion from December 31, 2017, driven by a decline in consumer loans, partially offset by an increase in commercial loans. Commercial loan growth reflected growth in commercial and industrial loans, partially offset by a decline in commercial real estate loans reflecting continued credit discipline. The decrease in consumer loans reflected paydowns, sales of 1-4 family first mortgage PCI Pick-a-Pay loans, a continued decline in junior lien mortgage loans, the sale of Reliable Financial Services, Inc., and an expected decline in automobile loans as originations were more than offset by paydowns.

information are in Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Table 13 shows contractual loan maturities for loan categories normally not subject to regular periodic principal reduction and the contractual distribution of loans in those categories to changes in interest rates.

Table 13: Maturities for Selected Commercial Loan Categories

(in millions)	December 31, 2018				December 31, 2017			
	Within one year	After one year through five years	After five years	Total	Within one year	After one year through five years	After five years	Total
Selected loan maturities:								
Commercial and industrial	\$ 109,566	213,425	27,208	350,199	105,327	201,530	26,268	333,125
Real estate mortgage	16,413	63,648	40,953	121,014	20,069	64,384	42,146	126,599
Real estate construction	9,958	11,343	1,195	22,496	9,555	13,276	1,448	24,279
Total selected loans	\$ 135,937	288,416	69,356	493,709	134,951	279,190	69,862	484,003
Distribution of loans to changes in interest rates:								
Loans at fixed interest rates	\$ 17,619	28,545	28,163	74,327	18,587	30,049	26,748	75,384
Loans at floating/variable interest rates	118,318	259,871	41,193	419,382	116,364	249,141	43,114	408,619
Total selected loans	\$ 135,937	288,416	69,356	493,709	134,951	279,190	69,862	484,003

Deposits

Deposits were \$1.3 trillion at December 31, 2018, down \$49.8 billion from December 31, 2017, due to a decrease in commercial deposits from financial institutions and a decline in consumer and small business banking deposits. The decline in commercial deposits from financial institutions was due to actions taken in the first half of 2018 in response to the asset cap included in the consent order issued by the FRB on February 2, 2018, and declines across many businesses as

commercial customers allocated more cash to higher-rate alternative investments. The decline in consumer and small business banking deposits was due to higher balance customers moving a portion of those balances to other cash alternatives offering higher rates. Table 14 provides additional information regarding deposits. Information regarding the impact of deposits on net interest income and a comparison of average deposit balances is provided in “Earnings Performance – Net Interest Income” and Table 5 earlier in this Report.

Table 14: Deposits

(\$ in millions)	Dec 31, 2018	% of total deposits	Dec 31, 2017	% of total deposits	% Change
Noninterest-bearing	\$ 349,534	27%	\$ 373,722	28%	(6)
Interest-bearing checking	56,797	4	51,928	4	9
Market rate and other savings	703,338	55	690,168	52	2
Savings certificates	22,648	2	20,415	2	11
Other time deposits	95,602	7	71,715	4	33
Deposits in foreign offices (1)	58,251	5	128,043	10	(55)
Total deposits	\$ 1,286,170	100%	\$ 1,335,991	100%	(4)

(1) Includes Eurodollar sweep balances of \$31.8 billion and \$80.1 billion at December 31, 2018 and 2017, respectively.

Equity

Total equity was \$197.1 billion at December 31, 2018, compared with \$208.1 billion at December 31, 2017. The decrease was driven by a \$17.3 billion increase in treasury stock, a \$4.2 billion decline in cumulative other comprehensive income predominantly due to fair value adjustments to available-for-sale

securities caused by an increase in long-term interest rates, and a \$2.1 billion decline in preferred stock, partially offset by a \$12.9 billion increase in retained earnings from earnings net of dividends paid. The increase in treasury stock was the result of the repurchase of 375.5 million shares of common stock in 2018, an increase of 91% from 2017.

Off-Balance Sheet Arrangements

In the ordinary course of business, we engage in financial transactions that are not recorded on the balance sheet, or may be recorded on the balance sheet in amounts that are different from the full contract or notional amount of the transaction. Our off-balance sheet arrangements include commitments to lend and purchase debt and equity securities, transactions with unconsolidated entities, guarantees, derivatives, and other commitments. These transactions are designed to (1) meet the financial needs of customers, (2) manage our credit, market or liquidity risks, and/or (3) diversify our funding sources.

Commitments to Lend and Purchase Debt and Equity Securities

We enter into commitments to lend funds to customers, which are usually at a stated interest rate, if funded, and for specific purposes and time periods. When we make commitments, we are exposed to credit risk. However, the maximum credit risk for these commitments will generally be lower than the contractual amount because a significant portion of these commitments is expected to expire without being used by the customer. For more information on lending commitments, see Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report. We also enter into commitments to purchase securities under resale agreements. For more information on commitments to purchase securities under resale agreements, see Note 15 (Guarantees, Pledged Assets and Collateral, and Other Commitments) to Financial Statements in this Report. We also may enter into commitments to purchase debt and equity securities to provide capital for customers' funding, liquidity or

other future needs. For more information, see the “Off-Balance Sheet Arrangements – Contractual Cash Obligations” section in this report and Note 15 (Guarantees, Pledged Assets and Collateral, and Other Commitments) to Financial Statements in this Report.

Transactions with Unconsolidated Entities

In the normal course of business, we enter into various types of on- and off-balance sheet transactions with special purpose entities (SPEs), which are corporations, trusts, limited liability companies or partnerships that are established for a limited purpose. Generally, SPEs are formed in connection with securitization transactions and are considered variable interest entities (VIEs). For more information on securitizations, including sales proceeds and cash flows from securitizations, see Note 9 (Securitizations and Variable Interest Entities) to Financial Statements in this Report.

Guarantees and Certain Contingent Arrangements

Guarantees are contracts that contingently require us to make payments to a guaranteed party based on an event or a change in an underlying asset, liability, rate or index. Guarantees are generally in the form of standby letters of credit, securities lending and other indemnifications, written put options, recourse obligations and other types of arrangements. For more information on guarantees and certain contingent arrangements, see Note 15 (Guarantees, Pledged Assets and Collateral, and Other Commitments) to Financial Statements in this Report.

Off-Balance Sheet Arrangements (continued)

Derivatives

We use derivatives to manage exposure to market risk, including interest rate risk, credit risk and foreign currency risk, and to assist customers with their risk management objectives. Derivatives are recorded on the balance sheet at fair value, and volume can be measured in terms of the notional amount, which is generally not exchanged, but is used only as the basis on which interest and other payments are determined. The notional amount is not recorded on the balance sheet and is not, when viewed in isolation, a meaningful measure of the risk profile of the instruments. For more information on derivatives, see Note 17 (Derivatives) to Financial Statements in this Report.

Other Commitments

We also have other off-balance sheet transactions, including obligations to make rental payments under noncancelable operating leases. Our operating lease obligations are discussed in Note 7 (Premises, Equipment, Lease Commitments and Other Assets) to Financial Statements in this Report.

Contractual Cash Obligations

In addition to the contractual commitments and arrangements previously described, which, depending on the nature of the obligation, may or may not require use of our resources, we enter into other contractual obligations that may require future cash payments in the ordinary course of business, including debt issuances for the funding of operations and leases for premises and equipment.

Table 15 summarizes these contractual obligations as of December 31, 2018, excluding the projected cash payments for obligations for short-term borrowing arrangements and pension and postretirement benefit plans. More information on those obligations is in Note 13 (Short-Term Borrowings) and Note 22 (Employee Benefits and Other Expenses) to Financial Statements in this Report.

Table 15: Contractual Cash Obligations

December 31, 2018							
(in millions)	Note(s) to Financial Statements	Less than 1 year	1-3 years	3-5 years	More than 5 years	Indeterminate maturity	Total
Contractual payments by period:							
Deposits (1)	12	\$ 88,435	32,310	6,188	3,712	1,155,525	1,286,170
Long-term debt (2)	14	46,547	73,239	36,892	72,366	—	229,044
Interest (3)		8,496	11,082	6,669	24,791	—	51,038
Operating leases	7	1,174	1,936	1,290	1,654	—	6,054
Unrecognized tax obligations	23	4	—	—	—	3,939	3,943
Commitments to purchase debt and equity securities (4)	15	2,436	409	—	—	—	2,845
Purchase and other obligations (5)		777	811	258	331	—	2,177
Total contractual obligations		\$ 147,869	119,787	51,297	102,854	1,159,464	1,581,271

(1) Includes interest-bearing and noninterest-bearing checking, and market rate and other savings accounts.

(2) Balances are presented net of unamortized debt discounts and premiums and purchase accounting adjustments.

(3) Represents the future interest obligations related to interest-bearing time deposits and long-term debt in the normal course of business including a net reduction of \$2.3 billion related to hedges used to manage interest rate risk. These interest obligations assume no early debt redemption. We estimated variable interest rate payments using December 31, 2018, rates, which we held constant until maturity. We have excluded interest related to structured notes where our payment obligation is contingent on the performance of certain benchmarks.

(4) Includes unfunded commitments to purchase debt and equity securities, excluding trade date payables, of \$335 million and \$2.5 billion, respectively. We have presented predominantly all of our contractual obligations on equity securities above in the maturing in less than one year category as there are no specified contribution dates in the agreements. These obligations may be requested at any time by the investment manager.

(5) Represents agreements related to unrecognized obligations to purchase goods or services.

We are subject to the income tax laws of the U.S., its states and municipalities, and those of the foreign jurisdictions in which we operate. We have various unrecognized tax obligations related to these operations that may require future cash tax payments to various taxing authorities. Because of their uncertain nature, the expected timing and amounts of these payments generally are not reasonably estimable or determinable. We attempt to estimate the amount payable in the next 12 months based on the status of our tax examinations and settlement discussions. See Note 23 (Income Taxes) to Financial Statements in this Report for more information.

Transactions with Related Parties

The Related Party Disclosures topic of the Accounting Standards Codification (ASC) 850 requires disclosure of material related party transactions, other than compensation arrangements, expense allowances and other similar items in the ordinary course of business. Based on ASC 850, we had no transactions required to be reported for the years ended December 31, 2018, 2017 and 2016. The Company has included within its disclosures information on its equity securities, relationships with variable interest entities, and employee benefit plan arrangements. See Note 8 (Equity Securities), Note 9 (Securitizations and Variable Interest Entities) and Note 22 (Employee Benefits and Other Expenses) to Financial Statements in this Report.

Risk Management

Wells Fargo manages a variety of risks that can significantly affect our financial performance and our ability to meet the expectations of our customers, stockholders, regulators and other stakeholders. We operate under a Board approved risk management framework which outlines our company-wide approach to risk management and oversight and describes the structures and practices employed to manage current and emerging risks inherent to Wells Fargo. We believe that enhancements made during 2018 to our risk management framework transform and clarify our risk management approach by emphasizing the role of risk management when setting corporate strategy and by further rationalizing and integrating certain risk management organizational, governance and reporting practices.

Risk Management Framework

Our risk management framework defines how we manage risk in a comprehensive, integrated and consistent manner and lays out our vision for the risk management of the organization. It reinforces each team member's personal accountability for risk management and is built on a foundation that begins with a deep understanding of the Company's processes, risks and controls. Our risk management framework also supports members of senior management in achieving the Company's strategic objectives and priorities, and it supports the Board as it carries out its risk oversight responsibilities.

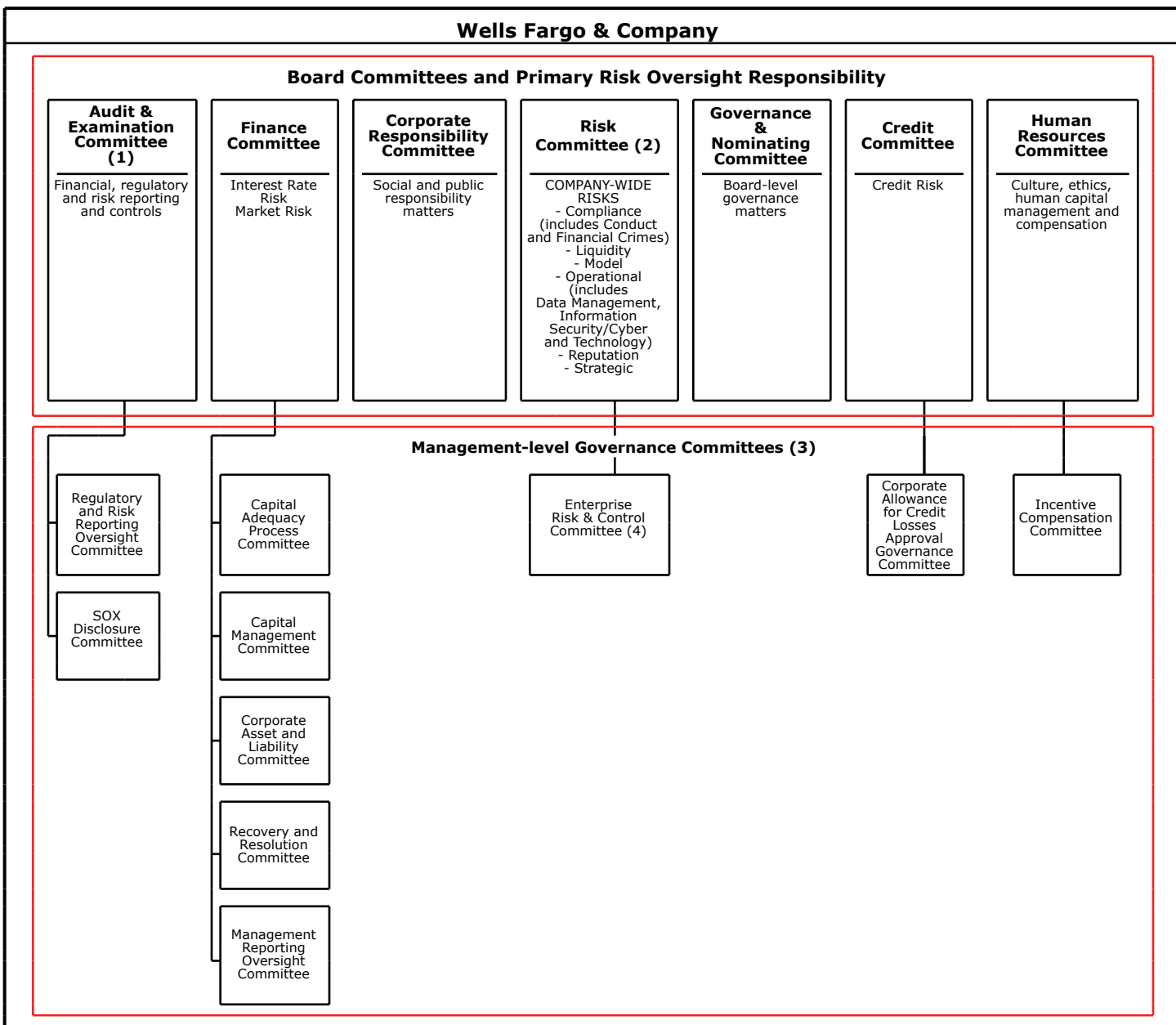
The risk management framework consists of three lines of defense: (1) the front line which consists of Wells Fargo's risk-generating activities, including all activities of its four primary business groups (Consumer Banking; Wholesale Banking; Wealth and Investment Management; and Payments, Virtual Solutions & Innovation) and certain activities of its enterprise functions (Human Resources, Enterprise Finance, Technology, Legal Department, Corporate Risk, Stakeholder Relations, and Wells Fargo Audit Services); (2) independent risk management, which consists of our Corporate Risk function and is led by our Chief Risk Officer (CRO) who reports to the Board's Risk Committee; and (3) internal audit, which is Wells Fargo Audit Services and is led by our Chief Auditor who reports to the Board's Audit & Examination Committee. In addition to the three lines of defense, our risk management framework includes enterprise control activities, which are certain specialized activities performed within centralized enterprise functions (such as Human Resources and the Legal Department) with a focus on controlling specific risks. Key elements of our risk management framework include:

- A **strong culture** that emphasizes each team member's ownership and understanding of risk. We want to cultivate an environment that expects and promotes robust communication and cooperation among the three lines of defense and supports identifying, escalating and addressing current and emerging risk issues.
- A **company-wide statement of risk appetite** that guides business and risk leaders as they manage risk on a daily basis. The company-wide statement of risk appetite describes the nature and magnitude of risk that the Company is willing to assume in pursuit of its business and strategic objectives, consistent with capital, liquidity and other regulatory requirements.
- A **risk management governance structure**, including escalation requirements and a committee structure that helps provide comprehensive oversight of the risks we face.
- A **company-wide risk inventory** that promotes a standardized and systematic process to identify and quantify risks at the business group and enterprise level to guide strategic business decisions and capital planning efforts.
- **Policies, procedures, and controls** which form an integrated risk management program that promotes active, prompt, and consistent identification, measurement, assessment, control, mitigation, reporting, and monitoring of current and emerging risk exposures across Wells Fargo and are integrated with clear enterprise risk roles and responsibilities for the three lines of defense.
- **Three lines of defense** that are closely integrated, each with specific roles and responsibilities for risk management and a clear engagement model that promotes challenge and appropriate escalation of issues and information.

Board and Management-level Committee Structures

Wells Fargo's Board committee and management-level governance committee structures are designed to ensure that key risks are identified and escalated and, if necessary, decided upon at the appropriate level of the Company. Accordingly, the structure is built upon defined escalation and reporting paths from the front line to independent risk management and management-level governance committees and, ultimately, to the Board as appropriate. Each management-level governance committee has defined escalation processes, authorities and responsibilities as outlined in its charter. Our Board committee and management-level governance committee structures, and the primary risk oversight responsibilities of each of those committees, is presented in Table 16.

Table 16: Board and Management-level Governance Committee Structure



- (1) The Audit & Examination Committee additionally oversees the internal audit function, external auditor independence, activities, and performance, and the disclosure framework for financial, regulatory and risk reports prepared for the Board, management, and bank regulatory agencies, and assists the Board in its oversight of the Company's compliance with legal and regulatory requirements.
- (2) The Risk Committee has a compliance subcommittee and a technology subcommittee to assist it in providing oversight of those risks as discussed herein.
- (3) Pursuant to their charters, many of the management-level governance committees have formed one or more sub-committees to address specific risk matters.
- (4) Certain committees report to the Enterprise Risk & Control Committee and have dual escalation and informational reporting paths to Board committees.

Board Oversight of Risk

The business and affairs of the Company are managed under the direction of the Board, whose responsibilities include overseeing management's implementation of the Company's risk management framework and ongoing oversight and governance of the Company's risk management activities. The Board carries out its risk oversight responsibilities directly and through the work of its seven standing committees, which all report to the full Board. Each Board committee works closely with management to understand and oversee the Company's key risk exposures.

The Risk Committee oversees company-wide risks. The Board's other standing committees also have primary oversight responsibility for certain specific risk matters, as highlighted in Table 16.

The Risk Committee additionally oversees the Company's Corporate Risk function and plays an active role in approving and overseeing the Company's risk management framework. The Risk Committee and the full Board review and approve the enterprise statement of risk appetite annually, and the Risk Committee also actively monitors the Company's risk profile relative to the approved risk appetite.

The full Board receives reports at each of its regular meetings from the Board committee chairs about committee activities, including risk oversight matters, and the Risk Committee receives periodic reports from management regarding current or emerging risk matters.

Management Oversight of Risk

The Company's management-level governance committees are designed to enable understanding, consideration and decision-making of significant risk and control matters at the appropriate level of the Company and by the appropriate mix of executives. Each committee has a defined set of authorities and responsibilities as set forth in its charter, and each committee has defined escalation paths and risk reporting responsibilities, including to the Board or Board committees, as appropriate.

The Enterprise Risk & Control Committee is the management-level governance committee that governs the management of financial risks, non-financial risks and enterprise and other risk programs. The Enterprise Risk & Control Committee is co-chaired by the Company's CEO and CRO and has an escalation path to the Board's Risk Committee. It considers and decides risk and control matters, addresses escalated issues, actively oversees risk mitigation, and provides regular updates to the Board's Risk Committee regarding emerging risks and senior management's assessment of the effectiveness of the Company's risk management program. It may escalate certain risk and control matters to other Board committees as appropriate based on their primary risk oversight responsibilities.

Each business group and enterprise function has a Risk & Control Committee that reports to the Enterprise Risk & Control Committee and has a mandate that mirrors the Enterprise Risk & Control Committee but is limited to the relevant business group or enterprise function. These committees focus on the risks that each group or function generates and is responsible for managing, and on the controls that are expected to be in place. Additionally, there are standalone specific risk type- or program-specific risk governance committees reporting to the Enterprise Risk & Control Committee to help provide complete and comprehensive governance for certain risk areas.

While the Enterprise Risk & Control Committee and the committees that report to it serve as the focal point for the management of company-wide risk matters, the management of certain specific risk types is supported by additional management-level governance committees, which all report to at least one of the Board's standing committees.

The Corporate Risk function, which is the Company's independent risk management organization, is headed by the Company's CRO who, among other things, is responsible for setting the strategic direction and driving the execution of Wells Fargo's risk management activities. The Corporate Risk function provides senior management and the Board with an independent perspective of the level of risk to which the Company is exposed.

Corporate Risk develops the Company's enterprise statement of risk appetite in the context of our risk management framework described above. As part of Wells Fargo's risk appetite, we maintain metrics along with associated objectives to measure and monitor the amount of risk that the Company is prepared to take. Actual results of these metrics are reported to the Enterprise Risk & Control Committee on a quarterly basis and to the Board's Risk Committee. Our business groups also have business-specific risk appetite statements based on the enterprise statement of risk appetite. The metrics included in the business group statements are harmonized with the enterprise level metrics to ensure consistency where appropriate. Business lines also maintain metrics and qualitative statements that are unique to their line of business. This allows for monitoring of risk and definition of risk appetite deeper within the organization.

The Company's senior management, including the CRO and Chief Auditor, work closely with the Board's committees and

provide ongoing reports and updates on risk matters during and outside of regular committee meetings, as appropriate.

Operational Risk Management

Operational risk is the risk resulting from inadequate or failed internal controls, processes, people and systems, or from external events. Operational risk is inherent in all Wells Fargo activities.

The Board's Risk Committee has primary oversight responsibility for all aspects of operational risk, including significant policies and programs regarding the Company's business continuity, data management, information security, privacy, technology, and third-party risk management. As part of its oversight responsibilities, the Board's Risk Committee approves the operational risk statement of risk appetite including inner and outer boundary thresholds, reviews and approves significant operational risk policies, and oversees the Company's ongoing operational risk management program.

At the management level, the Operational Risk function, which is part of Corporate Risk, has primary oversight responsibility for operational risk. The Operational Risk function reports to the CRO and also provides periodic reporting related to operational risk to the Board's Risk Committee. Within the Operational Risk function, Information Security Risk Management has oversight responsibility for information security risk, and Technology Risk Management Oversight has oversight responsibility for technology risk. Oversight of data management risk, an operational risk, is an enterprise control activity performed within the Data Management & Insight function, and oversight of human capital risk, an operational risk, is an enterprise control activity performed within the Human Resources function. In addition, the Risk & Control Committee for each business group and enterprise function reports operational risk matters to the Enterprise Risk & Control Committee.

Information security is a significant operational risk for financial institutions such as Wells Fargo, and includes the risk resulting from cyber attacks and other information security events relating to Wells Fargo technology, systems, networks, and data that would disrupt Wells Fargo's businesses, result in the disclosure of confidential data which could damage Wells Fargo's reputation, cause losses or increase costs. Wells Fargo's Board is actively engaged in the oversight of the Company's information security risk management and cyber defense programs. The Board's Risk Committee has primary oversight responsibility for information security risk and approves the Company's information security program, which includes the information security policy and the cyber defense program. The Risk Committee formed a Technology Subcommittee to assist it in providing oversight of technology, information security, and cyber risks as well as data management risk. The Technology Subcommittee reviews and recommends to the Risk Committee for approval any significant supporting information security (including cybersecurity) risk, technology risk, and data management risk programs and/or policies, including the Company's data management strategy. The Technology Subcommittee reports to the Risk Committee and both provide updates to the full Board.

Wells Fargo and other financial institutions continue to be the target of various evolving and adaptive cyber attacks, including malware and denial-of-service, as part of an effort to disrupt the operations of financial institutions, potentially test their cybersecurity capabilities, commit fraud, or obtain confidential, proprietary or other information. Cyber attacks have also focused on targeting online applications and services,

Risk Management (*continued*)

such as online banking, as well as cloud-based services provided by third parties, and have targeted the infrastructure of the internet causing the widespread unavailability of websites and degrading website performance. Wells Fargo has not experienced any material losses relating to these or other types of cyber attacks. Cybersecurity risk is a priority for Wells Fargo, and we continue to develop and enhance our controls, processes and systems in order to protect our networks, computers, software and data from attack, damage or unauthorized access. Wells Fargo is also proactively involved in industry cybersecurity efforts and working with other parties, including our third-party service providers and governmental agencies, to continue to enhance defenses and improve resiliency to cybersecurity threats. See the “Risk Factors” section in this Report for additional information regarding the risks associated with a failure or breach of our operational or security systems or infrastructure, including as a result of cyber attacks.

Compliance Risk Management

Compliance risk is the risk resulting from the failure to comply with applicable laws, regulations, rules, and other regulatory requirements, and the failure to appropriately address and limit violations of law and any associated impact to customers. Compliance risk encompasses other standards of self-regulatory organizations applicable to the banking industry as well as nonconformance with applicable internal policies and procedures.

The Board’s Risk Committee has primary oversight responsibility for all aspects of compliance risk, including financial crimes risk. As part of its oversight responsibilities, the Board’s Risk Committee approves the compliance risk and financial crimes risk statement of risk appetites including inner and outer boundary thresholds, reviews and approves significant compliance risk and financial crimes risk policies and programs, and oversees the Company’s ongoing compliance risk management and financial crimes risk management programs. The Compliance Subcommittee of the Risk Committee assists the Risk Committee in providing oversight of the Company’s compliance program and compliance risk management. The Compliance Subcommittee reports to the Risk Committee and both provide updates to the full Board.

At the management level, Wells Fargo Compliance, which is part of Corporate Risk, monitors the implementation of the Company’s compliance program. Financial Crimes Risk Management, which is part of Wells Fargo Compliance, oversees and monitors financial crimes risk. Wells Fargo Compliance reports to the CRO and also provides periodic reporting related to compliance risk to the Board’s Risk Committee and Compliance Subcommittee. In addition, the Risk & Control Committee for each business group and enterprise function reports compliance risk matters to the Enterprise Risk & Control Committee. We continue to enhance our oversight of operational and compliance risk management, including as required by the FRB’s February 2, 2018, and the CFPB/OCC’s April 20, 2018, consent orders.

Conduct Risk Management

Conduct risk, a sub-category of compliance risk, is the risk resulting from inappropriate, unethical, or unlawful behavior on the part of team members or individuals acting on behalf of the Company, caused by deliberate actions or business practices.

The Board has enhanced its oversight of conduct risk to oversee the alignment of team member conduct to the Company’s risk appetite (which the Board approves annually) and culture as reflected in our *Vision, Values & Goals* and Code

of Ethics and Business Conduct. The Board’s Risk Committee has primary oversight responsibility for company-wide conduct risk and risk management components of the Company’s culture, while the responsibilities of the Board’s Human Resources Committee include oversight of the Company’s company-wide culture, Code of Ethics and Business Conduct, conflicts of interest program, human capital management (including talent management and succession planning), performance management program, and incentive compensation risk management program.

At the management level, the Conduct Management Office has primary oversight responsibility for key elements of conduct risk, including internal investigations, sales practices oversight, complaints oversight, and ethics oversight. The Conduct Management Office reports to the CRO and also provides periodic reporting related to conduct risk to the relevant Board committees. In addition, the Risk & Control Committee for each business group and enterprise function reports conduct risk matters to the Enterprise Risk & Control Committee.

The Company’s incentive compensation risk management program is overseen by the management-level Incentive Compensation Committee, which is chaired by the Head of Human Resources and provides periodic reporting related to incentive compensation risk to the Board’s Human Resources Committee. The Human Resources function, which reports to the CEO, also oversees the Company’s culture program, which promotes compliance with laws, consideration of risks when making decisions, and facilitates open dialogue and transparency among the lines of defense.

Strategic Risk Management

Strategic risk is the risk to earnings, capital, and/or liquidity arising from adverse or poorly executed business decisions or ill-timed or inadequate responses to changes in the internal and external operating environment.

The Board has primary oversight responsibility for strategic planning and oversees management’s development and implementation of and approves the Company’s strategic plan, and considers whether it is aligned with the Company’s risk appetite. Management develops, executes and recommends strategic corporate transactions and the Board evaluates management’s proposals, including their impact on the Company’s risk profile and financial position. The Board’s Risk Committee has primary oversight responsibility for the Company’s strategic risk and the adequacy of the Company’s strategic risk management program, including associated risk management practices, processes and controls. The Board’s Risk Committee also reviews and approves significant strategic risk governance documents, and receives periodic reporting from management regarding risks related to new products, and changes to products, as appropriate.

At the management level, the Strategic Risk function, which is part of Corporate Risk, has primary oversight responsibility for strategic risk. The Strategic Risk function reports into the CRO and also provides periodic reporting related to strategic risk to the Board’s Risk Committee. In addition, the Risk & Control Committee for each business group and enterprise function reports strategic risk matters to the Enterprise Risk & Control Committee.

Model Risk Management

Model risk is the risk arising from decisions based on incorrect or misused model outputs or reports.

The Board’s Risk Committee has primary oversight responsibility for model risk. As part of its oversight

responsibilities, the Board's Risk Committee oversees the Company's model risk management policy, model validation activities, model performance, model issue remediation status, and adherence to model risk appetite metrics.

At the management level, the Corporate Model Risk function, which is part of Corporate Risk, has primary oversight responsibility for model risk and is responsible for ongoing governance, validation and monitoring of model risk across the Company. The Corporate Model Risk function reports to the CRO and also provides periodic reporting related to model risk to the Board's Risk Committee. In addition, the Risk & Control Committee for each business group and enterprise function reports model risk matters to the Enterprise Risk & Control Committee.

Reputation Risk Management

Reputation risk is the risk arising from negative perceptions by stakeholders, whether real or not, resulting in potential loss of trust in the Company's competence or integrity. Key external stakeholders include customers, potential and non-customers, shareholders, regulators, elected officials, advocacy groups, and the media.

The Board's Risk Committee has primary oversight responsibility for company-wide reputation risk, while each Board committee has reputation risk oversight responsibilities related to their primary oversight responsibilities. As part of its oversight responsibilities, the Board's Risk Committee receives reports from management that help it monitor how effectively the Company is managing reputation risk. As part of its oversight responsibilities for social and public responsibility matters, the Board's Corporate Responsibility Committee also receives reports from management relating to the Company's brand and stakeholder perception of the Company.

At the management level, the Reputation Risk Oversight function, which is part of Corporate Risk, has primary oversight responsibility for reputation risk. The Reputation Risk Oversight function reports into the CRO and also provides periodic reporting related to reputation risk to the Board's Risk Committee. In addition, the Risk & Control Committee for each business group and enterprise function reports reputation risk matters to the Enterprise Risk & Control Committee.

Credit Risk Management

We define credit risk as the risk of loss associated with a borrower or counterparty default (failure to meet obligations in accordance with agreed upon terms). Credit risk exists with many of our assets and exposures such as debt security holdings, certain derivatives, and loans.

The Board's Credit Committee has primary oversight responsibility for credit risk. At the management level, the Corporate Credit function, which is part of Corporate Risk, has primary oversight responsibility for credit risk. The Corporate Credit function reports to the CRO and also provides periodic reporting related to credit risk to the Board's Credit Committee. In addition, the Risk & Control Committee for each business group and enterprise function reports credit risk matters to the Enterprise Risk & Control Committee.

The following discussion focuses on our loan portfolios, which represent the largest component of assets on our balance sheet for which we have credit risk. Table 17 presents our total loans outstanding by portfolio segment and class of financing receivable.

Table 17: Total Loans Outstanding by Portfolio Segment and Class of Financing Receivable

(in millions)	Dec 31, 2018	Dec 31, 2017
Commercial:		
Commercial and industrial	\$ 350,199	333,125
Real estate mortgage	121,014	126,599
Real estate construction	22,496	24,279
Lease financing	19,696	19,385
Total commercial	513,405	503,388
Consumer:		
Real estate 1-4 family first mortgage	285,065	284,054
Real estate 1-4 family junior lien mortgage	34,398	39,713
Credit card	39,025	37,976
Automobile	45,069	53,371
Other revolving credit and installment	36,148	38,268
Total consumer	439,705	453,382
Total loans	\$ 953,110	956,770

We manage our credit risk by establishing what we believe are sound credit policies for underwriting new business, while monitoring and reviewing the performance of our existing loan portfolios. We employ various credit risk management and monitoring activities to mitigate risks associated with multiple risk factors affecting loans we hold, could acquire or originate including:

- Loan concentrations and related credit quality
- Counterparty credit risk
- Economic and market conditions
- Legislative or regulatory mandates
- Changes in interest rates
- Merger and acquisition activities
- Reputation risk

Our credit risk management oversight process is governed centrally, but provides for decentralized management and accountability by our lines of business. Our overall credit process includes comprehensive credit policies, disciplined credit underwriting, frequent and detailed risk measurement and modeling, extensive credit training programs, and a continual loan review and audit process.

A key to our credit risk management is adherence to a well-controlled underwriting process, which we believe is appropriate for the needs of our customers as well as investors who purchase the loans or securities collateralized by the loans.

Risk Management – Credit Risk Management (*continued*)

Credit Quality Overview Solid credit quality continued in 2018, as our net charge-off rate remained low at 0.29% of average total loans. We continued to benefit from improvements in the performance of our commercial and consumer real estate portfolios. In particular:

- Nonaccrual loans were \$6.5 billion at December 31, 2018, down from \$7.6 billion at December 31, 2017. Commercial nonaccrual loans declined to \$2.2 billion at December 31, 2018, compared with \$2.6 billion at December 31, 2017, and consumer nonaccrual loans declined to \$4.3 billion at December 31, 2018, compared with \$5.0 billion at December 31, 2017. The decline in nonaccrual loans reflected an improved housing market and credit improvement in commercial and industrial loans. Nonaccrual loans represented 0.68% of total loans at December 31, 2018, compared with 0.80% at December 31, 2017.
- Net charge-offs as a percentage of average total loans decreased to 0.29% in 2018, compared with 0.31% in 2017. Net charge-offs as a percentage of our average commercial and consumer portfolios were 0.09% and 0.52% in 2018, respectively, compared with 0.09% and 0.55%, respectively, in 2017.
- Loans that are not government insured/guaranteed and 90 days or more past due and still accruing were \$94 million and \$885 million in our commercial and consumer portfolios, respectively, at December 31, 2018, compared with \$49 million and \$1.0 billion at December 31, 2017.
- Our provision for credit losses was \$1.7 billion during 2018, compared with \$2.5 billion in 2017.
- The allowance for credit losses declined to \$10.7 billion, or 1.12% of total loans, at December 31, 2018, compared with \$12.0 billion, or 1.25%, at December 31, 2017.

Additional information on our loan portfolios and our credit quality trends follows.

PURCHASED CREDIT-IMPAIRED (PCI) LOANS Loans acquired with evidence of credit deterioration since their origination and where it is probable that we will not collect all contractually required principal and interest payments are PCI loans. Substantially all of our PCI loans were acquired in the Wachovia acquisition on December 31, 2008. PCI loans are recorded at fair value at the date of acquisition, and the historical allowance for credit losses related to these loans is not carried over. The carrying value of PCI loans at December 31, 2018, totaled \$5.0 billion, compared with \$12.8 billion at December 31, 2017, and \$58.8 billion at December 31, 2008. The decrease from December 31, 2017, was due to the sales of \$6.2 billion of Pick-a-Pay PCI loans during 2018, as well as portfolio runoff. PCI loans are considered to be accruing due to the existence of the accretable yield amount, which represents the cash expected to be collected in excess of their carrying value, and not based on consideration given to contractual interest payments. The accretable yield at December 31, 2018, was \$3.0 billion.

A nonaccretable difference is established for PCI loans to absorb losses expected on the contractual amounts of those loans in excess of the fair value recorded at the date of acquisition. Amounts absorbed by the nonaccretable difference do not affect the income statement or the allowance for credit losses. At December 31, 2018, \$480 million in nonaccretable difference remained to absorb losses on PCI loans.

For additional information on PCI loans, see the “Risk Management – Credit Risk Management – Real Estate 1-4 Family First and Junior Lien Mortgage Loans – Pick-a-Pay Portfolio” section in this Report, Note 1 (Summary of Significant Accounting Policies) and Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Significant Loan Portfolio Reviews Measuring and monitoring our credit risk is an ongoing process that tracks delinquencies, collateral values, Fair Isaac Corporation (FICO) scores, economic trends by geographic areas, loan-level risk grading for certain portfolios (typically commercial) and other indications of credit risk. Our credit risk monitoring process is designed to enable early identification of developing risk and to support our determination of an appropriate allowance for credit losses. The following discussion provides additional characteristics and analysis of our significant portfolios. See Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report for more analysis and credit metric information for each of the following portfolios.

COMMERCIAL AND INDUSTRIAL LOANS AND LEASE FINANCING For purposes of portfolio risk management, we aggregate commercial and industrial loans and lease financing according to market segmentation and standard industry codes. We generally subject commercial and industrial loans and lease financing to individual risk assessment using our internal borrower and collateral quality ratings. Our ratings are aligned to regulatory definitions of pass and criticized categories with criticized divided among special mention, substandard, doubtful and loss categories.

The commercial and industrial loans and lease financing portfolio totaled \$369.9 billion, or 39% of total loans, at December 31, 2018. The net charge-off rate for this portfolio was 0.13% in 2018, compared with 0.15% in 2017. At December 31, 2018, 0.43% of this portfolio was nonaccruing, compared with 0.56% at December 31, 2017, reflecting a decrease of \$399 million in nonaccrual loans, predominantly due to credit improvement in the oil and gas portfolio. Also, \$15.8 billion of the commercial and industrial loan and lease financing portfolio was internally classified as criticized in accordance with regulatory guidance at December 31, 2018, compared with \$17.9 billion at December 31, 2017. The decrease in criticized loans, which also includes the decrease in nonaccrual loans, was mostly due to improvement in the oil and gas portfolio.

Most of our commercial and industrial loans and lease financing portfolio is secured by short-term assets, such as accounts receivable, inventory and securities, as well as long-lived assets, such as equipment and other business assets. Generally, the collateral securing this portfolio represents a secondary source of repayment.

Table 18 provides a breakout of commercial and industrial loans and lease financing by industry, and includes \$63.7 billion of foreign loans at December 31, 2018. Foreign loans totaled \$21.8 billion within the investors category, \$19.1 billion within the financial institutions category and \$1.2 billion within the oil and gas category.

The investors category includes loans to special purpose vehicles (SPVs) formed by sponsoring entities to invest in financial assets backed predominantly by commercial and residential real estate or corporate cash flow, and are repaid from the asset cash flows or the sale of assets by the SPV. We limit loan amounts to a percentage of the value of the underlying assets, as determined by us, based on analysis of underlying

credit risk and other factors such as asset duration and ongoing performance.

We provide financial institutions with a variety of relationship focused products and services, including loans supporting short-term trade finance and working capital needs. The \$19.1 billion of foreign loans in the financial institutions category were predominantly originated by our Corporate and Investment Banking business.

The oil and gas loan portfolio totaled \$12.2 billion, or 1% of total outstanding loans at December 31, 2018, compared with \$12.5 billion, or 1% of total outstanding loans at December 31, 2017. Oil and gas nonaccrual loans decreased to \$416 million at December 31, 2018, compared with \$1.1 billion at December 31, 2017, due to continued credit improvement in the portfolio.

Table 18: Commercial and Industrial Loans and Lease Financing by Industry (1)

(in millions)	December 31, 2018		
	Nonaccrual loans	Total portfolio (2)	% of total loans
Investors	\$ 24	73,880	8%
Financial institutions	159	43,054	5
Cyclical retailers	81	27,875	3
Food and beverage	53	17,175	2
Healthcare	126	16,611	2
Technology	15	16,379	2
Industrial equipment	63	14,780	2
Real estate lessor	6	14,711	2
Oil and gas	416	12,221	1
Transportation	51	8,773	1
Business services	27	8,245	1
Public administration	7	7,659	1
Other	548	108,532 (3)	9
Total	\$ 1,576	369,895	39%

- (1) Industry categories are based on the North American Industry Classification System and the amounts reported include foreign loans. See Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report for a breakout of commercial foreign loans.
- (2) Includes \$4 million PCI loans, which are considered to be accruing due to the existence of the accretable yield and not based on consideration given to contractual interest payments.
- (3) No other single industry had total loans in excess of \$6.0 billion.

Risk mitigation actions, including the restructuring of repayment terms, securing collateral or guarantees, and entering into extensions, are based on a re-underwriting of the loan and our assessment of the borrower's ability to perform under the agreed-upon terms. Extension terms generally range from six to thirty-six months and may require that the borrower provide additional economic support in the form of partial repayment, or additional collateral or guarantees. In cases where the value of

collateral or financial condition of the borrower is insufficient to repay our loan, we may rely upon the support of an outside repayment guarantee in providing the extension.

Our ability to seek performance under a guarantee is directly related to the guarantor's creditworthiness, capacity and willingness to perform, which is evaluated on an annual basis, or more frequently as warranted. Our evaluation is based on the most current financial information available and is focused on various key financial metrics, including net worth, leverage, and current and future liquidity. We consider the guarantor's reputation, creditworthiness, and willingness to work with us based on our analysis as well as other lenders' experience with the guarantor. Our assessment of the guarantor's credit strength is reflected in our loan risk ratings for such loans. The loan risk rating and accruing status are important factors in our allowance methodology.

In considering the accrual status of the loan, we evaluate the collateral and future cash flows as well as the anticipated support of any repayment guarantor. In many cases, the strength of the guarantor provides sufficient assurance that full repayment of the loan is expected. When full and timely collection of the loan becomes uncertain, including the performance of the guarantor, we place the loan on nonaccrual status. As appropriate, we also charge the loan down in accordance with our charge-off policies, generally to the net realizable value of the collateral securing the loan, if any.

COMMERCIAL REAL ESTATE (CRE) We generally subject CRE loans to individual risk assessment using our internal borrower and collateral quality ratings. Our ratings are aligned to regulatory definitions of pass and criticized categories with criticized segmented among special mention, substandard, doubtful and loss categories. The CRE portfolio, which included \$7.7 billion of foreign CRE loans, totaled \$143.5 billion, or 15% of total loans, at December 31, 2018, and consisted of \$121.0 billion of mortgage loans and \$22.5 billion of construction loans.

Table 19 summarizes CRE loans by state and property type with the related nonaccrual totals. The portfolio is diversified both geographically and by property type. The largest geographic concentrations of CRE loans are in California, New York, Florida and Texas, which combined represented 50% of the total CRE portfolio. By property type, the largest concentrations are office buildings at 27% and apartments at 16% of the portfolio. CRE nonaccrual loans totaled 0.4% of the CRE outstanding balance at December 31, 2018, compared with 0.4% at December 31, 2017. At December 31, 2018, we had \$4.5 billion of criticized CRE mortgage loans, compared with \$4.3 billion at December 31, 2017, and \$289 million of criticized CRE construction loans, compared with \$298 million at December 31, 2017.

Risk Management – Credit Risk Management (continued)

Table 19: CRE Loans by State and Property Type

	December 31, 2018							
	Real estate mortgage		Real estate construction		Total			% of total loans
(in millions)	Nonaccrual loans	Total portfolio	Nonaccrual loans	Total portfolio	Nonaccrual loans	Total portfolio		
By state:								
California	\$ 143	34,396	7	4,559	150	38,955		4%
New York	10	10,676	—	2,796	10	13,472		1
Florida	29	7,708	2	2,044	31	9,752		1
Texas	64	7,796	1	1,451	65	9,247		1
Arizona	33	4,246	—	366	33	4,612		*
North Carolina	31	3,679	6	849	37	4,528		*
Georgia	12	3,615	—	606	12	4,221		*
Washington	11	3,390	1	593	12	3,983		*
Virginia	12	2,864	—	941	12	3,805		*
Illinois	7	2,958	—	429	7	3,387		*
Other	228	39,686	15	7,862	243	47,548	(1)	5
Total	\$ 580	121,014	32	22,496	612	143,510		15%
By property:								
Office buildings	\$ 142	36,089	2	3,079	144	39,168		4%
Apartments	12	16,107	—	7,484	12	23,591		2
Industrial/warehouse	95	15,366	—	1,295	95	16,661		2
Retail (excluding shopping center)	99	14,512	7	569	106	15,081		2
Shopping center	6	11,217	—	1,184	6	12,401		1
Hotel/motel	19	9,649	—	1,832	19	11,481		1
Mixed use properties (2)	81	5,943	2	524	83	6,467		1
Institutional	43	3,135	—	1,946	43	5,081		1
Agriculture	46	2,468	—	33	46	2,501		*
1-4 family structure	—	9	6	2,210	6	2,219		*
Other	37	6,519	15	2,340	52	8,859		1
Total	\$ 580	121,014	32	22,496	612	143,510		15%

* Less than 1%.

(1) Includes 40 states; no state had loans in excess of \$3.4 billion.

(2) Mixed use properties are primarily owner occupied real estate, including data centers, flexible space leased to multiple tenants, light manufacturing and other specialized uses.

FOREIGN LOANS AND COUNTRY RISK EXPOSURE We classify loans for financial statement and certain regulatory purposes as foreign primarily based on whether the borrower's primary address is outside of the United States. At December 31, 2018, foreign loans totaled \$71.9 billion, representing approximately 8% of our total consolidated loans outstanding, compared with \$70.4 billion, or approximately 7% of total consolidated loans outstanding, at December 31, 2017. Foreign loans were approximately 4% of our consolidated total assets at both December 31, 2018, and December 31, 2017.

Our country risk monitoring process incorporates frequent dialogue with our financial institution customers, counterparties and regulatory agencies, enhanced by centralized monitoring of macroeconomic and capital markets conditions in the respective countries. We establish exposure limits for each country through a centralized oversight process based on customer needs, and in consideration of relevant economic, political, social, legal, and transfer risks. We monitor exposures closely and adjust our country limits in response to changing conditions.

We evaluate our individual country risk exposure based on our assessment of the borrower's ability to repay, which gives consideration for allowable transfers of risk such as guarantees and collateral and may be different from the reporting based on the borrower's primary address. Our largest single foreign country exposure based on our assessment of risk at December 31, 2018, was the United Kingdom, which totaled

\$27.2 billion, or approximately 1% of our total assets, and included \$3.1 billion of sovereign claims. Our United Kingdom sovereign claims arise predominantly from deposits we have placed with the Bank of England pursuant to regulatory requirements in support of our London branch. The United Kingdom officially announced its intention to leave the European Union (Brexit) on March 29, 2017, starting the two-year negotiation process leading to its departure. We continue to implement plans for Brexit. Our primary goal is to continue to serve our existing clients in the United Kingdom and the European Union as well as to continue to meet the needs of our domestic clients as they do business in the United Kingdom and the European Union. We have an existing authorized bank in Ireland and an asset management entity in Luxembourg. We are also in the process of obtaining regulatory approvals to establish a broker dealer in France. We continue to explore options to leverage these entities in order to continue to serve clients in the European Union. In addition, the impact of Brexit on our supplier contracts, staffing and business operations in the European Union is subject to an ongoing review, and we are implementing mitigating actions where possible. For additional information on risks associated with Brexit, see the "Risk Factors" section in this Report.

Table 20 provides information regarding our top 20 exposures by country (excluding the U.S.) and our Eurozone exposure, based on our assessment of risk, which gives

consideration to the country of any guarantors and/or underlying collateral.

Table 20: Select Country Exposures

(in millions)	December 31, 2018								
	Lending (1)		Securities (2)		Derivatives and other (3)		Total exposure		
	Sovereign	Non-sovereign	Sovereign	Non-sovereign	Sovereign	Non-sovereign	Sovereign	Non-sovereign (4)	Total
Top 20 country exposures:									
United Kingdom	\$ 3,102	22,227	—	1,694	3	215	3,105	24,136	27,241
Canada	31	16,651	(27)	190	—	135	4	16,976	16,980
Cayman Islands	—	7,208	—	—	—	182	—	7,390	7,390
Germany	3,840	1,871	(10)	(7)	—	340	3,830	2,204	6,034
Ireland	20	3,897	—	132	—	74	20	4,103	4,123
Bermuda	—	3,841	—	98	—	56	—	3,995	3,995
China	—	2,754	(1)	(28)	25	17	24	2,743	2,767
Guernsey	—	2,606	—	—	—	2	—	2,608	2,608
Netherlands	—	2,180	43	315	—	28	43	2,523	2,566
India	—	2,120	—	156	—	—	—	2,276	2,276
Luxembourg	—	1,502	—	617	—	30	—	2,149	2,149
Brazil	—	1,967	—	—	22	—	22	1,967	1,989
Chile	1	1,654	—	(3)	—	5	1	1,656	1,657
Japan	271	1,082	3	55	—	11	274	1,148	1,422
Australia	—	1,288	—	94	—	10	—	1,392	1,392
France	—	1,220	—	81	8	3	8	1,304	1,312
South Korea	—	1,254	11	9	—	5	11	1,268	1,279
Switzerland	—	1,206	—	(22)	—	17	—	1,201	1,201
Mexico	—	1,164	—	5	—	3	—	1,172	1,172
Virgin Islands (British)	—	1,018	—	64	—	—	—	1,082	1,082
Total top 20 country exposures	\$ 7,265	78,710	19	3,450	58	1,133	7,342	83,293	90,635
Eurozone exposure:									
Eurozone countries included in Top 20 above (5)	\$ 3,860	10,670	33	1,138	8	475	3,901	12,283	16,184
Austria	—	680	—	116	—	—	—	796	796
Spain	—	428	—	17	—	35	—	480	480
Belgium	—	322	—	(67)	—	—	—	255	255
Other Eurozone countries (6)	23	187	—	74	—	—	23	261	284
Total Eurozone exposure	\$ 3,883	12,287	33	1,278	8	510	3,924	14,075	17,999

- (1) Lending exposure includes funded loans and unfunded commitments, leveraged leases, and money market placements presented on a gross basis prior to the deduction of impairment allowance and collateral received under the terms of the credit agreements. For the countries listed above, there are \$478 million in defeased leases secured significantly by U.S. Treasury and government agency securities.
- (2) Represents exposure on debt and equity securities of foreign issuers. Long and short positions are netted and net short positions are reflected as negative exposure.
- (3) Represents counterparty exposure on foreign exchange and derivative contracts, and securities resale and lending agreements. This exposure is presented net of counterparty netting adjustments and reduced by the amount of cash collateral. It includes credit default swaps (CDS) predominantly used for market making activities in the U.S. and London based trading businesses, which sometimes results in selling and purchasing protection on the identical reference entities. Generally, we do not use market instruments such as CDS to hedge the credit risk of our investment or loan positions, although we do use them to manage risk in our trading businesses. At December 31, 2018, the gross notional amount of our CDS sold that reference assets in the Top 20 or Eurozone countries was \$332 million, which was offset by the notional amount of CDS purchased of \$484 million. We did not have any CDS purchased or sold that reference pools of assets that contain sovereign debt or where the reference asset was solely the sovereign debt of a foreign country.
- (4) For countries presented in the table, total non-sovereign exposure comprises \$41.3 billion exposure to financial institutions and \$43.8 billion to non-financial corporations at December 31, 2018.
- (5) Consists of exposure to Germany, Ireland, Netherlands, Luxembourg and France included in Top 20.
- (6) Includes non-sovereign exposure to Italy, Portugal, and Greece in the amount of \$141 million, \$19 million and \$14 million, respectively. We had no sovereign exposure in these countries at December 31, 2018.

Risk Management – Credit Risk Management (*continued*)

REAL ESTATE 1-4 FAMILY FIRST AND JUNIOR LIEN

MORTGAGE LOANS Our real estate 1-4 family first and junior lien mortgage loans, as presented in Table 21, include loans we have made to customers and retained as part of our asset/liability management strategy, the Pick-a-Pay portfolio acquired

from Wachovia which is discussed later in this Report and other purchased loans, and loans included on our balance sheet as a result of consolidation of variable interest entities (VIEs).

Table 21: Real Estate 1-4 Family First and Junior Lien Mortgage Loans

(in millions)	December 31, 2018		December 31, 2017	
	Balance	% of portfolio	Balance	% of portfolio
Real estate 1-4 family first mortgage	\$ 285,065	89%	\$ 284,054	88%
Real estate 1-4 family junior lien mortgage	34,398	11	39,713	12
Total real estate 1-4 family mortgage loans	\$ 319,463	100%	\$ 323,767	100%

The real estate 1-4 family mortgage loan portfolio includes some loans with adjustable-rate features and some with an interest-only feature as part of the loan terms. Interest-only loans were approximately 4% of total loans at both December 31, 2018 and 2017. We believe we have manageable adjustable-rate mortgage (ARM) reset risk across our owned mortgage loan portfolios. We do not offer option ARM products, nor do we offer variable-rate mortgage products with fixed payment amounts, commonly referred to within the financial services industry as negative amortizing mortgage loans. The option ARMs we do have are included in the Pick-a-Pay portfolio which was acquired from Wachovia. For more information, see the “Pick-a-Pay Portfolio” section in this Report.

We continue to modify real estate 1-4 family mortgage loans to assist homeowners and other borrowers experiencing financial difficulties. Loans are generally underwritten at the time of the modification in accordance with underwriting guidelines established for our loan modification programs. Under these programs, we may provide concessions such as interest rate reductions, forbearance of principal, and in some cases, principal forgiveness. These programs generally include trial payment periods of three to four months, and after successful completion and compliance with terms during this period, the loan is permanently modified. Loans included under these programs are accounted for as troubled debt restructurings (TDRs) at the start of a trial period or at the time of permanent modification, if no trial period is used. See the “Critical Accounting Policies – Allowance for Credit Losses” section in this Report for discussion on how we determine the allowance attributable to our modified residential real estate portfolios.

Part of our credit monitoring includes tracking delinquency, current FICO scores and loan/combined loan to collateral values (LTV/CLTV) on the entire real estate 1-4 family mortgage loan portfolio. These credit risk indicators, which exclude government insured/guaranteed loans, continued to improve in 2018 on the non-PCI mortgage portfolio. Loans 30 days or more delinquent at December 31, 2018, totaled \$4.0 billion, or 1% of total non-PCI mortgages, compared with \$5.3 billion, or 2%, at December 31, 2017. Loans with FICO scores lower than 640 totaled \$9.7 billion, or 3% of total non-PCI mortgages at December 31, 2018, compared with \$11.7 billion, or 4%, at December 31, 2017. Mortgages with a LTV/CLTV greater than 100% totaled \$3.9 billion at December 31, 2018, or 1% of total non-PCI mortgages, compared with \$6.1 billion, or 2%, at December 31, 2017. Information regarding credit quality indicators, including PCI credit quality indicators, can be found in Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Real estate 1-4 family first and junior lien mortgage loans by state are presented in Table 22. Our real estate 1-4 family non-PCI mortgage loans to borrowers in California represented 12% of total loans at December 31, 2018, located predominantly within the larger metropolitan areas, with no single California metropolitan area consisting of more than 5% of total loans. We monitor changes in real estate values and underlying economic or market conditions for all geographic areas of our real estate 1-4 family first and junior lien mortgage portfolios as part of our credit risk management process. Our underwriting and periodic review of loans and lines secured by residential real estate collateral includes appraisals or estimates from automated valuation models (AVMs) to support property values. AVMs are computer-based tools used to estimate the market value of homes. AVMs are a lower-cost alternative to appraisals and support valuations of large numbers of properties in a short period of time using market comparables and price trends for local market areas. The primary risk associated with the use of AVMs is that the value of an individual property may vary significantly from the average for the market area. We have processes to periodically validate AVMs and specific risk management guidelines addressing the circumstances when AVMs may be used. AVMs are not allowed in real estate 1-4 family first and junior lien mortgage origination underwriting. Broker evaluations and enhanced desktop appraisal reports are allowed in junior lien originations and some first lien line of credit originations up to \$250,000. An appraisal is required for all real estate 1-4 family first and junior lien mortgage commitments greater than \$250,000. Additional information about AVMs and our policy for their use can be found in Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Table 22: Real Estate 1-4 Family First and Junior Lien Mortgage Loans by State

December 31, 2018				
(in millions)	Real estate 1-4 family first mortgage	Real estate 1-4 family junior lien mortgage	Total real estate 1-4 family mortgage	% of total loans
Real estate 1-4 family loans (excluding PCI):				
California	\$ 109,092	9,338	118,430	12%
New York	28,954	1,714	30,668	3
New Jersey	13,811	3,152	16,963	2
Florida	12,350	3,140	15,490	2
Washington	9,677	759	10,436	1
Virginia	8,343	2,020	10,363	1
Texas	8,566	658	9,224	1
North Carolina	5,888	1,608	7,496	1
Pennsylvania	5,422	1,929	7,351	1
Other (1)	65,042	10,063	75,105	8
Government insured/guaranteed loans (2)	12,932	—	12,932	1
Real estate 1-4 family loans (excluding PCI)	280,077	34,381	314,458	33
Real estate 1-4 family PCI loans	4,988	17	5,005	1
Total	\$ 285,065	34,398	319,463	34%

(1) Consists of 41 states; no state had loans in excess of \$6.8 billion.

(2) Represents loans whose repayments are predominantly insured by the Federal Housing Administration (FHA) or guaranteed by the Department of Veterans Affairs (VA).

First Lien Mortgage Portfolio Our total real estate 1-4 family first lien mortgage portfolio increased \$1.0 billion in 2018, as growth in held for investment nonconforming mortgage loans was partially offset by payoffs and Pick-a-Pay PCI loan sales of \$6.2 billion. In addition, \$1.3 billion of nonconforming mortgage loan originations that would have otherwise been included in this portfolio, were designated as held for sale in 2018 in anticipation of the future issuance of residential mortgage-backed securities. We retained \$42.0 billion in nonconforming originations, consisting of loans that exceed conventional conforming loan amount limits established by federal government-sponsored entities (GSEs) in 2018.

The credit performance associated with our real estate 1-4 family first lien mortgage portfolio continued to improve in 2018, as measured through net charge-offs and nonaccrual loans. Net charge-offs as a percentage of average real estate 1-4 family first lien mortgage loans improved to a net recovery of 0.03% in 2018, compared with a net recovery of 0.02% in 2017. Nonaccrual loans were \$3.2 billion at December 31, 2018, compared with \$3.7 billion at December 31, 2017. The decrease in nonaccrual loans from December 31, 2017, was driven by nonaccrual loan sales and an improving housing environment.

Table 23 shows certain delinquency and loss information for the first lien mortgage portfolio and lists the top five states by outstanding balance.

Table 23: First Lien Mortgage Portfolio Performance

(in millions)	Outstanding balance		% of loans 30 days or more past due		Loss (recovery) rate	
	December 31,		December 31,		Year ended December 31,	
	2018	2017	2018	2017	2018	2017
California	\$ 109,092	101,464	0.68%	1.06	(0.06)	(0.07)
New York	28,954	26,624	1.12	1.65	0.04	0.03
New Jersey	13,811	13,212	1.91	2.74	0.03	0.16
Florida	12,350	13,083	2.58	3.95	(0.17)	(0.16)
Washington	9,677	8,845	0.57	0.85	(0.06)	(0.08)
Other	93,261	92,961	1.70	2.25	(0.02)	0.02
Total	267,145	256,189	1.23	1.78	(0.03)	(0.02)
Government insured/guaranteed loans	12,932	15,143				
PCI	4,988	12,722				
Total first lien mortgages	\$ 285,065	284,054				

Risk Management – Credit Risk Management (continued)

Pick-a-Pay Portfolio The Pick-a-Pay portfolio was one of the consumer residential first lien mortgage portfolios we acquired from Wachovia and a majority of the portfolio was identified as PCI loans.

The Pick-a-Pay portfolio is included in the consumer real estate 1-4 family first mortgage class of loans throughout this Report. Table 24 provides balances by types of loans as of December 31, 2018. As a result of our loan modification and loss mitigation efforts as well as borrower payoffs, Pick-a-Pay option payment loans have been reduced to \$8.8 billion at December 31, 2018, from \$99.9 billion at acquisition. Total

adjusted unpaid principal balance of Pick-a-Pay PCI loans was \$6.6 billion at December 31, 2018, compared with \$61.0 billion at acquisition. Due to loan modification and loss mitigation efforts as well as borrower payoffs, the adjusted unpaid principal balance of option payment PCI loans has declined to 19% of the total Pick-a-Pay portfolio at December 31, 2018, compared with 51% at acquisition. As favorable sale opportunities arise, we may sell portions of this portfolio. We expect to close on the sale of approximately \$2.4 billion unpaid principal balance of Pick-a-Pay PCI loans in first quarter 2019.

Table 24: Pick-a-Pay Portfolio – Comparison to Acquisition Date

(in millions)	December 31, 2018		December 31, 2008	
	Adjusted unpaid principal balance (1)	% of total	Adjusted unpaid principal balance (1)	% of total
Option payment loans	\$ 8,813	50%	\$ 99,937	86%
Non-option payment adjustable-rate and fixed-rate loans	2,848	16	15,763	14
Full-term loan modifications	6,080	34	—	—
Total adjusted unpaid principal balance	\$ 17,741	100%	\$ 115,700	100%
Total carrying value	\$ 16,115		\$ 95,315	

(1) Adjusted unpaid principal balance includes write-downs taken on loans where severe delinquency (normally 180 days) or other indications of severe borrower financial stress exist that indicate there will be a loss of contractually due amounts upon final resolution of the loan.

Pick-a-Pay option payment loans may have fixed or adjustable rates with payment options that include a minimum payment, an interest-only payment or fully amortizing payment (both 15- and 30-year options).

Since December 31, 2008, we have completed over 138,000 proprietary and Home Affordability Modification Program (HAMP) Pick-a-Pay loan modifications, which have resulted in over \$6.1 billion of principal forgiveness. We have also provided interest rate reductions and loan term extensions to enable sustainable homeownership for our Pick-a-Pay customers.

The predominant portion of our PCI loans is included in the Pick-a-Pay portfolio. Our cash flows expected to be collected have been favorably affected over time by lower expected defaults and losses as a result of observed and forecasted economic strengthening, particularly in housing prices, and our loan modification efforts. Since acquisition, we have reclassified \$9.3 billion from the nonaccretable difference to the accretable yield. Fluctuations in the accretable yield are driven by changes in interest rate indices for variable rate PCI loans, prepayment assumptions, and expected principal and interest payments over the estimated life of the portfolio, which will be affected by the pace and degree of improvements in the U.S. economy and housing markets and projected lifetime performance resulting from loan modification activity. Changes in the projected timing of cash flow events, including loan liquidations, prepayments, modifications and short sales, can also affect the accretable yield and the estimated weighted-average life of the portfolio.

During 2018, we sold \$6.2 billion of Pick-a-Pay PCI loans that resulted in a gain of \$2.4 billion. The accretable yield balance related to our Pick-a-Pay PCI loan portfolio declined \$5.9 billion during 2018, driven by realized accretion of \$1.0 billion, \$2.4 billion from the gain on the loan sales, a \$2.1 billion reduction in expected interest cash flows resulting from the loan sales, and a \$752 million reduction in cash flows resulting from higher prepayments, partially offset by a \$372 million reclassification from nonaccretable difference. An increase in expected prepayments and passage of time lowered our estimated weighted-average life to approximately 5.5 years at December 31, 2018, from 6.8 years at December 31, 2017. The accretable yield percentage for Pick-a-Pay PCI loans for fourth quarter 2018 was 11.47%, up from 9.83% in fourth quarter 2017, due to an increase in the amount of accretable yield relative to the shortened weighted-average life. Based on loan sales in fourth quarter 2018, we expect the accretable yield percentage to increase to approximately 11.49% for first quarter 2019.

For further information on the judgment involved in estimating expected cash flows for PCI loans, see Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report.

Junior Lien Mortgage Portfolio The junior lien mortgage portfolio consists of residential mortgage lines and loans that are subordinate in rights to an existing lien on the same property. It is not unusual for these lines and loans to have draw periods, interest only payments, balloon payments, adjustable rates and similar features. Junior lien loan products are mostly amortizing payment loans with fixed interest rates and repayment periods between five to 30 years.

We continuously monitor the credit performance of our junior lien mortgage portfolio for trends and factors that influence the frequency and severity of loss. We have observed that the severity of loss for junior lien mortgages is high and generally not affected by whether we or a third party own or service the related first lien mortgage, but the frequency of delinquency is typically lower when we own or service the first lien mortgage. In general, we have limited information available on the delinquency status of the third party owned or serviced first lien where we also hold a junior lien. To capture this inherent loss content, our allowance process for junior lien mortgages considers the relative difference in loss experience for junior lien mortgages behind first lien mortgage loans we own or service, compared with those behind first lien mortgage loans owned or serviced by third parties. In addition, our allowance process for junior lien mortgages that are current, but are in

their revolving period, considers the inherent loss where the borrower is delinquent on the corresponding first lien mortgage loans.

Table 25 shows certain delinquency and loss information for the junior lien mortgage portfolio and lists the top five states by outstanding balance. The decrease in outstanding balances since December 31, 2017, predominantly reflects loan paydowns. As of December 31, 2018, 6% of the outstanding balance of the junior lien mortgage portfolio was associated with loans that had a combined loan to value (CLTV) ratio in excess of 100%. Of those junior lien mortgages with a CLTV ratio in excess of 100%, 2.93% were 30 days or more past due. CLTV means the ratio of the total loan balance of first lien mortgages and junior lien mortgages (including unused line amounts for credit line products) to property collateral value. The unsecured portion (the outstanding amount that was in excess of the most recent property collateral value) of the outstanding balances of these loans totaled 2% of the junior lien mortgage portfolio at December 31, 2018. For additional information on consumer loans by LTV/CLTV, see Table 6.12 in Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Table 25: Junior Lien Mortgage Portfolio Performance

(in millions)	Outstanding balance		% of loans 30 days or more past due		Loss (recovery) rate	
	December 31,		December 31,		Year ended December 31,	
	2018	2017	2018	2017	2018	2017
California	\$ 9,338	10,599	1.67%	2.09	(0.46)	(0.40)
New Jersey	3,152	3,606	2.57	2.86	0.25	0.64
Florida	3,140	3,688	2.73	3.05	—	0.10
Virginia	2,020	2,358	1.91	2.34	0.19	0.29
Pennsylvania	1,929	2,210	2.10	2.37	0.15	0.39
Other	14,802	17,225	2.12	2.33	(0.07)	0.08
Total	34,381	39,686	2.08	2.38	(0.11)	0.03
PCI	17	27				
Total junior lien mortgages	\$ 34,398	39,713				

Risk Management – Credit Risk Management (continued)

Our junior lien, as well as first lien, lines of credit portfolios generally have draw periods of 10, 15 or 20 years with variable interest rate and payment options during the draw period of (1) interest only or (2) 1.5% of outstanding principal balance plus accrued interest. During the draw period, the borrower has the option of converting all or a portion of the line from a variable interest rate to a fixed rate with terms including interest-only payments for a fixed period between three to seven years or a fully amortizing payment with a fixed period between five to 30 years. At the end of the draw period, a line of credit generally converts to an amortizing payment schedule with repayment terms of up to 30 years based on the balance at time of conversion. Certain lines and loans have been structured with a balloon payment, which requires full repayment of the outstanding balance at the end of the term period. The conversion of lines or loans to fully amortizing or balloon payoff may result in a significant payment increase, which can affect some borrowers' ability to repay the outstanding balance.

On a monthly basis, we monitor the payment characteristics of borrowers in our first and junior lien lines of credit portfolios. In December 2018, approximately 44% of these borrowers paid only the minimum amount due and approximately 50% paid more than the minimum amount due. The rest were either delinquent or paid less than the minimum amount due. For the borrowers with an interest only payment feature, approximately

30% paid only the minimum amount due and approximately 63% paid more than the minimum amount due.

The lines that enter their amortization period may experience higher delinquencies and higher loss rates than the ones in their draw or term period. We have considered this increased inherent risk in our allowance for credit loss estimate.

In anticipation of our borrowers reaching the end of their contractual commitment, we have created a program to inform, educate and help these borrowers transition from interest-only to fully-amortizing payments or full repayment. We monitor the performance of the borrowers moving through the program in an effort to refine our ongoing program strategy.

Table 26 reflects the outstanding balance of our portfolio of junior lien mortgages, including lines and loans, and first lien lines segregated into scheduled end of draw or end of term periods and products that are currently amortizing, or in balloon repayment status. It excludes real estate 1-4 family first lien line reverse mortgages, which total \$109 million, because they are predominantly insured by the FHA, and it excludes PCI loans, which total \$34 million, because their losses were generally reflected in our nonaccretable difference established at the date of acquisition.

Table 26: Junior Lien Mortgage Line and Loan and First Lien Mortgage Line Portfolios Payment Schedule

(in millions)	Outstanding balance December 31, 2018	Scheduled end of draw/term						
		2019	2020	2021	2022	2023	2024 and thereafter (1)	Amortizing
Junior lien lines and loans	\$ 34,381	456	499	1,107	3,964	2,754	14,291	11,310
First lien lines	\$ 11,802	169	197	509	1,887	1,419	5,616	2,005
Total (2)(3)	\$ 46,183	625	696	1,616	5,851	4,173	19,907	13,315
% of portfolios	100%	1	2	3	13	9	43	29

- (1) Substantially all lines and loans are scheduled to convert to amortizing loans by the end of 2028, with annual scheduled amounts through 2028 ranging from \$2.4 billion to \$5.8 billion and averaging \$3.9 billion per year.
- (2) Junior and first lien lines are primarily interest-only during their draw period. The unfunded credit commitments for junior and first lien lines totaled \$60.1 billion at December 31, 2018.
- (3) Includes scheduled end-of-term balloon payments for lines and loans totaling \$179 million, \$223 million, \$365 million, \$172 million, \$7 million and \$30 million for 2019, 2020, 2021, 2022, 2023, and 2024 and thereafter, respectively. Amortizing lines and loans include \$56 million of end-of-term balloon payments, which are past due. At December 31, 2018, \$488 million, or 4% of outstanding lines of credit that are amortizing, are 30 days or more past due compared to \$553 million or 2% for lines in their draw period.

CREDIT CARDS Our credit card portfolio totaled \$39.0 billion at December 31, 2018, which represented 4% of our total outstanding loans. The net charge-off rate for our credit card portfolio was 3.51% for 2018, compared with 3.49% for 2017.

AUTOMOBILE Our automobile portfolio, predominantly composed of indirect loans, totaled \$45.1 billion at December 31, 2018. The net charge-off rate for our automobile portfolio was 1.21% for 2018, compared with 1.18% for 2017.

OTHER REVOLVING CREDIT AND INSTALLMENT Other revolving credit and installment loans totaled \$36.1 billion at December 31, 2018, and primarily included student and securities-based loans. Our private student loan portfolio totaled \$11.2 billion at December 31, 2018. The net charge-off rate for other revolving credit and installment loans was 1.53% for 2018, compared with 1.52% for 2017.

NONPERFORMING ASSETS (NONACCRUAL LOANS AND FORECLOSED ASSETS) Table 27 summarizes nonperforming assets (NPAs) for each of the last five years. We generally place loans on nonaccrual status when:

- the full and timely collection of interest or principal becomes uncertain (generally based on an assessment of the borrower's financial condition and the adequacy of collateral, if any), such as in bankruptcy or other circumstances;
- they are 90 days (120 days with respect to real estate 1-4 family first and junior lien mortgages) past due for interest or principal, unless both well-secured and in the process of collection;
- part of the principal balance has been charged off; or
- for junior lien mortgages, we have evidence that the related first lien mortgage may be 120 days past due or in the

process of foreclosure regardless of the junior lien delinquency status.

Credit card loans are not placed on nonaccrual status, but are generally fully charged off when the loan reaches 180 days past due.

Note 1 (Summary of Significant Accounting Policies – Loans) to Financial Statements in this Report describes our accounting policy for nonaccrual and impaired loans.

Nonaccrual loans were \$6.5 billion at December 31, 2018, down \$1.2 billion from a year ago, due to a \$413 million decrease in commercial and industrial nonaccruals reflecting continued credit improvement in the portfolio, as well as a decrease of \$690 million in consumer real estate nonaccruals.

Table 27: Nonperforming Assets (Nonaccrual Loans and Foreclosed Assets)

(in millions)	December 31,				
	2018	2017	2016	2015	2014
Nonaccrual loans:					
Commercial:					
Commercial and industrial	\$ 1,486	1,899	3,199	1,363	537
Real estate mortgage	580	628	685	969	1,490
Real estate construction	32	37	43	66	187
Lease financing	90	76	115	26	24
Total commercial	2,188	2,640	4,042	2,424	2,238
Consumer:					
Real estate 1-4 family first mortgage	3,183	3,732	4,516	6,829	8,056
Real estate 1-4 family junior lien mortgage	945	1,086	1,206	1,495	1,848
Automobile	130	130	106	121	137
Other revolving credit and installment	50	58	51	49	41
Total consumer	4,308	5,006	5,879	8,494	10,082
Total nonaccrual loans (1)(2)(3)(4)	\$ 6,496	7,646	9,921	10,918	12,320
As a percentage of total loans	0.68%	0.80	1.03	1.19	1.43
Foreclosed assets:					
Government insured/guaranteed (5)	\$ 88	120	197	446	982
Non-government insured/guaranteed	363	522	781	979	1,627
Total foreclosed assets	451	642	978	1,425	2,609
Total nonperforming assets	\$ 6,947	8,288	10,899	12,343	14,929
As a percentage of total loans	0.73%	0.87	1.13	1.35	1.73

- (1) Financial information for periods prior to December 31, 2018, has been revised to exclude mortgage loans held for sale (MLHFS), loans held for sale (LHFS) and loans held at fair value of \$390 million, \$463 million, \$464 million, and \$528 million at December 31, 2017, 2016, 2015, and 2014, respectively.
- (2) Excludes PCI loans because they continue to earn interest income from accretable yield, independent of performance in accordance with their contractual terms.
- (3) Real estate 1-4 family mortgage loans predominantly insured by the FHA or guaranteed by the VA are not placed on nonaccrual status because they are insured or guaranteed.
- (4) See Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report for further information on impaired loans.
- (5) Consistent with regulatory reporting requirements, foreclosed real estate resulting from government insured/guaranteed loans are classified as nonperforming. However, both principal and interest related to these foreclosed real estate assets are collectible because the loans were predominantly insured by the FHA or guaranteed by the VA. Foreclosure of certain government guaranteed residential real estate mortgage loans that meet criteria specified by Accounting Standards Update (ASU) 2014-14, *Classification of Certain Government-Guaranteed Mortgage Loans Upon Foreclosure*, effective as of January 1, 2014, are excluded from this table and included in Accounts Receivable in Other Assets. For more information on the classification of certain government-guaranteed mortgage loans upon foreclosure, see Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report.

Risk Management – Credit Risk Management (*continued*)

Table 28 provides a summary of nonperforming assets during 2018.

Table 28: Nonperforming Assets by Quarter During 2018

	December 31, 2018		September 30, 2018		June 30, 2018		March 31, 2018	
		% of		% of		% of		% of
(in millions)	Balance	total loans	Balance	total loans	Balance	total loans	Balance	total loans
Nonaccrual loans:								
Commercial:								
Commercial and industrial	\$ 1,486	0.42%	\$ 1,555	0.46%	\$ 1,559	0.46%	\$ 1,516	0.45%
Real estate mortgage	580	0.48	603	0.50	765	0.62	755	0.60
Real estate construction	32	0.14	44	0.19	51	0.22	45	0.19
Lease financing	90	0.46	96	0.49	80	0.41	93	0.48
Total commercial	2,188	0.43	2,298	0.46	2,455	0.49	2,409	0.48
Consumer:								
Real estate 1-4 family first mortgage	3,183	1.12	3,267	1.15	3,469	1.23	3,673	1.30
Real estate 1-4 family junior lien mortgage	945	2.75	983	2.78	1,029	2.82	1,087	2.87
Automobile	130	0.29	118	0.26	119	0.25	117	0.24
Other revolving credit and installment	50	0.14	48	0.13	54	0.14	53	0.14
Total consumer	4,308	0.98	4,416	1.00	4,671	1.06	4,930	1.11
Total nonaccrual loans (1)	6,496	0.68	6,714	0.71	7,126	0.75	7,339	0.77
Foreclosed assets:								
Government insured/guaranteed	88		87		90		103	
Non-government insured/guaranteed	363		435		409		468	
Total foreclosed assets	451		522		499		571	
Total nonperforming assets	\$ 6,947	0.73%	\$ 7,236	0.77%	\$ 7,625	0.81%	\$ 7,910	0.83%
Change in NPAs from prior quarter	\$ (289)		(389)		(285)		(378)	

(1) Financial information for periods prior to December 31, 2018, has been revised to exclude MLHFS, LHFS and loans held at fair value of \$339 million, \$360 million, and \$380 million, at September 30, June 30, and March 31, 2018, respectively.

Table 29 provides an analysis of the changes in nonaccrual loans.

Table 29: Analysis of Changes in Nonaccrual Loans

(in millions)	Quarter ended				Year ended Dec 31,	
	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018	2018	2017
Commercial nonaccrual loans						
Balance, beginning of period	\$ 2,298	2,455	2,409	2,640	2,640	4,059
Inflows	662	774	726	605	2,767	2,893
Outflows:						
Returned to accruing	(45)	(122)	(43)	(113)	(323)	(417)
Foreclosures	(12)	—	—	—	(12)	(20)
Charge-offs	(193)	(191)	(133)	(119)	(636)	(630)
Payments, sales and other	(522)	(618)	(504)	(604)	(2,248)	(3,245)
Total outflows	(772)	(931)	(680)	(836)	(3,219)	(4,312)
Balance, end of period	2,188	2,298	2,455	2,409	2,188	2,640
Consumer nonaccrual loans						
Balance, beginning of period	4,416	4,671	4,930	5,006	5,006	5,879
Inflows	569	572	578	714	2,433	3,093
Outflows:						
Returned to accruing	(269)	(319)	(342)	(374)	(1,304)	(1,583)
Foreclosures	(35)	(41)	(40)	(50)	(166)	(218)
Charge-offs	(57)	(65)	(84)	(86)	(292)	(468)
Payments, sales and other	(316)	(402)	(371)	(280)	(1,369)	(1,697)
Total outflows	(677)	(827)	(837)	(790)	(3,131)	(3,966)
Balance, end of period	4,308	4,416	4,671	4,930	4,308	5,006
Total nonaccrual loans (1)	\$ 6,496	6,714	7,126	7,339	6,496	7,646

(1) Financial information for periods prior to December 31, 2018, has been revised to exclude MLHFS, LHFS and loans held at fair value of \$339 million, \$360 million, and \$380 million, at September 30, June 30, and March 31, 2018, respectively, and \$390 million at December 31, 2017.

Typically, changes to nonaccrual loans period-over-period represent inflows for loans that are placed on nonaccrual status in accordance with our policy, offset by reductions for loans that are paid down, charged off, sold, foreclosed, or are no longer classified as nonaccrual as a result of continued performance and an improvement in the borrower's financial condition and loan repayment capabilities. Also, reductions can come from borrower repayments even if the loan remains on nonaccrual.

While nonaccrual loans are not free of loss content, we believe exposure to loss is significantly mitigated by the following factors at December 31, 2018:

- Over 96% of total commercial nonaccrual loans and 99% of total consumer nonaccrual loans are secured. Of the consumer nonaccrual loans, 96% are secured by real estate and 87% have a combined LTV (CLTV) ratio of 80% or less.
- losses of \$358 million and \$1.5 billion have already been recognized on 20% of commercial nonaccrual loans and 45% of consumer nonaccrual loans, respectively. Generally, when a consumer real estate loan is 120 days past due (except when required earlier by guidance issued by bank regulatory agencies), we transfer it to nonaccrual status. When the loan reaches 180 days past due, or is active or discharged in bankruptcy, it is our policy to write these loans down to net realizable value (fair value of collateral less estimated costs to sell). Thereafter, we re-evaluate each loan regularly and record additional write-downs if needed.
- 82% of commercial nonaccrual loans were current on interest, but were on nonaccrual status because the full or timely collection of interest or principal had become uncertain.

- 72% of commercial nonaccrual loans were current on both principal and interest, but will remain on nonaccrual status until the full and timely collection of principal and interest becomes certain.
- the remaining risk of loss of all nonaccrual loans has been considered and we believe is adequately covered by the allowance for loan losses.
- of \$1.9 billion of consumer loans in bankruptcy or discharged in bankruptcy, and classified as nonaccrual, \$1.3 billion were current.

We continue to work with our customers experiencing financial difficulty to determine if they can qualify for a loan modification so that they can stay in their homes. Under our proprietary modification programs, customers may be required to provide updated documentation, and some programs require completion of payment during trial periods to demonstrate sustained performance before the loan can be removed from nonaccrual status.

If interest due on all nonaccrual loans (including loans that were, but are no longer on nonaccrual at year end) had been accrued under the original terms, approximately \$446 million of interest would have been recorded as income on these loans, compared with \$426 million actually recorded as interest income in 2018, versus \$500 million and \$395 million, respectively, in 2017.

Risk Management – Credit Risk Management (*continued*)

Table 30 provides a summary of foreclosed assets and an analysis of changes in foreclosed assets.

Table 30: Foreclosed Assets

(in millions)	Quarter ended				Year ended Dec 31,	
	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018	2018	2017
Summary by loan segment						
Government insured/guaranteed	\$ 88	87	90	103	88	120
PCI loans:						
Commercial	24	31	42	59	24	57
Consumer	72	63	61	58	72	62
Total PCI loans	96	94	103	117	96	119
All other loans:						
Commercial	103	170	134	162	103	207
Consumer	164	171	172	189	164	196
Total all other loans	267	341	306	351	267	403
Total foreclosed assets	\$ 451	522	499	571	451	642
Analysis of changes in foreclosed assets						
Balance, beginning of period	\$ 522	499	571	642	642	978
Net change in government insured/guaranteed (2)	1	(3)	(13)	(17)	(32)	(77)
Additions to foreclosed assets (3)	193	209	191	185	778	899
Reductions:						
Sales	(274)	(181)	(257)	(245)	(957)	(1,125)
Write-downs and gains (losses) on sales	9	(2)	7	6	20	(33)
Total reductions	(265)	(183)	(250)	(239)	(937)	(1,158)
Balance, end of period	\$ 451	522	499	571	451	642

(1) Foreclosed government insured/guaranteed loans are temporarily transferred to and held by us as servicer, until reimbursement is received from FHA or VA. The net change in government insured/guaranteed foreclosed assets is generally made up of inflows from mortgages held for investment and MLHFS, and outflows when we are reimbursed by FHA/VA.

(2) Includes loans moved into foreclosure from nonaccrual status, PCI loans transitioned directly to foreclosed assets and repossessed automobiles.

Foreclosed assets at December 31, 2018, included \$317 million of foreclosed residential real estate, of which 28% is predominantly FHA insured or VA guaranteed and expected to have minimal or no loss content. The remaining foreclosed assets balance of \$134 million has been written down to estimated net realizable value. Of the \$451 million in foreclosed assets at December 31, 2018, 65% have been in the foreclosed assets portfolio one year or less.

TROUBLED DEBT RESTRUCTURINGS (TDRs)

Table 31: Troubled Debt Restructurings (TDRs)

(in millions)	December 31,				
	2018	2017	2016	2015	2014
Commercial:					
Commercial and industrial	\$ 1,623	2,096	2,584	1,123	724
Real estate mortgage	704	901	1,119	1,456	1,880
Real estate construction	39	44	91	125	314
Lease financing	56	35	6	1	2
Total commercial TDRs	2,422	3,076	3,800	2,705	2,920
Consumer:					
Real estate 1-4 family first mortgage	10,629	12,080	14,134	16,812	18,226
Real estate 1-4 family junior lien mortgage	1,639	1,849	2,074	2,306	2,437
Credit Card	449	356	300	299	338
Automobile	89	87	85	105	127
Other revolving credit and installment	154	126	101	73	49
Trial modifications	149	194	299	402	452
Total consumer TDRs	13,109	14,692	16,993	19,997	21,629
Total TDRs	\$ 15,531	17,768	20,793	22,702	24,549
TDRs on nonaccrual status	\$ 4,058	4,801	6,193	6,506	7,104
TDRs on accrual status:					
Government insured/guaranteed	1,299	1,359	1,526	1,771	2,078
Non-government insured/guaranteed	10,174	11,608	13,074	14,425	15,367
Total TDRs	\$ 15,531	17,768	20,793	22,702	24,549

Table 32: TDRs Balance by Quarter During 2018

(in millions)	Dec 31,	Sep 30,	Jun 30,	Mar 31,
	2018	2018	2018	2018
Commercial:				
Commercial and industrial	\$ 1,623	1,837	1,792	1,703
Real estate mortgage	704	782	904	939
Real estate construction	39	49	40	45
Lease financing	56	65	50	53
Total commercial TDRs	2,422	2,733	2,786	2,740
Consumer:				
Real estate 1-4 family first mortgage	10,629	10,967	11,387	11,782
Real estate 1-4 family junior lien mortgage	1,639	1,689	1,735	1,794
Credit Card	449	431	410	386
Automobile	89	91	81	83
Other revolving credit and installment	154	146	141	137
Trial modifications	149	163	200	198
Total consumer TDRs	13,109	13,487	13,954	14,380
Total TDRs	\$ 15,531	16,220	16,740	17,120
TDRs on nonaccrual status	\$ 4,058	4,298	4,454	4,428
TDRs on accrual status:				
Government insured/guaranteed	1,299	1,308	1,368	1,375
Non-government insured/guaranteed	10,174	10,614	10,918	11,317
Total TDRs	\$ 15,531	16,220	16,740	17,120

Table 31 and Table 32 provide information regarding the recorded investment of loans modified in TDRs. The allowance for loan losses for TDRs was \$1.2 billion and \$1.6 billion at December 31, 2018 and 2017, respectively. See Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report for additional information regarding TDRs. In those situations where principal is forgiven, the entire amount of such

forgiveness is immediately charged off to the extent not done so prior to the modification. When we delay the timing on the repayment of a portion of principal (principal forbearance), we charge off the amount of forbearance if that amount is not considered fully collectible.

Our nonaccrual policies are generally the same for all loan types when a restructuring is involved. We typically

Risk Management – Credit Risk Management (*continued*)

re-underwrite loans at the time of restructuring to determine whether there is sufficient evidence of sustained repayment capacity based on the borrower's documented income, debt to income ratios, and other factors. Loans lacking sufficient evidence of sustained repayment capacity at the time of modification are charged down to the fair value of the collateral, if applicable. For an accruing loan that has been modified, if the borrower has demonstrated performance under the previous terms and the underwriting process shows the capacity to continue to perform under the restructured terms, the loan will generally remain in accruing status. Otherwise, the loan will be placed in nonaccrual status and may be returned to accruing status when the borrower demonstrates a sustained period of performance, generally six consecutive months of payments, or

equivalent, inclusive of consecutive payments made prior to modification. Loans will also be placed on nonaccrual, and a corresponding charge-off is recorded to the loan balance, when we believe that principal and interest contractually due under the modified agreement will not be collectible.

Table 33 provides an analysis of the changes in TDRs. Loans modified more than once are reported as TDR inflows only in the period they are first modified. Other than resolutions such as foreclosures, sales and transfers to held for sale, we may remove loans held for investment from TDR classification, but only if they have been refinanced or restructured at market terms and qualify as a new loan.

Table 33: Analysis of Changes in TDRs

(in millions)	Quarter ended				Year ended Dec 31,	
	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018	2018	2017
Commercial TDRs						
Balance, beginning of period	\$ 2,733	2,786	2,740	3,076	3,076	3,800
Inflows (1)(2)	374	588	481	321	1,764	2,117
Outflows						
Charge-offs	(88)	(92)	(41)	(63)	(284)	(306)
Foreclosure	(2)	(13)	—	—	(15)	(15)
Payments, sales and other (2)(3)	(595)	(536)	(394)	(594)	(2,119)	(2,520)
Balance, end of period	2,422	2,733	2,786	2,740	2,422	3,076
Consumer TDRs						
Balance, beginning of period	13,487	13,954	14,380	14,692	14,692	16,993
Inflows (1)	379	414	467	487	1,747	1,817
Outflows						
Charge-offs	(57)	(56)	(56)	(54)	(223)	(205)
Foreclosure	(90)	(116)	(133)	(131)	(470)	(619)
Payments, sales and other (3)	(595)	(672)	(706)	(618)	(2,591)	(3,189)
Net change in trial modifications (4)	(15)	(37)	2	4	(46)	(105)
Balance, end of period	13,109	13,487	13,954	14,380	13,109	14,692
Total TDRs	\$ 15,531	16,220	16,740	17,120	15,531	17,768

(1) Inflows include loans that modify, even if they resolve within the period, as well as gross advances on term loans that modified in a prior period and net advances on revolving commercial TDRs that modified in a prior period.

(2) Information for the quarter ended June 30, 2018, has been revised to offset payments and advances (i.e., inflows) on revolving commercial TDRs, for consistent presentation of this activity for all periods.

(3) Other outflows include normal amortization/accretion of loan basis adjustments and loans transferred to held-for-sale. It also includes \$59 million and \$5 million of loans refinanced or restructured at market terms and qualifying as new loans and removed from TDR classification for the quarters ended December 31 and March 31, 2018, respectively, while no loans were removed from TDR classification for the quarters ended September 30 and June 30, 2018. During 2017, \$6 million of loans refinanced or structured as new loans and were removed from TDR classification.

(4) Net change in trial modifications includes: inflows of new TDRs entering the trial payment period, net of outflows for modifications that either (i) successfully perform and enter into a permanent modification, or (ii) did not successfully perform according to the terms of the trial period plan and are subsequently charged-off, foreclosed upon or otherwise resolved.

LOANS 90 DAYS OR MORE PAST DUE AND STILL ACCRUING

Loans 90 days or more past due as to interest or principal are still accruing if they are (1) well-secured and in the process of collection or (2) real estate 1-4 family mortgage loans or consumer loans exempt under regulatory rules from being classified as nonaccrual until later delinquency, usually 120 days past due. PCI loans are not included in past due and still accruing loans even when they are 90 days or more contractually past due. These PCI loans are considered to be accruing because they continue to earn interest from accretable yield, independent of performance in accordance with their contractual terms.

Excluding insured/guaranteed loans, loans 90 days or more past due and still accruing at December 31, 2018, were down \$78 million, or 7%, from December 31, 2017, due to payoffs, modifications and other loss mitigation activities and credit stabilization.

Loans 90 days or more past due and still accruing whose repayments are predominantly insured by the FHA or guaranteed by the VA for mortgages were \$7.7 billion at December 31, 2018, down from \$10.5 billion at December 31, 2017, due to an improvement in delinquencies, loan modification activity, as well as runoff. All remaining student loans guaranteed by agencies on behalf of the U.S. Department of Education under the FFELP were sold as of March 31, 2017.

Table 34 reflects non-PCI loans 90 days or more past due and still accruing by class for loans not government insured/guaranteed. For additional information on delinquencies by loan class, see Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Table 34: Loans 90 Days or More Past Due and Still Accruing (1)

(in millions)	December 31,				
	2018	2017	2016	2015	2014
Total (excluding PCI)(2):	\$ 8,704	11,532	11,437	13,866	17,183
Less: FHA insured/VA guaranteed (3)	7,725	10,475	10,467	12,863	16,204
Less: Student loans guaranteed under the FFELP (4)	—	—	3	26	63
Total, not government insured/guaranteed	\$ 979	1,057	967	977	916
By segment and class, not government insured/guaranteed:					
Commercial:					
Commercial and industrial	\$ 43	26	28	97	31
Real estate mortgage	51	23	36	13	16
Real estate construction	—	—	—	4	—
Total commercial	94	49	64	114	47
Consumer:					
Real estate 1-4 family first mortgage	124	213	170	220	256
Real estate 1-4 family junior lien mortgage	32	60	56	65	83
Credit card	513	492	452	397	364
Automobile	114	143	112	79	73
Other revolving credit and installment	102	100	113	102	93
Total consumer	885	1,008	903	863	869
Total, not government insured/guaranteed	\$ 979	1,057	967	977	916

(1) Financial information for periods prior to December 31, 2018, has been revised to exclude MLHFS, LHFS and loans held at fair value, which reduced "Total, not government insured/guaranteed" by \$6 million, \$5 million, \$4 million and \$4 million at December 31, 2017, 2016, 2015 and 2014, respectively.

(2) PCI loans totaled \$370 million, \$1.4 billion, \$2.0 billion, \$2.9 billion and \$3.7 billion at December 31, 2018, 2017, 2016, 2015 and 2014, respectively.

(3) Represents loans whose repayments are predominantly insured by the FHA or guaranteed by the VA.

(4) Represents loans whose repayments are largely guaranteed by agencies on behalf of the U.S. Department of Education under the FFELP. All remaining student loans guaranteed under the FFELP were sold as of March 31, 2017.

Risk Management – Credit Risk Management (*continued*)

NET CHARGE-OFFS

Table 35: Net Charge-offs

	Year ended		December 31,		September 30,		June 30,		Quarter ended	
	December 31,		December 31,		September 30,		June 30,		March 31,	
	Net loan charge-offs	% of avg. loans	Net loan charge-offs	% of avg. loans (1)	Net loan charge-offs	% of avg. loans (1)	Net loan charge-offs	% of avg. loans (1)	Net loan charge-offs	% of avg. loans (1)
(\$ in millions)										
2018										
Commercial:										
Commercial and industrial	\$ 423	0.13%	\$ 132	0.15%	\$ 148	0.18%	\$ 58	0.07%	\$ 85	0.10%
Real estate mortgage	(28)	(0.02)	(12)	(0.04)	(1)	—	—	—	(15)	(0.05)
Real estate construction	(13)	(0.05)	(1)	(0.01)	(2)	(0.04)	(6)	(0.09)	(4)	(0.07)
Lease financing	47	0.24	13	0.26	7	0.14	15	0.32	12	0.25
Total commercial	429	0.09	132	0.10	152	0.12	67	0.05	78	0.06
Consumer:										
Real estate 1-4 family first mortgage	(88)	(0.03)	(22)	(0.03)	(25)	(0.04)	(23)	(0.03)	(18)	(0.03)
Real estate 1-4 family junior lien mortgage	(40)	(0.11)	(10)	(0.11)	(9)	(0.10)	(13)	(0.13)	(8)	(0.09)
Credit card	1,292	3.51	338	3.54	299	3.22	323	3.61	332	3.69
Automobile	584	1.21	133	1.16	130	1.10	113	0.93	208	1.64
Other revolving credit and installment	567	1.53	150	1.64	133	1.44	135	1.44	149	1.60
Total consumer	2,315	0.52	589	0.53	528	0.47	535	0.49	663	0.60
Total	\$ 2,744	0.29%	\$ 721	0.30%	\$ 680	0.29%	\$ 602	0.26%	\$ 741	0.32%
2017										
Commercial:										
Commercial and industrial	\$ 492	0.15%	\$ 118	0.14%	\$ 125	0.15%	\$ 78	0.10%	\$ 171	0.21%
Real estate mortgage	(44)	(0.03)	(10)	(0.03)	(3)	(0.01)	(6)	(0.02)	(25)	(0.08)
Real estate construction	(30)	(0.12)	(3)	(0.05)	(15)	(0.24)	(4)	(0.05)	(8)	(0.15)
Lease financing	28	0.15	10	0.20	6	0.12	7	0.15	5	0.11
Total commercial	446	0.09	115	0.09	113	0.09	75	0.06	143	0.11
Consumer:										
Real estate 1-4 family first mortgage	(48)	(0.02)	(23)	(0.03)	(16)	(0.02)	(16)	(0.02)	7	0.01
Real estate 1-4 family junior lien mortgage	13	0.03	(7)	(0.06)	1	—	(4)	(0.03)	23	0.21
Credit card	1,242	3.49	336	3.66	277	3.08	320	3.67	309	3.54
Automobile	683	1.18	188	1.38	202	1.41	126	0.86	167	1.10
Other revolving credit and installment	592	1.52	142	1.46	140	1.44	154	1.58	156	1.60
Total consumer	2,482	0.55	636	0.56	604	0.53	580	0.51	662	0.59
Total	\$ 2,928	0.31%	\$ 751	0.31%	\$ 717	0.30%	\$ 655	0.27%	\$ 805	0.34%

(1) Quarterly net charge-offs (recoveries) as a percentage of average respective loans are annualized.

Table 35 presents net charge-offs for the four quarters and full year of 2018 and 2017. Net charge-offs in 2018 were \$2.7 billion (0.29% of average total loans outstanding), compared with \$2.9 billion (0.31%) in 2017.

The decrease in commercial and industrial net charge-offs in 2018 reflected continued improvement in our oil and gas portfolio. Our commercial real estate portfolios were in a net recovery position every quarter in 2018 and 2017. Total net charge-offs decreased from the prior year across all consumer portfolios, except for the credit card portfolio, which had a slight increase.

ALLOWANCE FOR CREDIT LOSSES The allowance for credit losses, which consists of the allowance for loan losses and the allowance for unfunded credit commitments, is management's estimate of credit losses inherent in the loan portfolio and unfunded credit commitments at the balance sheet date, excluding loans carried at fair value. The detail of the changes in the allowance for credit losses by portfolio segment (including charge-offs and recoveries by loan class) is in Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

We apply a disciplined process and methodology to establish our allowance for credit losses each quarter. This

process takes into consideration many factors, including historical and forecasted loss trends, loan-level credit quality ratings and loan grade-specific characteristics. The process involves subjective and complex judgments. In addition, we review a variety of credit metrics and trends. These credit metrics and trends, however, do not solely determine the amount of the allowance as we use several analytical tools. Our estimation approach for the commercial portfolio reflects the estimated probability of default in accordance with the borrower's financial strength, and the severity of loss in the event of default, considering the quality of any underlying collateral. Probability of default and severity at the time of default are statistically derived through historical observations of defaults and losses after default within each credit risk rating. Our estimation approach for the consumer portfolio uses forecasted losses that represent our best estimate of inherent loss based on historical experience, quantitative and other mathematical techniques. For additional information on our allowance for credit losses, see the "Critical Accounting Policies – Allowance for Credit Losses" section and Note 1 (Summary of Significant Accounting Policies) and Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

Table 36 presents the allocation of the allowance for credit losses by loan segment and class for the last five years.

Table 36: Allocation of the Allowance for Credit Losses (ACL)

	Dec 31, 2018		Dec 31, 2017		Dec 31, 2016		Dec 31, 2015		Dec 31, 2014	
	Loans as % of total ACL	loans	Loans as % of total ACL	loans	Loans as % of total ACL	loans	Loans as % of total ACL	loans	Loans as % of total ACL	loans
(in millions)										
Commercial:										
Commercial and industrial	\$ 3,628	37%	\$ 3,752	35%	\$ 4,560	34%	\$ 4,231	33%	\$ 3,506	32%
Real estate mortgage	1,282	13	1,374	13	1,320	14	1,264	13	1,576	13
Real estate construction	1,200	2	1,238	3	1,294	2	1,210	3	1,097	2
Lease financing	307	2	268	2	220	2	167	1	198	1
Total commercial	6,417	54	6,632	53	7,394	52	6,872	50	6,377	48
Consumer:										
Real estate 1-4 family first mortgage	750	30	1,085	30	1,270	29	1,895	30	2,878	31
Real estate 1-4 family junior lien mortgage	431	3	608	4	815	5	1,223	6	1,566	7
Credit card	2,064	4	1,944	4	1,605	4	1,412	4	1,271	4
Automobile	475	5	1,039	5	817	6	529	6	516	6
Other revolving credit and installment	570	4	652	4	639	4	581	4	561	4
Total consumer	4,290	46	5,328	47	5,146	48	5,640	50	6,792	52
Total	\$10,707	100%	\$11,960	100%	\$12,540	100%	\$12,512	100%	\$13,169	100%

	Dec 31, 2018		Dec 31, 2017		Dec 31, 2016		Dec 31, 2015		Dec 31, 2014	
Components:										
Allowance for loan losses	\$	9,775		11,004		11,419		11,545		12,319
Allowance for unfunded credit commitments		932		956		1,121		967		850
Allowance for credit losses	\$	10,707		11,960		12,540		12,512		13,169
Allowance for loan losses as a percentage of total loans		1.03%		1.15		1.18		1.26		1.43
Allowance for loan losses as a percentage of total net charge-offs		356		376		324		399		418
Allowance for credit losses as a percentage of total loans		1.12		1.25		1.30		1.37		1.53
Allowance for credit losses as a percentage of total nonaccrual loans (1)		165		156		126		115		107

(1) Financial information for periods prior to December 31, 2018, has been revised to exclude MLHFS, LHFS and loans held at fair value from nonaccrual loans.

In addition to the allowance for credit losses, there was \$480 million at December 31, 2018, and \$474 million at December 31, 2017, of nonaccretable difference to absorb losses for PCI loans, which totaled \$5.0 billion at December 31, 2018. The allowance for credit losses is lower than otherwise would have been required without PCI loan accounting. As a result of PCI loans, certain ratios of the Company may not be directly comparable with credit-related metrics for other financial institutions. Additionally, loans purchased at fair value, including loans from the GE Capital business acquisitions in 2016, generally reflect a lifetime credit loss adjustment and therefore do not initially require additions to the allowance as is typically associated with loan growth. For additional information on PCI loans, see the “Risk Management – Credit Risk Management – Purchased Credit-Impaired Loans” section, Note 1 (Summary of Significant Accounting Policies) and Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

The ratio of the allowance for credit losses to total nonaccrual loans may fluctuate significantly from period to period due to such factors as the mix of loan types in the

portfolio, borrower credit strength and the value and marketability of collateral.

The allowance for credit losses decreased \$1.3 billion, or 10%, in 2018, due to continued improvement in the credit quality of our residential real estate portfolios and a decrease in allowance for our automobile portfolio reflecting an improvement in our outlook for hurricane-related losses in Puerto Rico, partially offset by an increase in allowance for the credit card portfolio. Total provision for credit losses was \$1.7 billion in 2018, \$2.5 billion in 2017, and \$3.8 billion in 2016. The provision for credit losses was \$1.0 billion less than net charge-offs in 2018, reflecting the same changes mentioned above for the allowance for credit losses, compared with \$400 million less than net charge-offs in 2017. The 2016 provision was \$250 million more than net charge-offs.

We believe the allowance for credit losses of \$10.7 billion at December 31, 2018, was appropriate to cover credit losses inherent in the loan portfolio, including unfunded credit commitments, at that date. The entire allowance is available to absorb credit losses inherent in the total loan portfolio. The allowance for credit losses is subject to change and reflects

Risk Management – Credit Risk Management (*continued*)

existing factors as of the date of determination, including economic or market conditions and ongoing internal and external examination processes. Due to the sensitivity of the allowance for credit losses to changes in the economic and business environment, it is possible that we will incur incremental credit losses not anticipated as of the balance sheet date. Future allowance levels will be based on a variety of factors, including loan growth, portfolio performance and general economic conditions. Our process for determining the allowance for credit losses is discussed in the “Critical Accounting Policies – Allowance for Credit Losses” section and Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report.

LIABILITY FOR MORTGAGE LOAN REPURCHASE LOSSES

We sell residential mortgage loans to various parties, including (1) government-sponsored entities (GSEs) Federal Home Loan Mortgage Corporation (FHLMC) and Federal National Mortgage Association (FNMA) who include the mortgage loans in GSE-guaranteed mortgage securitizations, (2) SPEs that issue private label MBS, and (3) other financial institutions that purchase mortgage loans for investment or private label securitization. In addition, we pool FHA-insured and VA-guaranteed mortgage loans that are then used to back securities guaranteed by the Government National Mortgage Association (GNMA). We may be required to repurchase these mortgage loans, indemnify the securitization trust, investor or insurer, or reimburse the securitization trust, investor or insurer for credit losses incurred on loans (collectively, repurchase) in the event of a breach of contractual representations or warranties that is not remedied within a period (usually 90 days or less) after we receive notice of the breach.

In connection with our sales and securitization of residential mortgage loans to various parties, we have established a mortgage repurchase liability, initially at fair value, related to various representations and warranties that reflect management’s estimate of losses for loans for which we could have a repurchase obligation, whether or not we currently service those loans, based on a combination of factors. Our mortgage repurchase liability estimation process also incorporates a forecast of repurchase demands associated with mortgage insurance rescission activity.

The overall level of unresolved repurchase demands and mortgage insurance rescissions outstanding at December 31, 2018, was \$49 million, representing 230 loans, down from \$108 million, or 482 loans, a year ago both in number of outstanding loans and in total dollar balances. The decrease was predominantly due to private investor demands resolved in third quarter 2018.

Customary with industry practice, we have the right of recourse against correspondent lenders from whom we have purchased loans with respect to representations and warranties. Historical recovery rates as well as projected lender performance are incorporated in the establishment of our mortgage repurchase liability.

We do not typically receive repurchase requests from GNMA, FHA and the Department of Housing and Urban Development (HUD) or VA. As an originator of an FHA-insured or VA-guaranteed loan, we are responsible for obtaining the insurance with the FHA or the guarantee with the VA. To the extent we are not able to obtain the insurance or the guarantee we must request permission to repurchase the loan from the GNMA pool. Such repurchases from GNMA pools typically represent a self-initiated process upon discovery of the uninsurable loan (usually within 180 days from funding of the

loan). Alternatively, in lieu of repurchasing loans from GNMA pools, we may be asked by FHA/HUD or the VA to indemnify them (as applicable) for defects found in the Post Endorsement Technical Review process or audits performed by FHA/HUD or the VA. The Post Endorsement Technical Review is a process whereby HUD performs underwriting audits of closed/insured FHA loans for potential deficiencies. Our liability for mortgage loan repurchase losses incorporates probable losses associated with such indemnification.

RISKS RELATING TO SERVICING ACTIVITIES In addition to servicing loans in our portfolio, we act as servicer and/or master servicer of residential mortgage loans included in GSE-guaranteed mortgage securitizations, GNMA-guaranteed mortgage securitizations of FHA-insured/VA-guaranteed mortgages and private label mortgage securitizations, as well as for unsecuritized loans owned by institutional investors. The following discussion summarizes the primary duties and requirements of servicing and related industry developments.

The loans we service were originated by us or by other mortgage loan originators. As servicer, our primary duties are typically to (1) collect payments due from borrowers, (2) advance certain delinquent payments of principal and interest on the mortgage loans, (3) maintain and administer any hazard, title or primary mortgage insurance policies relating to the mortgage loans, (4) maintain any required escrow accounts for payment of taxes and insurance and administer escrow payments, (5) foreclose on defaulted mortgage loans or, to the extent consistent with the related servicing agreement, consider alternatives to foreclosure, such as loan modifications or short sales, and (6) for loans sold into private label securitizations, manage the foreclosed property through liquidation. As master servicer, our primary duties are typically to (1) supervise, monitor and oversee the servicing of the mortgage loans by the servicer, (2) consult with each servicer and use reasonable efforts to cause the servicer to observe its servicing obligations, (3) prepare monthly distribution statements to security holders and, if required by the securitization documents, certain periodic reports required to be filed with the SEC, (4) if required by the securitization documents, calculate distributions and loss allocations on the mortgage-backed securities, (5) prepare tax and information returns of the securitization trust, and (6) advance amounts required by non-affiliated servicers who fail to perform their advancing obligations.

Each agreement under which we act as servicer or master servicer generally specifies a standard of responsibility for actions we take in such capacity and provides protection against expenses and liabilities we incur when acting in compliance with the specified standard. For example, private label securitization agreements under which we act as servicer or master servicer typically provide that the servicer and the master servicer are entitled to indemnification by the securitization trust for taking action or refraining from taking action in good faith or for errors in judgment. However, we are not indemnified, but rather are required to indemnify the securitization trustee, against any failure by us, as servicer or master servicer, to perform our servicing obligations or against any of our acts or omissions that involve willful misfeasance, bad faith or gross negligence in the performance of, or reckless disregard of, our duties. In addition, if we commit a material breach of our obligations as servicer or master servicer, we may be subject to termination if the breach is not cured within a specified period following notice, which can generally be given by the securitization trustee or a specified percentage of security holders. Whole loan sale contracts under which we act as servicer generally include similar provisions

with respect to our actions as servicer. The standards governing servicing in GSE-guaranteed securitizations, and the possible remedies for violations of such standards, vary, and those standards and remedies are determined by servicing guides maintained by the GSEs, contracts between the GSEs and individual servicers and topical guides published by the GSEs from time to time. Such remedies could include indemnification or repurchase of an affected mortgage loan. In addition, in connection with our servicing activities, we could become subject to consent orders and settlement agreements with federal and state regulators for alleged servicing issues and practices. In general, these can require us to provide customers with loan modification relief, refinancing relief, and foreclosure prevention and assistance, as well as can impose certain monetary penalties on us.

Asset/Liability Management

Asset/liability management involves evaluating, monitoring and managing interest rate risk, market risk, liquidity and funding. Primary oversight of interest rate risk and market risk resides with the Finance Committee of our Board of Directors (Board), which oversees the administration and effectiveness of financial risk management policies and processes used to assess and manage these risks. Primary oversight of liquidity and funding resides with the Risk Committee of the Board. At the management level we utilize a Corporate Asset/Liability Management Committee (Corporate ALCO), which consists of senior financial, risk, and business executives, to oversee these risks and report on them periodically to the Board's Finance Committee and Risk Committee as appropriate. As discussed in more detail for market risk activities below, we employ separate management level oversight specific to market risk.

INTEREST RATE RISK Interest rate risk, which potentially can have a significant earnings impact, is an integral part of being a financial intermediary. We are subject to interest rate risk because:

- assets and liabilities may mature or reprice at different times (for example, if assets reprice faster than liabilities and interest rates are generally rising, earnings will initially increase);
- assets and liabilities may reprice at the same time but by different amounts (for example, when the general level of interest rates is rising, we may increase rates paid on checking and savings deposit accounts by an amount that is less than the general rise in market interest rates);
- short-term and long-term market interest rates may change by different amounts (for example, the shape of the yield curve may affect new loan yields and funding costs differently);
- the remaining maturity of various assets or liabilities may shorten or lengthen as interest rates change (for example, if long-term mortgage interest rates increase sharply, MBS held in the debt securities portfolio may pay down slower than anticipated, which could impact portfolio income); or

- interest rates may also have a direct or indirect effect on loan demand, collateral values, credit losses, mortgage origination volume, the fair value of MSRs and other financial instruments, the value of the pension liability and other items affecting earnings.

We assess interest rate risk by comparing outcomes under various net interest income simulations using many interest rate scenarios that differ in the direction of interest rate changes, the degree of change over time, the speed of change and the projected shape of the yield curve. These simulations require assumptions regarding drivers of earnings and balance sheet composition such as loan originations, prepayment speeds on loans and debt securities, deposit flows and mix, as well as pricing strategies.

Currently, our profile is such that we project net interest income will benefit modestly from higher interest rates as our assets would reprice faster and to a greater degree than our liabilities, while in the case of lower interest rates, our assets would reprice downward and to a greater degree than our liabilities.

Our most recent simulations estimate net interest income sensitivity over the next two years under a range of both lower and higher interest rates. Measured impacts from standardized ramps (gradual changes) and shocks (instantaneous changes) are summarized in Table 37, indicating net interest income sensitivity relative to the Company's base net interest income plan. Ramp scenarios assume interest rates move gradually in parallel across the yield curve relative to the base scenario in year one, and the full amount of the ramp is held as a constant differential to the base scenario in year two. The following describes the simulation assumptions for the scenarios presented in Table 37:

- Simulations are dynamic and reflect anticipated growth across assets and liabilities.
- Other macroeconomic variables that could be correlated with the changes in interest rates are held constant.
- Mortgage prepayment and origination assumptions vary across scenarios and reflect only the impact of the higher or lower interest rates.
- Our base scenario deposit forecast incorporates mix changes consistent with the base interest rate trajectory. Deposit mix is modeled to be the same as in the base scenario across the alternative scenarios. In higher interest rate scenarios, customer activity that shifts balances into higher-yielding products could reduce expected net interest income.
- We hold the size of the projected debt and equity securities portfolios constant across scenarios.

Risk Management – Asset/Liability Management (continued)

Table 37: Net Interest Income Sensitivity Over Next Two-Year Horizon Relative to Base Expectation

		Lower Rates		Higher Rates	
(\$ in billions)	Base	100 bps Ramp Parallel Decrease	100 bps Instantaneous Parallel Increase	200 bps Ramp Parallel Increase	
First Year of Forecasting Horizon					
Net Interest Income Sensitivity to Base Scenario	\$	(0.9) - (0.4)	0.9 - 1.4	0.9 - 1.4	
<i>Key Rates at Horizon End</i>					
Fed Funds Target	3.00 %	2.00	4.00	5.00	
10-year CMT (1)	3.72	2.72	4.72	5.72	
Second Year of Forecasting Horizon					
Net Interest Income Sensitivity to Base Scenario	\$	(1.7) - (1.2)	1.4 - 1.9	2.3 - 2.8	
<i>Key Rates at Horizon End</i>					
Fed Funds Target	3.00 %	2.00	4.00	5.00	
10-year CMT (1)	4.01	3.01	5.01	6.01	

(1) U.S. Constant Maturity Treasury Rate

The sensitivity results above do not capture interest rate sensitive noninterest income and expense impacts. Our interest rate sensitive noninterest income and expense is predominantly driven by mortgage activity, and may move in the opposite direction of our net interest income. Typically, in response to higher interest rates, mortgage activity, primarily refinancing activity, generally declines. And in response to lower interest rates, mortgage activity generally increases. Mortgage results are also impacted by the valuation of MSR and related hedge positions. See the “Risk Management – Asset/Liability Management – Mortgage Banking Interest Rate and Market Risk” section in this Report for more information.

Interest rate sensitive noninterest income also results from changes in earnings credit for noninterest-bearing deposits that reduce treasury management deposit service fees. Furthermore, for the trading portfolio, interest rate changes may result in net interest income compression (generally as interest rates rise) or expansion (generally as interest rates fall) that does not reflect the offsetting effects of certain economic hedges. Instead, as a result of GAAP requirements, the effects of such economic hedges are recorded in noninterest income.

We use the debt securities portfolio and exchange-traded and over-the-counter (OTC) interest rate derivatives to hedge our interest rate exposures. See the “Balance Sheet Analysis – Available-for-Sale and Held-to-Maturity Debt Securities” section in this Report for more information on the use of the available-for-sale and held-to-maturity securities portfolios. The notional or contractual amount, credit risk amount and fair value of the derivatives used to hedge our interest rate risk exposures as of December 31, 2018, and December 31, 2017, are presented in Note 17 (Derivatives) to Financial Statements in this Report. We use derivatives for asset/liability management in two main ways:

- to convert the cash flows from selected asset and/or liability instruments/portfolios including investments, commercial loans and long-term debt, from fixed-rate payments to floating-rate payments, or vice versa; and
- to economically hedge our mortgage origination pipeline, funded mortgage loans and MSR using interest rate swaps, swaptions, futures, forwards and options.

MORTGAGE BANKING INTEREST RATE AND MARKET RISK

We originate, fund and service mortgage loans, which subjects us to various risks, including credit, liquidity and interest rate risks. Based on market conditions and other factors, we reduce credit and liquidity risks by selling or securitizing a majority of the long-term fixed-rate mortgage and ARM loans we originate. On the other hand, we may hold originated ARMs and fixed-rate mortgage loans in our loan portfolio as an investment for our deposits. We determine whether the loans will be held for investment or held for sale at the time of commitment. We may subsequently change our intent to hold loans for investment and sell some or all of our ARMs or fixed-rate mortgages as part of our corporate asset/liability management. We may also acquire and add to our securities available for sale a portion of the securities issued at the time we securitize MLHFS.

Interest rate and market risk can be substantial in the mortgage business. Changes in interest rates may potentially reduce total origination and servicing fees, the value of our residential MSR measured at fair value, the value of MLHFS and the associated income and loss reflected in mortgage banking noninterest income, the income and expense associated with instruments (economic hedges) used to hedge changes in the fair value of MSR and MLHFS, and the value of derivative loan commitments (interest rate “locks”) extended to mortgage applicants.

Interest rates affect the amount and timing of origination and servicing fees because consumer demand for new mortgages and the level of refinancing activity are sensitive to changes in mortgage interest rates. Typically, a decline in mortgage interest rates will lead to an increase in mortgage originations and fees and may also lead to an increase in servicing fee income, depending on the level of new loans added to the servicing portfolio and prepayments. Given the time it takes for consumer behavior to fully react to interest rate changes, as well as the time required for processing a new application, providing the commitment, and securitizing and selling the loan, interest rate changes will affect origination and servicing fees with a lag. The amount and timing of the impact on origination and servicing fees will depend on the magnitude, speed and duration of the change in interest rates.

We measure originations of MLHFS at fair value where an active secondary market and readily available market prices exist to reliably support fair value pricing models used for these loans. Loan origination fees on these loans are recorded when earned, and related direct loan origination costs are recognized when incurred. We also measure at fair value certain of our other interests held related to residential loan sales and securitizations. We believe fair value measurement for MLHFS and other interests held, which we hedge with free-standing derivatives (economic hedges) along with our MSR measured at fair value, reduces certain timing differences and better matches changes in the value of these assets with changes in the value of derivatives used as economic hedges for these assets. During 2016, 2017, and 2018, in response to continued secondary market illiquidity, as well as our desire to retain high quality loans on our balance sheet, we continued to originate certain prime non-agency loans to be substantially held for investment. We did however designate a small portion of our non-agency originations in 2018 to MLHFS in support of future issuances of private label residential mortgage backed securities (RMBS). We issued \$441 million of RMBS in fourth quarter 2018.

We initially measure all of our MSR at fair value and carry substantially all of them at fair value depending on our strategy for managing interest rate risk. Under this method, the MSR are recorded at fair value at the time we sell or securitize the

related mortgage loans. The carrying value of MSRs carried at fair value reflects changes in fair value at the end of each quarter and changes are included in net servicing income, a component of mortgage banking noninterest income. If the fair value of the MSRs increases, income is recognized; if the fair value of the MSRs decreases, a loss is recognized. We use a dynamic and sophisticated model to estimate the fair value of our MSRs and periodically benchmark our estimates to independent appraisals. The valuation of MSRs can be highly subjective and involve complex judgments by management about matters that are inherently unpredictable. See “Critical Accounting Policies – Valuation of Residential Mortgage Servicing Rights” section in this Report for additional information. Changes in interest rates influence a variety of significant assumptions included in the periodic valuation of MSRs, including prepayment speeds, expected returns and potential risks on the servicing asset portfolio, the value of escrow balances and other servicing valuation elements.

An increase in interest rates generally reduces the propensity for refinancing, extends the expected duration of the servicing portfolio and, therefore, increases the estimated fair value of the MSRs. However, an increase in interest rates can also reduce mortgage loan demand and, therefore, reduce origination income. A decline in interest rates generally increases the propensity for refinancing, reduces the expected duration of the servicing portfolio and therefore reduces the estimated fair value of MSRs. This reduction in fair value causes a charge to income for MSRs carried at fair value, net of any gains on free-standing derivatives (economic hedges) used to hedge MSRs. We may choose not to fully hedge the entire potential decline in the value of our MSRs resulting from a decline in interest rates because the potential increase in origination/servicing fees in that scenario provides a partial “natural business hedge.”

The price risk associated with our MSRs is economically hedged with a combination of highly liquid interest rate forward instruments including mortgage forward contracts, interest rate swaps and interest rate options. All of the instruments included in the hedge are marked to fair value daily. Because the hedging instruments are traded in predominantly highly liquid markets, their prices are readily observable and are fully reflected in each quarter’s mark to market. Quarterly MSR hedging results include a combination of directional gain or loss due to market changes as well as any carry income generated. If the economic hedge is effective, its overall directional hedge gain or loss will offset the change in the valuation of the underlying MSR asset. Gains or losses associated with these economic hedges are included in mortgage banking noninterest income. Consistent with our longstanding approach to hedging interest rate risk in the mortgage business, the size of the hedge and the particular combination of forward hedging instruments at any point in time is designed to reduce the volatility of the mortgage business’s earnings over various time frames within a range of mortgage interest rates. Because market factors, the composition of the mortgage servicing portfolio and the relationship between the origination and servicing sides of our mortgage business change continually, the types of instruments used in our hedging are reviewed daily and rebalanced based on our evaluation of current market factors and the interest rate risk inherent in our MSRs portfolio. Throughout 2018, our economic hedging strategy generally used forward mortgage purchase contracts that were effective at offsetting the impact of interest rates on the value of the MSR asset.

Mortgage forward contracts are designed to pass the full economics of the underlying reference mortgage securities to the

holder of the contract, including both the directional gain and loss from the forward delivery of the reference securities and the corresponding carry income. Carry income represents the contract’s price accretion from the forward delivery price to the spot price including both the yield earned on the reference securities and the market implied cost of financing during the period. The actual amount of carry income earned on the hedge each quarter will depend on the amount of the underlying asset that is hedged and the particular instruments included in the hedge. The level of carry income is driven by the slope of the yield curve and other market driven supply and demand factors affecting the specific reference securities. A steep yield curve generally produces higher carry income while a flat or inverted yield curve can result in lower or potentially negative carry income. The level of carry income is also affected by the type of instrument used. In general, mortgage forward contracts tend to produce higher carry income than interest rate swap contracts. Carry income is recognized over the life of the mortgage forward as a component of the contract’s mark to market gain or loss.

Hedging the various sources of interest rate risk in mortgage banking is a complex process that requires sophisticated modeling and constant monitoring. While we attempt to balance these various aspects of the mortgage business, there are several potential risks to earnings:

- Valuation changes for MSRs associated with interest rate changes are recorded in earnings immediately within the accounting period in which those interest rate changes occur, whereas the impact of those same changes in interest rates on origination and servicing fees occur with a lag and over time. Thus, the mortgage business could be protected from adverse changes in interest rates over a period of time on a cumulative basis but still display large variations in income from one accounting period to the next.
- The degree to which our net gains on loan originations offsets valuation changes for MSRs is imperfect, varies at different points in the interest rate cycle, and depends not just on the direction of interest rates but on the pattern of quarterly interest rate changes.
- Origination volumes, the valuation of MSRs and hedging results and associated costs are also affected by many factors. Such factors include the mix of new business between ARMs and fixed-rate mortgages, the relationship between short-term and long-term interest rates, the degree of volatility in interest rates, the relationship between mortgage interest rates and other interest rate markets, and other interest rate factors. Additional factors that can impact the valuation of the MSRs include changes in servicing and foreclosure costs due to changes in investor or regulatory guidelines, as well as individual state foreclosure legislation, and changes in discount rates due to market participants requiring a higher return due to updated market expectations on costs and risks associated with investing in MSRs. Many of these factors are hard to predict and we may not be able to directly or perfectly hedge their effect.
- While our hedging activities are designed to balance our mortgage banking interest rate risks, the financial instruments we use may not perfectly correlate with the values and income being hedged. For example, the change in the value of ARM production held for sale from changes in mortgage interest rates may or may not be fully offset by index-based financial instruments used as economic hedges for such ARMs. Additionally, hedge-carry income on our economic hedges for the MSRs may not continue at recent levels if the spread between short-term and long-term

Risk Management – Asset/Liability Management (*continued*)

interest rates decreases, the overall level of hedges changes as interest rates change, or there are other changes in the market for mortgage forwards that affect the implied carry.

The total carrying value of our residential and commercial MSRs was \$16.1 billion and \$15.0 billion at December 31, 2018 and 2017, respectively. The weighted-average note rate on our portfolio of loans serviced for others was 4.32% and 4.23% at December 31, 2018 and 2017, respectively. The carrying value of our total MSRs represented 0.94% and 0.88% of mortgage loans serviced for others at December 31, 2018 and 2017, respectively.

As part of our mortgage banking activities, we enter into commitments to fund residential mortgage loans at specified times in the future. A mortgage loan commitment can be either a floating rate commitment, where the interest rate is not yet determined, or it can be an interest rate lock that binds us to lend funds to a potential borrower at a specified interest rate and within a specified period of time, generally up to 60 days after inception of the rate lock. These loan commitments are derivative loan commitments if the loans that will result from the exercise of the commitments will be held for sale. These derivative loan commitments are recognized at fair value on the balance sheet with changes in their fair values recorded as part of mortgage banking noninterest income. The fair value of these commitments include, at inception and during the life of the loan commitment, the expected net future cash flows related to the associated servicing of the loan as part of the fair value measurement of derivative loan commitments. Changes subsequent to inception are based on changes in fair value of the underlying loan resulting from the exercise of the commitment and changes in the probability that the loan will not fund within the terms of the commitment, referred to as a fall-out factor. The value of the underlying loan commitment is affected by changes in interest rates and the passage of time.

Outstanding derivative loan commitments (interest rate “locks”) expose us to the risk that the price of the mortgage loans underlying the commitments might decline due to increases in mortgage interest rates from inception of the rate lock to the funding of the loan. To minimize this risk, we employ mortgage forwards and options and Eurodollar futures and options contracts as economic hedges against the potential decreases in the values of the loans. We expect that these derivative financial instruments will experience changes in fair value that will either fully or partially offset the changes in fair value of the derivative loan commitments. However, changes in investor demand, such as concerns about credit risk, can also cause changes in the spread relationships between underlying loan value and the derivative financial instruments that cannot be hedged.

MARKET RISK Market risk is the risk of possible economic loss from adverse changes in market risk factors such as interest rates, credit spreads, foreign exchange rates, equity and commodity prices, and the risk of possible loss due to counterparty risk. This includes implied volatility risk, basis risk, and market liquidity risk. Market risk also includes counterparty credit risk, price risk in the trading book, mortgage servicing rights and the associated hedge effectiveness risk associated with the mortgage book, and impairment on private equity investments.

The Board’s Finance Committee has primary oversight responsibility for market risk and oversees the Company’s market risk exposure and market risk management strategies. In addition, the Board’s Risk Committee has certain oversight responsibilities with respect to market risk, including adjusting the Company’s market risk appetite with input from the Finance Committee. The Finance Committee also reports key market risk matters to the Risk Committee.

At the management level, the Market and Counterparty Risk Management function, which is part of Corporate Risk, has primary oversight responsibility for market risk. The Market and Counterparty Risk Management function reports into the CRO and also provides periodic reporting related to market risk to the Board’s Finance Committee. In addition, the Risk & Control Committee for each business group and enterprise function reports market risk matters to the Enterprise Risk & Control Committee.

MARKET RISK – TRADING ACTIVITIES We engage in trading activities to accommodate the investment and risk management activities of our customers and to execute economic hedging to manage certain balance sheet risks. These trading activities predominantly occur within our Wholesale Banking businesses and to a lesser extent other divisions of the Company. Debt securities held for trading, equity securities held for trading, trading loans and trading derivatives are financial instruments used in our trading activities, and all are carried at fair value. Income earned on the financial instruments used in our trading activities include net interest income, changes in fair value and realized gains and losses. Net interest income earned from our trading activities is reflected in the interest income and interest expense components of our income statement. Changes in fair value of the financial instruments used in our trading activities are reflected in net gains on trading activities, a component of noninterest income in our income statement. For more information on the financial instruments used in our trading activities and the income from these trading activities, see Note 4 (Trading Activities) to Financial Statements in this Report.

Value-at-risk (VaR) is a statistical measure used to estimate the potential loss from adverse moves in the financial markets. The Company uses VaR metrics complemented with sensitivity analysis and stress testing in measuring and monitoring market risk. These market risk measures are monitored at both the business unit level and at aggregated levels on a daily basis. Our corporate market risk management function aggregates and monitors all exposures to ensure risk measures are within our established risk appetite. Changes to the market risk profile are analyzed and reported on a daily basis. The Company monitors various market risk exposure measures from a variety of perspectives, including line of business, product, risk type, and legal entity.

Trading VaR is the measure used to provide insight into the market risk exhibited by the Company’s trading positions. The Company calculates Trading VaR for risk management purposes to establish line of business and Company-wide risk limits. Trading VaR is calculated based on all trading positions on our balance sheet.

Table 38 shows the Company's Trading General VaR by risk category. As presented in Table 38, average Company Trading General VaR was \$16 million for the quarter ended December 31, 2018, compared with \$12 million for the quarter ended September 30, 2018, and \$13 million for the quarter ended

December 31, 2017. The increase in average Company Trading General VaR for the quarter ended December 31, 2018, was mainly driven by changes in portfolio composition.

Table 38: Trading 1-Day 99% General VaR by Risk Category

(in millions)	Quarter ended											
	December 31, 2018				September 30, 2018				December 31, 2017			
	Period end	Average	Low	High	Period end	Average	Low	High	Period end	Average	Low	High
Company Trading General VaR Risk Categories												
Credit	\$ 18	16	13	24	13	17	11	55	12	16	11	28
Interest rate	28	20	14	28	18	18	6	52	13	10	6	17
Equity	5	5	2	7	5	5	4	7	10	11	10	14
Commodity	2	2	1	4	2	1	1	2	1	1	1	2
Foreign exchange	1	1	0	2	0	1	0	1	0	0	0	1
Diversification benefit (1)	(33)	(28)			(25)	(30)			(24)	(25)		
Company Trading General VaR	\$ 21	16			13	12			12	13		

(1) The period-end VaR was less than the sum of the VaR components described above, which is due to portfolio diversification. The diversification effect arises because the risks are not perfectly correlated causing a portfolio of positions to usually be less risky than the sum of the risks of the positions alone. The diversification benefit is not meaningful for low and high metrics since they may occur on different days.

Sensitivity Analysis Given the inherent limitations of the VaR models, the Company uses other measures, including sensitivity analysis, to measure and monitor risk. Sensitivity analysis is the measure of exposure to a single risk factor, such as a 0.01% increase in interest rates or a 1% increase in equity prices. We conduct and monitor sensitivity on interest rates, credit spreads, volatility, equity, commodity, and foreign exchange exposure. Sensitivity analysis complements VaR as it provides an indication of risk relative to each factor irrespective of historical market moves.

Stress Testing While VaR captures the risk of loss due to adverse changes in markets using recent historical market data, stress testing is designed to capture the Company's exposure to extreme but low probability market movements. Stress scenarios estimate the risk of losses based on management's assumptions of abnormal but severe market movements such as severe credit spread widening or a large decline in equity prices. These scenarios assume that the market moves happen instantaneously and no repositioning or hedging activity takes place to mitigate losses as events unfold (a conservative approach since experience demonstrates otherwise).

An inventory of scenarios is maintained representing both historical and hypothetical stress events that affect a broad range of market risk factors with varying degrees of correlation and differing time horizons. Hypothetical scenarios assess the impact of large movements in financial variables on portfolio values. Typical examples include a 1% (100 basis point) increase across the yield curve or a 10% decline in equity market indexes. Historical scenarios utilize an event-driven approach: the stress scenarios are based on plausible but rare events, and the analysis addresses how these events might affect the risk factors relevant to a portfolio.

The Company's stress testing framework is also used in calculating results in support of the Federal Reserve Board's Comprehensive Capital Analysis and Review (CCAR) and internal stress tests. Stress scenarios are regularly reviewed and updated to address potential market events or concerns. For

more detail on the CCAR process, see the "Capital Management" section in this Report.

MARKET RISK – EQUITY SECURITIES We are directly and indirectly affected by changes in the equity markets. We make and manage direct investments in start-up businesses, emerging growth companies, management buy-outs, acquisitions and corporate recapitalizations. We also invest in non-affiliated funds that make similar private equity investments. These private equity investments are made within capital allocations approved by management and the Board. The Board's policy is to review business developments, key risks and historical returns for the private equity investment portfolio at least annually. Management reviews these investments at least quarterly and assesses them for possible OTTI. For nonmarketable equity securities, the analysis is based on facts and circumstances of each individual investment and the expectations for that investment's cash flows and capital needs, the viability of its business model and our exit strategy. Investments in nonmarketable equity securities include private equity investments accounted for under the equity method, fair value through net income, and the measurement alternative.

In conjunction with the March 2008 initial public offering (IPO) of Visa, Inc. (Visa), we received approximately 20.7 million shares of Visa Class B common stock, the class which was apportioned to member banks of Visa at the time of the IPO. To manage our exposure to Visa and realize the value of the appreciated Visa shares, we incrementally sold these shares through a series of sales, thereby eliminating this position as of September 30, 2015. As part of these sales, we agreed to compensate the buyer for any additional contributions to a litigation settlement fund for the litigation matters associated with the Class B shares we sold. Our exposure to this retained litigation risk has been updated quarterly and is reflected on our balance sheet. For additional information about the associated litigation matters, see the "Interchange Litigation" section in Note 16 (Legal Actions) to Financial Statements in this Report.

Risk Management – Asset/Liability Management (continued)

As part of our business to support our customers, we trade public equities, listed/OTC equity derivatives and convertible bonds. We have parameters that govern these activities. We also have marketable equity securities that include investments relating to our venture capital activities. We manage these marketable equity securities within capital risk limits approved by management and the Board and monitored by Corporate ALCO and the Market Risk Committee. The fair value changes in these marketable equity securities are recognized in net income. For more information, see Note 8 (Equity Securities) to Financial Statements in this Report.

Changes in equity market prices may also indirectly affect our net income by (1) the value of third-party assets under management and, hence, fee income, (2) borrowers whose ability to repay principal and/or interest may be affected by the stock market, or (3) brokerage activity, related commission income and other business activities. Each business line monitors and manages these indirect risks.

LIQUIDITY AND FUNDING The objective of effective liquidity management is to ensure that we can meet customer loan requests, customer deposit maturities/withdrawals and other cash commitments efficiently under both normal operating conditions and under periods of Wells Fargo-specific and/or market stress. To achieve this objective, the Board of Directors establishes liquidity guidelines that require sufficient asset-based liquidity to cover potential funding requirements and to avoid over-dependence on volatile, less reliable funding markets. These guidelines are monitored on a monthly basis by the Corporate ALCO and on a quarterly basis by the Board of Directors. These guidelines are established and monitored for both the consolidated company and for the Parent on a stand-alone basis to ensure that the Parent is a source of strength for its regulated, deposit-taking banking subsidiaries.

Liquidity Standards In September 2014, the FRB, OCC and FDIC issued a final rule that implements a quantitative liquidity requirement consistent with the liquidity coverage ratio (LCR) established by the Basel Committee on Banking Supervision (BCBS). The rule requires banking institutions, such as Wells Fargo, to hold high-quality liquid assets (HQLA), such as central bank reserves and government and corporate debt that can be converted easily and quickly into cash, in an amount equal to or greater than its projected net cash outflows during a 30-day stress period. The rule is applicable to the Company on a consolidated basis and to our insured depository institutions with total assets greater than \$10 billion. In addition, the FRB finalized rules imposing enhanced liquidity management standards on large bank holding companies (BHC) such as Wells Fargo, and has finalized a rule that requires large bank holding companies to publicly disclose on a quarterly basis certain quantitative and qualitative information regarding their LCR calculations.

The FRB, OCC and FDIC have proposed a rule that would implement a stable funding requirement, the net stable funding ratio (NSFR), which would require large banking organizations, such as Wells Fargo, to maintain a sufficient amount of stable funding in relation to their assets, derivative exposures and commitments over a one-year horizon period.

Liquidity Coverage Ratio As of December 31, 2018, the consolidated Company and Wells Fargo Bank, N.A. were above the minimum LCR requirement of 100%, which is calculated as HQLA divided by projected net cash outflows, as each is defined under the LCR rule. Table 39 presents the Company's quarterly average values for the daily-calculated LCR and its components calculated pursuant to the LCR rule requirements.

Table 39: Liquidity Coverage Ratio

(in millions, except ratio)	Average for Quarter ended December 31, 2018	
HQLA (1)(2)	\$	366,578
Projected net cash outflows		303,158
LCR		121%

(1) Excludes excess HQLA at Wells Fargo Bank, N.A.

(2) Net of applicable haircuts required under the LCR rule.

Liquidity Sources We maintain liquidity in the form of cash, cash equivalents and unencumbered high-quality, liquid debt securities. These assets make up our primary sources of liquidity which are presented in Table 40. Our primary sources of liquidity are substantially the same in composition as HQLA under the LCR rule; however, our primary sources of liquidity will generally exceed HQLA calculated under the LCR rule due to the applicable haircuts to HQLA and the exclusion of excess HQLA at our subsidiary insured depository institutions required under the LCR rule.

Our cash is predominantly on deposit with the Federal Reserve. Debt securities included as part of our primary sources of liquidity are comprised of U.S. Treasury and federal agency debt, and mortgage-backed securities issued by federal agencies within our debt securities portfolio. We believe these debt securities provide quick sources of liquidity through sales or by pledging to obtain financing, regardless of market conditions. Some of these debt securities are within the held-to-maturity portion of our debt securities portfolio and as such are not intended for sale but may be pledged to obtain financing. Some of the legal entities within our consolidated group of companies are subject to various regulatory, tax, legal and other restrictions that can limit the transferability of their funds. We believe we maintain adequate liquidity for these entities in consideration of such funds transfer restrictions.

Table 40: Primary Sources of Liquidity

(in millions)	December 31, 2018			December 31, 2017		
	Total	Encumbered	Unencumbered	Total	Encumbered	Unencumbered
Interest-earning deposits with banks	\$ 149,736	—	149,736	192,580	—	192,580
Debt securities of U.S. Treasury and federal agencies	57,688	1,504	56,184	51,125	964	50,161
Mortgage-backed securities of federal agencies (1)	244,211	35,656	208,555	246,894	46,062	200,832
Total	\$ 451,635	37,160	414,475	490,599	47,026	443,573

(1) Included in encumbered securities at December 31, 2018, were securities with a fair value of \$261 million which were purchased in December 2018, but settled in January 2019.

In addition to our primary sources of liquidity shown in Table 40, liquidity is also available through the sale or financing of other debt securities including trading and/or available-for-sale debt securities, as well as through the sale, securitization or financing of loans, to the extent such debt securities and loans are not encumbered. In addition, other debt securities in our held-to-maturity portfolio, to the extent not encumbered, may be pledged to obtain financing.

Deposits have historically provided a sizable source of relatively low-cost funds. Deposits were 135% of total loans at December 31, 2018, and 140% at December 31, 2017.

Additional funding is provided by long-term debt and short-term borrowings. We access domestic and international capital markets for long-term funding (generally greater than one year) through issuances of registered debt securities, private placements and asset-backed secured funding.

Table 41 shows selected information for short-term borrowings, which generally mature in less than 30 days.

Table 41: Short-Term Borrowings

(in millions)	Quarter ended				
	Dec 31, 2018	Sep 30, 2018	Jun 30, 2018	Mar 31, 2018	Dec 31, 2017
Balance, period end					
Federal funds purchased and securities sold under agreements to repurchase	\$ 92,430	92,418	89,307	80,916	88,684
Other short-term borrowings	13,357	13,033	15,189	16,291	14,572
Total	\$ 105,787	105,451	104,496	97,207	103,256
Average daily balance for period					
Federal funds purchased and securities sold under agreements to repurchase	\$ 93,483	92,141	89,138	86,535	88,197
Other short-term borrowings	12,479	13,331	14,657	15,244	13,945
Total	\$ 105,962	105,472	103,795	101,779	102,142
Maximum month-end balance for period					
Federal funds purchased and securities sold under agreements to repurchase (1)	\$ 93,918	92,531	92,103	88,121	91,604
Other short-term borrowings (2)	13,357	14,270	15,272	16,924	14,948

(1) Highest month-end balance in each of the last five quarters was in November, July, May and January 2018, and November 2017.

(2) Highest month-end balance in each of the last five quarters was in December, July, May and January 2018, and November 2017.

Parent In February 2017, the Parent filed a registration statement with the SEC for the issuance of senior and subordinated notes, preferred stock and other securities. The Parent's ability to issue debt and other securities under this registration statement is limited by the debt issuance authority granted by the Board. As of December 31, 2018, the Parent was authorized by the Board to issue up to \$180 billion in outstanding long-term debt. The Parent's long-term debt issuance authority granted by the Board includes debt issued to affiliates and others. At December 31, 2018, the Parent had available \$38.1 billion in long-term debt issuance authority. In 2018, the Parent issued \$2.0 billion of senior notes, of which \$1.5 billion were registered with the SEC. In addition, the Parent issued \$5.5 billion of registered senior notes in January 2019 and issued CAD \$1.0 billion of senior notes in February 2019 that were registered in the U.S. and distributed on a private placement basis in Canada. The Parent's short-term debt issuance authority granted by the Board was limited to debt issued to affiliates, and was revoked by the Board at management's request in January 2018.

The Parent's proceeds from securities issued were used for general corporate purposes, and, unless otherwise specified in

the applicable prospectus or prospectus supplement, we expect the proceeds from securities issued in the future will be used for the same purposes. Depending on market conditions, we may purchase our outstanding debt securities from time to time in privately negotiated or open market transactions, by tender offer, or otherwise.

Wells Fargo Bank, N.A. As of December 31, 2018, Wells Fargo Bank, N.A. was authorized by its board of directors to issue \$100 billion in outstanding short-term debt and \$175 billion in outstanding long-term debt and had available \$99.1 billion in short-term debt issuance authority and \$96.4 billion in long-term debt issuance authority. In April 2018, Wells Fargo Bank, N.A. established a new \$100 billion bank note program under which, subject to any other debt outstanding under the limits described above, it may issue \$50 billion in outstanding short-term senior notes and \$50 billion in outstanding long-term senior or subordinated notes. At December 31, 2018, Wells Fargo Bank, N.A. had remaining issuance capacity under the new bank note program of \$50.0 billion in short-term senior notes and \$39.8 billion in long-term senior or subordinated notes. In 2018, Wells Fargo

Risk Management – Asset/Liability Management (continued)

Bank, N.A. issued \$17.8 billion of unregistered senior notes, including \$1.0 billion of senior redeemable floating rate notes issued in September 2018 with an interest rate indexed to the new Secured Overnight Financing Rate (SOFR) published by the Federal Reserve Bank of New York, and \$6.0 billion of which were issued under a prior bank note program. SOFR is an alternative to the London Interbank Offered Rate (LIBOR) and is a broad measure of the cost of borrowing cash overnight collateralized by U.S. Treasury securities. Due to the uncertainty surrounding the future of LIBOR, it is expected that a transition away from the widespread use of LIBOR to alternative benchmark rates will occur by the end of 2021. Accordingly, the FASB recently issued a pronouncement that includes SOFR, among others, as a permitted benchmark interest rate for the application of hedge accounting. We have a significant amount of assets and liabilities referenced to LIBOR such as commercial loans, adjustable rate mortgage loans, derivatives, securities, and long-term debt. We have established a LIBOR Transition Office to develop and direct a coordinated strategy to transition numerous products and exposures away from LIBOR. The LIBOR Transition Office has initiated a comprehensive, company-wide process to address certain challenges and risks associated with the transition away from the widespread use of LIBOR and has directed an evaluation of the provisions in our contracts that could apply in connection with any discontinuation of, or change to, LIBOR, as well as the operational issues that could arise. In addition, regulators and trade associations periodically issue guidance, consultations and recommendations relating to LIBOR-transition matters, which will inform our overall planning. See the “Risk Factors” section in this Report for additional information regarding the potential impact of a benchmark rate, such as LIBOR, or other referenced financial metric being significantly changed, replaced or discontinued.

In addition, during 2018, Wells Fargo Bank, N.A. executed advances of \$29.2 billion with the Federal Home Loan Bank of Des Moines, and as of December 31, 2018, Wells Fargo Bank, N.A. had outstanding advances of \$49.6 billion across the Federal Home Loan Bank System. In addition, Wells Fargo Bank, N.A. executed \$3.0 billion in Federal Home Loan Bank advances in February 2019.

Credit Ratings Investors in the long-term capital markets, as well as other market participants, generally will consider, among other factors, a company’s debt rating in making investment decisions. Rating agencies base their ratings on many quantitative and qualitative factors, including capital adequacy, liquidity, asset quality, business mix, the level and quality of earnings, and rating agency assumptions regarding the probability and extent of federal financial assistance or support for certain large financial institutions. Adverse changes in these factors could result in a reduction of our credit rating; however, our debt securities do not contain credit rating covenants.

There were no actions undertaken by the rating agencies with regard to our credit ratings during fourth quarter 2018. Both the Parent and Wells Fargo Bank, N.A. remain among the highest-rated financial firms in the U.S.

See the “Risk Factors” section in this Report for additional information regarding our credit ratings and the potential impact a credit rating downgrade would have on our liquidity and operations, as well as Note 17 (Derivatives) to Financial Statements in this Report for information regarding additional collateral and funding obligations required for certain derivative instruments in the event our credit ratings were to fall below investment grade.

The credit ratings of the Parent and Wells Fargo Bank, N.A. as of December 31, 2018, are presented in Table 42.

Table 42: Credit Ratings as of December 31, 2018

	Wells Fargo & Company		Wells Fargo Bank, N.A.	
	Senior debt	Short-term borrowings	Long-term deposits	Short-term borrowings
Moody’s	A2	P-1	Aa1	P-1
S&P Global Ratings	A-	A-2	A+	A-1
Fitch Ratings, Inc.	A+	F1	AA	F1+
DBRS	AA(low)	R-1(middle)	AA	R-1(high)

FEDERAL HOME LOAN BANK MEMBERSHIP The Federal Home Loan Banks (the FHLBs) are a group of cooperatives that lending institutions use to finance housing and economic development in local communities. We are a member of the FHLBs based in Dallas, Des Moines and San Francisco. Each member of the FHLBs is required to maintain a minimum investment in capital stock of the applicable FHLB. The board of directors of each FHLB can increase the minimum investment

requirements in the event it has concluded that additional capital is required to allow it to meet its own regulatory capital requirements. Any increase in the minimum investment requirements outside of specified ranges requires the approval of the Federal Housing Finance Agency. Because the extent of any obligation to increase our investment in any of the FHLBs depends entirely upon the occurrence of a future event, potential future payments to the FHLBs are not determinable.

Capital Management

We have an active program for managing capital through a comprehensive process for assessing the Company’s overall capital adequacy. Our objective is to maintain capital at an amount commensurate with our risk profile and risk tolerance objectives, and to meet both regulatory and market expectations. We primarily fund our working capital needs through the retention of earnings net of both dividends and share

repurchases, as well as through the issuance of preferred stock and long and short-term debt. Retained earnings increased \$12.9 billion from December 31, 2017, predominantly from Wells Fargo net income of \$22.4 billion, less common and preferred stock dividends of \$9.5 billion. During 2018, we issued 65.1 million shares of common stock. During 2018, we repurchased 375.5 million shares of common stock in open

market transactions, including through forward repurchase transactions, and from employee benefit plans, at a cost of \$20.6 billion. The amount of our repurchases are subject to various factors as discussed in the “Securities Repurchases” section below. For additional information about our forward repurchase agreements, see Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report.

On September 17, 2018, we redeemed all of our 8.00% Non-Cumulative Perpetual Class A Preferred Stock, Series J, at a redemption price equal to \$1,000 per share.

Regulatory Capital Guidelines

The Company and each of our insured depository institutions are subject to various regulatory capital adequacy requirements administered by the FRB and the OCC. Risk-based capital (RBC) guidelines establish a risk-adjusted ratio relating capital to different categories of assets and off-balance sheet exposures as discussed below.

RISK-BASED CAPITAL AND RISK-WEIGHTED ASSETS The Company is subject to final and interim final rules issued by federal banking regulators to implement Basel III capital requirements for U.S. banking organizations. These rules are based on international guidelines for determining regulatory capital issued by the Basel Committee on Banking Supervision (BCBS). The federal banking regulators’ capital rules, among other things, require on a fully phased-in basis:

- a minimum Common Equity Tier 1 (CET1) ratio of 9.0%, comprised of a 4.5% minimum requirement plus a capital conservation buffer of 2.5% and for us, as a global systemically important bank (G-SIB), a capital surcharge to be calculated annually, which is 2.0% based on our year-end 2017 data;
- a minimum tier 1 capital ratio of 10.5%, comprised of a 6.0% minimum requirement plus the capital conservation buffer of 2.5% and the G-SIB capital surcharge of 2.0%;
- a minimum total capital ratio of 12.5%, comprised of a 8.0% minimum requirement plus the capital conservation buffer of 2.5% and the G-SIB capital surcharge of 2.0%;
- a potential countercyclical buffer of up to 2.5% to be added to the minimum capital ratios, which is currently not in effect but could be imposed by regulators at their discretion if it is determined that a period of excessive credit growth is contributing to an increase in systemic risk;
- a minimum tier 1 leverage ratio of 4.0%; and
- a minimum supplementary leverage ratio (SLR) of 5.0% (comprised of a 3.0% minimum requirement plus a supplementary leverage buffer of 2.0%) for large and internationally active bank holding companies (BHCs).

We were required to comply with the final Basel III capital rules beginning January 2014, with certain provisions subject to phase-in periods. Beginning January 1, 2018, the requirements for calculating CET1 and tier 1 capital, along with RWAs, became fully phased-in. However, the requirements for calculating tier 2 and total capital are still in accordance with Transition Requirements. The entire Basel III capital rules are scheduled to be fully phased in by the end of 2021. The Basel III capital rules contain two frameworks for calculating capital requirements, a Standardized Approach, which replaced Basel I, and an Advanced Approach applicable to certain institutions, including Wells Fargo. Accordingly, in the assessment of our capital adequacy, we must report the lower of our CET1, tier 1 and total capital ratios calculated

under the Standardized Approach and under the Advanced Approach.

On April 10, 2018, the FRB issued a proposed rule that would add a stress capital buffer and a stress leverage buffer to the minimum capital and tier 1 leverage ratio requirements. The buffers would be calculated based on the decrease in a financial institution’s risk-based capital and tier 1 leverage ratios under the supervisory severely adverse scenario in CCAR, plus four quarters of planned common stock dividends. The stress capital buffer would replace the 2.5% capital conservation buffer under the Standardized Approach, whereas the stress leverage buffer would be added to the current 4% minimum tier 1 leverage ratio.

Because the Company has been designated as a G-SIB, we are also subject to the FRB’s rule implementing the additional capital surcharge of between 1.0-4.5% on G-SIBs. Under the rule, we must annually calculate our surcharge under two methods and use the higher of the two surcharges. The first method (method one) considers our size, interconnectedness, cross-jurisdictional activity, substitutability, and complexity, consistent with the methodology developed by the BCBS and the Financial Stability Board (FSB). The second (method two) uses similar inputs, but replaces substitutability with use of short-term wholesale funding and will generally result in higher surcharges than the BCBS methodology. The G-SIB surcharge became fully effective on January 1, 2019. Based on year-end 2017 data, our 2019 G-SIB surcharge under method two is 2.0% of the Company’s RWAs, which is the higher of method one and method two. Because the G-SIB surcharge is calculated annually based on data that can differ over time, the amount of the surcharge is subject to change in future years. Under the Standardized Approach (fully phased-in), our CET1 ratio of 11.74% exceeded the minimum of 9.0% by 274 basis points at December 31, 2018.

The tables that follow provide information about our risk-based capital and related ratios as calculated under Basel III capital guidelines. For banking industry regulatory reporting purposes, we continue to report our tier 2 and total capital in accordance with Transition Requirements but are managing our capital based on a fully phased-in calculation. For information about our capital requirements calculated in accordance with Transition Requirements, see Note 28 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report.

Capital Management (continued)

Table 43 summarizes our CET1, tier 1 capital, total capital, risk-weighted assets and capital ratios on a fully phased-in basis at December 31, 2018 and December 31, 2017. As of December 31, 2018, our CET1, tier 1, and total capital ratios were lower using RWAs calculated under the Standardized Approach.

Table 43: Capital Components and Ratios (Fully Phased-In) (1)

		December 31, 2018		December 31, 2017	
		Advanced Approach	Standardized Approach	Advanced Approach	Standardized Approach
(in millions, except ratios)					
Common Equity Tier 1	(A)	\$ 146,363	146,363	154,022	154,022
Tier 1 Capital	(B)	167,866	167,866	177,466	177,466
Total Capital	(C)	198,103	206,346	208,395	218,159
Risk-Weighted Assets	(D)	1,177,350	1,247,210	1,225,939	1,285,563
Common Equity Tier 1 Capital Ratio	(A)/(D)	12.43%	11.74 *	12.56	11.98 *
Tier 1 Capital Ratio	(B)/(D)	14.26	13.46 *	14.48	13.80 *
Total Capital Ratio	(C)/(D)	16.83	16.54 *	17.00	16.97 *

* Denotes the lowest capital ratio as determined under the Advanced and Standardized Approaches.

(1) Beginning January 1, 2018, the requirements for calculating CET1 and tier 1 capital, along with RWAs, became fully phased-in. However, the requirements for calculating tier 2 and total capital are still in accordance with Transition Requirements. Accordingly, fully phased-in total capital amounts and ratios are considered non-GAAP financial measures that are used by management, bank regulatory agencies, investors and analysts to assess and monitor the Company's capital position. See Table 44 for information regarding the calculation and components of CET1, tier 1 capital, total capital and RWAs, as well as the corresponding reconciliation of our fully phased-in regulatory capital amounts to GAAP financial measures.

Table 44 provides information regarding the calculation and composition of our risk-based capital under the Advanced and Standardized Approaches at December 31, 2018 and December 31, 2017.

Table 44: Risk-Based Capital Calculation and Components

(in millions)	December 31, 2018		December 31, 2017	
	Advanced Approach	Standardized Approach	Advanced Approach	Standardized Approach
Total equity	\$ 197,066	197,066	208,079	208,079
Adjustments:				
Preferred stock	(23,214)	(23,214)	(25,358)	(25,358)
Additional paid-in capital on ESOP preferred stock	(95)	(95)	(122)	(122)
Unearned ESOP shares	1,502	1,502	1,678	1,678
Noncontrolling interests	(900)	(900)	(1,143)	(1,143)
Total common stockholders' equity	174,359	174,359	183,134	183,134
Adjustments:				
Goodwill	(26,418)	(26,418)	(26,587)	(26,587)
Certain identifiable intangible assets (other than MSRs)	(559)	(559)	(1,624)	(1,624)
Other assets (1)	(2,187)	(2,187)	(2,155)	(2,155)
Applicable deferred taxes (2)	785	785	962	962
Investment in certain subsidiaries and other	383	383	292	292
Common Equity Tier 1 (Fully Phased-In)	146,363	146,363	154,022	154,022
Effect of Transition Requirements (3)	—	—	743	743
Common Equity Tier 1 (Transition Requirements)	\$ 146,363	146,363	154,765	154,765
Common Equity Tier 1 (Fully Phased-In)	\$ 146,363	146,363	154,022	154,022
Preferred stock	23,214	23,214	25,358	25,358
Additional paid-in capital on ESOP preferred stock	95	95	122	122
Unearned ESOP shares	(1,502)	(1,502)	(1,678)	(1,678)
Other	(304)	(304)	(358)	(358)
Total Tier 1 capital (Fully Phased-In) (A)	167,866	167,866	177,466	177,466
Effect of Transition Requirements (3)	—	—	743	743
Total Tier 1 capital (Transition Requirements)	\$ 167,866	167,866	178,209	178,209
Total Tier 1 capital (Fully Phased-In)	\$ 167,866	167,866	177,466	177,466
Long-term debt and other instruments qualifying as Tier 2	27,946	27,946	28,994	28,994
Qualifying allowance for credit losses (4)	2,463	10,706	2,196	11,960
Other	(172)	(172)	(261)	(261)
Total Tier 2 capital (Fully Phased-In) (B)	30,237	38,480	30,929	40,693
Effect of Transition Requirements	695	695	1,195	1,195
Total Tier 2 capital (Transition Requirements)	\$ 30,932	39,175	32,124	41,888
Total qualifying capital (Fully Phased-In) (A)+(B)	\$ 198,103	206,346	208,395	218,159
Total Effect of Transition Requirements	695	695	1,938	1,938
Total qualifying capital (Transition Requirements)	\$ 198,798	207,041	210,333	220,097
Risk-Weighted Assets (RWAs) (5)(6):				
Credit risk	\$ 803,273	1,201,246	890,171	1,249,395
Market risk	45,964	45,964	36,168	36,168
Operational risk	328,113	N/A	299,600	N/A
Total RWAs (Fully Phased-In) (3)	\$ 1,177,350	1,247,210	1,225,939	1,285,563

(1) Represents goodwill and other intangibles on nonmarketable equity securities, which are included in other assets.

(2) Applicable deferred taxes relate to goodwill and other intangible assets. They were determined by applying the combined federal statutory rate and composite state income tax rates to the difference between book and tax basis of the respective goodwill and intangible assets at period end.

(3) Beginning January 1, 2018, the requirements for calculating CET1 and tier 1 capital, along with RWAs, became fully phased-in, so the effect of the transition requirements was \$0 at December 31, 2018.

(4) Under the Advanced Approach the allowance for credit losses that exceeds expected credit losses is eligible for inclusion in Tier 2 Capital, to the extent the excess allowance does not exceed 0.6% of Advanced credit RWAs, and under the Standardized Approach, the allowance for credit losses is includable in Tier 2 Capital up to 1.25% of Standardized credit RWAs, with any excess allowance for credit losses being deducted from total RWAs.

(5) RWAs calculated under the Advanced Approach utilize a risk-sensitive methodology, which relies upon the use of internal credit models based upon our experience with internal rating grades. Advanced Approach also includes an operational risk component, which reflects the risk of operating loss resulting from inadequate or failed internal processes or systems.

(6) Under the regulatory guidelines for risk-based capital, on-balance sheet assets and credit equivalent amounts of derivatives and off-balance sheet items are assigned to one of several broad risk categories according to the obligor, or, if relevant, the guarantor or the nature of any collateral. The aggregate dollar amount in each risk category is then multiplied by the risk weight associated with that category. The resulting weighted values from each of the risk categories are aggregated for determining total RWAs.

Capital Management *(continued)*

Table 45 presents the changes in Common Equity Tier 1 under the Advanced Approach for the year ended December 31, 2018.

Table 45: Analysis of Changes in Common Equity Tier 1

(in millions)		
Common Equity Tier 1 (Fully Phased-In) at December 31, 2017	\$	154,022
Net income applicable to common stock		20,689
Common stock dividends		(7,889)
Common stock issued, repurchased, and stock compensation-related items		(17,881)
Goodwill		170
Certain identifiable intangible assets (other than MSRs)		1,065
Other assets (1)		(32)
Applicable deferred taxes (2)		(177)
Investment in certain subsidiaries and other		(3,604)
Change in Common Equity Tier 1		(7,659)
Common Equity Tier 1 (Fully Phased-In) at December 31, 2018	\$	146,363

(1) Represents goodwill and other intangibles on nonmarketable equity securities, which are included in other assets.

(2) Applicable deferred taxes relate to goodwill and other intangible assets. They were determined by applying the combined federal statutory rate and composite state income tax rates to the difference between book and tax basis of the respective goodwill and intangible assets at period end.

Table 46 presents net changes in the components of RWAs under the Advanced and Standardized Approaches for the year ended December 31, 2018.

Table 46: Analysis of Changes in RWAs

(in millions)		Advanced Approach	Standardized Approach
RWAs (Fully Phased-In) at December 31, 2017	\$	1,225,939	1,285,563
Net change in credit risk RWAs		(86,898)	(48,149)
Net change in market risk RWAs		9,796	9,796
Net change in operational risk RWAs		28,513	N/A
Total change in RWAs		(48,589)	(38,353)
RWAs (Fully Phased-In) at December 31, 2018	\$	1,177,350	1,247,210

TANGIBLE COMMON EQUITY We also evaluate our business based on certain ratios that utilize tangible common equity. Tangible common equity is a non-GAAP financial measure and represents total equity less preferred equity, noncontrolling interests, and goodwill and certain identifiable intangible assets (including goodwill and intangible assets associated with certain of our nonmarketable equity securities, but excluding mortgage servicing rights), net of applicable deferred taxes. These tangible common equity ratios are as follows:

- Tangible book value per common share, which represents tangible common equity divided by common shares outstanding.

- Return on average tangible common equity (ROTCE), which represents our annualized earnings contribution as a percentage of tangible common equity.

The methodology of determining tangible common equity may differ among companies. Management believes that tangible book value per common share and return on average tangible common equity, which utilize tangible common equity, are useful financial measures because they enable investors and others to assess the Company's use of equity.

Table 47 provides a reconciliation of these non-GAAP financial measures to GAAP financial measures.

Table 47: Tangible Common Equity

(in millions, except ratios)		Balance at period end			Average balance for the year ended		
		Dec 31, 2018	Dec 31, 2017	Dec 31, 2016	Dec 31, 2018	Dec 31, 2017	Dec 31, 2016
Total equity		\$ 197,066	208,079	200,497	203,356	205,654	200,690
Adjustments:							
Preferred stock		(23,214)	(25,358)	(24,551)	(24,956)	(25,592)	(24,363)
Additional paid-in capital on ESOP preferred stock		(95)	(122)	(126)	(125)	(139)	(161)
Unearned ESOP shares		1,502	1,678	1,565	2,159	2,143	2,011
Noncontrolling interests		(900)	(1,143)	(916)	(929)	(948)	(936)
Total common stockholders' equity	(A)	174,359	183,134	176,469	179,505	181,118	177,241
Adjustments:							
Goodwill		(26,418)	(26,587)	(26,693)	(26,453)	(26,629)	(26,700)
Certain identifiable intangible assets (other than MSRs)		(559)	(1,624)	(2,723)	(1,088)	(2,176)	(3,254)
Other assets (1)		(2,187)	(2,155)	(2,088)	(2,197)	(2,184)	(2,117)
Applicable deferred taxes (2)		785	962	1,772	866	1,570	1,897
Tangible common equity	(B)	\$ 145,980	153,730	146,737	150,633	151,699	147,067
Common shares outstanding	(C)	4,581.3	4,891.6	5,016.1	N/A	N/A	N/A
Net income applicable to common stock	(D)	N/A	N/A	N/A	\$ 20,689	20,554	20,373
Book value per common share	(A)/(C)	\$ 38.06	37.44	35.18	N/A	N/A	N/A
Tangible book value per common share	(B)/(C)	31.86	31.43	29.25	N/A	N/A	N/A
Return on average common stockholders' equity (ROE)	(D)/(A)	N/A	N/A	N/A	11.53 %	11.35	11.49
Return on average tangible common equity (ROTCE)	(D)/(B)	N/A	N/A	N/A	13.73	13.55	13.85

(1) Represents goodwill and other intangibles on nonmarketable equity securities, which are included in other assets.

(2) Applicable deferred taxes relate to goodwill and other intangible assets. They were determined by applying the combined federal statutory rate and composite state income tax rates to the difference between book and tax basis of the respective goodwill and intangible assets at period end.

Capital Management (continued)

SUPPLEMENTARY LEVERAGE RATIO In April 2014, federal banking regulators finalized a rule that enhances the SLR requirements for BHCs, like Wells Fargo, and their insured depository institutions. The SLR consists of Tier 1 capital divided by the Company's total leverage exposure. Total leverage exposure consists of the total average on-balance sheet assets, plus off-balance sheet exposures, such as undrawn commitments and derivative exposures, less amounts permitted to be deducted from Tier 1 capital. The rule, which became effective on January 1, 2018, requires a covered BHC to maintain a SLR of at least 5.0% (comprised of the 3.0% minimum requirement plus a supplementary leverage buffer of 2.0%) to avoid restrictions on capital distributions and discretionary bonus payments. The rule also requires that all of our insured depository institutions maintain a SLR of 6.0% under applicable regulatory capital adequacy guidelines. In April 2018, the FRB and OCC proposed rules (the "Proposed SLR Rules") that would replace the 2% supplementary leverage buffer with a buffer equal to one-half of the firm's G-SIB capital surcharge. The Proposed SLR Rules would similarly tailor the current 6% SLR requirement for our insured depository institutions. At December 31, 2018, our SLR for the Company was 7.7% calculated under the Advanced Approach capital framework. Based on our review, our current leverage levels would exceed the applicable requirements for each of our insured depository institutions as well. See Table 48 for information regarding the calculation and components of the SLR.

Table 48: Supplementary Leverage Ratio

(in millions, except ratio)	Quarter ended December 31, 2018
Tier 1 capital	\$ 167,866
Total average assets	1,879,047
Less: deductions from Tier 1 capital (1)	28,748
Total adjusted average assets	1,850,299
Adjustments:	
Derivative exposures (2)	68,753
Repo-style transactions (3)	5,350
Other off-balance sheet exposures (4)	250,162
Total adjustments	324,265
Total leverage exposure	\$ 2,174,564
Supplementary leverage ratio	7.7%

- (1) Amounts permitted to be deducted from Tier 1 capital primarily include goodwill and other intangible assets, net of associated deferred tax liabilities.
- (2) Represents adjustments for off balance sheet derivative exposures, and derivative collateral netting as defined for supplementary leverage ratio determination purposes.
- (3) Adjustments for repo-style transactions represent counterparty credit risk for all repo-style transactions where Wells Fargo & Company is the principal (i.e., principal counterparty facing the client).
- (4) Adjustments for other off-balance sheet exposures represent the notional amounts of all off-balance sheet exposures (excluding off balance sheet exposures associated with derivative and repo-style transactions) less the adjustments for conversion to credit equivalent amounts under the regulatory capital rule.

OTHER REGULATORY CAPITAL MATTERS In December 2016, the FRB finalized rules to address the amount of equity and unsecured long-term debt a U.S. G-SIB must hold to improve its resolvability and resiliency, often referred to as Total Loss Absorbing Capacity (TLAC). Under the rules, which became effective on January 1, 2019, U.S. G-SIBs are required to have a minimum TLAC amount (consisting of CET1 capital and additional tier 1 capital issued directly by the top-tier or covered BHC plus eligible external long-term debt) equal to the greater of (i) 18% of RWAs and (ii) 7.5% of total leverage exposure (the

denominator of the SLR calculation). Additionally, U.S. G-SIBs are required to maintain (i) a TLAC buffer equal to 2.5% of RWAs plus the firm's applicable G-SIB capital surcharge calculated under method one plus any applicable countercyclical buffer to be added to the 18% minimum and (ii) an external TLAC leverage buffer equal to 2.0% of total leverage exposure to be added to the 7.5% minimum, in order to avoid restrictions on capital distributions and discretionary bonus payments. The rules also require U.S. G-SIBs to have a minimum amount of eligible unsecured long-term debt equal to the greater of (i) 6.0% of RWAs plus the firm's applicable G-SIB capital surcharge calculated under method two and (ii) 4.5% of the total leverage exposure. In addition, the rules impose certain restrictions on the operations and liabilities of the top-tier or covered BHC in order to further facilitate an orderly resolution, including prohibitions on the issuance of short-term debt to external investors and on entering into derivatives and certain other types of financial contracts with external counterparties. While the rules permit permanent grandfathering of a significant portion of otherwise ineligible long-term debt that was issued prior to December 31, 2016, long-term debt issued after that date must be fully compliant with the eligibility requirements of the rules in order to count toward the minimum TLAC amount. As a result of the rules, we will need to issue additional long-term debt to remain compliant with the requirements. Under the Proposed SLR Rules, the 2% external TLAC leverage buffer would be replaced with a buffer equal to one-half of the firm's G-SIB capital surcharge. Additionally, the Proposed SLR Rules would modify the leverage component for calculating the minimum amount of eligible unsecured long-term debt from 4.5% of total leverage exposure to 2.5% of total leverage exposure plus one-half of the firm's G-SIB capital surcharge. As of December 31, 2018, our eligible external TLAC as a percentage of total risk-weighted assets was 23.35% compared with a required minimum of 22.0%. Similar to the risk-based capital requirements, we determine minimum required TLAC based on the greater of RWAs determined under the Standardized and Advanced approaches.

In addition, as discussed in the "Risk Management – Asset/Liability Management – Liquidity and Funding – Liquidity Standards" section in this Report, federal banking regulators have issued a final rule regarding the U.S. implementation of the Basel III LCR and a proposed rule regarding the NSFR.

Capital Planning and Stress Testing

Our planned long-term capital structure is designed to meet regulatory and market expectations. We believe that our long-term targeted capital structure enables us to invest in and grow our business, satisfy our customers' financial needs in varying environments, access markets, and maintain flexibility to return capital to our shareholders. Our long-term targeted capital structure also considers capital levels sufficient to exceed capital requirements including the G-SIB surcharge. Accordingly, based on the final Basel III capital rules under the lower of the Standardized or Advanced Approaches CET1 capital ratios, we currently target a long-term CET1 capital ratio at or in excess of 10%, which includes a 2% G-SIB surcharge. Our capital targets are subject to change based on various factors, including changes to the regulatory capital framework and expectations for large banks promulgated by bank regulatory agencies, planned capital actions, changes in our risk profile and other factors. As discussed above in "Regulatory Capital Guidelines", the FRB has proposed including a stress capital buffer (SCB) to replace the current capital conservation buffer as part of the capital requirements for large U.S. banks. The proposal is not final, but

it is expected that the adoption of CECL accounting would be included in the SCB calculation. We expect that implementation of the SCB may increase the level and volatility of minimum capital requirements, which may cause our current 10% CET1 long-term target ratio to increase.

Under the FRB's capital plan rule, large BHCs are required to submit capital plans annually for review to determine if the FRB has any objections before making any capital distributions. The rule requires updates to capital plans in the event of material changes in a BHC's risk profile, including as a result of any significant acquisitions. The FRB assesses the overall financial condition, risk profile, and capital adequacy of BHCs while considering both quantitative and qualitative factors when evaluating capital plans.

Our 2018 capital plan, which was submitted on April 4, 2018, as part of CCAR, included a comprehensive capital outlook supported by an assessment of expected sources and uses of capital over a given planning horizon under a range of expected and stress scenarios. As part of the 2018 CCAR, the FRB also generated a supervisory stress test, which assumed a sharp decline in the economy and significant decline in asset pricing using the information provided by the Company to estimate performance. The FRB reviewed the supervisory stress results both as required under the Dodd-Frank Act using a common set of capital actions for all large BHCs and by taking into account the Company's proposed capital actions. The FRB published its supervisory stress test results as required under the Dodd-Frank Act on June 21, 2018. On June 28, 2018, the FRB notified us that it did not object to our capital plan included in the 2018 CCAR.

Federal banking regulators require stress tests to evaluate whether an institution has sufficient capital to continue to operate during periods of adverse economic and financial conditions. These stress testing requirements set forth the timing and type of stress test activities large BHCs and banks must undertake as well as rules governing stress testing controls, oversight and disclosure requirements. The rules also limit a large BHC's ability to make capital distributions to the extent its actual capital issuances were less than amounts indicated in its capital plan. As required under the FRB's stress testing rule, we must submit a mid-cycle stress test based on second quarter data and scenarios developed by the Company. We submitted the results of the mid-cycle stress test to the FRB and disclosed a summary of the results in October 2018. In October 2018, the FRB proposed a rule that would, among other things, eliminate the mid-cycle stress test requirement for banks beginning in 2020.

Securities Repurchases

From time to time the Board authorizes the Company to repurchase shares of our common stock. Although we announce when the Board authorizes share repurchases, we typically do not give any public notice before we repurchase our shares. Future stock repurchases may be private or open-market repurchases, including block transactions, accelerated or delayed block transactions, forward repurchase transactions, and similar transactions. Additionally, we may enter into plans to purchase stock that satisfy the conditions of Rule 10b5-1 of the Securities Exchange Act of 1934. Various factors determine the amount of our share repurchases, including our capital requirements, the number of shares we expect to issue for employee benefit plans and acquisitions, market conditions (including the trading price of our stock), and regulatory and legal considerations, including the FRB's response to our capital plan and to changes in our risk profile. Due to the various factors impacting the amount of our share repurchases and the fact that we tend to be in the market regularly to satisfy repurchase considerations under our capital plan, our repurchases occur at various price levels. We may suspend repurchase activity at any time.

In January 2018, the Board authorized the repurchase of 350 million shares of our common stock. In October 2018, the Board authorized the repurchase of an additional 350 million shares of our common stock. At December 31, 2018, we had remaining authority to repurchase approximately 395 million shares, subject to regulatory and legal conditions. For more information about share repurchases during fourth quarter 2018, see Part II, Item 5 in our 2018 Form 10-K.

Historically, our policy has been to repurchase shares under the "safe harbor" conditions of Rule 10b-18 of the Securities Exchange Act of 1934 including a limitation on the daily volume of repurchases. Rule 10b-18 imposes an additional daily volume limitation on share repurchases during a pending merger or acquisition in which shares of our stock will constitute some or all of the consideration. Our management may determine that during a pending stock merger or acquisition when the safe harbor would otherwise be available, it is in our best interest to repurchase shares in excess of this additional daily volume limitation. In such cases, we intend to repurchase shares in compliance with the other conditions of the safe harbor, including the standing daily volume limitation that applies whether or not there is a pending stock merger or acquisition.

In connection with our participation in the Capital Purchase Program (CPP), a part of the Troubled Asset Relief Program (TARP), we issued to the U.S. Treasury Department warrants to purchase 110,261,688 shares of our common stock with an original exercise price of \$34.01 per share. The warrants expired on October 29, 2018, and the holders of 110,646 unexercised warrants as of the expiration date are no longer entitled to receive any shares of our common stock.

Regulatory Matters

Since the enactment of the Dodd-Frank Act in 2010, the U.S. financial services industry has been subject to a significant increase in regulation and regulatory oversight initiatives. This increased regulation and oversight has substantially changed how most U.S. financial services companies conduct business and has increased their regulatory compliance costs. The following highlights the more significant regulations and regulatory oversight initiatives that have affected or may affect our business. For additional information about the regulatory matters discussed below and other regulations and regulatory oversight matters, see Part I, Item 1 “Regulation and Supervision” of our 2018 Form 10-K, and the “Capital Management,” “Forward-Looking Statements” and “Risk Factors” sections and Note 28 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report.

Dodd-Frank Act

The Dodd-Frank Act is the most significant financial reform legislation since the 1930s and is driving much of the current U.S. regulatory reform efforts. The Dodd-Frank Act and many of its provisions became effective in July 2010 and July 2011. The following provides additional information on the Dodd-Frank Act, including the current status of certain of its rulemaking initiatives.

- *Enhanced supervision and regulation of systemically important firms.* The Dodd-Frank Act grants broad authority to federal banking regulators to establish enhanced supervisory and regulatory requirements for systemically important firms. The FRB has finalized a number of regulations implementing enhanced prudential requirements for large bank holding companies (BHCs) like Wells Fargo regarding risk-based capital and leverage, risk and liquidity management, and imposing debt-to-equity limits on any BHC that regulators determine poses a grave threat to the financial stability of the United States. The FRB and OCC have also finalized rules implementing stress testing requirements for large BHCs and national banks. The FRB has also finalized enhanced prudential standards that implement single counterparty credit limits, and has proposed a rule to establish remediation requirements for large BHCs experiencing financial distress. Similarly, the FRB has proposed additional requirements regarding effective risk management practices at large BHCs, including its expectations for boards of directors and senior management. In addition to the authorization of enhanced supervisory and regulatory requirements for systemically important firms, the Dodd-Frank Act also established the Financial Stability Oversight Council and the Office of Financial Research, which may recommend new systemic risk management requirements and require new reporting of systemic risks. The OCC, under separate authority, has also finalized guidelines establishing heightened governance and risk management standards for large national banks such as Wells Fargo Bank, N.A. The OCC guidelines require covered banks to establish and adhere to a written risk governance framework in order to manage and control their risk-taking activities. The guidelines also formalize roles and responsibilities for risk management practices within covered banks and create certain risk oversight responsibilities for their boards of directors.
- *Regulation of consumer financial products.* The Dodd-Frank Act established the Consumer Financial Protection Bureau (CFPB) to ensure consumers receive clear and accurate disclosures regarding financial products and to protect them from hidden fees and unfair, deceptive or abusive practices. With respect to residential mortgage lending, the CFPB issued a number of final rules implementing new origination, notification, disclosure and other requirements, as well as additional limitations on the fees and charges that may be increased from the estimates provided by lenders. The CFPB finalized amendments to the rule implementing the Home Mortgage Disclosure Act, resulting in a significant expansion of the data points lenders are required to collect and report to the CFPB. The CFPB also expanded the transactions covered by the rule and increased the reporting frequency from annual to quarterly for large volume lenders, such as Wells Fargo, beginning January 1, 2020. With respect to other financial products, the CFPB finalized rules, most of which become effective on April 1, 2019, to make prepaid cards subject to similar consumer protections as those provided by more traditional debit and credit cards such as fraud protection and expanded access to account information. In addition to these rulemaking activities, the CFPB is continuing its ongoing supervisory examination activities of the financial services industry with respect to a number of consumer businesses and products, including mortgage lending and servicing, fair lending requirements, student lending activities, and automobile finance.
- *Volcker Rule.* The Volcker Rule, with limited exceptions, prohibits banking entities from engaging in proprietary trading or owning any interest in or sponsoring or having certain relationships with a hedge fund, a private equity fund or certain structured transactions that are deemed covered funds. Federal banking regulators, the SEC and the Commodity Futures Trading Commission (CFTC) (collectively, the Volcker supervisory regulators) jointly released a final rule to implement the Volcker Rule’s restrictions, and the FRB has proposed further rules to streamline and modify compliance with the Volcker Rule’s requirements. As a banking entity with more than \$50 billion in consolidated assets, we are also subject to enhanced compliance program requirements.
- *Regulation of swaps and other derivatives activities.* The Dodd-Frank Act established a comprehensive framework for regulating over-the-counter derivatives and authorized the CFTC and the SEC to regulate swaps and security-based swaps, respectively. The CFTC has adopted rules applicable to our provisionally registered swap dealer, Wells Fargo Bank, N.A., that require, among other things, extensive regulatory and public reporting of swaps, central clearing and trading of swaps on exchanges or other multilateral platforms, and compliance with comprehensive internal and external business conduct standards. The SEC is expected to implement parallel rules applicable to security-based swaps. In addition, federal regulators have adopted final rules establishing initial and variation margin requirements for swaps and security-based swaps not centrally cleared, rules placing restrictions on a party’s right to exercise default rights under derivatives and other qualified financial contracts against applicable banking organizations, and record-keeping requirements for qualified financial contracts. All of these new rules, as well as others being considered by regulators in other jurisdictions, may

negatively impact customer demand for over-the-counter derivatives, impact our ability to offer customers new derivatives or amendments to existing derivatives, and may increase our costs for engaging in swaps, security-based swaps, and other derivatives activities.

- *Regulation of interchange transaction fees (the Durbin Amendment).* On October 1, 2011, the FRB rule enacted to implement the Durbin Amendment to the Dodd-Frank Act that limits debit card interchange transaction fees to those reasonable and proportional to the cost of the transaction became effective. The rule generally established that the maximum allowable interchange fee that an issuer may receive or charge for an electronic debit transaction is the sum of 21 cents per transaction and 5 basis points multiplied by the value of the transaction. On July 31, 2013, the U.S. District Court for the District of Columbia ruled that the approach used by the FRB in setting the maximum allowable interchange transaction fee impermissibly included costs that were specifically excluded from consideration under the Durbin Amendment. In August 2013, the FRB filed a notice of appeal of the decision to the United States Court of Appeals for the District of Columbia. In March 2014, the Court of Appeals reversed the District Court's decision, but did direct the FRB to provide further explanation regarding its treatment of the costs of monitoring transactions, which the FRB published in August 2015. The plaintiffs did not file a petition for rehearing with the Court of Appeals but filed a petition for writ of certiorari with the U.S. Supreme Court. In January 2015, the U.S. Supreme Court denied the petition for writ of certiorari.

Regulatory Capital Guidelines and Capital Plans

During 2013, federal banking regulators issued final rules that substantially amended the risk-based capital rules for banking organizations. The rules implement the Basel III regulatory capital reforms in the U.S., comply with changes required by the Dodd-Frank Act, and replace the existing Basel I-based capital requirements. We were required to begin complying with the rules on January 1, 2014, subject to phase-in periods that are scheduled to be fully phased in by January 1, 2022. In 2014, federal banking regulators also finalized rules to impose a supplementary leverage ratio on large BHCs like Wells Fargo and our insured depository institutions and to implement the Basel III liquidity coverage ratio. For more information on the final capital, leverage and liquidity rules, and additional capital requirements applicable to us, see the "Capital Management" section in this Report.

"Living Will" Requirements and Related Matters

Rules adopted by the FRB and the FDIC under the Dodd-Frank Act require large financial institutions, including Wells Fargo, to prepare and periodically revise resolution plans, so-called "living-wills", that would facilitate their resolution in the event of material distress or failure. Under the rules, resolution plans are required to provide strategies for resolution under the Bankruptcy Code and other applicable insolvency regimes that can be accomplished in a reasonable period of time and in a manner that mitigates the risk that failure would have serious adverse effects on the financial stability of the United States. On December 19, 2017, the FRB and FDIC announced that Wells Fargo's 2017 resolution plan submission did not have any deficiencies; however, they identified a specific shortcoming that would need to be addressed in the Company's next submission. Our national bank subsidiary, Wells Fargo Bank, N.A. (the

"Bank"), is also required to prepare a resolution plan and submitted its 2018 resolution plan to the FDIC on June 29, 2018. If the FRB or FDIC determines that our resolution plan has deficiencies, they may impose more stringent capital, leverage or liquidity requirements on us or restrict our growth, activities or operations until we adequately remedy the deficiencies. If the FRB or FDIC ultimately determines that we have been unable to remedy any deficiencies, they could require us to divest certain assets or operations.

We must also prepare and submit to the FRB a recovery plan that identifies a range of options that we may consider during times of idiosyncratic or systemic economic stress to remedy any financial weaknesses and restore market confidence without extraordinary government support. Recovery options include the possible sale, transfer or disposal of assets, securities, loan portfolios or businesses. The Bank must also prepare and submit to the OCC a recovery plan that sets forth the bank's plan to remain a going concern when the bank is experiencing considerable financial or operational stress, but has not yet deteriorated to the point where liquidation or resolution is imminent. If either the FRB or the OCC determine that our recovery plan is deficient, they may impose fines, restrictions on our business or ultimately require us to divest assets.

If Wells Fargo were to fail, it may be resolved in a bankruptcy proceeding or, if certain conditions are met, under the resolution regime created by the Dodd-Frank Act known as the "orderly liquidation authority." The orderly liquidation authority allows for the appointment of the FDIC as receiver for a systemically important financial institution that is in default or in danger of default if, among other things, the resolution of the institution under the U.S. Bankruptcy Code would have serious adverse effects on financial stability in the United States. If the FDIC is appointed as receiver for Wells Fargo & Company (the "Parent"), then the orderly liquidation authority, rather than the U.S. Bankruptcy Code, would determine the powers of the receiver and the rights and obligations of our security holders. The FDIC's orderly liquidation authority requires that security holders of a company in receivership bear all losses before U.S. taxpayers are exposed to any losses, and allows the FDIC to disregard the strict priority of creditor claims under the U.S. Bankruptcy Code in certain circumstances.

Whether under the U.S. Bankruptcy Code or by the FDIC under the orderly liquidation authority, Wells Fargo could be resolved using a "multiple point of entry" strategy, in which the Parent and one or more of its subsidiaries would each undergo separate resolution proceedings, or a "single point of entry" strategy, in which the Parent would likely be the only material legal entity to enter resolution proceedings. The FDIC has announced that a single point of entry strategy may be a desirable strategy under its implementation of the orderly liquidation authority, but not all aspects of how the FDIC might exercise this authority are known and additional rulemaking is possible.

The strategy described in our most recent resolution plan submission is a multiple point of entry strategy; however, we have made a decision to move to a single point of entry strategy for our next resolution plan submission. We are not obligated to maintain either a single point of entry or multiple point of entry strategy, and the strategies reflected in our resolution plan submissions are not binding in the event of an actual resolution of Wells Fargo, whether conducted under the U.S. Bankruptcy Code or by the FDIC under the orderly liquidation authority.

To facilitate the orderly resolution of systemically important financial institutions in case of material distress or failure,

Regulatory Matters (*continued*)

federal banking regulations require that institutions, such as Wells Fargo, maintain a minimum amount of equity and unsecured debt to absorb losses and recapitalize operating subsidiaries. Federal banking regulators have also required measures to facilitate the continued operation of operating subsidiaries notwithstanding the failure of their parent companies, such as limitations on parent guarantees, and have issued guidance encouraging institutions to take legally binding measures to provide capital and liquidity resources to certain subsidiaries in order to facilitate an orderly resolution. In response to the regulators' guidance and to facilitate the orderly resolution of the Company using either a single point of entry or multiple point of entry resolution strategy, on June 28, 2017, the Parent entered into a support agreement (the "Support Agreement") with WFC Holdings, LLC, an intermediate holding company and subsidiary of the Parent (the "IHC"), and the Bank, Wells Fargo Securities, LLC ("WFS"), and Wells Fargo Clearing Services, LLC ("WFCS"), each an indirect subsidiary of the Parent. Pursuant to the Support Agreement, the Parent transferred a significant amount of its assets, including the majority of its cash, deposits, liquid securities and intercompany loans (but excluding its equity interests in its subsidiaries and certain other assets), to the IHC and will continue to transfer those types of assets to the IHC from time to time. In the event of our material financial distress or failure, the IHC will be obligated to use the transferred assets to provide capital and/or liquidity to the Bank pursuant to the Support Agreement and to WFS and WFCS through repurchase facilities entered into in connection with the Support Agreement. Under the Support Agreement, the IHC will also provide funding and liquidity to the Parent through subordinated notes and a committed line of credit, which, together with the issuance of dividends, is expected to provide the Parent, during business as usual operating conditions, with the same access to cash necessary to service its debts, pay dividends, repurchase its shares, and perform its other obligations as it would have had if it had not entered into these arrangements and transferred any assets. If certain liquidity and/or capital metrics fall below defined triggers, the subordinated notes would be forgiven and the committed line of credit would terminate, which could materially and adversely impact the Parent's liquidity and its ability to satisfy its debts and other obligations, and could result in the commencement of bankruptcy proceedings by the Parent at an earlier time than might have otherwise occurred if the Support Agreement were not implemented. The Parent's and the IHC's respective obligations under the Support Agreement are secured pursuant to a related security agreement.

Other Regulatory Related Matters

- *Broker-dealer standards of conduct.* In April 2018, the SEC proposed a rule that would require broker-dealers to act in the best interest of a retail customer when making a recommendation of any securities transaction or investment strategy involving securities. This rule may impact the manner in which business is conducted with customers seeking investment advice and may affect certain investment product offerings.
- *OCC revocation of relief.* On November 18, 2016, the OCC revoked provisions of certain consent orders that provided Wells Fargo Bank, N.A. relief from specific requirements and limitations regarding rules, policies, and procedures for corporate activities; OCC approval of changes in directors and senior executive officers; and golden parachute payments. As a result, Wells Fargo Bank, N.A. is no longer eligible for expedited treatment for certain applications; is

now required to provide prior written notice to the OCC of a change in directors and senior executive officers; and is now subject to certain regulatory limitations on golden parachute payments.

- *Community Reinvestment Act (CRA) rating.* In March 2017, we announced that the OCC had downgraded our most recent CRA rating, which covers the years 2009 – 2012, to "Needs to Improve" due to previously issued regulatory consent orders. A "Needs to Improve" rating imposes regulatory restrictions and limitations on certain of the Company's nonbank activities, including its ability to engage in certain nonbank mergers and acquisitions or undertake new financial in nature activities, and CRA performance is taken into account by regulators in reviewing applications to establish bank branches and for approving proposed bank mergers and acquisitions. The rating also results in the loss of expedited processing of applications to undertake certain activities, and requires the Company to receive prior regulatory approval for certain activities, including to issue or prepay certain subordinated debt obligations, open or relocate bank branches, or make certain public welfare investments. In addition, a "Needs to Improve" rating could have an impact on the Company's relationships with certain states, counties, municipalities or other public agencies to the extent applicable law, regulation or policy limits, restricts or influences whether such entity may do business with a company that has a below "Satisfactory" rating.
- *FRB consent order regarding governance oversight and compliance and operational risk management.* On February 2, 2018, the Company entered into a consent order with the FRB. As required by the consent order, the Board submitted to the FRB a plan to further enhance the Board's governance and oversight of the Company, and the Company submitted to the FRB a plan to further improve the Company's compliance and operational risk management program. The consent order requires the Company, following the FRB's acceptance and approval of the plans and the Company's adoption and implementation of the plans, to complete third-party reviews of the enhancements and improvements provided for in the plans. Until these third-party reviews are complete and the plans are approved and implemented to the satisfaction of the FRB, the Company's total consolidated assets will be limited to the level as of December 31, 2017. Compliance with this asset cap will be measured on a two-quarter daily average basis to allow for management of temporary fluctuations. The Company continues to have constructive dialogue with the FRB on an ongoing basis to clarify expectations, receive feedback, and assess progress under the consent order. In order to have enough time to incorporate this feedback into the Company's plans in a thoughtful manner, adopt and implement the final plans as accepted by the FRB, and complete the required third-party reviews, the Company is planning to operate under the asset cap through the end of 2019. Additionally, after removal of the asset cap, a second third-party review must also be conducted to assess the efficacy and sustainability of the enhancements and improvements.
- *Consent orders with the CFPB and OCC regarding compliance risk management program, automobile collateral protection insurance policies, and mortgage interest rate lock extensions.* On April 20, 2018, the Company entered into consent orders with the CFPB and OCC to pay an aggregate of \$1 billion in civil money

penalties to resolve matters regarding the Company's compliance risk management program and past practices involving certain automobile collateral protection insurance policies and certain mortgage interest rate lock extensions. As required by the consent orders, the Company submitted to the CFPB and OCC an enterprise-wide compliance risk management plan and a plan to enhance the Company's internal audit program with respect to federal consumer

financial law and the terms of the consent orders. In addition, as required by the consent orders, the Company submitted for non-objection plans to remediate customers affected by the automobile collateral protection insurance and mortgage interest rate lock matters, as well as a plan for the management of remediation activities conducted by the Company.

Critical Accounting Policies

Our significant accounting policies (see Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report) are fundamental to understanding our results of operations and financial condition because they require that we use estimates and assumptions that may affect the value of our assets or liabilities and financial results. Five of these policies are critical because they require management to make difficult, subjective and complex judgments about matters that are inherently uncertain and because it is likely that materially different amounts would be reported under different conditions or using different assumptions. These policies govern:

- the allowance for credit losses;
- the valuation of residential MSRs;
- the fair value of financial instruments;
- income taxes; and
- liability for contingent litigation losses.

Management and the Board's Audit and Examination Committee have reviewed and approved these critical accounting policies.

Allowance for Credit Losses

We maintain an allowance for credit losses, which consists of the allowance for loan losses and the allowance for unfunded credit commitments, which is management's estimate of credit losses inherent in the loan portfolio, including unfunded credit commitments, at the balance sheet date, excluding loans carried at fair value. For a description of our related accounting policies, see Note 1 (Summary of Significant Accounting Policies) to Financial Statements in this Report.

Changes in the allowance for credit losses and, therefore, in the related provision for credit losses can materially affect net income. In applying the judgment and review required to determine the allowance for credit losses, management considers changes in economic conditions, customer behavior, and collateral value, among other influences. From time to time, economic factors or business decisions, such as the addition or liquidation of a loan product or business unit, may affect the loan portfolio, causing management to provide for or release amounts from the allowance for credit losses. While our methodology attributes portions of the allowance to specific portfolio segments (commercial and consumer), the entire allowance for credit losses is available to absorb credit losses inherent in the total loan portfolio and unfunded credit commitments.

Judgment is specifically applied in:

- *Credit risk ratings applied to individual commercial loans and unfunded credit commitments.* We estimate the probability of default in accordance with the borrower's financial strength using a borrower quality rating and the severity of loss in the event of default using a collateral quality rating. Collectively, these ratings are referred to as credit risk ratings and are assigned to our commercial loans.

Probability of default and severity at the time of default are statistically derived through historical observations of defaults and losses after default within each credit risk rating. Commercial loan risk ratings are evaluated based on each situation by experienced senior credit officers and are subject to periodic review by an internal team of credit specialists.

- *Economic assumptions applied to pools of consumer loans (statistically modeled).* Losses are estimated using economic variables to represent our best estimate of inherent loss. Our forecasted losses are modeled using a range of economic scenarios.
- *Selection of a credit loss estimation model that fits the credit risk characteristics of its portfolio.* We use both internally developed and vendor supplied models in this process. We often use expected loss, transition rate, flow rate, competing hazard, vintage maturation, and time series or statistical trend models, most with economic correlations. Management must use judgment in establishing additional input metrics for the modeling processes, considering further stratification into reference data time series, sub-product, origination channel, vintage, loss type, geographic location and other predictive characteristics. The models used to determine the allowance for credit losses are validated in accordance with Company policies by an internal model validation group.
- *Assessment of limitations to credit loss estimation models.* We apply our judgment to adjust our modeled estimates to reflect other risks that may be identified from current conditions and developments in selected portfolios.
- *Identification and measurement of impaired loans, including loans modified in a TDR.* Our experienced senior credit officers may consider a loan impaired based on their evaluation of current information and events, including loans modified in a TDR. The measurement of impairment is typically based on an analysis of the present value of expected future cash flows. The development of these expectations requires significant management judgment and review.
- *An amount for imprecision or uncertainty which reflects management's overall estimate of the effect of quantitative and qualitative factors on inherent credit losses.* This amount represents management's judgment of risks inherent in the processes and assumptions used in establishing the allowance for credit losses. This imprecision considers economic environmental factors, modeling assumptions and performance, process risk, and other subjective factors, including industry trends and emerging risk assessments.

Critical Accounting Policies (continued)

SENSITIVITY TO CHANGES Table 49 demonstrates the impact of the sensitivity of our estimates on our allowance for credit losses.

Table 49: Allowance Sensitivity Summary

(in billions)	December 31, 2018	
	Estimated increase/(decrease) in allowance	
Assumption:		
Favorable (1)	\$	(3.2)
Adverse (2)		6.9

- (1) Represents a one risk rating upgrade throughout our commercial portfolio segment and a more optimistic economic outlook for modeled losses on our consumer portfolio segment.
- (2) Represents a one risk rating downgrade throughout our commercial portfolio segment, a more pessimistic economic outlook for modeled losses on our consumer portfolio segment, and incremental deterioration for PCI loans.

The sensitivity analyses provided in the previous table are hypothetical scenarios and are not considered probable. They do not represent management's view of inherent losses in the portfolio as of the balance sheet date. Because significant judgment is used, it is possible that others performing similar analyses could reach different conclusions. See the "Risk Management – Credit Risk Management – Allowance for Credit Losses" section and Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report for further discussion of our allowance for credit losses.

Valuation of Residential Mortgage Servicing Rights (MSRs)

MSRs are assets that represent the rights to service mortgage loans for others. We recognize MSRs when we purchase servicing rights from third parties, or retain servicing rights in connection with the sale or securitization of loans we originate (asset transfers). We also have MSRs acquired in the past under co-issuer agreements that provide for us to service loans that were originated and securitized by third-party correspondents.

We carry our MSRs related to residential mortgage loans at fair value. Periodic changes in our residential MSRs and the economic hedges used to hedge our residential MSRs are reflected in earnings.

We use a model to estimate the fair value of our residential MSRs. The model is validated by an internal model validation group operating in accordance with Company policies. The model calculates the present value of estimated future net servicing income and incorporates inputs and assumptions that market participants use in estimating fair value. Certain significant inputs and assumptions generally are not observable in the market and require judgment to determine. If observable market indications do become available, these are factored into the estimates as appropriate:

- *The mortgage loan prepayment speed used to estimate future net servicing income.* The prepayment speed is the annual rate at which borrowers are forecasted to repay their mortgage loan principal; this rate also includes estimated borrower defaults. We use models to estimate prepayment speeds and borrower defaults which are influenced by changes in mortgage interest rates and borrower behavior.
- *The discount rate used to present value estimated future net servicing income.* The discount rate is the required rate of return investors in the market would expect for an asset with similar risk. To determine the discount rate, we consider the risk premium for uncertainties from servicing

operations (e.g., possible changes in future servicing costs, ancillary income and earnings on escrow accounts).

- *The expected cost to service loans used to estimate future net servicing income.* The cost to service loans includes estimates for unreimbursed expenses, such as delinquency and foreclosure costs, which considers the number of defaulted loans as well as changes in servicing processes associated with default and foreclosure management.

Both prepayment speed and discount rate assumptions can, and generally will, change quarterly as market conditions and mortgage interest rates change. For example, an increase in either the prepayment speed or discount rate assumption results in a decrease in the fair value of the MSRs, while a decrease in either assumption would result in an increase in the fair value of the MSRs. In recent years, there have been significant market-driven fluctuations in loan prepayment speeds and the discount rate. These fluctuations can be rapid and may be significant in the future. Additionally, while our current valuation reflects our best estimate of servicing costs, future regulatory or investor changes in servicing standards, as well as changes in individual state foreclosure legislation or additional market participant information regarding servicing cost assumptions, may have an impact on our servicing cost assumption and our MSR valuation in future periods.

For a description of our valuation and sensitivity of MSRs, see Note 1 (Summary of Significant Accounting Policies), Note 9 (Securitizations and Variable Interest Entities), Note 10 (Mortgage Banking Activities) and Note 18 (Fair Values of Assets and Liabilities) to Financial Statements in this Report.

Fair Value of Financial Instruments

Fair value represents the price that would be received to sell the financial asset or paid to transfer the financial liability in an orderly transaction between market participants at the measurement date.

We use fair value measurements to record fair value adjustments to certain financial instruments and to determine fair value disclosures. For example, assets and liabilities held for trading purposes, marketable equity securities not held for trading purposes, debt securities available for sale, derivatives and substantially all of our residential MLHFS are carried at fair value each period. Other financial instruments, such as certain MLHFS, nonmarketable equity securities and substantially all of our loans held for investment, are not carried at fair value each period but may require nonrecurring fair value adjustments due to application of lower-of-cost-or-market accounting, measurement alternative accounting or write-downs of individual assets. We also disclose our estimate of fair value for financial instruments not recorded at fair value, such as loans held for investment or issuances of long-term debt.

The accounting provisions for fair value measurements include a three-level hierarchy for disclosure of assets and liabilities recorded at fair value. The classification of assets and liabilities within the hierarchy is based on whether the inputs to the valuation methodology used for measurement are observable or unobservable. Observable inputs reflect market-derived or market-based information obtained from independent sources, while unobservable inputs reflect our estimates about market data. For additional information on fair value levels, see Note 18 (Fair Values of Assets and Liabilities) to Financial Statements in this Report.

When developing fair value measurements, we maximize the use of observable inputs and minimize the use of unobservable inputs. When available, we use quoted prices in

active markets to measure fair value. If quoted prices in active markets are not available, fair value measurement is based upon models that use primarily market-based or independently sourced market parameters, including interest rate yield curves, prepayment speeds, option volatilities and currency rates. However, when observable market data is limited or not available, fair value estimates are typically determined using internally-developed models based on unobservable inputs. In these instances, management judgment is necessary as we are required to make judgments about significant assumptions market participants would use to estimate fair value. Determination of these assumptions includes consideration of market conditions and liquidity levels. Changes in the market conditions, such as reduced liquidity in the capital markets or changes in secondary market activities, may reduce the availability and reliability of quoted prices or observable data used to determine fair value. In such cases, it may be appropriate to adjust available quoted prices or observable market data. When significant adjustments are required to price quotes or other observable market data, it may be appropriate to utilize an estimate of fair value based primarily on unobservable inputs. Internal models used to determine fair value are validated in accordance with company policies by an internal model validation group. Additionally, we use third-party pricing services to obtain fair values, which are used to either record the price of an instrument or to corroborate internally developed prices. Third-party price validation procedures are performed over the reasonableness of the fair value measurements. For additional information on our use of pricing services, see Note 1 (Summary of Significant Accounting Policies) and Note 18 (Fair Value of Assets and Liabilities) to Financial Statements in this Report.

Significant judgment is also required to determine whether certain assets measured at fair value are classified as Level 2 or Level 3 of the fair value hierarchy as described in Note 18 (Fair Value of Assets and Liabilities) to Financial Statements in this Report. When making this judgment, we consider available information, including observable market data, indications of market liquidity and orderliness, and our understanding of the valuation techniques and significant inputs used. The classification of Level 2 or Level 3 is based upon the specific facts and circumstances of each instrument or instrument category and judgments are made regarding the significance of the Level 3 inputs to the instruments' fair value measurement in its entirety. If Level 3 inputs are considered significant, the instrument is classified as Level 3.

Table 50 presents the summary of the fair value of financial instruments recorded at fair value on a recurring basis, and the amounts of Level 3 assets and liabilities (before derivative netting adjustments). The fair value of the remaining assets and liabilities were measured using valuation methodologies involving market-based or market-derived information (collectively Level 1 and 2 measurements).

Table 50: Fair Value Level 3 Summary

(\$ in billions)	December 31, 2018		December 31, 2017	
	Total balance	Level 3 (1)	Total balance	Level 3 (1)
Assets carried at fair value	\$ 408.4	25.3	416.6	24.9
As a percentage of total assets	22%	1	21	1
Liabilities carried at fair value	\$ 28.2	1.6	27.3	2.0
As a percentage of total liabilities	2%	*	2	*

* Less than 1%.

(1) Before derivative netting adjustments.

See Note 18 (Fair Values of Assets and Liabilities) to Financial Statements in this Report for a complete discussion on our fair value of financial instruments, our related measurement techniques and the impact to our financial statements.

Income Taxes

We file consolidated and separate company U.S. federal income tax returns, foreign tax returns and various combined and separate company state tax returns. We evaluate two components of income tax expense: current and deferred income tax expense. Current income tax expense represents our estimated taxes to be paid or refunded for the current period and includes income tax expense related to our uncertain tax positions. Deferred income tax expense results from changes in deferred tax assets and liabilities between periods. We determine deferred income taxes using the balance sheet method. Under this method, the net deferred tax asset or liability is based on the tax effects of the differences between the book and tax bases of assets and liabilities, and recognizes enacted changes in tax rates and laws in the period in which they occur. Deferred tax assets are recognized subject to management's judgment that realization is "more likely than not." Uncertain tax positions that meet the more likely than not recognition threshold are measured to determine the amount of benefit to recognize. An uncertain tax position is measured at the largest amount of benefit that management believes has a greater than 50% likelihood of realization upon settlement. Tax benefits not meeting our realization criteria represent unrecognized tax benefits. We account for interest and penalties as a component of income tax expense. In 2018, we finalized the recognition of the U.S. tax expense associated with a deemed repatriation of undistributed earnings of certain non-U.S. subsidiaries as required under the 2017 Tax Act. We do not intend to distribute these earnings in a taxable manner, and therefore intend to limit distributions of foreign earnings previously taxed in the U.S., that would qualify for the 100% dividends received deduction, and that would not result in any significant state or foreign taxes. All other undistributed foreign earnings will continue to be permanently reinvested outside the U.S.

The income tax laws of the jurisdictions in which we operate are complex and subject to different interpretations by the taxpayer and the relevant government taxing authorities. In establishing a provision for income tax expense, we must make judgments and interpretations about the application of these inherently complex tax laws. We must also make estimates about when in the future certain items will affect taxable income in the various tax jurisdictions, both domestic and foreign. Our interpretations may be subjected to review during examination by taxing authorities and disputes may arise over the respective tax positions. We attempt to resolve these disputes during the

Critical Accounting Policies (*continued*)

tax examination and audit process and ultimately through the court systems when applicable.

We monitor relevant tax authorities and revise our estimate of accrued income taxes due to changes in income tax laws and their interpretation by the courts and regulatory authorities on a quarterly basis. Revisions of our estimate of accrued income taxes also may result from our own income tax planning and from the resolution of income tax controversies. Such revisions in our estimates may be material to our operating results for any given quarter.

See Note 23 (Income Taxes) to Financial Statements in this Report for a further description of our provision for income taxes and related income tax assets and liabilities.

Liability for Contingent Litigation Losses

The Company is involved in a number of judicial, regulatory, arbitration and other proceedings concerning matters arising from the conduct of its business activities, and many of those proceedings expose the Company to potential financial loss. We establish accruals for these legal actions when potential losses associated with the actions become probable and the costs can be reasonably estimated. For such accruals, we record the amount we consider to be the best estimate within a range of potential losses that are both probable and estimable; however, if we cannot determine a best estimate, then we record the low end of the range of those potential losses. The actual costs of resolving legal actions may be substantially higher or lower than the amounts accrued for those actions.

We apply judgment when establishing an accrual for potential losses associated with legal actions and in establishing the range of reasonably possible losses in excess of the accrual. Our judgment in establishing accruals and the range of reasonably possible losses in excess of the Company's accrual for probable and estimable losses is influenced by our understanding of information currently available related to the legal evaluation and potential outcome of actions, including input and advice on these matters from our internal counsel, external counsel and senior management. These matters may be in various stages of investigation, discovery or proceedings. They may also involve a wide variety of claims across our businesses, legal entities and jurisdictions. The eventual outcome may be a scenario that was not considered or was considered remote in anticipated occurrence. Accordingly, our estimate of potential losses will change over time and the actual losses may vary significantly.

The outcomes of legal actions are unpredictable and subject to significant uncertainties, and it is inherently difficult to determine whether any loss is probable or even possible. It is also inherently difficult to estimate the amount of any loss and there may be matters for which a loss is probable or reasonably possible but not currently estimable. Accordingly, actual losses may be in excess of the established accrual or the range of reasonably possible loss.

See Note 16 (Legal Actions) to Financial Statements in this Report for further information.

Current Accounting Developments

Table 51 provides the significant accounting updates applicable to us that have been issued by the FASB but are not yet effective.

Table 51: Current Accounting Developments – Issued Standards

Standard	Description	Effective date and financial statement impact
Accounting Standard Update (ASU or Update) 2018-16 - Derivatives and Hedging (Topic 815): <i>Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes</i>	The Update expands the list of U.S. benchmark interest rates permitted in the application of hedge accounting. The Update adds the OIS rate based on SOFR as a U.S. benchmark interest rate to facilitate the LIBOR to SOFR transition and provide sufficient lead time for entities to prepare for changes to interest rate risk hedging strategies for both risk management and hedge accounting purposes.	We adopted the guidance in first quarter 2019. The adoption did not impact existing hedges, but may impact new hedge relationships if we designate the SOFR OIS rate as the designated hedged benchmark interest rate for the Company's fixed-rate financial instruments and forecasted issuances or purchases of fixed-rate financial instruments.
ASU 2018-12 – Financial Services – Insurance (Topic 944): <i>Targeted Improvements to the Accounting for Long-Duration Contracts</i>	The Update requires all features in long-duration insurance contracts that meet the definition of a market risk benefit to be measured at fair value through earnings with changes in fair value attributable to our own credit risk recognized in other comprehensive income. Currently, two measurement models exist for these features, fair value and insurance accrual. The Update requires the use of a standardized discount rate and routine updates for insurance assumptions used in valuing the liability for future policy benefits for traditional long-duration contracts. The Update also simplifies the amortization of deferred acquisition costs.	The guidance becomes effective on January 1, 2021. Certain of our variable annuity reinsurance products meet the definition of market risk benefits and will be measured at fair value as of the earliest period presented. The cumulative effect of changes attributable to the market risk benefit of the liability's instrument-specific credit risk (i.e., the Company's own credit risk) will be recognized in the beginning balance of accumulated other comprehensive income. The cumulative effect of the difference between fair value and carrying value, excluding the effect of our own credit, will be recognized in the opening balance of retained earnings. Changes to the liability for future policy benefits for traditional long-duration contracts and deferred acquisition costs will be applied to all outstanding contracts on the basis of their existing carrying amounts at the beginning of the earliest period presented. The impact of the Update on our consolidated financial statements is still being evaluated.
ASU 2017-08 – Receivables – Nonrefundable Fees and Other Costs (Subtopic 310-20): <i>Premium Amortization on Purchased Callable Debt Securities</i>	The Update changes the accounting for certain purchased callable debt securities held at a premium to shorten the amortization period for the premium to the earliest call date rather than to the maturity date. Accounting for purchased callable debt securities held at a discount does not change. The discount would continue to amortize to the maturity date.	We adopted the guidance in first quarter 2019 and recorded a cumulative-effect adjustment as of January 1, 2019, that reduced retained earnings by \$592 million and increased other comprehensive income by \$481 million. The guidance impacted our investments in purchased callable debt securities held at a premium classified as available-for-sale (AFS) and held-to-maturity (HTM), which primarily consist of obligations of U.S. states and political subdivisions. In future periods, interest income recognized prior to the call date will be reduced because the premium will be amortized over a shorter time period.

Current Accounting Developments (continued)

Standard	Description	Effective date and financial statement impact
ASU 2016-13 – Financial Instruments – Credit Losses (Topic 326): <i>Measurement of Credit Losses on Financial Instruments</i>	The Update changes the accounting for credit losses measurement on loans and debt securities. For loans and held-to-maturity debt securities, the Update requires a current expected credit loss (CECL) measurement to estimate the allowance for credit losses (ACL) for the remaining estimated life of the financial asset (including off-balance sheet credit exposures) using historical experience, current conditions, and reasonable and supportable forecasts. The Update eliminates the existing guidance for PCI loans, but requires an allowance for purchased financial assets with more than insignificant deterioration since origination. In addition, the Update modifies the other-than-temporary impairment model for available-for-sale debt securities to require an allowance for credit impairment instead of a direct write-down, which allows for reversal of credit impairments in future periods based on improvements in credit.	<p>We expect to adopt the guidance in first quarter 2020. Our implementation process includes loss forecasting model development, evaluation of technical accounting topics, updates to our allowance documentation, reporting processes and related internal controls, and overall operational readiness for our adoption of the Update, which will continue throughout 2019, including parallel runs for CECL alongside our current allowance process.</p> <p>We are in the process of developing, validating, and implementing models used to estimate credit losses under CECL. We have substantially completed a significant majority of our loss forecasting models, and we expect to complete the validation process for our loan models during 2019.</p> <p>Our current planned approach for estimating expected life-time credit losses for loans and debt securities includes the following key components:</p> <ul style="list-style-type: none"> • An initial forecast period of one year for all portfolio segments and classes of financing receivables and off-balance-sheet credit exposures. This period reflects management's expectation of losses based on forward-looking economic scenarios over that time. • A historical loss forecast period covering the remaining contractual life, adjusted for prepayments, by portfolio segment and class of financing receivables based on the change in key historic economic variables during representative historical expansionary and recessionary periods. • A reversion period of up to 2 years connecting the initial loss forecast to the historical loss forecast based on economic conditions at the measurement date. • We will utilize discounted cash flow (DCF) methods to measure credit impairment for loans modified in a TDR, unless they are collateral dependent and measured at the fair value of collateral. The DCF methods would obtain estimated life-time credit losses using the conceptual components described above. • For available-for-sale debt securities and certain beneficial interests classified as held-to-maturity, we plan to utilize the DCF methods to measure the ACL, which will incorporate expected credit losses using the conceptual components described above. <p>We expect an overall increase in the ACL for loans, with an expected increase for longer duration consumer portfolios and an expected decrease for commercial loans given short contractual maturities with conditional renewal options. The expected impact on our ACL does not include the impact of the FASB's recently proposed change to consider recoveries of previously charged off loans or subsequent increases in fair value of collateral for collateral dependent loans in the ACL measurement. If finalized, the proposed changes would reduce the expected change in our ACL. We continue to evaluate the results of our modeled loss estimates and will continue to make refinements to our approach, including evaluating an amount for imprecision or uncertainty, based on management's judgment of the risk inherent in the processes and assumptions used in estimating the ACL.</p> <p>We will recognize an ACL for held-to-maturity and available-for-sale debt securities. The ACL on available-for-sale debt securities will be subject to a limitation based on the fair value of the security. Based on the credit quality of our existing debt securities portfolio, we do not expect the ACL for held-to-maturity and available-for-sale debt securities to be significant.</p> <p>The amount of the change in our ACL will be impacted by our portfolio composition and credit quality at the adoption date as well as economic conditions and forecasts at that time. At adoption, we expect to have a cumulative-effect adjustment to retained earnings for our change in the ACL, which will impact our capital. Federal banking regulatory agencies have agreed to limit the initial capital impact of the Update by allowing a phased adoption over three years, on a straight-line basis. An increase in our ACL will result in a reduction to our regulatory capital amounts and ratios; however, at this point in implementation, we are not able to provide a more precise estimate of the impact.</p>

Standard	Description	Effective date and financial statement impact
ASU 2016-02 – Leases (Topic 842) and subsequent related Updates	The Update requires lessees to recognize operating leases on the balance sheet with lease liabilities and related right-of-use assets based on the present value of future lease payments. Lessor accounting activities are largely unchanged from existing lease accounting. The Update also eliminates leveraged lease accounting but allows existing leveraged leases to continue their current accounting until maturity, termination or modification.	We adopted the guidance in first quarter 2019 and have elected not to provide a comparative presentation for 2018 and 2017 financial statements. At adoption, we recognized a cumulative effect adjustment of approximately \$100 million that increased retained earnings related to deferred gains on our prior sale-leaseback transactions. Our operating lease right-of-use assets and liabilities, for approximately 7,000 leases, were \$5 billion and \$5.6 billion, respectively. There were no material changes to the timing of expense recognition on these operating leases or in the recognition and measurement of our lessor accounting. While the increase to our consolidated total assets related to operating lease right-of-use assets increases our risk-weighted assets and decreases our capital ratios, we do not expect these changes to be material.

In addition to the list above, the following Updates are applicable to us but are not expected to have a material impact on our consolidated financial statements:

- ASU 2018-17 – Consolidation (Topic 810): *Targeted Improvements to Related Party Guidance for Variable Interest Entities*
- ASU 2018-15 – Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40): *Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract (a consensus of the FASB Emerging Issues Task Force)*
- ASU 2018-13 – Fair Value Measurement (Topic 820): *Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement*
- ASU 2018-09 – Codification Improvements
- ASU 2018-03 – Technical Corrections and Improvements to Financial Instruments – Overall (Subtopic 825-10): *Financial Instruments – Overall*
- ASU 2017-04 – Intangibles – Goodwill and Other (Topic 350): *Simplifying the Test for Goodwill Impairment*

Forward-Looking Statements

This document contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. In addition, we may make forward-looking statements in our other documents filed or furnished with the SEC, and our management may make forward-looking statements orally to analysts, investors, representatives of the media and others. Forward-looking statements can be identified by words such as “anticipates,” “intends,” “plans,” “seeks,” “believes,” “estimates,” “expects,” “target,” “projects,” “outlook,” “forecast,” “will,” “may,” “could,” “should,” “can” and similar references to future periods. In particular, forward-looking statements include, but are not limited to, statements we make about: (i) the future operating or financial performance of the Company, including our outlook for future growth; (ii) our noninterest expense and efficiency ratio; (iii) future credit quality and performance, including our expectations regarding future loan losses and allowance levels; (iv) the appropriateness of the allowance for credit losses; (v) our expectations regarding net interest income and net interest margin; (vi) loan growth or the reduction or mitigation of risk in our loan portfolios; (vii) future capital or liquidity levels or targets and our estimated Common Equity Tier 1 ratio under Basel III capital standards; (viii) the performance of our mortgage business and any related exposures; (ix) the expected outcome and impact of legal, regulatory and legislative developments, as well as our expectations regarding compliance therewith; (x) future common stock dividends, common share repurchases and other uses of capital; (xi) our targeted range for return on assets, return on equity, and return on tangible common equity; (xii) the outcome of contingencies, such as legal proceedings; and (xiii) the Company’s plans, objectives and strategies.

Forward-looking statements are not based on historical facts but instead represent our current expectations and assumptions regarding our business, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and

changes in circumstances that are difficult to predict. Our actual results may differ materially from those contemplated by the forward-looking statements. We caution you, therefore, against relying on any of these forward-looking statements. They are neither statements of historical fact nor guarantees or assurances of future performance. While there is no assurance that any list of risks and uncertainties or risk factors is complete, important factors that could cause actual results to differ materially from those in the forward-looking statements include the following, without limitation:

- current and future economic and market conditions, including the effects of declines in housing prices, high unemployment rates, U.S. fiscal debt, budget and tax matters, geopolitical matters, and any slowdown in global economic growth;
- our capital and liquidity requirements (including under regulatory capital standards, such as the Basel III capital standards) and our ability to generate capital internally or raise capital on favorable terms;
- financial services reform and other current, pending or future legislation or regulation that could have a negative effect on our revenue and businesses, including the Dodd-Frank Act and other legislation and regulation relating to bank products and services;
- developments in our mortgage banking business, including the extent of the success of our mortgage loan modification efforts, the amount of mortgage loan repurchase demands that we receive, any negative effects relating to our mortgage servicing, loan modification or foreclosure practices, and the effects of regulatory or judicial requirements or guidance impacting our mortgage banking business and any changes in industry standards;
- our ability to realize any efficiency ratio or expense target as part of our expense management initiatives, including as a result of business and economic cyclicity, seasonality, changes in our business composition and operating

Forward-Looking Statements (*continued*)

environment, growth in our businesses and/or acquisitions, and unexpected expenses relating to, among other things, litigation and regulatory matters;

- the effect of the current interest rate environment or changes in interest rates on our net interest income, net interest margin and our mortgage originations, mortgage servicing rights and mortgage loans held for sale;
- significant turbulence or a disruption in the capital or financial markets, which could result in, among other things, reduced investor demand for mortgage loans, a reduction in the availability of funding or increased funding costs, and declines in asset values and/or recognition of other-than-temporary impairment on securities held in our debt securities and equity securities portfolios;
- the effect of a fall in stock market prices on our investment banking business and our fee income from our brokerage, asset and wealth management businesses;
- negative effects from the retail banking sales practices matter and from other instances where customers may have experienced financial harm, including on our legal, operational and compliance costs, our ability to engage in certain business activities or offer certain products or services, our ability to keep and attract customers, our ability to attract and retain qualified team members, and our reputation;
- resolution of regulatory matters, litigation, or other legal actions, which may result in, among other things, additional costs, fines, penalties, restrictions on our business activities, reputational harm, or other adverse consequences;
- a failure in or breach of our operational or security systems or infrastructure, or those of our third-party vendors or other service providers, including as a result of cyber attacks;
- the effect of changes in the level of checking or savings account deposits on our funding costs and net interest margin;
- fiscal and monetary policies of the Federal Reserve Board; and
- the other risk factors and uncertainties described under “Risk Factors” in this Report.

In addition to the above factors, we also caution that the amount and timing of any future common stock dividends or repurchases will depend on the earnings, cash requirements and financial condition of the Company, market conditions, capital requirements (including under Basel capital standards), common stock issuance requirements, applicable law and regulations (including federal securities laws and federal banking regulations), and other factors deemed relevant by the Company’s Board of Directors, and may be subject to regulatory approval or conditions.

For more information about factors that could cause actual results to differ materially from our expectations, refer to our reports filed with the Securities and Exchange Commission, including the discussion under “Risk Factors” in this Report, as filed with the Securities and Exchange Commission and available on its website at www.sec.gov.

Any forward-looking statement made by us speaks only as of the date on which it is made. Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We undertake no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by law.

Forward-looking Non-GAAP Financial Measures. From time to time management may discuss forward-looking non-GAAP financial measures, such as forward-looking estimates or targets for return on average tangible common equity. We are unable to provide a reconciliation of forward-looking non-GAAP financial measures to their most directly comparable GAAP financial measures because we are unable to provide, without unreasonable effort, a meaningful or accurate calculation or estimation of amounts that would be necessary for the reconciliation due to the complexity and inherent difficulty in forecasting and quantifying future amounts or when they may occur. Such unavailable information could be significant to future results.

Risk Factors

An investment in the Company involves risk, including the possibility that the value of the investment could fall substantially and that dividends or other distributions on the investment could be reduced or eliminated. We discuss below risk factors that could adversely affect our financial results and condition, and the value of, and return on, an investment in the Company.

RISKS RELATED TO THE ECONOMY, FINANCIAL MARKETS, INTEREST RATES AND LIQUIDITY

As one of the largest lenders in the U.S. and a provider of financial products and services to consumers and businesses across the U.S. and internationally, our financial results have been, and will continue to be, materially affected by general economic conditions, and a deterioration in economic conditions or in the financial markets may materially adversely affect our lending and other businesses and our financial results and condition. We generate revenue from the interest and fees we charge on the loans and other products and services we

sell, and a substantial amount of our revenue and earnings comes from the net interest income and fee income that we earn from our consumer and commercial lending and banking businesses, including our mortgage banking business. These businesses have been, and will continue to be, materially affected by the state of the U.S. economy, particularly unemployment levels and home prices. Although the U.S. economy has continued to gradually improve from the depressed levels of 2008 and early 2009, economic growth has at times been slow and uneven. In addition, the negative effects and continued uncertainty stemming from U.S. fiscal and political matters, including concerns about deficit levels, taxes and U.S. debt ratings, have impacted and may continue to impact the global economic recovery. Moreover, geopolitical matters, including international political unrest or disturbances, Britain’s vote to withdraw from the European Union, as well as continued concerns over commodity prices, restrictions on international trade, and global economic difficulties, may impact the stability of financial markets and the global economy. In particular, Britain’s vote to withdraw from the European Union, including the terms of its exit, could increase economic barriers between

Britain and the European Union, limit our ability to conduct business in the European Union, impose additional costs on us, subject us to different laws, regulations and/or regulatory authorities, or adversely impact our business, financial results and operating model. For example, certain operations of our broker-dealer in London may be impacted by the terms and conditions of Britain's withdrawal. Although we are transitioning certain of these operations to other European countries, there is no guarantee that we will be able to operate or conduct business in the European Union in the same manner following Britain's withdrawal. A prolonged period of slow growth in the global economy, particularly in the U.S., or any deterioration in general economic conditions and/or the financial markets resulting from the above matters or any other events or factors that may disrupt or dampen the global economic recovery, could materially adversely affect our financial results and condition.

A weakening in business or economic conditions, including higher unemployment levels or declines in home prices, can also adversely affect our borrowers' ability to repay their loans, which can negatively impact our credit performance. If unemployment levels worsen or if home prices fall we would expect to incur elevated charge-offs and provision expense from increases in our allowance for credit losses. These conditions may adversely affect not only consumer loan performance but also commercial and CRE loans, especially for those business borrowers that rely on the health of industries that may experience deteriorating economic conditions. The ability of these and other borrowers to repay their loans may deteriorate, causing us, as one of the largest commercial and CRE lenders in the U.S., to incur significantly higher credit losses. In addition, weak or deteriorating economic conditions make it more challenging for us to increase our consumer and commercial loan portfolios by making loans to creditworthy borrowers at attractive yields. Furthermore, weak economic conditions, as well as competition and/or increases in interest rates, could soften demand for our loans resulting in our retaining a much higher amount of lower yielding liquid assets on our balance sheet. If economic conditions do not continue to improve or if the economy worsens and unemployment rises, which also would likely result in a decrease in consumer and business confidence and spending, the demand for our credit products, including our mortgages, may fall, reducing our interest and noninterest income and our earnings.

A deterioration in business and economic conditions, which may erode consumer and investor confidence levels, and/or increased volatility of financial markets, also could adversely affect financial results for our fee-based businesses, including our investment advisory, mutual fund, securities brokerage, wealth management, and investment banking businesses. In 2018, approximately 25% of our revenue was fee income, which included trust and investment fees, card fees and other fees. We earn fee income from managing assets for others and providing brokerage and other investment advisory and wealth management services. Because investment management fees are often based on the value of assets under management, a fall in the market prices of those assets could reduce our fee income. Changes in stock market prices could affect the trading activity of investors, reducing commissions and other fees we earn from our brokerage business. In addition, adverse market conditions may negatively affect the performance of products we have provided to customers, which may expose us to legal actions or additional costs. The U.S. stock market experienced all-time highs in 2018, but also experienced significant volatility and there is no guarantee that high price levels will continue or that price levels will stabilize. Poor economic conditions and volatile

or unstable financial markets also can negatively affect our debt and equity underwriting and advisory businesses, as well as our trading activities and venture capital businesses. Any deterioration in global financial markets and economies, including as a result of any international political unrest or disturbances, may adversely affect the revenues and earnings of our international operations, particularly our global financial institution and correspondent banking services.

For more information, refer to the "Risk Management – Asset/Liability Management" and "– Credit Risk Management" sections in this Report.

Changes in interest rates and financial market values could reduce our net interest income and earnings, as well as our other comprehensive income, including as a result of recognizing losses on the debt and equity securities that we hold in our portfolio or trade for our customers. Our net interest income is the interest we earn on loans, debt securities and other assets we hold less the interest we pay on our deposits, long-term and short-term debt, and other liabilities. Net interest income is a measure of both our net interest margin – the difference between the yield we earn on our assets and the interest rate we pay for deposits and our other sources of funding – and the amount of earning assets we hold. Changes in either our net interest margin or the amount or mix of earning assets we hold could affect our net interest income and our earnings. Changes in interest rates can affect our net interest margin. Although the yield we earn on our assets and our funding costs tend to move in the same direction in response to changes in interest rates, one can rise or fall faster than the other, causing our net interest margin to expand or contract. If our funding costs rise faster than the yield we earn on our assets or if the yield we earn on our assets falls faster than our funding costs, our net interest margin could contract.

The amount and type of earning assets we hold can affect our yield and net interest margin. We hold earning assets in the form of loans and debt and equity securities, among other assets. As noted above, if the economy worsens we may see lower demand for loans by creditworthy customers, reducing our net interest income and yield. In addition, our net interest income and net interest margin can be negatively affected by a prolonged low interest rate environment as it may result in us holding lower yielding loans and securities on our balance sheet, particularly if we are unable to replace the maturing higher yielding assets with similar higher yielding assets. Increases in interest rates, however, may negatively affect loan demand and could result in higher credit losses as borrowers may have more difficulty making higher interest payments. As described below, changes in interest rates also affect our mortgage business, including the value of our MSRs.

Changes in the slope of the "yield curve" – or the spread between short-term and long-term interest rates – could also reduce our net interest margin. Normally, the yield curve is upward sloping, meaning short-term rates are lower than long-term rates. When the yield curve flattens, or even inverts, our net interest margin could decrease if the cost of our short-term funding increases relative to the yield we can earn on our long-term assets.

The interest we earn on our loans may be tied to U.S.-denominated interest rates such as the federal funds rate while the interest we pay on our debt may be based on international rates such as LIBOR. If the federal funds rate were to fall without a corresponding decrease in LIBOR, we might earn less on our loans without any offsetting decrease in our funding costs. This could lower our net interest margin and our net interest income.

Risk Factors (continued)

In addition, our floating rate funding, certain hedging transactions, and certain of the products that we offer, such as floating rate loans and derivatives in connection with customer accommodation activities, reference a benchmark rate, such as LIBOR, or other financial metric in order to determine the applicable interest rate or payment amount. In the event any such benchmark rate or other referenced financial metric is significantly changed, replaced or discontinued, or ceases to be recognized as an acceptable market benchmark rate or financial metric (for example, if LIBOR is discontinued after 2021 as contemplated by the U.K. Financial Conduct Authority), there may be uncertainty or differences in the calculation of the applicable interest rate or payment amount depending on the terms of the governing instrument and there may be significant work required to transition to using any new benchmark rate or other financial metric. This could result in different financial performance for previously booked transactions, require different hedging strategies, require renegotiation of previously booked transactions, or affect our capital and liquidity planning and management. In addition, the transition to using any new benchmark rate or other financial metric may impact our existing transaction data, products, systems, models, operations and pricing processes, and could result in significant operational, systems, or other practical challenges, increased compliance, legal and operational costs, losses on financial instruments we hold, or other adverse consequences. Furthermore, the transition from a widely-used benchmark rate like LIBOR to any new benchmark rate could have a significant impact on the overall interest rate environment and could result in customers challenging the determination of their interest payments or entering into fewer transactions or postponing their financing needs, which could reduce our revenue and adversely affect our business. Moreover, to the extent borrowers with loans referenced to LIBOR, such as adjustable rate mortgage loans, experience higher interest payments as a result of the transition to a new benchmark rate, our customers' ability to repay their loans may be adversely affected, which can negatively impact our credit performance.

We assess our interest rate risk by estimating the effect on our earnings under various scenarios that differ based on assumptions about the direction, magnitude and speed of interest rate changes and the slope of the yield curve. We hedge some of that interest rate risk with interest rate derivatives. We also rely on the "natural hedge" that our mortgage loan originations and servicing rights can provide.

We generally do not hedge all of our interest rate risk. There is always the risk that changes in interest rates, credit spreads or option volatility could reduce our net interest income and earnings, as well as our other comprehensive income, in material amounts, especially if actual conditions turn out to be materially different than what we assumed. For example, if interest rates rise or fall faster than we assumed or the slope of the yield curve changes, we may incur significant losses on debt securities we hold as investments. To reduce our interest rate risk, we may rebalance our portfolios of debt securities, equity securities and loans, refinance our debt and take other strategic actions. We may incur losses when we take such actions.

We hold debt and equity securities, including U.S. Treasury and federal agency securities and federal agency MBS, securities of U.S. states and political subdivisions, residential and commercial MBS, corporate debt securities, other asset-backed securities and marketable equity securities, including securities relating to our venture capital activities. Because of changing economic and market conditions, as well as credit ratings, affecting issuers and the performance of any collateral

underlying the securities, we may be required to recognize OTTI in future periods on the securities we hold. In particular, economic difficulties in the oil and gas industry resulting from volatile or prolonged low energy prices may further impact our energy sector investments and require us to recognize OTTI in these investments in future periods. Furthermore, the value of the debt securities we hold can fluctuate due to changes in interest rates, issuer creditworthiness, and other factors. Our net income also is exposed to changes in interest rates, credit spreads, foreign exchange rates, and equity and commodity prices in connection with our trading activities, which are conducted primarily to accommodate the investment and risk management activities of our customers, as well as when we execute economic hedging to manage certain balance sheet risks. Trading debt securities and equity securities held for trading are carried at fair value with realized and unrealized gains and losses recorded in noninterest income. As part of our business to support our customers, we trade public debt and equity securities that are subject to market fluctuations with gains and losses recognized in net income. In addition, although high market volatility can increase our exposure to trading-related losses, periods of low volatility may have an adverse effect on our businesses as a result of reduced customer activity levels. Although we have processes in place to measure and monitor the risks associated with our trading activities, including stress testing and hedging strategies, there can be no assurance that our processes and strategies will be effective in avoiding losses that could have a material adverse effect on our financial results.

The value of our marketable and nonmarketable equity securities can fluctuate from quarter to quarter. Marketable equity securities are carried at fair value with unrealized gains and losses reflected in earnings. Nonmarketable equity securities are carried under the cost method, equity method, or measurement alternative, while others are carried at fair value with unrealized gains and losses reflected in earnings. Earnings from our equity securities portfolio may be volatile and hard to predict, and may have a significant effect on our earnings from period to period. When, and if, we recognize gains may depend on a number of factors, including general economic and market conditions, the prospects of the companies in which we invest, when a company goes public, the size of our position relative to the public float, and whether we are subject to any resale restrictions.

Nonmarketable equity securities include our private equity and venture capital investments that could result in significant OTTI losses for those investments carried under the measurement alternative or equity method. If we determine there is OTTI for an investment, we write-down the carrying value of the investment, resulting in a charge to earnings, which could be significant.

For more information, refer to the "Risk Management – Asset/Liability Management – Interest Rate Risk", "– Mortgage Banking Interest Rate and Market Risk", "– Market Risk – Trading Activities", and "– Market Risk – Equity Securities" and the "Balance Sheet Analysis – Available-for-Sale and Held-to-Maturity Debt Securities" sections in this Report and Note 4 (Trading Activities), Note 5 (Available-for-Sale and Held-to-Maturity Debt Securities) and Note 8 (Equity Securities) to Financial Statements in this Report.

Effective liquidity management, which ensures that we can meet customer loan requests, customer deposit maturities/withdrawals and other cash commitments, including principal and interest payments on our debt, efficiently under both normal operating conditions and

other unpredictable circumstances of industry or financial market stress, is essential for the operation of our business, and our financial results and condition could be materially adversely affected if we do not effectively manage our liquidity. Our liquidity is essential for the operation of our business. We primarily rely on bank deposits to be a low cost and stable source of funding for the loans we make and the operation of our business. Customer deposits, which include noninterest-bearing deposits, interest-bearing checking, savings certificates, certain market rate and other savings, and certain foreign deposits, have historically provided us with a sizable source of relatively stable and low-cost funds. In addition to customer deposits, our sources of liquidity include certain debt and equity securities, our ability to sell or securitize loans in secondary markets and to pledge loans to access secured borrowing facilities through the FHLB and the FRB, and our ability to raise funds in domestic and international money through capital markets.

Our liquidity and our ability to fund and run our business could be materially adversely affected by a variety of conditions and factors, including financial and credit market disruption and volatility or a lack of market or customer confidence in financial markets in general similar to what occurred during the financial crisis in 2008 and early 2009, which may result in a loss of customer deposits or outflows of cash or collateral and/or our inability to access capital markets on favorable terms. Market disruption and volatility could impact our credit spreads, which are the amount in excess of the interest rate of U.S. Treasury securities, or other benchmark securities, of the same maturity that we need to pay to our funding providers. Increases in interest rates and our credit spreads could significantly increase our funding costs. Other conditions and factors that could materially adversely affect our liquidity and funding include a lack of market or customer confidence in the Company or negative news about the Company or the financial services industry generally which also may result in a loss of deposits and/or negatively affect our ability to access the capital markets; our inability to sell or securitize loans or other assets; and, as described below, reductions in one or more of our credit ratings. Many of the above conditions and factors may be caused by events over which we have little or no control. While market conditions have improved since the financial crisis, there can be no assurance that significant disruption and volatility in the financial markets will not occur in the future. For example, concerns over geopolitical issues, commodity and currency prices, as well as global economic conditions, may cause financial market volatility.

In addition, concerns regarding U.S. government debt levels and any associated downgrade of U.S. government debt ratings may cause uncertainty and volatility as well. A downgrade of the sovereign debt ratings of the U.S. government or the debt ratings of related institutions, agencies or instrumentalities, as well as other fiscal or political events could, in addition to causing economic and financial market disruptions, materially adversely affect the market value of the U.S. government securities that we hold, the availability of those securities as collateral for borrowing, and our ability to access capital markets on favorable terms, as well as have other material adverse effects on the operation of our business and our financial results and condition.

As noted above, we rely heavily on bank deposits for our funding and liquidity. We compete with banks and other financial services companies for deposits. If our competitors raise the rates they pay on deposits our funding costs may increase, either because we raise our rates to avoid losing

deposits or because we lose deposits and must rely on more expensive sources of funding. Higher funding costs reduce our net interest margin and net interest income. Checking and savings account balances and other forms of customer deposits may decrease when customers perceive alternative investments, such as the stock market, as providing a better risk/return tradeoff. When customers move money out of bank deposits and into other investments, we may lose a relatively low-cost source of funds, increasing our funding costs and negatively affecting our liquidity.

If we are unable to continue to fund our assets through customer bank deposits or access capital markets on favorable terms or if we suffer an increase in our borrowing costs or otherwise fail to manage our liquidity effectively (including on an intraday basis), our liquidity, net interest margin, financial results and condition may be materially adversely affected. As we did during the financial crisis, we may also need, or be required by our regulators, to raise additional capital through the issuance of common stock, which could dilute the ownership of existing stockholders, or reduce or even eliminate our common stock dividend to preserve capital or in order to raise additional capital.

For more information, refer to the “Risk Management – Asset/Liability Management” section in this Report.

Adverse changes in our credit ratings could have a material adverse effect on our liquidity, cash flows, financial results and condition. Our borrowing costs and ability to obtain funding are influenced by our credit ratings. Reductions in one or more of our credit ratings could adversely affect our ability to borrow funds and raise the costs of our borrowings substantially and could cause creditors and business counterparties to raise collateral requirements or take other actions that could adversely affect our ability to raise funding. Credit ratings and credit ratings agencies’ outlooks are based on the ratings agencies’ analysis of many quantitative and qualitative factors, such as our capital adequacy, liquidity, asset quality, business mix, the level and quality of our earnings, rating agency assumptions regarding the probability and extent of federal financial assistance or support, and other rating agency specific criteria. In addition to credit ratings, our borrowing costs are affected by various other external factors, including market volatility and concerns or perceptions about the financial services industry generally. There can be no assurance that we will maintain our credit ratings and outlooks and that credit ratings downgrades in the future would not materially affect our ability to borrow funds and borrowing costs.

Downgrades in our credit ratings also may trigger additional collateral or funding obligations which could negatively affect our liquidity, including as a result of credit-related contingent features in certain of our derivative contracts. Although a one or two notch downgrade in our current credit ratings would not be expected to trigger a material increase in our collateral or funding obligations, a more severe credit rating downgrade of our long-term and short-term credit ratings could increase our collateral or funding obligations and the effect on our liquidity could be material.

For information on our credit ratings, see the “Risk Management – Asset/Liability Management – Liquidity and Funding – Credit Ratings” section and for information regarding additional collateral and funding obligations required of certain derivative instruments in the event our credit ratings were to fall below investment grade, see Note 17 (Derivatives) to Financial Statements in this Report.

Risk Factors *(continued)*

We rely on dividends from our subsidiaries for liquidity, and federal and state law, as well as certain contractual arrangements, can limit those dividends.

Wells Fargo & Company, the parent holding company (the “Parent”), is a separate and distinct legal entity from its subsidiaries. It receives substantially all of its funding and liquidity from dividends and other distributions from its subsidiaries. We generally use these dividends and distributions, among other things, to pay dividends on our common and preferred stock and interest and principal on our debt. Federal and state laws limit the amount of dividends and distributions that our bank and some of our nonbank subsidiaries, including our broker-dealer subsidiaries, may pay to the Parent. In addition, under a Support Agreement (the “Support Agreement”) dated June 28, 2017 among the Parent, WFC Holdings, LLC, an intermediate holding company and subsidiary of the Parent (the “IHC”), and Wells Fargo Bank, N.A., Wells Fargo Securities, LLC, and Wells Fargo Clearing Services, LLC, each an indirect subsidiary of the Parent, the IHC may be restricted from making dividend payments to the Parent if certain liquidity and/or capital metrics fall below defined triggers. Also, our right to participate in a distribution of assets upon a subsidiary’s liquidation or reorganization is subject to the prior claims of the subsidiary’s creditors.

For more information, refer to the “Regulation and Supervision – Dividend Restrictions” and “– Holding Company Structure” sections in our 2018 Form 10-K and to Note 3 (Cash, Loan and Dividend Restrictions) and Note 28 (Regulatory and Agency Capital Requirements) to Financial Statements in this Report.

RISKS RELATED TO FINANCIAL REGULATORY REFORM AND OTHER LEGISLATION AND REGULATIONS

Enacted legislation and regulation, including the Dodd-Frank Act, as well as future legislation and/or regulation, could require us to change certain of our business practices, reduce our revenue and earnings, impose additional costs on us or otherwise adversely affect our business operations and/or competitive position. Our parent company, our subsidiary banks and many of our nonbank subsidiaries such as those related to our brokerage and mutual fund businesses, are subject to significant and extensive regulation under state and federal laws in the U.S., as well as the applicable laws of the various jurisdictions outside of the U.S. where we conduct business. These regulations protect depositors, federal deposit insurance funds, consumers, investors, team members, and the banking and financial system as a whole, not necessarily our security holders. Economic, market and political conditions during the past few years have led to a significant amount of legislation and regulation in the U.S. and abroad affecting the financial services industry, as well as heightened expectations and scrutiny of financial services companies from banking regulators. These laws and regulations may affect the manner in which we do business and the products and services that we provide, affect or restrict our ability to compete in our current businesses or our ability to enter into or acquire new businesses, reduce or limit our revenue in businesses or impose additional fees, assessments or taxes on us, intensify the regulatory supervision of us and the financial services industry, and adversely affect our business operations or have other negative consequences. Our businesses and revenues in non-U.S. jurisdictions are also subject to risks from political, economic and social developments in those jurisdictions,

including sanctions or business restrictions, asset freezes or confiscation, unfavorable political or diplomatic developments, or financial or social instability. In addition, greater government oversight and scrutiny of financial services companies has increased our operational and compliance costs as we must continue to devote substantial resources to enhancing our procedures and controls and meeting heightened regulatory standards and expectations. Any failure to meet regulatory requirements, standards or expectations, either in the U.S. or in foreign jurisdictions, could result in fees, penalties, restrictions on our ability to engage in certain business activities, or other adverse consequences.

On July 21, 2010, the Dodd-Frank Act, the most significant financial reform legislation since the 1930s, became law. The Dodd-Frank Act, among other things, imposes significant requirements and restrictions impacting the financial services industry. The Dodd-Frank Act, including current and future rules implementing its provisions and the interpretation of those rules, could result in a loss of revenue, require us to change certain of our business practices, limit our ability to pursue certain business opportunities, increase our capital requirements and impose additional assessments and costs on us and otherwise adversely affect our business operations and have other negative consequences.

Our consumer businesses, including our mortgage, automobile, credit card and other consumer lending and non-lending businesses, are subject to numerous and, in many cases, highly complex consumer protection laws and regulations, as well as enhanced regulatory scrutiny and more and expanded regulatory examinations and/or investigations. In particular, we may be negatively affected by the activities of the Consumer Financial Protection Bureau (CFPB), which has broad rulemaking powers and supervisory authority over consumer financial products and services. The CFPB’s activities may increase our compliance costs and require changes in our business practices as a result of regulations and requirements which could limit or negatively affect the products and services that we offer our customers. For example, the CFPB has issued a number of rules impacting residential mortgage lending practices and prepaid cards. If we fail to meet enhanced regulatory requirements and expectations with respect to our consumer businesses, we may be subject to increased costs, fines, penalties, restrictions on our business activities including the products and services we can provide, and/or harm to our reputation.

The Dodd-Frank Act’s proposed prohibitions or limitations on proprietary trading and private fund investment activities, known as the “Volcker Rule,” also may reduce our revenue. Final rules to implement the requirements of the Volcker Rule were issued in December 2013. The FRB has proposed further rules to streamline and modify compliance with the Volcker Rule’s requirements. Wells Fargo is also subject to enhanced compliance program requirements.

In addition, the Dodd-Frank Act established a comprehensive framework for regulating over-the-counter derivatives and authorized the CFTC and SEC to regulate swaps and security-based swaps, respectively. The CFTC has adopted rules applicable to our provisionally registered swap dealer, Wells Fargo Bank, N.A., that require, among other things, extensive regulatory and public reporting of swaps, central clearing and trading of swaps on exchanges or other multilateral platforms, and compliance with comprehensive internal and external business conduct standards. The SEC is expected to implement parallel rules applicable to security-based swaps. In addition, federal regulators have adopted final rules establishing

initial and variation margin requirements for swaps and security-based swaps not centrally cleared, rules placing restrictions on a party's right to exercise default rights under derivatives and other qualified financial contracts against applicable banking organizations, and record-keeping requirements for qualified financial contracts. All of these new rules, as well as others being considered by regulators in other jurisdictions, may negatively impact customer demand for over-the-counter derivatives, impact our ability to offer customers new derivatives or amendments to existing derivatives, and may increase our costs for engaging in swaps, security-based swaps, and other derivatives activities.

We are also subject to various rules and regulations related to the prevention of financial crimes and combating terrorism, including the U.S. Patriot Act of 2001. These rules and regulations require us to, among other things, implement policies and procedures related to anti-money laundering, anti-bribery and corruption, fraud, compliance, suspicious activities, currency transaction reporting and due diligence on customers. Although we have policies and procedures designed to comply with these rules and regulations, to the extent they are not fully effective or do not meet heightened regulatory standards or expectations, we may be subject to fines, penalties, restrictions on certain activities, reputational harm, or other adverse consequences.

Our businesses are also subject to laws and regulations enacted by U.S. and non-U.S. regulators and governmental authorities relating to the privacy of the information of customers, team members and others. These laws and regulations, among other things, increase our compliance obligations; have a significant impact on our businesses' collection, processing, sharing, use, and retention of personal data and reporting of data breaches; and provide for significantly increased penalties for non-compliance.

In April 2018, the SEC proposed a rule that would require broker-dealers to act in the best interest of a retail customer when making a recommendation of any securities transaction or investment strategy involving securities. This rule may impact the manner in which business is conducted with customers seeking investment advice and may affect certain investment product offerings.

On November 18, 2016, the OCC revoked provisions of certain consent orders that provided Wells Fargo Bank, N.A. relief from specific requirements and limitations regarding rules, policies, and procedures for corporate activities; OCC approval of changes in directors and senior executive officers; and golden parachute payments. As a result, Wells Fargo Bank, N.A. is no longer eligible for expedited treatment for certain applications; is now required to provide prior written notice to the OCC of a change in directors and senior executive officers; and is now subject to certain regulatory limitations on golden parachute payments.

In March 2017, we announced that the OCC had downgraded our most recent Community Reinvestment Act (CRA) rating, which covers the years 2009-2012, to "Needs to Improve" due to previously issued regulatory consent orders. A "Needs to Improve" rating imposes regulatory restrictions and limitations on certain of the Company's nonbank activities, including its ability to engage in certain nonbank mergers and acquisitions or undertake new financial in nature activities, and CRA performance is taken into account by regulators in reviewing applications to establish bank branches and for approving proposed bank mergers and acquisitions. The rating also results in the loss of expedited processing of applications to undertake certain activities, and requires the Company to receive

prior regulatory approval for certain activities, including to issue or prepay certain subordinated debt obligations, open or relocate bank branches, or make certain public welfare investments. In addition, a "Needs to Improve" rating could have an impact on the Company's relationships with certain states, counties, municipalities or other public agencies to the extent applicable law, regulation or policy limits, restricts or influences whether such entity may do business with a company that has a below "Satisfactory" rating.

On February 2, 2018, the Company entered into a consent order with the FRB. As required by the consent order, the Board submitted to the FRB a plan to further enhance the Board's governance and oversight of the Company, and the Company submitted to the FRB a plan to further improve the Company's compliance and operational risk management program. The consent order requires the Company, following the FRB's acceptance and approval of the plans and the Company's adoption and implementation of the plans, to complete third-party reviews of the enhancements and improvements provided for in the plans. Until these third-party reviews are complete and the plans are approved and implemented to the satisfaction of the FRB, the Company's total consolidated assets will be limited to the level as of December 31, 2017, which could adversely affect our results of operations or financial condition. Compliance with this asset cap will be measured on a two-quarter daily average basis to allow for management of temporary fluctuations. Additionally, after removal of the asset cap, a second third-party review must also be conducted to assess the efficacy and sustainability of the enhancements and improvements.

On April 20, 2018, the Company entered into consent orders with the CFPB and OCC to pay an aggregate of \$1 billion in civil money penalties to resolve matters regarding the Company's compliance risk management program and past practices involving certain automobile collateral protection insurance policies and certain mortgage interest rate lock extensions. As required by the consent orders, the Company submitted to the CFPB and OCC an enterprise-wide compliance risk management plan and a plan to enhance the Company's internal audit program with respect to federal consumer financial law and the terms of the consent orders. In addition, as required by the consent orders, the Company submitted for non-objection plans to remediate customers affected by the automobile collateral protection insurance and mortgage interest rate lock matters, as well as a plan for the management of remediation activities conducted by the Company.

The Company may be subject to further actions, including the imposition of consent orders or similar regulatory agreements or civil money penalties, by other federal regulators regarding similar issues, including the Company's risk management policies and procedures. Compliance with the FRB consent order, the CFPB and OCC consent orders, and any other consent orders or regulatory actions, as well as the implementation of their requirements, may increase the Company's costs and require the Company to undergo significant changes to its business, products and services.

Other future regulatory initiatives that could significantly affect our business include proposals to reform the housing finance market in the United States. These proposals, among other things, consider winding down the GSEs and reducing or eliminating over time the role of the GSEs in guaranteeing mortgages and providing funding for mortgage loans, as well as the implementation of reforms relating to borrowers, lenders, and investors in the mortgage market, including reducing the maximum size of a loan that the GSEs can guarantee, phasing in a minimum down payment requirement for borrowers,

Risk Factors *(continued)*

improving underwriting standards, and increasing accountability and transparency in the securitization process. Congress also may consider the adoption of legislation to reform the mortgage financing market in an effort to assist borrowers experiencing difficulty in making mortgage payments or refinancing their mortgages. The extent and timing of any regulatory reform or the adoption of any legislation regarding the GSEs and/or the home mortgage market, as well as any effect on the Company's business and financial results, are uncertain.

Any other future legislation and/or regulation, if adopted, also could significantly change our regulatory environment and increase our cost of doing business, limit the activities we may pursue or affect the competitive balance among banks, savings associations, credit unions, and other financial services companies, and have a material adverse effect on our financial results and condition.

For more information, refer to the "Regulatory Matters" section in this Report and the "Regulation and Supervision" section in our 2018 Form 10-K.

We could be subject to more stringent capital, leverage or liquidity requirements or restrictions on our growth, activities or operations if regulators determine that our resolution or recovery plan is deficient. Pursuant to rules adopted by the FRB and the FDIC, Wells Fargo has prepared and filed a resolution plan, a so-called "living will," that is designed to facilitate our resolution in the event of material distress or failure. There can be no assurance that the FRB or FDIC will respond favorably to the Company's resolution plans. If the FRB or FDIC determines that our resolution plan has deficiencies, they may impose more stringent capital, leverage or liquidity requirements on us or restrict our growth, activities or operations until we adequately remedy the deficiencies. If the FRB or FDIC ultimately determines that we have been unable to remedy any deficiencies, they could require us to divest certain assets or operations.

We must also prepare and submit to the FRB a recovery plan that identifies a range of options that we may consider during times of idiosyncratic or systemic economic stress to remedy any financial weaknesses and restore market confidence without extraordinary government support. Recovery options include the possible sale, transfer or disposal of assets, securities, loan portfolios or businesses. Our insured national bank subsidiary, Wells Fargo Bank, N.A. (the "Bank"), must also prepare and submit to the OCC a recovery plan that sets forth the Bank's plan to remain a going concern when the Bank is experiencing considerable financial or operational stress, but has not yet deteriorated to the point where liquidation or resolution is imminent. If the FRB or the OCC determines that our recovery plan is deficient, they may impose fines, restrictions on our business or ultimately require us to divest assets.

Our security holders may suffer losses in a resolution of Wells Fargo, whether in a bankruptcy proceeding or under the orderly liquidation authority of the FDIC, even if creditors of our subsidiaries are paid in full. If Wells Fargo were to fail, it may be resolved in a bankruptcy proceeding or, if certain conditions are met, under the resolution regime created by the Dodd-Frank Act known as the "orderly liquidation authority." The orderly liquidation authority allows for the appointment of the FDIC as receiver for a systemically important financial institution that is in default or in danger of default if, among other things, the resolution of the institution under the U.S. Bankruptcy Code would have serious adverse

effects on financial stability in the United States. If the FDIC is appointed as receiver for Wells Fargo & Company (the "Parent"), then the orderly liquidation authority, rather than the U.S. Bankruptcy Code, would determine the powers of the receiver and the rights and obligations of our security holders. The FDIC's orderly liquidation authority requires that security holders of a company in receivership bear all losses before U.S. taxpayers are exposed to any losses, and allows the FDIC to disregard the strict priority of creditor claims under the U.S. Bankruptcy Code in certain circumstances.

Whether under the U.S. Bankruptcy Code or by the FDIC under the orderly liquidation authority, Wells Fargo could be resolved using a "multiple point of entry" strategy, in which the Parent and one or more of its subsidiaries would each undergo separate resolution proceedings, or a "single point of entry" strategy, in which the Parent would likely be the only material legal entity to enter resolution proceedings. The FDIC has announced that a single point of entry strategy may be a desirable strategy under its implementation of the orderly liquidation authority, but not all aspects of how the FDIC might exercise this authority are known and additional rulemaking is possible.

The strategy described in our most recent resolution plan submission is a multiple point of entry strategy; however, we have made a decision to move to a single point of entry strategy for our next resolution plan submission. We are not obligated to maintain either a single point of entry or multiple point of entry strategy, and the strategies reflected in our resolution plan submissions are not binding in the event of an actual resolution of Wells Fargo, whether conducted under the U.S. Bankruptcy Code or by the FDIC under the orderly liquidation authority.

To facilitate the orderly resolution of systemically important financial institutions in case of material distress or failure, federal banking regulations require that institutions, such as Wells Fargo, maintain a minimum amount of equity and unsecured debt to absorb losses and recapitalize operating subsidiaries. Federal banking regulators have also required measures to facilitate the continued operation of operating subsidiaries notwithstanding the failure of their parent companies, such as limitations on parent guarantees, and have issued guidance encouraging institutions to take legally binding measures to provide capital and liquidity resources to certain subsidiaries in order to facilitate an orderly resolution. In response to the regulators' guidance and to facilitate the orderly resolution of the Company using either a single point of entry or multiple point of entry resolution strategy, on June 28, 2017, the Parent entered into the Support Agreement with WFC Holdings, LLC, an intermediate holding company and subsidiary of the Parent (the "IHC"), and the Bank, Wells Fargo Securities, LLC ("WFS"), and Wells Fargo Clearing Services, LLC ("WFCS"), each an indirect subsidiary of the Parent. Pursuant to the Support Agreement, the Parent transferred a significant amount of its assets, including the majority of its cash, deposits, liquid securities and intercompany loans (but excluding its equity interests in its subsidiaries and certain other assets), to the IHC and will continue to transfer those types of assets to the IHC from time to time. In the event of our material financial distress or failure, the IHC will be obligated to use the transferred assets to provide capital and/or liquidity to the Bank pursuant to the Support Agreement and to WFS and WFCS through repurchase facilities entered into in connection with the Support Agreement. Under the Support Agreement, the IHC will also provide funding and liquidity to the Parent through subordinated notes and a committed line of credit, which, together with the issuance of dividends, is expected to provide the Parent, during business as

usual operating conditions, with the same access to cash necessary to service its debts, pay dividends, repurchase its shares, and perform its other obligations as it would have had if it had not entered into these arrangements and transferred any assets. If certain liquidity and/or capital metrics fall below defined triggers, the subordinated notes would be forgiven and the committed line of credit would terminate, which could materially and adversely impact the Parent's liquidity and its ability to satisfy its debts and other obligations, and could result in the commencement of bankruptcy proceedings by the Parent at an earlier time than might have otherwise occurred if the Support Agreement were not implemented. The Parent's and the IHC's respective obligations under the Support Agreement are secured pursuant to a related security agreement.

Any resolution of the Company will likely impose losses on shareholders, unsecured debt holders and other creditors of the Parent, while the Parent's subsidiaries may continue to operate. Creditors of some or all of our subsidiaries may receive significant or full recoveries on their claims, while the Parent's security holders could face significant or complete losses. This outcome may arise whether the Company is resolved under the U.S. Bankruptcy Code or by the FDIC under the orderly liquidation authority, and whether the resolution is conducted using a multiple point of entry or a single point of entry strategy. Furthermore, in a multiple point of entry or single point of entry strategy, losses at some or all of our subsidiaries could be transferred to the Parent and borne by the Parent's security holders. Moreover, if either resolution strategy proved to be unsuccessful, our security holders could face greater losses than if the strategy had not been implemented.

Bank regulations, including Basel capital and liquidity standards and FRB guidelines and rules, may require higher capital and liquidity levels, limiting our ability to pay common stock dividends, repurchase our common stock, invest in our business, or provide loans or other products and services to our customers.

The Company and each of our insured depository institutions are subject to various regulatory capital adequacy requirements administered by federal banking regulators. In particular, the Company is subject to final and interim final rules issued by federal banking regulators to implement Basel III capital requirements for U.S. banking organizations. These rules are based on international guidelines for determining regulatory capital issued by the Basel Committee on Banking Supervision (BCBS). The federal banking regulators' capital rules, among other things, require on a fully phased-in basis:

- a minimum Common Equity Tier 1 (CET1) ratio of 9.0%, comprised of a 4.5% minimum requirement plus a capital conservation buffer of 2.5% and for us, as a global systemically important bank (G-SIB), a capital surcharge to be calculated annually, which is 2.0% based on our year-end 2017 data;
- a minimum tier 1 capital ratio of 10.5%, comprised of a 6.0% minimum requirement plus the capital conservation buffer of 2.5% and the G-SIB capital surcharge of 2.0%;
- a minimum total capital ratio of 12.5%, comprised of a 8.0% minimum requirement plus the capital conservation buffer of 2.5% and the G-SIB capital surcharge of 2.0%;
- a potential countercyclical buffer of up to 2.5% to be added to the minimum capital ratios, which is currently not in effect but could be imposed by regulators at their discretion if it is determined that a period of excessive credit growth is contributing to an increase in systemic risk;
- a minimum tier 1 leverage ratio of 4.0%; and

- a minimum supplementary leverage ratio (SLR) of 5.0% (comprised of a 3.0% minimum requirement plus a supplementary leverage buffer of 2.0%) for large and internationally active bank holding companies (BHCs).

We were required to comply with the final Basel III capital rules beginning January 2014, with certain provisions subject to phase-in periods. Beginning January 1, 2018, the requirements for calculating CET1 and tier 1 capital, along with RWAs, became fully phased-in. However, the requirements for calculating tier 2 and total capital are still in accordance with Transition Requirements. The entire Basel III capital rules are scheduled to be fully phased in by the end of 2021.

On April 10, 2018, the FRB issued a proposed rule that would add a stress capital buffer and a stress leverage buffer to the minimum capital and tier 1 leverage ratio requirements. The buffers would be calculated based on the decrease in a financial institution's risk-based capital and tier 1 leverage ratios under the supervisory severely adverse scenario in CCAR, plus four quarters of planned common stock dividends. The stress capital buffer would replace the 2.5% capital conservation buffer under the Standardized Approach, whereas the stress leverage buffer would be added to the current 4% minimum tier 1 leverage ratio.

Because the Company has been designated as a G-SIB, we are also subject to the FRB's rule implementing the additional capital surcharge of between 1.0-4.5% on G-SIBs. Under the rule, we must annually calculate our surcharge under two prescribed methods and use the higher of the two surcharges. The G-SIB surcharge became fully effective on January 1, 2019. Based on year-end 2017 data, our 2019 G-SIB surcharge is 2.0% of the Company's RWAs. However, because the G-SIB surcharge is calculated annually based on data that can differ over time, the amount of the surcharge is subject to change in future years.

In April 2014, federal banking regulators finalized a rule that enhances the SLR requirements for BHCs, like Wells Fargo, and their insured depository institutions. The SLR consists of tier 1 capital under Basel III divided by the Company's total leverage exposure. Total leverage exposure consists of the total average on-balance sheet assets, plus off-balance sheet exposures, such as undrawn commitments and derivative exposures, less amounts permitted to be deducted from tier 1 capital. The rule, which became effective on January 1, 2018, requires a covered BHC to maintain a SLR of at least 5.0% (comprised of the 3.0% minimum requirement plus a supplementary leverage buffer of 2.0%) to avoid restrictions on capital distributions and discretionary bonus payments. The rule also requires that all of our insured depository institutions maintain a SLR of 6.0% under applicable regulatory capital adequacy guidelines. In April 2018, the FRB and OCC proposed rules (the "Proposed SLR Rules") that would replace the 2% supplementary leverage buffer with a buffer equal to one-half of the firm's G-SIB capital surcharge. The Proposed SLR Rules would similarly tailor the current 6% SLR requirement for our insured depository institutions.

In December 2016, the FRB finalized rules to address the amount of equity and unsecured long-term debt a U.S. G-SIB must hold to improve its resolvability and resiliency, often referred to as Total Loss Absorbing Capacity (TLAC). Under the rules, which became effective on January 1, 2019, U.S. G-SIBs are required to have a minimum TLAC amount (consisting of CET1 capital and additional tier 1 capital issued directly by the top-tier or covered BHC plus eligible external long-term debt) equal to the greater of (i) 18% of RWAs and (ii) 7.5% of total leverage exposure (the denominator of the SLR calculation). Additionally, U.S. G-SIBs are required to maintain (i) a TLAC

Risk Factors (continued)

buffer equal to 2.5% of RWAs plus the firm's applicable G-SIB capital surcharge calculated under method one of the G-SIB calculation plus any applicable countercyclical buffer to be added to the 18% minimum and (ii) an external TLAC leverage buffer equal to 2.0% of total leverage exposure to be added to the 7.5% minimum, in order to avoid restrictions on capital distributions and discretionary bonus payments. The rules also require U.S. G-SIBs to have a minimum amount of eligible unsecured long-term debt equal to the greater of (i) 6.0% of RWAs plus the firm's applicable G-SIB capital surcharge calculated under method two of the G-SIB calculation and (ii) 4.5% of the total leverage exposure. In addition, the rules impose certain restrictions on the operations and liabilities of the top-tier or covered BHC in order to further facilitate an orderly resolution, including prohibitions on the issuance of short-term debt to external investors and on entering into derivatives and certain other types of financial contracts with external counterparties. While the rules permit permanent grandfathering of a significant portion of otherwise ineligible long-term debt that was issued prior to December 31, 2016, long-term debt issued after that date must be fully compliant with the eligibility requirements of the rules in order to count toward the minimum TLAC amount. As a result of the rules, we will need to issue additional long-term debt to remain compliant with the requirements. Under the Proposed SLR Rules, the 2% external TLAC leverage buffer would be replaced with a buffer equal to one-half of the firm's G-SIB capital surcharge. Additionally, the Proposed SLR Rules would modify the leverage component for calculating the minimum amount of eligible unsecured long-term debt from 4.5% of total leverage exposure to 2.5% of total leverage exposure plus one-half of the firm's G-SIB capital surcharge.

In September 2014, federal banking regulators issued a final rule that implements a quantitative liquidity requirement consistent with the liquidity coverage ratio (LCR) established by the BCBS. The rule requires banking institutions, such as Wells Fargo, to hold high-quality liquid assets, such as central bank reserves and government and corporate debt that can be converted easily and quickly into cash, in an amount equal to or greater than its projected net cash outflows during a 30-day stress period. The FRB also finalized rules imposing enhanced liquidity management standards on large BHCs such as Wells Fargo, and has finalized a rule that requires large bank holding companies to publicly disclose on a quarterly basis certain quantitative and qualitative information regarding their LCR calculations.

As part of its obligation to impose enhanced capital and risk-management standards on large financial firms pursuant to the Dodd-Frank Act, the FRB issued a final capital plan rule that requires large BHCs, including the Company, to submit annual capital plans for review and to obtain regulatory approval before making capital distributions. There can be no assurance that the FRB would respond favorably to the Company's future capital plans. The FRB has also finalized a number of regulations implementing enhanced prudential requirements for large BHCs like Wells Fargo regarding risk-based capital and leverage, risk and liquidity management, and imposing debt-to-equity limits on any BHC that regulators determine poses a grave threat to the financial stability of the United States. The FRB and OCC have also finalized rules implementing stress testing requirements for large BHCs and national banks. The FRB has also finalized enhanced prudential standards that implement single counterparty credit limits, and has proposed a rule to establish remediation requirements for large BHCs experiencing financial distress. The OCC, under separate authority, has also established

heightened governance and risk management standards for large national banks, such as Wells Fargo Bank, N.A.

The Basel standards and federal regulatory capital and liquidity requirements may limit or otherwise restrict how we utilize our capital, including common stock dividends and stock repurchases, and may require us to increase our capital and/or liquidity. Any requirement that we increase our regulatory capital, regulatory capital ratios or liquidity, including as a result of business growth, acquisitions or a change in our risk profile, could require us to liquidate assets or otherwise change our business, product offerings and/or investment plans, which may negatively affect our financial results. Although not currently anticipated, proposed capital requirements and/or our regulators may require us to raise additional capital in the future. Issuing additional common stock may dilute the ownership of existing stockholders. In addition, federal banking regulations may increase our compliance costs as well as limit our ability to invest in our business or provide loans or other products and services to our customers.

For more information, refer to the "Capital Management" and "Regulatory Matters" sections in this Report and the "Regulation and Supervision" section of our 2018 Form 10-K.

FRB policies, including policies on interest rates, can significantly affect business and economic conditions and our financial results and condition. The FRB regulates the supply of money in the United States. Its policies determine in large part our cost of funds for lending and investing and the return we earn on those loans and investments, both of which affect our net interest income and net interest margin. The FRB's interest rate policies also can materially affect the value of financial instruments we hold, such as debt securities and MSRs. In addition, its policies can affect our borrowers, potentially increasing the risk that they may fail to repay their loans. Changes in FRB policies are beyond our control and can be hard to predict. The FRB has stated that in determining the timing and size of any adjustments to the target range for the federal funds rate, the FRB will assess realized and expected economic conditions relative to its objectives of maximum employment and 2% inflation. As noted above, a declining or low interest rate environment and a flattening yield curve which may result from the FRB's actions could negatively affect our net interest income and net interest margin as it may result in us holding lower yielding loans and debt securities on our balance sheet.

CREDIT RISK

As one of the largest lenders in the U.S., increased credit risk, including as a result of a deterioration in economic conditions or changes in market conditions, could require us to increase our provision for credit losses and allowance for credit losses and could have a material adverse effect on our results of operations and financial condition. When we loan money or commit to loan money we incur credit risk, or the risk of losses if our borrowers do not repay their loans. As one of the largest lenders in the U.S., the credit performance of our loan portfolios significantly affects our financial results and condition. As noted above, if the current economic environment were to deteriorate, more of our customers may have difficulty in repaying their loans or other obligations which could result in a higher level of credit losses and provision for credit losses. We reserve for credit losses by establishing an allowance through a charge to earnings. The amount of this allowance is based on our assessment of credit

losses inherent in our loan portfolio (including unfunded credit commitments). The process for determining the amount of the allowance is critical to our financial results and condition. It requires difficult, subjective and complex judgments about the future, including forecasts of economic or market conditions that might impair the ability of our borrowers to repay their loans. We might increase the allowance because of changing economic conditions, including falling home prices and higher unemployment, significant loan growth, changes in consumer behavior or other market conditions that adversely affect borrowers, or other factors. Additionally, the regulatory environment or external factors, such as natural disasters, also can influence recognition of credit losses in our loan portfolios and impact our allowance for credit losses.

Our provision for credit losses was \$1.0 billion less than net charge-offs in 2018, which had a positive effect on our earnings. Future allowance levels may increase or decrease based on a variety of factors, including loan growth, portfolio performance and general economic conditions. While we believe that our allowance for credit losses was appropriate at December 31, 2018, there is no assurance that it will be sufficient to cover future credit losses, especially if housing and employment conditions worsen. In the event of significant deterioration in economic conditions or if we experience significant loan growth, we may be required to build reserves in future periods, which would reduce our earnings.

For more information, refer to the “Risk Management – Credit Risk Management” and “Critical Accounting Policies – Allowance for Credit Losses” sections in this Report.

We may have more credit risk and higher credit losses to the extent our loans are concentrated by loan type, industry segment, borrower type, or location of the borrower or collateral. Our credit risk and credit losses can increase if our loans are concentrated to borrowers engaged in the same or similar activities or to borrowers who individually or as a group may be uniquely or disproportionately affected by economic or market conditions. Similarly, challenging economic or market conditions, or trade policies, affecting a particular industry or geography may also impact related or dependent industries or the ability of borrowers living in such affected areas or working in such industries to meet their financial obligations. We experienced the effect of concentration risk in 2009 and 2010 when we incurred greater than expected losses in our residential real estate loan portfolio due to a housing slowdown and greater than expected deterioration in residential real estate values in many markets, including the Central Valley California market and several Southern California metropolitan statistical areas. As California is our largest banking state in terms of loans and deposits, deterioration in real estate values and underlying economic conditions in those markets or elsewhere in California could result in materially higher credit losses. In addition, deterioration in macro-economic conditions generally across the country could result in materially higher credit losses, including for our residential real estate loan portfolio, which includes nonconforming mortgage loans we retain on our balance sheet. We may experience higher delinquencies and higher loss rates as our consumer real estate secured lines of credit reach their contractual end of draw period and begin to amortize or our consumer Pick-a-Pay loans reach their recast trigger.

We are currently one of the largest CRE lenders in the U.S. A deterioration in economic conditions that negatively affects the business performance of our CRE borrowers, including increases in interest rates, declines in commercial property values, and/or changes in consumer behavior or other market

conditions, could result in materially higher credit losses and have a material adverse effect on our financial results and condition.

Challenges and/or changes in foreign economic conditions may increase our foreign credit risk. Our foreign loan exposure represented approximately 8% of our total consolidated outstanding loans and 4% of our total assets at December 31, 2018. Economic difficulties in foreign jurisdictions could also indirectly have a material adverse effect on our credit performance and results of operations and financial condition to the extent they negatively affect the U.S. economy and/or our borrowers who have foreign operations.

In order to reduce credit risk and obtain additional funding, from time to time we may securitize or sell similar types or categories of loans that we originate, such as mortgage loans and automobile loans. The agreements under which we do this generally contain various representations and warranties regarding the origination and characteristics of the loans. We may be required to repurchase the loans, reimburse investors and others, or incur other losses, including regulatory fines and penalties, as a result of any breaches in these contractual representations and warranties. For more information about our repurchase obligations with respect to mortgage loans, refer to the “Risk Factors – Risks Related to Our Mortgage Business” section in this Report.

For more information regarding credit risk, refer to the “Risk Management – Credit Risk Management” section and Note 6 (Loans and Allowance for Credit Losses) to Financial Statements in this Report.

We may incur losses on loans, securities and other acquired assets of Wachovia that are materially greater than reflected in our fair value adjustments. We accounted for the Wachovia merger under the purchase method of accounting, recording the acquired assets and liabilities of Wachovia at fair value. All PCI loans acquired in the merger were recorded at fair value based on the present value of their expected cash flows. We estimated cash flows using internal credit, interest rate and prepayment risk models using assumptions about matters that are inherently uncertain. We may not realize the estimated cash flows or fair value of these loans. In addition, although the difference between the pre-merger carrying value of the credit-impaired loans and their expected cash flows – the “nonaccretable difference” – is available to absorb future charge-offs, we may be required to increase our allowance for credit losses and related provision expense because of subsequent additional credit deterioration in these loans.

For more information, refer to the “Risk Management – Credit Risk Management” section in this Report.

OPERATIONAL AND LEGAL RISK

A failure in or breach of our operational or security systems, controls or infrastructure, or those of our third-party vendors and other service providers, could disrupt our businesses, damage our reputation, increase our costs and cause losses. As a large financial institution that serves customers through numerous physical locations, ATMs, the internet, mobile banking and other distribution channels across the U.S. and internationally, we depend on our ability to process, record and monitor a large number of customer transactions on a continuous basis. As our customer base and locations have expanded throughout the U.S. and internationally, as we have increasingly used the internet

Risk Factors *(continued)*

and mobile banking to provide products and services to our customers, and as customer, public, legislative and regulatory expectations regarding operational and information security have increased, our operational systems, controls and infrastructure must continue to be safeguarded and monitored for potential failures, disruptions and breakdowns. Our business, financial, accounting, data processing systems or other operating systems and facilities may stop operating properly, become insufficient based on our evolving business needs, or become disabled or damaged as a result of a number of factors including events that are wholly or partially beyond our control. For example, there could be sudden increases in customer transaction volume; electrical or telecommunications outages; degradation or loss of internet, website or mobile banking availability; climate change related impacts and natural disasters such as earthquakes, tornados, and hurricanes; disease pandemics; events arising from local or larger scale political or social matters, including terrorist acts; and, as described below, cyber attacks or other information security breaches. Furthermore, enhancements and upgrades to our infrastructure or operating systems may be time-consuming, entail significant costs, and create risks associated with implementing new systems and integrating them with existing ones. Due to the complexity and interconnectedness of our systems, the process of enhancing our infrastructure and operating systems, including their security measures and controls, can itself create a risk of system disruptions and security issues. Although we have business continuity plans and other safeguards in place, our business operations may be adversely affected by significant and widespread disruption to our physical infrastructure or operating systems that support our businesses and customers. For example, on February 7, 2019, we experienced system issues caused by an automatic power shutdown at one of our main data center facilities, which was triggered by a smoke alarm that resulted from a steam condition created by routine maintenance activities in the building. Although applications and related workloads were systematically re-routed to back-up data centers throughout the day, certain of our services experienced disruptions that delayed service to our customers. For instance, our online and mobile banking systems and certain ATM functions experienced disruptions for several hours, and certain critical mortgage origination systems experienced disruptions for several days.

As a result of financial institutions and technology systems becoming more interconnected and complex, any operational incident at a third party may increase the risk of loss or material impact to us or the financial industry as a whole. Furthermore, third parties on which we rely, including those that facilitate our business activities or to which we outsource operations, such as exchanges, clearing houses, financial intermediaries or vendors that provide services or security solutions for our operations, could also be sources of operational risk to us, including from information breaches or loss, breakdowns, disruptions or failures of their own systems or infrastructure, or any deficiencies in the performance of their responsibilities. We are also exposed to the risk that a disruption or other operational incident at a common service provider to those third parties could impede their ability to provide services or perform their responsibilities for us. In addition, we must meet regulatory requirements and expectations regarding our use of third-party service providers, and any failure by our third-party service providers to meet their obligations to us or to comply with applicable laws, rules, regulations, or Wells Fargo policies could result in fines, penalties, restrictions on our business, or other negative consequences.

Disruptions or failures in the physical infrastructure, controls or operating systems that support our businesses and customers, failures of the third parties on which we rely to adequately or appropriately provide their services or perform their responsibilities, or our failure to effectively manage or oversee our third-party relationships, could result in business disruptions, loss of revenue or customers, legal or regulatory proceedings, compliance and other costs, violations of applicable privacy and other laws, reputational damage, or other adverse consequences, any of which could materially adversely affect our results of operations or financial condition.

A cyber attack or other information security breach of our technologies, computer systems or networks, or those of our third-party vendors and other service providers, could disrupt our businesses, result in the disclosure or misuse of confidential or proprietary information, damage our reputation, increase our costs and cause losses. Information security risks for large financial institutions such as Wells Fargo have generally increased in recent years in part because of the proliferation of new technologies, the use of the internet, mobile devices, and cloud technologies to conduct financial transactions, and the increased sophistication and activities of organized crime, hackers, terrorists, activists, and other external parties, including foreign state-sponsored parties. Those parties also may attempt to misrepresent personal or financial information to obtain loans or other financial products from us or attempt to fraudulently induce employees, customers, or other users of our systems to disclose confidential information in order to gain access to our data or that of our customers. As noted above, our operations rely on the secure processing, transmission and storage of confidential information in our computer systems and networks. Our banking, brokerage, investment advisory, and capital markets businesses rely on our digital technologies, computer and email systems, software, hardware, and networks to conduct their operations. In addition, to access our products and services, our customers may use personal smartphones, tablets, and other mobile devices that are beyond our control systems. Although we believe we have robust information security procedures and controls, our technologies, systems, networks, and our customers' devices may become the target of cyber attacks or other information security breaches that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of Wells Fargo's or our customers' confidential, proprietary and other information, or otherwise disrupt Wells Fargo's or its customers' or other third parties' business operations. For example, various retailers have reported they were victims of cyber attacks in which large amounts of their customers' data, including debit and credit card information, was obtained. In these situations, we generally incur costs to replace compromised cards and address fraudulent transaction activity affecting our customers. We are also exposed to the risk that a team member or other person acting on behalf of the Company fails to comply with applicable policies and procedures and inappropriately circumvents controls for personal gain or other improper purposes.

Due to the increasing interconnectedness and complexity of financial institutions and technology systems, an information security incident at a third party may increase the risk of loss or material impact to us or the financial industry as a whole. In addition, third parties on which we rely, including those that facilitate our business activities or to which we outsource operations, such as internet, mobile technology and cloud service providers, could be sources of information security risk

to us. If those third parties fail to adequately or appropriately safeguard their technologies, systems, and networks, we may suffer material harm, including business disruptions, losses or remediation costs, reputational damage, legal or regulatory proceedings, or other adverse consequences.

To date we have not experienced any material losses relating to cyber attacks or other information security breaches, but there can be no assurance that we will not suffer such losses in the future. Our risk and exposure to these matters remains heightened because of, among other things, the evolving nature of these threats, the prominent size and scale of Wells Fargo and its role in the financial services industry, our plans to continue to implement our digital and mobile banking channel strategies and develop additional remote connectivity solutions to serve our customers when and how they want to be served, our expanded geographic footprint and international presence, the outsourcing of some of our business operations, and the current global economic and political environment. For example, Wells Fargo and other financial institutions continue to be the target of various evolving and adaptive cyber attacks, including malware and denial-of-service, as part of an effort to disrupt the operations of financial institutions, potentially test their cybersecurity capabilities, commit fraud, or obtain confidential, proprietary or other information. Cyber attacks have also focused on targeting online applications and services, such as online banking, as well as cloud-based services provided by third parties, and have targeted the infrastructure of the internet, causing the widespread unavailability of websites and degrading website performance. As a result, information security and the continued development and enhancement of our controls, processes and systems designed to protect our networks, computers, software and data from attack, damage or unauthorized access remain a priority for Wells Fargo. We are also proactively involved in industry cybersecurity efforts and working with other parties, including our third-party service providers and governmental agencies, to continue to enhance defenses and improve resiliency to cybersecurity and other information security threats. As these threats continue to evolve, we may be required to expend significant additional resources to continue to modify or enhance our protective measures or to investigate and remediate any information security vulnerabilities or incidents. Because the investigation of any information security breach is inherently unpredictable and would require time to complete, we may not be able to immediately address the consequences of a breach, which may further increase any associated costs and consequences. Moreover, to the extent our insurance covers aspects of information security risk, such insurance may not be sufficient to cover all losses associated with an information security breach.

Cyber attacks or other information security breaches affecting us or third parties on which we rely, including those that facilitate our business activities or to which we outsource operations, or security breaches of the networks, systems or devices that our customers use to access our products and services, could result in business disruptions, loss of revenue or customers, legal or regulatory proceedings, compliance and other costs, violations of applicable privacy and other laws, reputational damage, or other adverse consequences, any of which could materially adversely affect our results of operations or financial condition.

Our framework for managing risks may not be fully effective in mitigating risk and loss to us. Our risk management framework seeks to mitigate risk and loss to us. We have established processes and procedures intended to identify,

measure, monitor, report and analyze the types of risk to which we are subject, including liquidity risk, credit risk, market risk, interest rate risk, operational risk, legal and compliance risk, and reputational risk, among others. However, as with any risk management framework, there are inherent limitations to our risk management strategies as there may exist, or develop in the future, risks that we have not appropriately anticipated, identified or managed. Our risk management framework is also dependent on ensuring that effective operational controls and a sound culture exist throughout the Company. The inability to develop effective operational controls or to foster the appropriate culture in each of our lines of business, including the inability to align performance management and compensation to achieve the desired culture, could adversely impact the effectiveness of our risk management framework. Similarly, if we are unable to effectively manage our business or operations, we may be exposed to increased risks or unexpected losses. We are also exposed to risks if we do not accurately or completely execute a process or transaction, whether due to human error or otherwise. In certain instances, we rely on models to measure, monitor and predict risks, such as market and interest rate risks, as well as to help inform business decisions; however, there is no assurance that these models will appropriately or sufficiently capture all relevant risks or accurately predict future events or exposures. In addition, we rely on data to aggregate and assess our various risk exposures and business activities, and any issues with the quality or effectiveness of our data, including our aggregation, management, and validation procedures, could result in ineffective risk management practices, business decisions or customer service, inefficient use of resources, or inaccurate regulatory or other risk reporting. We also use artificial intelligence to help further inform our business decisions and risk management practices, but there is no assurance that artificial intelligence will appropriately or sufficiently replicate certain outcomes or accurately predict future events or exposures. The recent financial and credit crisis and resulting regulatory reform highlighted both the importance and some of the limitations of managing unanticipated risks, and our regulators remain focused on ensuring that financial institutions build and maintain robust risk management policies and practices. If our risk management framework proves ineffective, we could suffer unexpected losses which could materially adversely affect our results of operations or financial condition.

Risks related to sales practices and other instances where customers may have experienced financial harm.

Various government entities and offices have undertaken formal or informal inquiries, investigations or examinations arising out of certain sales practices of the Company that were the subject of settlements with the CFPB, the Office of the Comptroller of the Currency, and the Office of the Los Angeles City Attorney announced by the Company on September 8, 2016. In addition to imposing monetary penalties and other sanctions, regulatory authorities may require admissions of wrongdoing and compliance with other conditions in connection with such matters, which can lead to restrictions on our ability to engage in certain business activities or offer certain products or services, limitations on our ability to access capital markets, limitations on capital distributions, the loss of customers, and/or other direct and indirect adverse consequences. A number of lawsuits have also been filed by non-governmental parties seeking damages or other remedies related to these sales practices. The ultimate resolution of any of these pending legal proceedings or government investigations, depending on the sanctions and

Risk Factors (continued)

remedy sought and granted, could materially adversely affect our results of operations and financial condition. We may also incur additional costs and expenses in order to address and defend these pending legal proceedings and government investigations, and we may have increased compliance and other costs related to these matters. Furthermore, negative publicity or public opinion resulting from these matters may increase the risk of reputational harm to our business, which can impact our ability to keep and attract customers, affect our ability to attract and retain qualified team members, result in the loss of revenue, or have other material adverse effects on our results of operations and financial condition. In addition, the ultimate results and conclusions of our company-wide review of sales practices issues are still pending and could lead to an increase in the identified number of potentially impacted customers, additional legal or regulatory proceedings, compliance and other costs, reputational damage, the identification of issues in our practices or methodologies that were used to identify, prevent or remediate sales practices related matters, the loss of additional team members, or further changes in policies and procedures that may impact our business.

Furthermore, our priority of rebuilding trust has included an ongoing effort to identify other areas or instances where customers may have experienced financial harm. For example, we have identified certain issues related to historical practices concerning the origination, servicing, and/or collection of consumer automobile loans, including matters related to certain insurance products. The identification of such other areas or instances where customers may have experienced financial harm could lead to, and in some cases has already resulted in, additional remediation costs, loss of revenue or customers, legal or regulatory proceedings, compliance and other costs, reputational damage, or other adverse consequences.

For more information, refer to the “Overview – Retail Sales Practices Matters” and “– Additional Efforts to Rebuild Trust” sections and Note 16 (Legal Actions) to Financial Statements in this Report.

We may incur fines, penalties and other negative consequences from regulatory violations, possibly even inadvertent or unintentional violations, or from any failure to meet regulatory standards or expectations.

We maintain systems and procedures designed to ensure that we comply with applicable laws and regulations. However, we are subject to heightened compliance and regulatory oversight and expectations, particularly due to the evolving and increasing regulatory landscape we operate in. We are also subject to consent orders with regulators that subject us to various conditions and restrictions. In addition, a single event or issue may give rise to numerous and overlapping investigations and proceedings, either by multiple federal and state agencies in the U.S. or by multiple regulators and other governmental entities in different jurisdictions. Also, the laws and regulations in jurisdictions in which we operate may be different or even conflict with each other, such as differences between U.S. federal and state law or differences between U.S. and foreign laws as to the products and services we may offer or other business activities we may engage in, which can lead to compliance difficulties or issues. Furthermore, many legal and regulatory regimes require us to report transactions and other information to regulators and other governmental authorities, self-regulatory organizations, exchanges, clearing houses and customers. We are also required to withhold funds and make various tax-related payments, relating to our own tax obligations and those of our customers. We may be subject to fines, penalties, restrictions on

our business, or other negative consequences if we do not timely, completely, or accurately provide regulatory reports, customer notices or disclosures, or make tax-related withholdings or payments, on behalf of ourselves or our customers. Moreover, some legal/regulatory frameworks provide for the imposition of fines or penalties for noncompliance even though the noncompliance was inadvertent or unintentional and even though there was in place at the time systems and procedures designed to ensure compliance. For example, we are subject to regulations issued by the Office of Foreign Assets Control (OFAC) that prohibit financial institutions from participating in the transfer of property belonging to the governments of certain foreign countries and designated nationals of those countries. OFAC may impose penalties or restrictions on certain activities for inadvertent or unintentional violations even if reasonable processes are in place to prevent the violations. Any violation of these or other applicable laws or regulatory requirements, even if inadvertent or unintentional, or any failure to meet regulatory standards or expectations, including any failure to satisfy the conditions of any consent orders, could result in fees, penalties, restrictions on our ability to engage in certain business activities, reputational harm, loss of customers or other negative consequences.

Negative publicity, including as a result of our actual or alleged conduct or public opinion of the financial services industry generally, could damage our reputation and business.

Reputation risk, or the risk to our business, earnings and capital from negative public opinion, is inherent in our business and has increased substantially because of the financial crisis, our size and profile in the financial services industry, and sales practices related matters and other instances where customers may have experienced financial harm. Negative public opinion about the financial services industry generally or Wells Fargo specifically could adversely affect our ability to keep and attract customers. Negative public opinion could result from our actual or alleged conduct in any number of activities, including sales practices; mortgage, automobile or other consumer lending practices; loan origination or servicing activities; mortgage foreclosure actions; management of client accounts or investments; lending, investing or other business relationships; identification and management of potential conflicts of interest from transactions, obligations and interests with and among our customers; corporate governance; regulatory compliance; risk management; incentive compensation practices; and disclosure, sharing or inadequate protection or improper use of customer information, and from actions taken by government regulators and community or other organizations in response to that conduct. Although we have policies and procedures in place intended to detect and prevent conduct by team members and third-party service providers that could potentially harm customers or our reputation, there is no assurance that such policies and procedures will be fully effective in preventing such conduct. Furthermore, our actual or perceived failure to address or prevent any such conduct or otherwise to effectively manage our business or operations could result in significant reputational harm. In addition, because we conduct most of our businesses under the “Wells Fargo” brand, negative public opinion about one business also could affect our other businesses. Moreover, actions by the financial services industry generally or by certain members or individuals in the industry also can adversely affect our reputation. The proliferation of social media websites utilized by Wells Fargo and other third parties, as well as the personal use of social media by our team members and others,

including personal blogs and social network profiles, also may increase the risk that negative, inappropriate or unauthorized information may be posted or released publicly that could harm our reputation or have other negative consequences, including as a result of our team members interacting with our customers in an unauthorized manner in various social media outlets.

Wells Fargo and other financial institutions have been targeted from time to time by protests and demonstrations, which have included disrupting the operation of our retail banking locations and have resulted in negative public commentary about financial institutions, including the fees charged for various products and services. Wells Fargo and other financial institutions have also been subject to negative publicity as a result of providing financial services to or making investments in industries or organizations subject to stakeholder concerns. There can be no assurance that continued protests or negative publicity for the Company specifically or large financial institutions generally will not harm our reputation and adversely affect our business and financial results.

Risks related to legal actions. Wells Fargo and some of its subsidiaries are involved in judicial, regulatory, arbitration, and other proceedings or investigations concerning matters arising from the conduct of our business activities. Although we believe we have a meritorious defense in all significant legal actions pending against us, there can be no assurance as to the ultimate outcome. We establish accruals for legal actions when potential losses associated with the actions become probable and the costs can be reasonably estimated. We may still incur costs for a legal action even if we have not established an accrual. In addition, the actual cost of resolving a legal action may be substantially higher than any amounts accrued for that action. The ultimate resolution of a pending legal proceeding or investigation, depending on the remedy sought and granted, could materially adversely affect our results of operations and financial condition.

As noted above, we are subject to heightened regulatory oversight and scrutiny, which may lead to regulatory investigations, proceedings or enforcement actions. In addition to imposing monetary penalties and other sanctions, regulatory authorities may require criminal pleas or other admissions of wrongdoing and compliance with other conditions in connection with settling such matters, which can lead to reputational harm, loss of customers, restrictions on the ability to access capital markets, limitations on capital distributions, the inability to engage in certain business activities or offer certain products or services, and/or other direct and indirect adverse effects.

For more information, refer to Note 16 (Legal Actions) to Financial Statements in this Report.

RISKS RELATED TO OUR MORTGAGE BUSINESS

Our mortgage banking revenue can be volatile from quarter to quarter, including from the impact of changes in interest rates on our origination activity and on the value of our MSR, MLHFS and associated economic hedges, and we rely on the GSEs to purchase our conforming loans to reduce our credit risk and provide liquidity to fund new mortgage loans. We are one of the largest mortgage originators and residential mortgage servicers in the U.S., and we earn revenue from fees we receive for originating mortgage loans and for servicing mortgage loans. As a result of our mortgage servicing business, we have a sizable portfolio of MSRs. An MSR is the right to service a mortgage loan – collect principal, interest and escrow amounts – for a fee. We acquire MSRs when we retain the servicing rights after we

sell or securitize the loans we have originated or when we purchase the servicing rights to mortgage loans originated by other lenders. We initially measure and carry all our residential MSRs using the fair value measurement method. Fair value is the present value of estimated future net servicing income, calculated based on a number of variables, including assumptions about the likelihood of prepayment by borrowers. Changes in interest rates can affect prepayment assumptions and thus fair value. When interest rates fall, borrowers are usually more likely to prepay their mortgage loans by refinancing them at a lower rate. As the likelihood of prepayment increases, the fair value of our MSRs can decrease. Each quarter we evaluate the fair value of our MSRs, and any decrease in fair value reduces earnings in the period in which the decrease occurs. We also measure at fair value MLHFS for which an active secondary market and readily available market prices exist. In addition, we measure at fair value certain other interests we hold related to residential loan sales and securitizations. Similar to other interest-bearing securities, the value of these MLHFS and other interests may be negatively affected by changes in interest rates. For example, if market interest rates increase relative to the yield on these MLHFS and other interests, their fair value may fall.

When rates rise, the demand for mortgage loans usually tends to fall, reducing the revenue we receive from loan originations. Under the same conditions, revenue from our MSRs can increase through increases in fair value. When rates fall, mortgage originations usually tend to increase and the value of our MSRs usually tends to decline, also with some offsetting revenue effect. Even though they can act as a “natural hedge,” the hedge is not perfect, either in amount or timing. For example, the negative effect on revenue from a decrease in the fair value of residential MSRs is generally immediate, but any offsetting revenue benefit from more originations and the MSRs relating to the new loans would generally accrue over time. It is also possible that, because of economic conditions and/or a weak or deteriorating housing market, even if interest rates were to fall or remain low, mortgage originations may also fall or any increase in mortgage originations may not be enough to offset the decrease in the MSRs value caused by the lower rates.

We typically use derivatives and other instruments to hedge our mortgage banking interest rate risk. We may not hedge all of our risk, and we may not be successful in hedging any of the risk. Hedging is a complex process, requiring sophisticated models and constant monitoring, and is not a perfect science. We may use hedging instruments tied to U.S. Treasury rates, LIBOR or Eurodollars that may not perfectly correlate with the value or income being hedged. We could incur significant losses from our hedging activities. There may be periods where we elect not to use derivatives and other instruments to hedge mortgage banking interest rate risk.

We rely on GSEs to purchase mortgage loans that meet their conforming loan requirements and on the Federal Housing Authority (FHA) to insure loans that meet their policy requirements. These loans are then securitized into either GSE or GNMA securities that are sold to investors. In order to meet customer needs, we also originate loans that do not conform to either GSE or FHA standards, which are referred to as “nonconforming” loans. We generally retain these nonconforming loans on our balance sheet. When we retain a loan on our balance sheet not only do we forgo fee revenue and keep the credit risk of the loan but we also do not receive any sale proceeds that could be used to generate new loans. If we were unable or unwilling to continue retaining nonconforming loans on our balance sheet, whether due to regulatory, business

Risk Factors (continued)

or other reasons, our ability to originate new nonconforming loans may be reduced, thereby reducing the interest income we earn from originating these loans. Similarly, if the GSEs or the FHA were to limit or reduce their purchases or insuring of loans, our ability to fund, and thus originate new mortgage loans, could also be reduced. We cannot assure that the GSEs or the FHA will not materially limit their purchases or insuring of conforming loans or change their criteria for what constitutes a conforming loan (e.g., maximum loan amount or borrower eligibility). Each of the GSEs is currently in conservatorship, with its primary regulator, the Federal Housing Finance Agency acting as conservator. We cannot predict if, when or how the conservatorship will end, or any associated changes to the GSEs business structure and operations that could result. As noted above, there are various proposals to reform the housing finance market in the U.S., including the role of the GSEs in the housing finance market. The impact of any such regulatory reform regarding the housing finance market and the GSEs, including whether the GSEs will continue to exist in their current form, as well as any effect on the Company's business and financial results, are uncertain.

For more information, refer to the "Risk Management – Asset/Liability Management – Mortgage Banking Interest Rate and Market Risk" and "Critical Accounting Policies" sections in this Report.

We may be required to repurchase mortgage loans or reimburse investors and others as a result of breaches in contractual representations and warranties, and we may incur other losses as a result of real or alleged violations of statutes or regulations applicable to the origination of our residential mortgage loans. The origination of residential mortgage loans is governed by a variety of federal and state laws and regulations, including the Truth in Lending Act of 1968 and various anti-fraud and consumer protection statutes, which are complex and frequently changing. We often sell residential mortgage loans that we originate to various parties, including GSEs, SPEs that issue private label MBS, and other financial institutions that purchase mortgage loans for investment or private label securitization. We may also pool FHA-insured and VA-guaranteed mortgage loans which back securities guaranteed by GNMA. The agreements under which we sell mortgage loans and the insurance or guaranty agreements with the FHA and VA contain various representations and warranties regarding the origination and characteristics of the mortgage loans. We may be required to repurchase mortgage loans, indemnify the securitization trust, investor or insurer, or reimburse the securitization trust, investor or insurer for credit losses incurred on loans in the event of a breach of contractual representations or warranties that is not remedied within a period (usually 90 days or less) after we receive notice of the breach. We establish a mortgage repurchase liability related to the various representations and warranties that reflect management's estimate of losses for loans which we have a repurchase obligation. Because the level of mortgage loan repurchase losses depends upon economic factors, investor demand strategies and other external conditions that may change over the life of the underlying loans, the level of the liability for mortgage loan repurchase losses is difficult to estimate, requires considerable management judgment, and is subject to change. If economic conditions or the housing market worsen or future investor repurchase demand and our success at appealing repurchase requests differ from past experience, we could have increased repurchase

obligations and increased loss severity on repurchases, requiring significant additions to the repurchase liability.

Additionally, for residential mortgage loans that we originate, borrowers may allege that the origination of the loans did not comply with applicable laws or regulations in one or more respects and assert such violation as an affirmative defense to payment or to the exercise by us of our remedies, including foreclosure proceedings, or in an action seeking statutory and other damages in connection with such violation. If we are not successful in demonstrating that the loans in dispute were originated in accordance with applicable statutes and regulations, we could become subject to monetary damages and other civil penalties, including the loss of certain contractual payments or the inability to exercise certain remedies under the loans.

For more information, refer to the "Risk Management – Credit Risk Management – Liability for Mortgage Loan Repurchase Losses" section in this Report.

We may be terminated as a servicer or master servicer, be required to repurchase a mortgage loan or reimburse investors for credit losses on a mortgage loan, or incur costs, liabilities, fines and other sanctions if we fail to satisfy our servicing obligations, including our obligations with respect to mortgage loan foreclosure actions. We act as servicer and/or master servicer for mortgage loans included in securitizations and for unsecuritized mortgage loans owned by investors. As a servicer or master servicer for those loans we have certain contractual obligations to the securitization trusts, investors or other third parties, including, in our capacity as a servicer, foreclosing on defaulted mortgage loans or, to the extent consistent with the applicable securitization or other investor agreement, considering alternatives to foreclosure such as loan modifications or short sales and, in our capacity as a master servicer, overseeing the servicing of mortgage loans by the servicer. In addition, we may have certain servicing obligations for properties that fall within a flood zone. If we commit a material breach of our obligations as servicer or master servicer, we may be subject to termination if the breach is not cured within a specified period of time following notice, which can generally be given by the securitization trustee or a specified percentage of security holders, causing us to lose servicing income. In addition, we may be required to indemnify the securitization trustee against losses from any failure by us, as a servicer or master servicer, to perform our servicing obligations or any act or omission on our part that involves willful misfeasance, bad faith or gross negligence. Furthermore, if any of the companies that insure the mortgage loans in our servicing portfolio experience financial difficulties or credit downgrades, we may incur additional costs to obtain replacement insurance coverage with another provider, possibly at a higher cost than the coverage we would replace. In some cases, if we do not satisfy our servicing obligations, we may be contractually obligated to repurchase a mortgage loan or reimburse the investor for credit losses, which could significantly reduce our net servicing income.

We may incur costs, liabilities to borrowers, title insurers and/or securitization investors, legal proceedings, or other adverse consequences if we fail to meet our obligations with respect to mortgage foreclosure actions or we experience delays in the foreclosure process. The fair value of our MSRs may be negatively affected to the extent our servicing costs increase because of higher foreclosure or other servicing related costs. We may be subject to fines and other sanctions imposed by federal

or state regulators as a result of actual or perceived deficiencies in our mortgage servicing practices, including with respect to our foreclosure practices or our servicing of flood zone properties. Any of these actions may harm our reputation, negatively affect our residential mortgage origination or servicing business, or result in material fines, penalties, equitable remedies, or other enforcement actions.

For more information, refer to the “Risk Management – Credit Risk Management – Liability for Mortgage Loan Repurchase Losses” and “– Risks Relating to Servicing Activities,” and “Critical Accounting Policies – Valuation of Residential Mortgage Servicing Rights” sections and Note 15 (Guarantees, Pledged Assets and Collateral, and Other Commitments) and Note 16 (Legal Actions) to Financial Statements in this Report.

RISKS RELATED TO OUR INDUSTRY’S COMPETITIVE OPERATING ENVIRONMENT

We face significant and increasing competition in the rapidly evolving financial services industry. We compete with other financial institutions in a highly competitive industry that is undergoing significant changes as a result of financial regulatory reform, technological advances, increased public scrutiny stemming from the financial crisis, and current economic conditions. Our success depends on our ability to develop and maintain deep and enduring relationships with our customers based on the quality of our customer service, the wide variety of products and services that we can offer our customers and the ability of those products and services to satisfy our customers’ needs, the pricing of our products and services, the extensive distribution channels available for our customers, our innovation, and our reputation. Continued or increased competition in any one or all of these areas may negatively affect our customer relationships, market share and results of operations and/or cause us to increase our capital investment in our businesses in order to remain competitive. In addition, our ability to reposition or reprice our products and services from time to time may be limited and could be influenced significantly by the current economic, regulatory and political environment for large financial institutions as well as by the actions of our competitors. Furthermore, any changes in the types of products and services that we offer our customers and/or the pricing for those products and services could result in a loss of customer relationships and market share and could materially adversely affect our results of operations.

Continued technological advances and the growth of e-commerce have made it possible for non-depository institutions to offer products and services that traditionally were banking products, and for financial institutions and other companies to provide electronic and internet-based financial solutions, including electronic securities trading, lending and payment solutions. In addition, technological advances, including digital currencies, may diminish the importance of depository institutions and other financial intermediaries in the transfer of funds between parties. We may not respond effectively to these and other competitive threats from existing and new competitors and may be forced to sell products at lower prices, increase our investment in our business to modify or adapt our existing products and services, and/or develop new products and services to respond to our customers’ needs. To the extent we are not successful in developing and introducing new products and services or responding or adapting to the competitive landscape or to changes in customer preferences, we

may lose customer relationships and our revenue growth and results of operations may be materially adversely affected.

Our ability to attract and retain qualified team members is critical to the success of our business and failure to do so could adversely affect our business performance, competitive position and future prospects. The success of Wells Fargo is heavily dependent on the talents and efforts of our team members, including our senior leaders, and in many areas of our business, including commercial banking, brokerage, investment advisory, capital markets, risk management and technology, the competition for highly qualified personnel is intense. We also seek to retain a pipeline of team members to provide continuity of succession for our senior leadership positions. In order to attract and retain highly qualified team members, we must provide competitive compensation and effectively manage team member performance and development. As a large financial institution and additionally to the extent we remain subject to consent orders we may be subject to limitations on compensation by our regulators that may adversely affect our ability to attract and retain these qualified team members, especially if some of our competitors may not be subject to these same compensation limitations. If we are unable to continue to attract and retain qualified team members, including successors for senior leadership positions, our business performance, competitive position and future prospects may be adversely affected.

RISKS RELATED TO OUR FINANCIAL STATEMENTS

Changes in accounting policies or accounting standards, and changes in how accounting standards are interpreted or applied, could materially affect how we report our financial results and condition. Our accounting policies are fundamental to determining and understanding our financial results and condition. As described below, some of these policies require use of estimates and assumptions that may affect the value of our assets or liabilities and financial results. Any changes in our accounting policies could materially affect our financial statements.

From time to time the FASB and the SEC change the financial accounting and reporting standards that govern the preparation of our external financial statements. For example, Accounting Standards Update 2016-13 - *Financial Instruments-Credit Losses* (Topic 326), which becomes effective in first quarter 2020, will replace the current “incurred loss” model for the allowance for credit losses with an “expected loss” model referred to as the Current Expected Credit Loss model, or CECL. CECL could materially affect how we determine our allowance and report our financial results and condition.

In addition, accounting standard setters and those who interpret the accounting standards (such as the FASB, SEC, banking regulators and our outside auditors) may change or even reverse their previous interpretations or positions on how these standards should be applied. Changes in financial accounting and reporting standards and changes in current interpretations may be beyond our control, can be hard to predict and could materially affect how we report our financial results and condition. We may be required to apply a new or revised standard retroactively or apply an existing standard differently, also retroactively, in each case potentially resulting in our restating prior period financial statements in material amounts.

For more information, refer to the “Current Accounting Developments” section in this Report.

Risk Factors *(continued)*

Our financial statements are based in part on assumptions and estimates which, if wrong, could cause unexpected losses in the future, and our financial statements depend on our internal controls over financial reporting. Pursuant to U.S. GAAP, we are required to use certain assumptions and estimates in preparing our financial statements, including in determining credit loss reserves, reserves for mortgage repurchases, reserves related to litigation and the fair value of certain assets and liabilities, among other items. Several of our accounting policies are critical because they require management to make difficult, subjective and complex judgments about matters that are inherently uncertain and because it is likely that materially different amounts would be reported under different conditions or using different assumptions. For a description of these policies, refer to the “Critical Accounting Policies” section in this Report. If assumptions or estimates underlying our financial statements are incorrect, we may experience material losses.

Certain of our financial instruments, including derivative assets and liabilities, debt securities, certain loans, MSRs, private equity investments, structured notes and certain repurchase and resale agreements, among other items, require a determination of their fair value in order to prepare our financial statements. Where quoted market prices are not available, we may make fair value determinations based on internally developed models or other means which ultimately rely to some degree on management judgment, and there is no assurance that our models will capture or appropriately reflect all relevant inputs required to accurately determine fair value. Some of these and other assets and liabilities may have no direct observable price levels, making their valuation particularly subjective, being based on significant estimation and judgment. In addition, sudden illiquidity in markets or declines in prices of certain loans and securities may make it more difficult to value certain balance sheet items, which may lead to the possibility that such valuations will be subject to further change or adjustment and could lead to declines in our earnings.

The Sarbanes-Oxley Act of 2002 (Sarbanes-Oxley) requires our management to evaluate the Company’s disclosure controls and procedures and its internal control over financial reporting and requires our auditors to issue a report on our internal control over financial reporting. We are required to disclose, in our annual report on Form 10-K, the existence of any “material weaknesses” in our internal controls. We cannot assure that we will not identify one or more material weaknesses as of the end of any given quarter or year, nor can we predict the effect on our stock price of disclosure of a material weakness. In addition, our customers may rely on the effectiveness of our internal controls as a service provider, and any deficiency in those controls could affect our customers and damage our reputation or business. Sarbanes-Oxley also limits the types of non-audit services our outside auditors may provide to us in order to preserve their independence from us. If our auditors were found not to be “independent” of us under SEC rules, we could be required to engage new auditors and re-file financial statements and audit reports with the SEC. We could be out of compliance with SEC rules until new financial statements and audit reports were filed, limiting our ability to raise capital and resulting in other adverse consequences.

RISKS RELATED TO STRATEGIC DECISIONS

If we are unable to develop and execute effective business plans or strategies, our competitive standing and results of operations could suffer. We are subject to rapid changes in technology, regulation, and product innovation,

and face intense competition for customers, sources of revenue, capital, services, qualified team members, and other essential business resources. In order to meet these challenges, we may undertake business plans or strategies related to, among other things, our organizational structure and risk management framework, our expenses and efficiency, the types of products and services we offer, the geographies in which we operate, the manner in which we serve our clients and customers, the third parties with which we do business, and the methods and distribution channels by which we offer our products and services. Accomplishing these business plans or strategies may be complex, time intensive, and require significant financial, technological, management and other resources, and there is no guarantee that any business plans or strategies will ultimately be successful. To the extent we are unable to develop or execute effective business plans or strategies, our competitive position, reputation, prospects for growth, and results of operations may be adversely affected.

In addition, we regularly explore opportunities to expand our products, services, and assets through strategic acquisitions of companies or businesses in the financial services industry. We generally must receive federal regulatory approvals before we can acquire a bank, bank holding company, or certain other financial services businesses. We cannot be certain when or if, or on what terms and conditions, any required regulatory approvals will be granted. We might be required to sell banks, branches and/or business units or assets or issue additional equity as a condition to receiving regulatory approval for an acquisition. When we do announce an acquisition, our stock price may fall depending on the size of the acquisition, the type of business to be acquired, the purchase price, and the potential dilution to existing stockholders or our earnings per share if we issue common stock in connection with the acquisition. Furthermore, difficulty in integrating an acquired company or business may cause us not to realize expected revenue increases, cost savings, increases in geographic or product presence, and other projected benefits from the acquisition. The integration could result in higher than expected deposit attrition, loss of key team members, an increase in our compliance costs or risk profile, disruption of our business or the acquired business, or otherwise harm our ability to retain customers and team members or achieve the anticipated benefits of the acquisition. Time and resources spent on integration may also impair our ability to grow our existing businesses. Many of the foregoing risks may be increased if the acquired company or business operates internationally or in a geographic location where we do not already have significant business operations and/or team members.

* * *

Any factor described in this Report or in any of our other SEC filings could by itself, or together with other factors, adversely affect our financial results and condition. Refer to our quarterly reports on Form 10-Q filed with the SEC in 2019 for material changes to the above discussion of risk factors. There are factors not discussed above or elsewhere in this Report that could adversely affect our financial results and condition.

Controls and Procedures

Disclosure Controls and Procedures

The Company's management evaluated the effectiveness, as of December 31, 2018, of the Company's disclosure controls and procedures. The Company's chief executive officer and chief financial officer participated in the evaluation. Based on this evaluation, the Company's chief executive officer and chief financial officer concluded that the Company's disclosure controls and procedures were effective as of December 31, 2018.

Internal Control Over Financial Reporting

Internal control over financial reporting is defined in Rule 13a-15(f) promulgated under the Securities Exchange Act of 1934 as a process designed by, or under the supervision of, the Company's principal executive and principal financial officers and effected by the Company's Board, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles (GAAP) and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of assets of the Company;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and
- 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. 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. No change occurred during any quarter in 2018 that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. Management's report on internal control over financial reporting is set forth below and should be read with these limitations in mind.

Management's Report on Internal Control over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. Management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2018, using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control – Integrated Framework (2013)*. Based on this assessment, management concluded that as of December 31, 2018, the Company's internal control over financial reporting was effective.

KPMG LLP, the independent registered public accounting firm that audited the Company's financial statements included in this Annual Report, issued an audit report on the Company's internal control over financial reporting. KPMG's audit report appears on the following page.

Report of Independent Registered Public Accounting Firm

The Stockholders and Board of Directors
Wells Fargo & Company:

Opinion on Internal Control Over Financial Reporting

We have audited Wells Fargo & Company and Subsidiaries' (the Company) internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements), and our report dated February 27, 2019 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible 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 Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) 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.

/s/ KPMG LLP

San Francisco, California
February 27, 2019

Financial Statements

Wells Fargo & Company and Subsidiaries

Consolidated Statement of Income

(in millions, except per share amounts)	Year ended December 31,		
	2018	2017	2016
Interest income			
Debt securities (1)	\$ 14,406	12,946	11,244
Mortgage loans held for sale	777	786	784
Loans held for sale (1)	140	50	38
Loans	43,974	41,388	39,505
Equity securities (1)	992	799	635
Other interest income (1)	4,358	2,940	1,457
Total interest income	64,647	58,909	53,663
Interest expense			
Deposits	5,622	3,013	1,395
Short-term borrowings	1,717	758	330
Long-term debt	6,703	5,157	3,830
Other interest expense	610	424	354
Total interest expense	14,652	9,352	5,909
Net interest income	49,995	49,557	47,754
Provision for credit losses	1,744	2,528	3,770
Net interest income after provision for credit losses	48,251	47,029	43,984
Noninterest income			
Service charges on deposit accounts	4,716	5,111	5,372
Trust and investment fees	14,509	14,495	14,243
Card fees	3,907	3,960	3,936
Other fees	3,384	3,557	3,727
Mortgage banking	3,017	4,350	6,096
Insurance	429	1,049	1,268
Net gains from trading activities (1)	602	542	610
Net gains on debt securities (2)	108	479	942
Net gains from equity securities (1)(3)	1,515	1,779	1,103
Lease income	1,753	1,907	1,927
Other	2,473	1,603	1,289
Total noninterest income	36,413	38,832	40,513
Noninterest expense			
Salaries	17,834	17,363	16,552
Commission and incentive compensation	10,264	10,442	10,247
Employee benefits	4,926	5,566	5,094
Equipment	2,444	2,237	2,154
Net occupancy	2,888	2,849	2,855
Core deposit and other intangibles	1,058	1,152	1,192
FDIC and other deposit assessments	1,110	1,287	1,168
Other	15,602	17,588	13,115
Total noninterest expense	56,126	58,484	52,377
Income before income tax expense	28,538	27,377	32,120
Income tax expense	5,662	4,917	10,075
Net income before noncontrolling interests	22,876	22,460	22,045
Less: Net income from noncontrolling interests	483	277	107
Wells Fargo net income	\$ 22,393	22,183	21,938
Less: Preferred stock dividends and other	1,704	1,629	1,565
Wells Fargo net income applicable to common stock	\$ 20,689	20,554	20,373
Per share information			
Earnings per common share	\$ 4.31	4.14	4.03
Diluted earnings per common share	4.28	4.10	3.99
Average common shares outstanding	4,799.7	4,964.6	5,052.8
Diluted average common shares outstanding	4,838.4	5,017.3	5,108.3

(1) Financial information for the prior periods has been revised to reflect presentation changes made in connection with our adoption in first quarter 2018 of Accounting Standards Update (ASU) 2016-01 – Financial Instruments – Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. See Note 1 (Summary of Significant Accounting Policies) for more information.

(2) Total other-than-temporary impairment (OTTI) losses were \$17 million, \$205 million and \$207 million for the years ended December 31, 2018, 2017 and 2016, respectively. Of total OTTI, losses of \$28 million, \$262 million and \$189 million were recognized in earnings, and losses (reversal of losses) of \$(11) million, \$(57) million and \$18 million were recognized as non-credit-related OTTI in other comprehensive income for the years ended December 31, 2018, 2017 and 2016, respectively.

(3) Includes OTTI losses of \$352 million, \$344 million and \$453 million for the years ended December 31, 2018, 2017 and 2016, respectively.

The accompanying notes are an integral part of these statements.

Wells Fargo & Company and Subsidiaries

Consolidated Statement of Comprehensive Income

(in millions)	Year ended December 31,		
	2018	2017	2016
Wells Fargo net income	\$ 22,393	22,183	21,938
Other comprehensive income (loss), before tax:			
Debt securities (1):			
Net unrealized gains (losses) arising during the period	(4,493)	2,719	(3,458)
Reclassification of net (gains) losses to net income	248	(737)	(1,240)
Derivatives and hedging activities:			
Net unrealized gains (losses) arising during the period	(532)	(540)	177
Reclassification of net (gains) losses on cash flow hedges to net income	294	(543)	(1,029)
Defined benefit plans adjustments:			
Net actuarial and prior service gains (losses) arising during the period	(434)	49	(52)
Amortization of net actuarial loss, settlements and other to net income	253	153	158
Foreign currency translation adjustments:			
Net unrealized gains (losses) arising during the period	(156)	96	(3)
Other comprehensive income (loss), before tax	(4,820)	1,197	(5,447)
Income tax benefit (expense) related to other comprehensive income	1,144	(434)	1,996
Other comprehensive income (loss), net of tax	(3,676)	763	(3,451)
Less: Other comprehensive loss from noncontrolling interests	(2)	(62)	(17)
Wells Fargo other comprehensive income (loss), net of tax	(3,674)	825	(3,434)
Wells Fargo comprehensive income	18,719	23,008	18,504
Comprehensive income from noncontrolling interests	481	215	90
Total comprehensive income	\$ 19,200	23,223	18,594

- (1) The year ended December 31, 2017, and December 31, 2016, includes net unrealized gains (losses) arising during the period from equity securities of \$81 million and \$259 million and reclassification of net (gains) losses to net income related to equity securities of \$(456) million and \$(300) million, respectively. In connection with our adoption in first quarter 2018 of ASU 2016-01, the year ended December 31, 2018, reflects net unrealized gains (losses) arising during the period and reclassification of net (gains) losses to net income from only debt securities.

The accompanying notes are an integral part of these statements.

Wells Fargo & Company and Subsidiaries

Consolidated Balance Sheet

	Dec 31, 2018	Dec 31, 2017
(in millions, except shares)		
Assets		
Cash and due from banks	\$ 23,551	23,367
Interest-earning deposits with banks (1)	149,736	192,580
Total cash, cash equivalents, and restricted cash (1)	173,287	215,947
Federal funds sold and securities purchased under resale agreements (1)	80,207	80,025
Debt securities:		
Trading, at fair value (2)	69,989	57,624
Available-for-sale, at fair value (2)	269,912	276,407
Held-to-maturity, at cost (fair value \$142,115 and \$138,985)	144,788	139,335
Mortgage loans held for sale (includes \$11,771 and \$16,116 carried at fair value) (3)	15,126	20,070
Loans held for sale (includes \$1,469 and \$1,023 carried at fair value) (2)(3)	2,041	1,131
Loans (includes \$244 and \$376 carried at fair value) (3)	953,110	956,770
Allowance for loan losses	(9,775)	(11,004)
Net loans	943,335	945,766
Mortgage servicing rights:		
Measured at fair value	14,649	13,625
Amortized	1,443	1,424
Premises and equipment, net	8,920	8,847
Goodwill	26,418	26,587
Derivative assets	10,770	12,228
Equity securities (includes \$29,556 and \$39,227 carried at fair value) (2)(3)	55,148	62,497
Other assets (2)	79,850	90,244
Total assets (4)	\$ 1,895,883	1,951,757
Liabilities		
Noninterest-bearing deposits	\$ 349,534	373,722
Interest-bearing deposits	936,636	962,269
Total deposits	1,286,170	1,335,991
Short-term borrowings	105,787	103,256
Derivative liabilities	8,499	8,796
Accrued expenses and other liabilities	69,317	70,615
Long-term debt	229,044	225,020
Total liabilities (5)	1,698,817	1,743,678
Equity		
Wells Fargo stockholders' equity:		
Preferred stock	23,214	25,358
Common stock – \$1-2/3 par value, authorized 9,000,000,000 shares; issued 5,481,811,474 shares	9,136	9,136
Additional paid-in capital	60,685	60,893
Retained earnings	158,163	145,263
Cumulative other comprehensive income (loss)	(6,336)	(2,144)
Treasury stock – 900,557,866 shares and 590,194,846 shares	(47,194)	(29,892)
Unearned ESOP shares	(1,502)	(1,678)
Total Wells Fargo stockholders' equity	196,166	206,936
Noncontrolling interests	900	1,143
Total equity	197,066	208,079
Total liabilities and equity	\$ 1,895,883	1,951,757

- (1) Financial information has been revised to reflect the impact of our adoption in first quarter 2018 of ASU 2016-18 – Statement of Cash Flows (Topic 230): *Restricted Cash* in which we changed the presentation of our cash and cash equivalents to include both cash and due from banks as well as interest-earning deposits with banks, which are inclusive of any restricted cash. See Note 1 (Summary of Significant Accounting Policies) for more information.
- (2) Financial information for the prior period has been revised to reflect presentation changes in connection with our adoption in first quarter 2018 of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*. See Note 1 (Summary of Significant Accounting Policies) for more information.
- (3) Parenthetical amounts represent assets and liabilities that we are required to carry at fair value or have elected the fair value option.
- (4) Our consolidated assets at December 31, 2018 and 2017, include the following assets of certain variable interest entities (VIEs) that can only be used to settle the liabilities of those VIEs: Cash and due from banks, \$139 million and \$116 million; Interest-bearing deposits with banks, \$8 million and \$371 million; Debt securities, \$45 million and \$0 million; Net loans, \$13.6 billion and \$12.5 billion; Derivative assets, \$0 million and \$0 million; Equity securities, \$85 million and \$306 million; Other assets, \$221 million and \$342 million; and Total assets, \$14.1 billion and \$13.6 billion, respectively.
- (5) Our consolidated liabilities at December 31, 2018 and 2017, include the following VIE liabilities for which the VIE creditors do not have recourse to Wells Fargo: Derivative liabilities, \$0 million and \$5 million; Accrued expenses and other liabilities, \$191 million and \$132 million; Long-term debt, \$816 million and \$1.5 billion; and Total liabilities, \$1.0 billion and \$1.6 billion, respectively.

The accompanying notes are an integral part of these statements.

Consolidated Statement of Changes in Equity

(in millions, except shares)	Preferred stock		Common stock	
	Shares	Amount	Shares	Amount
Balance December 31, 2015	11,259,917	\$ 22,214	5,092,128,810	\$ 9,136
Cumulative effect from change in consolidation accounting (1)				
Balance January 1, 2016	11,259,917	22,214	5,092,128,810	9,136
Net income				
Other comprehensive income (loss), net of tax				
Noncontrolling interests				
Common stock issued			63,441,805	
Common stock repurchased (2)			(159,647,152)	
Preferred stock issued to ESOP	1,150,000	1,150		
Preferred stock released by ESOP				
Preferred stock converted to common shares	(963,205)	(963)	20,185,863	
Common stock warrants repurchased/exercised				
Preferred stock issued	86,000	2,150		
Common stock dividends				
Preferred stock dividends				
Tax benefit from stock incentive compensation				
Stock incentive compensation expense				
Net change in deferred compensation and related plans				
Net change	272,795	2,337	(76,019,484)	—
Balance December 31, 2016	11,532,712	\$ 24,551	5,016,109,326	\$ 9,136
Cumulative effect from change in hedge accounting (3)				
Balance January 1, 2017	11,532,712	24,551	5,016,109,326	9,136
Net income				
Other comprehensive income (loss), net of tax				
Noncontrolling interests				
Common stock issued			57,257,564	
Common stock repurchased (2)			(196,519,707)	
Preferred stock issued to ESOP	950,000	950		
Preferred stock released by ESOP				
Preferred stock converted to common shares	(833,077)	(833)	14,769,445	
Common stock warrants repurchased/exercised				
Preferred stock issued	27,600	690		
Common stock dividends				
Preferred stock dividends				
Tax benefit from stock incentive compensation (4)				
Stock incentive compensation expense				
Net change in deferred compensation and related plans				
Net change	144,523	807	(124,492,698)	—
Balance December 31, 2017	11,677,235	\$ 25,358	4,891,616,628	\$ 9,136

- (1) Effective January 1, 2016, we adopted changes in consolidation accounting pursuant to Accounting Standards Update (ASU) 2015-02: *Amendments to the Consolidation Analysis*. Accordingly, we recorded a \$121 million net increase to beginning noncontrolling interests as a cumulative-effect adjustment.
- (2) For the year ended December 31, 2016, includes \$750 million related to a private forward repurchase transaction that settled in first quarter 2017 for 14.7 million shares of common stock. See Note 1 (Summary of Significant Accounting Policies) for additional information.
- (3) Effective January 1, 2017, we adopted changes in hedge accounting pursuant to ASU 2017-12 – Derivatives and Hedging (Topic 815): *Targeted Improvements to Accounting for Hedging Activities*.
- (4) Effective January 1, 2017, we adopted Accounting Standards Update 2016-09 (*Improvements to Employee Share-Based Payment Accounting*). Accordingly, tax benefit from stock incentive compensation is reported in income tax expense in the consolidated statement of income.

The accompanying notes are an integral part of these statements.

(continued on following pages)

Wells Fargo stockholders' equity

Additional paid-in capital	Retained earnings	Cumulative other comprehensive income (loss)	Treasury stock	Unearned ESOP shares	Total Wells Fargo stockholders' equity	Noncontrolling interests	Total equity
60,714	120,866	297	(18,867)	(1,362)	192,998	893	193,891
						121	121
60,714	120,866	297	(18,867)	(1,362)	192,998	1,014	194,012
	21,938				21,938	107	22,045
		(3,434)			(3,434)	(17)	(3,451)
2					2	(188)	(186)
(203)	(451)		3,040		2,386		2,386
(250)			(7,866)		(8,116)		(8,116)
99				(1,249)	—		—
(83)				1,046	963		963
(11)			974		—		—
(17)					(17)		(17)
(49)					2,101		2,101
51	(7,712)				(7,661)		(7,661)
	(1,566)				(1,566)		(1,566)
277					277		277
779					779		779
(1,075)			6		(1,069)		(1,069)
(480)	12,209	(3,434)	(3,846)	(203)	6,583	(98)	6,485
60,234	133,075	(3,137)	(22,713)	(1,565)	199,581	916	200,497
	(381)	168			(213)		(213)
60,234	132,694	(2,969)	(22,713)	(1,565)	199,368	916	200,284
	22,183				22,183	277	22,460
		825			825	(62)	763
—					—	12	12
(133)	(277)		2,758		2,348		2,348
750			(10,658)		(9,908)		(9,908)
31				(981)	—		—
(35)				868	833		833
97			736		—		—
(133)					(133)		(133)
(13)					677		677
50	(7,708)				(7,658)		(7,658)
	(1,629)				(1,629)		(1,629)
—					—		—
875					875		875
(830)			(15)		(845)		(845)
659	12,569	825	(7,179)	(113)	7,568	227	7,795
60,893	145,263	(2,144)	(29,892)	(1,678)	206,936	1,143	208,079

(continued from previous pages)

Wells Fargo & Company and Subsidiaries

Consolidated Statement of Changes in Equity

(in millions, except shares)	Preferred stock		Common stock	
	Shares	Amount	Shares	Amount
Balance December 31, 2017	11,677,235	\$ 25,358	4,891,616,628	\$ 9,136
Cumulative effect from change in accounting policies (1)				
Balance January 1, 2018	11,677,235	25,358	4,891,616,628	9,136
Adoption of accounting standard related to certain tax effects stranded in accumulated other comprehensive income (loss)(2)				
Net income				
Other comprehensive income (loss), net of tax				
Noncontrolling interests				
Common stock issued			41,082,047	
Common stock repurchased			(375,477,998)	
Preferred stock redeemed (3)	(2,150,375)	(1,995)		
Preferred stock issued to ESOP	1,100,000	1,100		
Preferred stock released by ESOP				
Preferred stock converted to common shares	(1,249,644)	(1,249)	24,032,931	
Common stock warrants repurchased/exercised				
Preferred stock issued	—	—		
Common stock dividends				
Preferred stock dividends				
Stock incentive compensation expense				
Net change in deferred compensation and related plans				
Net change	(2,300,019)	(2,144)	(310,363,020)	—
Balance December 31, 2018	9,377,216	\$ 23,214	4,581,253,608	\$ 9,136

(1) Effective January 1, 2018, we adopted ASU 2016-04 – Liabilities – Extinguishments of Liabilities (Subtopic 405-20): *Recognition of Breakage for Certain Prepaid Stored-Value Products*, ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*, and ASU 2014-09 – Revenue from Contracts With Customers (Topic 606) and subsequent related Updates. See Note 1 (Summary of Significant Accounting Policies) in this Report for more information.

(2) Represents the reclassification from other comprehensive income to retained earnings as a result of our adoption of ASU 2018-02 – *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, in the third quarter of 2018. For additional information, see Note 1.

(3) Represents the impact of the redemption of preferred stock, series J, in third quarter 2018.

The accompanying notes are an integral part of these statements.

Wells Fargo stockholders' equity

Additional paid-in capital	Retained earnings	Cumulative other comprehensive income (loss)	Treasury stock	Unearned ESOP shares	Total Wells Fargo stockholders' equity	Noncontrolling interests	Total equity
60,893	145,263	(2,144)	(29,892)	(1,678)	206,936	1,143	208,079
	94	(118)			(24)		(24)
60,893	145,357	(2,262)	(29,892)	(1,678)	206,912	1,143	208,055
	400	(400)			—		—
	22,393				22,393	483	22,876
		(3,674)			(3,674)	(2)	(3,676)
7					7	(724)	(717)
(76)	(321)		2,073		1,676		1,676
—			(20,633)		(20,633)		(20,633)
	(155)				(2,150)		(2,150)
43				(1,143)	—		—
(70)				1,319	1,249		1,249
6			1,243		—		—
(325)					(325)		(325)
—					—		—
66	(7,955)				(7,889)		(7,889)
	(1,556)				(1,556)		(1,556)
1,041					1,041		1,041
(900)			15		(885)		(885)
(208)	12,806	(4,074)	(17,302)	176	(10,746)	(243)	(10,989)
60,685	158,163	(6,336)	(47,194)	(1,502)	196,166	900	197,066

Wells Fargo & Company and Subsidiaries
Consolidated Statement of Cash Flows

(in millions)	Year ended December 31,		
	2018	2017	2016
Cash flows from operating activities:			
Net income before noncontrolling interests	\$ 22,876	22,460	22,045
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for credit losses	1,744	2,528	3,770
Changes in fair value of MSRs, MLHFS and LHFS carried at fair value	453	886	139
Depreciation, amortization and accretion	5,593	5,406	4,970
Other net gains (1)	(7,630)	(1,518)	(6,337)
Stock-based compensation	2,255	2,046	1,945
Originations and purchases of mortgage loans held for sale (1)	(152,832)	(181,269)	(205,300)
Proceeds from sales of and paydowns on mortgages loans held for sale (1)	119,097	134,984	127,479
Net change in:			
Debt and equity securities, held for trading (1)	35,054	33,505	63,309
Loans held for sale (1)	(960)	327	(451)
Deferred income taxes	1,970	666	1,793
Derivative assets and liabilities	1,513	(5,025)	2,089
Other assets (1)	7,805	(1,214)	(14,232)
Other accrued expenses and liabilities	(865)	4,837	(211)
Net cash provided by operating activities	36,073	18,619	1,008
Cash flows from investing activities:			
Net change in:			
Federal funds sold and securities purchased under resale agreements (2)	(1,184)	(21,497)	(15,747)
Available-for-sale debt securities:			
Proceeds from sales (1)	7,320	42,067	30,958
Prepayments and maturities (1)	36,725	45,688	40,998
Purchases (1)	(60,067)	(103,656)	(120,978)
Held-to-maturity securities:			
Paydowns and maturities	10,934	10,673	7,957
Purchases	—	—	(23,593)
Equity securities, not held for trading:			
Proceeds from sales and capital returns (1)	6,242	5,451	3,711
Purchases (1)	(6,433)	(3,735)	(5,383)
Loans:			
Loans originated by banking subsidiaries, net of principal collected	(18,619)	317	(39,002)
Proceeds from sales (including participations) of loans held for investment	16,294	10,439	10,061
Purchases (including participations) of loans	(2,088)	(3,702)	(6,221)
Principal collected on nonbank entities' loans	6,791	7,448	6,844
Loans originated by nonbank entities	(6,482)	(6,814)	(7,743)
Net cash paid for acquisitions	(10)	(320)	(30,584)
Proceeds from sales of foreclosed assets and short sales	3,592	5,198	7,311
Other, net (2)	(769)	(709)	(508)
Net cash used by investing activities	(7,754)	(13,152)	(141,919)
Cash flows from financing activities:			
Net change in:			
Deposits	(48,034)	29,912	82,767
Short-term borrowings	2,531	14,020	(1,198)
Long-term debt:			
Proceeds from issuance	47,595	43,575	90,111
Repayment	(40,565)	(80,802)	(34,462)
Preferred stock:			
Proceeds from issuance	—	677	2,101
Redeemed	(2,150)	—	—
Cash dividends paid	(1,622)	(1,629)	(1,566)
Common stock:			
Proceeds from issuance	632	1,211	1,415
Stock tendered for payment of withholding taxes	(331)	(393)	(494)
Repurchased	(20,633)	(9,908)	(8,116)
Cash dividends paid	(7,692)	(7,480)	(7,472)
Net change in noncontrolling interests	(462)	30	(188)
Other, net	(248)	(133)	(107)
Net cash provided (used) by financing activities	(70,979)	(10,920)	122,791
Net change in cash, cash equivalents, and restricted cash (2)	(42,660)	(5,453)	(18,120)
Cash, cash equivalents, and restricted cash at beginning of year (2)	215,947	221,400	239,520
Cash, cash equivalents, and restricted cash at end of year (2)	\$ 173,287	215,947	221,400
Supplemental cash flow disclosures:			
Cash paid for interest	\$ 14,366	9,103	5,573
Cash paid for income taxes	1,977	6,592	8,446

- (1) Financial information for the prior periods has been revised to reflect presentation changes made in connection with our adoption in first quarter 2018 of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*. See Note 1 (Summary of Significant Accounting Policies) for more information.
- (2) Financial information has been revised to reflect the impact of our adoption in first quarter 2018 of ASU 2016-18 – Statement of Cash Flows (Topic 230): *Restricted Cash* in which we changed the presentation of our cash and cash equivalents to include both cash and due from banks as well as interest-earning deposits with banks, which are inclusive of any restricted cash. See Note 1 (Summary of Significant Accounting Policies) for more information.

The accompanying notes are an integral part of these statements. See Note 1 (Summary of Significant Accounting Policies) for noncash activities.

Notes to Financial Statements

See the Glossary of Acronyms at the end of this Report for terms used throughout the Financial Statements and related Notes.

Note 1: Summary of Significant Accounting Policies

Wells Fargo & Company is a diversified financial services company. We provide banking, trust and investments, mortgage banking, investment banking, retail banking, brokerage, and consumer and commercial finance through banking locations, the internet and other distribution channels to consumers, businesses and institutions in all 50 states, the District of Columbia, and in foreign countries. When we refer to “Wells Fargo,” “the Company,” “we,” “our” or “us,” we mean Wells Fargo & Company and Subsidiaries (consolidated). Wells Fargo & Company (the Parent) is a financial holding company and a bank holding company. We also hold a majority interest in a real estate investment trust, which has publicly traded preferred stock outstanding.

Our accounting and reporting policies conform with U.S. generally accepted accounting principles (GAAP) and practices in the financial services industry. To prepare the financial statements in conformity with GAAP, management must make estimates based on assumptions about future economic and market conditions (for example, unemployment, market liquidity, real estate prices, etc.) that affect the reported amounts of assets and liabilities at the date of the financial statements, income and expenses during the reporting period and the related disclosures. Although our estimates contemplate current conditions and how we expect them to change in the future, it is reasonably possible that actual conditions could be worse than anticipated in those estimates, which could materially affect our results of operations and financial condition. Management has made significant estimates in several areas, including:

- allowance for credit losses (Note 6 (Loans and Allowance for Credit Losses));
- valuations of residential mortgage servicing rights (MSRs) (Note 9 (Securitizations and Variable Interest Entities) and Note 10 (Mortgage Banking Activities)) and financial instruments (Note 18 (Fair Values of Assets and Liabilities));
- liabilities for contingent litigation losses (Note 16 (Legal Actions)); and
- income taxes (Note 23 (Income Taxes)).

Actual results could differ from those estimates.

Accounting Standards Adopted in 2018

In 2018, we adopted the following new accounting guidance:

- Accounting Standards Update (ASU or Update) 2018-14 – Compensation – Retirement Benefits – Defined Benefit Plans—General (Subtopic 715-20): *Disclosure Framework – Changes to the Disclosure Requirements for Defined Benefit Plans*
- ASU 2018-02 – Income Statement-Reporting Comprehensive Income (Topic 220): *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*
- ASU 2017-09 – Compensation – Stock Compensation (Topic 718): *Scope of Modification Accounting*;
- ASU 2017-07 – Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost;
- ASU 2017-05 – Other Income – Gains and Losses from the Derecognition of Nonfinancial Assets (Subtopic 610-20): *Clarifying the Scope of Asset Derecognition Guidance and Accounting for Partial Sales of Nonfinancial Assets*;
- ASU 2017-01 – Business Combinations (Topic 805):

Clarifying the Definition of a Business;

- ASU 2016-18 – Statement of Cash Flows (Topic 230): *Restricted Cash*;
- ASU 2016-16 – Income Taxes (Topic 740): *Intra-Entity Transfers of Assets Other Than Inventory*;
- ASU 2016-15 – Statement of Cash Flows (Topic 230): *Classification of Certain Cash Receipts and Cash Payments*;
- ASU 2016-04 – Liabilities – Extinguishments of Liabilities (Subtopic 405-20): *Recognition of Breakage for Certain Prepaid Stored-Value Products*;
- ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*; and
- ASU 2014-09 – Revenue from Contracts With Customers (Topic 606) and subsequent related Updates.

ASU 2018-14 changes the disclosure requirements for our defined benefit pension and postretirement plans. We are eliminating two disclosures that are no longer considered beneficial: (1) information related to amounts in accumulated other comprehensive income to be recognized in the next year as benefit cost and (2) the effect of one-percentage point change on assumed health care cost trend rates. We have added two disclosures: (1) the weighted-average interest crediting rates for plans with promised interest crediting rates, and (2) explanations for significant gain and losses related to changes in the benefit obligation. We early adopted this change in fourth quarter 2018.

ASU 2018-02 allows a reclassification to update amounts in accumulated other comprehensive income to an appropriate tax rate under the Tax Cuts & Jobs Act. In 2018, we reclassified \$400 million resulting in a reduction of accumulated other comprehensive income and an increase to retained earnings. For additional information, see Note 25 (Other Comprehensive Income). We have finalized our provisional tax estimates based on the completion of our U.S. tax filings in fourth quarter 2018.

ASU 2017-09 clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. Under the ASU, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. The Update is applied to awards modified on or after the adoption date and accordingly, did not have a material impact on our consolidated financial statements.

ASU 2017-07 requires that the service cost component of net benefit cost be reported in the same line item as other compensation costs arising from services rendered by employees during the period, and the other pension cost components (interest cost, expected return on plan assets and amortization of actuarial gains and losses) be presented in the income statement separate from the service cost component. The income statement line item used to present the other pension cost components must be disclosed. We adopted this change in first quarter 2018. The Update did not have a material impact on our consolidated financial statements.

Note 1: Summary of Significant Accounting Policies (continued)

ASU 2017-05 provides guidance for recognizing gains and losses from the transfer of nonfinancial assets in contracts with non-customers. The ASU applies to nonfinancial assets, including real estate (e.g., buildings, land, windmills, solar farms), ships and intellectual property. We adopted this change in first quarter 2018. The Update did not have a material impact on our consolidated financial statements.

ASU 2017-01 requires that when substantially all of the fair value of gross assets acquired is concentrated in a single asset (or a group of similar assets), the assets acquired would not represent a business. We adopted this change in first quarter 2018. The Update is applied prospectively and did not have a material impact on our consolidated financial statements.

ASU 2016-18 requires that restricted cash and cash equivalents are included with the total cash and cash equivalents in the consolidated statement of cash flows. In addition, the nature of any restrictions will be disclosed in the footnotes to the financial statements. We adopted this change in first quarter 2018. Our retrospective adoption includes changes to our presentation of cash and cash equivalents in our consolidated statement of cash flows to include both cash and due from banks as well as interest-earning deposits with banks. In addition, we had corresponding changes on our consolidated balance sheets.

ASU 2016-16 requires us to recognize the income tax effects of intercompany sales and transfers of assets other than inventory in the period in which the transfer occurs. We adopted this change in first quarter 2018. The Update did not have a material impact on our consolidated financial statements.

ASU 2016-15 addresses eight specific cash flow issues with the objective of reducing the existing diversity in practice for reporting in the statement of cash flows. We adopted this change in first quarter 2018. The Update did not have a material impact on our consolidated financial statements.

ASU 2016-04 modifies the accounting for certain prepaid card products to require the recognition of breakage. Breakage represents the estimated amount that will not be redeemed by the cardholder for goods or services. We adopted this change in first quarter 2018. Upon adoption, we recorded a cumulative-effect adjustment that increased retained earnings, given estimated breakage, by \$20 million.

ASU 2016-01 changes the accounting for certain equity securities to record at fair value with unrealized gains or losses reflected in earnings, as well as improve the disclosures of equity securities and the fair value of financial instruments. The Update also requires that for purposes of disclosing the fair value of financial instruments recorded at amortized cost, including loans and long-term debt, the valuation methodology is based on an exit price notion.

We adopted the Update in first quarter 2018 and recorded a cumulative-effect adjustment as of January 1, 2018, that increased retained earnings by \$106 million as a result of a transition adjustment to reclassify \$118 million in net unrealized gains from other comprehensive income to retained earnings, partially offset by a transition adjustment to decrease retained earnings by \$12 million primarily to adjust the carrying value of our auction rate securities from cost to fair value. No transition adjustment was recorded for investments changed to the measurement alternative (described below), which was applied prospectively.

As a result of adopting this ASU, our investments in marketable equity securities, including those previously classified as available-for-sale, are accounted for at fair value with unrealized gains or losses reflected in earnings. Additionally, our share of unrealized gains or losses related to marketable equity securities held by our equity method investees are reflected in earnings. Prior to adoption, such unrealized gains and losses were reflected in other comprehensive income. Our investments in nonmarketable equity securities previously accounted for under the cost method of accounting, except for Federal Reserve Bank stock, are now accounted for either at fair value with unrealized gains and losses reflected in earnings or using the measurement alternative. The measurement alternative is similar to the cost method of accounting, except the carrying value is adjusted through earnings for impairment, if any, and changes in observable and orderly transactions in the same or similar investment. We account for substantially all of our private equity investments, previously using the cost method of accounting, now under the measurement alternative. Our auction rate securities portfolio is now accounted for at fair value with unrealized gains or losses reflected in earnings.

In connection with our adoption of this Update, we have modified our balance sheet and income statement presentation to report marketable and nonmarketable equity securities and their results separately from debt securities by now reporting all equity securities in a new line labeled "Equity securities" in both the balance sheet and income statement. Additionally we now report loans held for trading purposes in loans held for sale and have reclassified net gains and losses on marketable equity securities used as economic hedges of deferred compensation obligations from "Net gains for trading activities" to "Net gains from equity securities". All prior periods have been revised to conform to these changes in reporting.

Table 1.1 provides a summary of our reporting changes implemented in connection with our adoption of ASU 2016-01 in first quarter 2018.

Table 1.1: Summary of Reporting Changes

Financial instrument or transaction type	As previously reported	Revised reporting
Balance Sheet		
Marketable equity securities	Trading assets and available for sale investment securities	Equity securities (new caption)
Nonmarketable equity securities	Other assets	Equity securities (new caption)
Loans held for trading	Trading assets	Loans held for sale
Debt securities held for trading	Trading assets	Debt securities (formerly "Investment securities")
Income Statement		
Interest income:		
Marketable equity securities	Trading assets and investment securities	Equity securities (new caption)
Nonmarketable equity securities	Other	Equity securities (new caption)
Loans held for trading	Trading assets	Loans held for sale
Debt securities held for trading	Trading assets	Debt securities (formerly "Investment securities")
Noninterest income:		
Deferred compensation gains (1)	Net gains from trading activities	Net gains from equity securities

(1) Reclassification of net gains and losses on marketable equity securities economically hedging our deferred compensation obligations.

Table 1.2 summarizes financial assets and liabilities by form and measurement accounting model.

Table 1.2: Accounting Model for Financial Assets and Liabilities

Balance sheet caption	Measurement model(s)	Financial statement Note reference
Cash and due from banks	Cost	N/A
Interest-earning deposits with banks	Cost	N/A
Federal funds sold and securities purchased under resale agreements	Amortized cost	N/A
Debt securities:		
Trading	FV-NI (1)	Note 4: Trading Activities Note 18: Fair Values of Assets and Liabilities
Available-for-sale	FV-OCI (2)	Note 5: Available-for-Sale and Held-to-Maturity Debt Securities Note 18: Fair Values of Assets and Liabilities
Held-to-maturity	Amortized cost	Note 5: Available-for-Sale and Held-to-Maturity Debt Securities
Mortgage loans held for sale	FV-NI (1) LOCOM (3)	Note 18: Fair Values of Assets and Liabilities
Loans held for sale	FV-NI (1) LOCOM (3)	Note 18: Fair Values of Assets and Liabilities
Loans	Amortized cost FV-NI (1)	Note 6: Loans and Allowance for Credit Losses Note 18: Fair Values of Assets and Liabilities
Derivative assets and liabilities	FV-NI (1) FV-OCI (2)	Note 4: Trading Activities Note 17: Derivatives Note 18: Fair Values of Assets and Liabilities
Equity securities:		
Marketable	FV-NI (1)	Note 4: Trading Activities Note 8: Equity Securities Note 18: Fair Values of Assets and Liabilities
Nonmarketable	FV-NI (1) Cost method Equity method MA (4)	Note 4: Trading Activities Note 8: Equity Securities Note 18: Fair Values of Assets and Liabilities
Other assets	Amortized cost (5)	Note 7: Premises, Equipment, Lease Commitments and Other Assets
Deposits	Amortized cost	N/A
Short-term borrowings	Amortized cost	N/A
Long-term debt	Amortized cost	N/A

(1) FV-NI represents the fair value through net income accounting model.

(2) FV-OCI represents the fair value through other comprehensive income accounting model.

(3) LOCOM represents the lower of cost or fair value accounting model.

(4) MA represents the measurement alternative accounting model.

(5) Other assets are generally carried at amortized cost, except for bank-owned life insurance which is carried at cash surrender value.

Note 1: Summary of Significant Accounting Policies (continued)

ASU 2014-09 modifies the guidance used to recognize revenue from contracts with customers for transfers of goods or services and transfers of non-financial assets, unless those contracts are within the scope of other guidance. We adopted the Update in first quarter 2018, and upon a modified retrospective adoption, we recorded a cumulative-effect adjustment as of January 1, 2018, that decreased retained earnings by \$32 million, due to changes in the timing of revenue for corporate trust services that are provided over the life of the associated trust. In addition, we changed the presentation of some costs such that underwriting expenses of our broker-dealer business that were previously netted against revenue are now included in noninterest expense, and card payment network charges that were previously included in noninterest expense are now netted against card fee revenue.

Consolidation

Our consolidated financial statements include the accounts of the Parent and our subsidiaries in which we have a controlling interest.

We are also a variable interest holder in certain entities in which equity investors do not have the characteristics of a controlling financial interest or where the entity does not have enough equity at risk to finance its activities without additional subordinated financial support from other parties (referred to as variable interest entities (VIEs)). Our variable interest arises from contractual, ownership or other monetary interests in the entity, which change with fluctuations in the fair value of the entity's net assets. We consolidate a VIE if we are the primary beneficiary. We are the primary beneficiary if we have a controlling financial interest, which includes both the power to direct the activities that most significantly impact the VIE and a variable interest that potentially could be significant to the VIE. To determine whether or not a variable interest we hold could potentially be significant to the VIE, we consider both qualitative and quantitative factors regarding the nature, size and form of our involvement with the VIE. We assess whether or not we are the primary beneficiary of a VIE on an ongoing basis.

Significant intercompany accounts and transactions are eliminated in consolidation. When we have significant influence over operating and financing decisions for a company but do not own a majority of the voting equity interests, we account for the investment using the equity method of accounting, which requires us to recognize our proportionate share of the company's earnings. If we do not have significant influence, we account for the equity security under the fair value method, cost method or measurement alternative.

Cash, Cash Equivalents and Restricted Cash

Cash, cash equivalents and restricted cash include cash on hand, cash items in transit, and amounts due from or held with other depository institutions. See Note 3 (Cash, Loan and Dividend Restrictions) for the nature of our restrictions on cash and cash equivalents.

Trading Activities

We engage in trading activities to accommodate the investment and risk management activities of our customers. These activities predominantly occur in our Wholesale Banking businesses and to a lesser extent other divisions of the Company. The assets and liabilities classified as trading include debt securities, loans, equity securities, derivatives and short sales, which are reported within the balance sheet line item based on the form of the instrument. In addition, debt securities that are

held for investment purposes that we have elected to account for under the fair value method, are classified as trading.

Our trading assets and liabilities are carried on the balance sheet at fair value with changes in fair value recognized in net gains from trading activities and interest income and interest expense recognized in net interest income.

Customer accommodation trading activities include our actions as an intermediary to buy and sell financial instruments and market-making activities. We also take positions to manage our exposure to customer accommodation activities. We hold financial instruments for trading in long positions (assets), as well as short positions where we sold financial instruments we have not yet purchased (liabilities), to facilitate our trading activities. As an intermediary we interact with market buyers and sellers to facilitate the purchase and sale of financial instruments to meet the anticipated or current needs of our customers. For example, we may purchase or sell a derivative to a customer who wants to manage interest rate risk exposure. We typically enter into an offsetting derivative or security position to manage our exposure to the customer transaction. We earn income based on the transaction price difference between the customer transaction and the offsetting position, which is reflected in the fair value changes of the positions recorded in the net gains from trading activities.

Our market-making activities include taking long and short trading positions to facilitate customer order flow. These activities are typically executed on a short-term basis. As a market-maker we earn income due to: (1) difference between the price paid or received for the purchase and sale of the security (bid-ask spread), (2) the net interest income of the positions, and (3) the changes in fair value of the trading positions held on our balance sheet. Additionally, we may enter into separate derivative or security positions to manage our exposure related to our long and short trading positions taken in our market-making activities. Income earned on these market-making activities are reflected in the fair value changes of these positions recorded in net gains from trading activities.

Debt Securities

Our investments in debt securities that are not held for trading purposes are classified as either debt securities available-for-sale (AFS) or held-to-maturity (HTM).

AVAILABLE-FOR-SALE DEBT SECURITIES

Debt securities for which the Company does not have the positive intent and ability to hold to maturity are classified as AFS. These AFS debt securities are reported at fair value with unrealized gains and losses, net of applicable income taxes, reported in cumulative OCI.

We conduct other-than-temporary impairment (OTTI) analysis on a quarterly basis or more often if a potential loss-triggering event occurs. The initial indicator of OTTI is a decline in fair value below the amortized cost of the debt security.

An AFS debt security that has a decline in the fair value below the security's amortized cost records OTTI if we (1) have the intent to sell the security, (2) it is more likely than not that we will be required to sell the security before recovery of its amortized cost basis, or (3) we do not expect to recover the entire amortized cost basis of the security.

Estimating recovery of the amortized cost basis of an AFS debt security is based upon an assessment of the cash flows expected to be collected. If the present value of cash flows expected to be collected, discounted at the security's effective yield, is less than amortized cost, OTTI is considered to have occurred. In performing an assessment of the cash flows

expected to be collected, we consider all relevant information including:

- the length of time and the extent to which the fair value has been less than the amortized cost basis;
- the historical and implied volatility of the fair value of the security;
- the cause of the price decline, such as the general level of interest rates or adverse conditions specifically related to the security, an industry or a geographic area;
- the issuer's financial condition, near-term prospects and ability to service the debt;
- the payment structure of the debt security and the likelihood of the issuer being able to make payments that increase in the future;
- for asset-backed securities, the credit performance of the underlying collateral, including delinquency rates, level of non-performing assets, cumulative losses to date, collateral value and the remaining credit enhancement compared with expected credit losses;
- any change in rating agencies' credit ratings at evaluation date from acquisition date and any likely imminent action;
- independent analyst reports and forecasts, sector credit ratings and other independent market data; and
- recoveries or additional declines in fair value subsequent to the balance sheet date.

If we intend to sell the security, or if it is more likely than not we will be required to sell the security before recovery of amortized cost basis, an OTTI write-down is recognized in earnings equal to the entire difference between the amortized cost basis and fair value of the security. For debt security that is considered other-than-temporarily impaired that we do not intend to sell or it is more likely than not that we will not be required to sell before recovery, the OTTI write-down is separated into an amount representing the credit loss, which is recognized in earnings, and the amount related to all other factors, which is recognized in OCI. The measurement of the credit loss component is equal to the difference between the debt security's amortized cost basis and the present value of its expected future cash flows discounted at the security's effective yield. The remaining difference between the security's fair value and the present value of expected future cash flows is due to all other factors. We believe that we will fully collect the carrying value of securities on which we have recorded a non-credit-related impairment in OCI.

Following the recognition of OTTI, the security's new amortized cost basis is the previous basis minus the OTTI amount recognized in earnings.

We recognize realized gains and losses on the sale of AFS debt securities in net gains (losses) on debt securities using the specific identification method.

Unamortized premiums and discounts are recognized in interest income over the contractual life of the security using the interest method. As principal repayments are received on securities (i.e., primarily mortgage-backed securities (MBS)) a proportionate amount of the related premium or discount is recognized in income so that the effective interest rate on the remaining portion of the security continues unchanged.

HELD-TO-MATURITY DEBT SECURITIES Debt securities for which the Company has the positive intent and ability to hold to maturity are classified as held-to-maturity (HTM). These HTM debt securities are reported at historical cost adjusted for amortization of premiums and accretion of discounts. We recognize OTTI when there is a decline in fair value and we do

not expect to recover the entire amortized cost basis of the debt security. The amortized cost is written-down to fair value with the credit loss component recorded to earnings and the remaining component recognized in OCI. The OTTI assessment related to intent to sell, required to sell, whether we expect recovery of the amortized cost basis and determination of any credit loss component recognized in earnings for HTM debt securities is the same as described for AFS debt securities. AFS debt securities transferred to the HTM classification are recorded at fair value and the unrealized gains or losses resulting from the transfer of these securities continue to be reported in cumulative OCI. The unamortized OCI balance is amortized into earnings over the remaining life of the security using the effective interest method. The HTM amortized cost basis used in the OTTI analysis includes the unamortized OCI balances related to previous security transfers.

Securities Purchased and Sold Agreements

Securities purchased under resale agreements and securities sold under repurchase agreements are accounted for as collateralized financing transactions and are recorded at the acquisition or sale price plus accrued interest. We monitor the fair value of securities purchased and sold and obtain collateral from or return it to counterparties when appropriate. These financing transactions do not create material credit risk given the collateral provided and the related monitoring process.

Mortgage Loans and Loans Held for Sale

Mortgage loans held for sale (MLHFS) include commercial and residential mortgages originated for sale and securitization in the secondary market, which is our principal market, or for sale as whole loans. We have elected the fair value option for substantially all residential MLHFS (see Note 18 (Fair Values of Assets and Liabilities)). The remaining residential MLHFS are held at the lower of cost or fair value (LOCOM) and are valued on an aggregate portfolio basis. Commercial MLHFS are held at LOCOM and are valued on an individual loan basis.

Loans held for sale (LHFS) includes commercial loans originated for sale in the secondary market and loans used in market-making activities in our trading business. The loans held for trading purposes are carried at fair value, with the remainder of LHFS recorded at LOCOM.

Gains and losses on MLHFS are recorded in mortgage banking noninterest income. Gains and losses on LHFS used in trading activities are recognized in net gains from trading activities, with gains and losses on LHFS not used in trading activities recognized in other noninterest income. Direct loan origination costs and fees for MLHFS and LHFS under the fair value option are recognized in income at origination. For MLHFS and LHFS recorded at LOCOM, loan costs and fees are deferred at origination and are recognized in income at time of sale. Interest income on MLHFS and LHFS is calculated based upon the note rate of the loan and is recorded in interest income.

Our lines of business are authorized to originate held-for-investment loans that meet or exceed established loan product profitability criteria, including minimum positive net interest margin spreads in excess of funding costs. When a determination is made at the time of commitment to originate loans as held for investment, it is our intent to hold these loans to maturity or for the "foreseeable future," subject to periodic review under our management evaluation processes, including corporate asset/liability management. In determining the "foreseeable future" for loans, management considers (1) the current economic environment and market conditions, (2) our business strategy and current business plans, (3) the nature and

Note 1: Summary of Significant Accounting Policies (continued)

type of the loan receivable, including its expected life, and (4) our current financial condition and liquidity demands. If subsequent changes, including changes in interest rates, significantly impact the ongoing profitability of certain loan products, we may subsequently change our intent to hold these loans, and we would take actions to sell such loans. Upon such management determination, we immediately transfer these loans to the MLHFS or LHFS portfolio at LOCOM.

Loans

Loans are reported at their outstanding principal balances net of any unearned income, cumulative charge-offs, unamortized deferred fees and costs on originated loans and unamortized premiums or discounts on purchased loans. PCI loans are reported net of any remaining purchase accounting adjustments. See the "Purchased Credit-Impaired Loans" section in this Note for our accounting policy for PCI loans.

Unearned income, deferred fees and costs, and discounts and premiums are amortized to interest income over the contractual life of the loan using the interest method. Loan commitment fees are generally deferred and amortized into noninterest income on a straight-line basis over the commitment period.

We have certain private label and co-brand credit card loans through a program agreement that involves our active participation in the operating activity of the program with a third party. We share in the economic results of the loans subject to this agreement. We consider the program to be a collaborative arrangement and therefore report our share of revenue and losses on a net basis in interest income for loans, other noninterest income and provision for credit losses as applicable. Our net share of revenue from this activity represented less than 1% of our total revenues for 2018.

Loans also include direct financing leases that are recorded at the aggregate of minimum lease payments receivable plus the estimated residual value of the leased property, less unearned income. Leveraged leases, which are a form of direct financing leases, are recorded net of related non-recourse debt. Leasing income is recognized as a constant percentage of outstanding lease financing balances over the lease terms in interest income.

NONACCRUAL AND PAST DUE LOANS We generally place loans on nonaccrual status when:

- the full and timely collection of interest or principal becomes uncertain (generally based on an assessment of the borrower's financial condition and the adequacy of collateral, if any), such as in bankruptcy or other circumstances;
- they are 90 days (120 days with respect to real estate 1-4 family first and junior lien mortgages) past due for interest or principal, unless both well-secured and in the process of collection;
- part of the principal balance has been charged off, except for credit card loans, which are generally not placed on nonaccrual status, but are generally fully charged off when the loan reaches 180 days past due; or
- for junior lien mortgages, we have evidence that the related first lien mortgage may be 120 days past due or in the process of foreclosure regardless of the junior lien delinquency status.

PCI loans are written down at acquisition to fair value using an estimate of cash flows deemed to be collectible and an accretable yield is established. Accordingly, such loans are not classified as nonaccrual because they continue to earn interest

from accretable yield, independent of performance in accordance of their contractual terms, and we expect to fully collect the new carrying values of such loans (that is, the new cost basis arising out of purchase accounting).

When we place a loan on nonaccrual status, we reverse the accrued unpaid interest receivable against interest income and suspend amortization of any net deferred fees. If the ultimate collectability of the recorded loan balance is in doubt on a nonaccrual loan, the cost recovery method is used and cash collected is applied to first reduce the carrying value of the loan. Otherwise, interest income may be recognized to the extent cash is received. Generally, we return a loan to accrual status when all delinquent interest and principal become current under the terms of the loan agreement and collectability of remaining principal and interest is no longer doubtful.

We typically re-underwrite modified loans at the time of a restructuring to determine if there is sufficient evidence of sustained repayment capacity based on the borrower's financial strength, including documented income, debt to income ratios and other factors. If the borrower has demonstrated performance under the previous terms and the underwriting process shows the capacity to continue to perform under the restructured terms, the loan will generally remain in accruing status. When a loan classified as a troubled debt restructuring (TDR) performs in accordance with its modified terms, the loan either continues to accrue interest (for performing loans) or will return to accrual status after the borrower demonstrates a sustained period of performance (generally six consecutive months of payments, or equivalent, inclusive of consecutive payments made prior to the modification). Loans will be placed on nonaccrual status and a corresponding charge-off is recorded if we believe it is probable that principal and interest contractually due under the modified terms of the agreement will not be collectible.

Our loans are considered past due when contractually required principal or interest payments have not been made on the due dates.

LOAN CHARGE-OFF POLICIES For commercial loans, we generally fully charge off or charge down to net realizable value (fair value of collateral, less estimated costs to sell) for loans secured by collateral when:

- management judges the loan to be uncollectible;
- repayment is deemed to be protracted beyond reasonable time frames;
- the loan has been classified as a loss by either our internal loan review process or our banking regulatory agencies;
- the customer has filed bankruptcy and the loss becomes evident owing to a lack of assets; or
- the loan is 180 days past due unless both well-secured and in the process of collection.

For consumer loans, we fully charge off or charge down to net realizable value when deemed uncollectible due to bankruptcy or other factors, or no later than reaching a defined number of days past due, as follows:

- 1-4 family first and junior lien mortgages – We generally charge down to net realizable value when the loan is 180 days past due.
- Automobile loans – We generally fully charge off when the loan is 120 days past due.
- Credit card loans – We generally fully charge off when the loan is 180 days past due.
- Unsecured loans (closed end) – We generally fully charge off when the loan is 120 days past due.

- Unsecured loans (open end) – We generally fully charge off when the loan is 180 days past due.
- Other secured loans – We generally fully or partially charge down to net realizable value when the loan is 120 days past due.

IMPAIRED LOANS We consider a loan to be impaired when, based on current information and events, we determine that we will not be able to collect all amounts due according to the loan contract, including scheduled interest payments. This evaluation is generally based on delinquency information, an assessment of the borrower's financial condition and the adequacy of collateral, if any. Our impaired loans predominantly include loans on nonaccrual status in the commercial portfolio segment and loans modified in a TDR, whether on accrual or nonaccrual status.

When we identify a loan as impaired, we generally measure the impairment, if any, based on the difference between the recorded investment in the loan (net of previous charge-offs, deferred loan fees or costs and unamortized premium or discount) and the present value of expected future cash flows, discounted at the loan's effective interest rate. When the value of an impaired loan is calculated by discounting expected cash flows, interest income is recognized using the loan's effective interest rate over the remaining life of the loan. When collateral is the sole source of repayment for the impaired loan, rather than the borrower's income or other sources of repayment, we charge down to net realizable value.

TROUBLED DEBT RESTRUCTURINGS In situations where, for economic or legal reasons related to a borrower's financial difficulties, we grant a concession for other than an insignificant period of time to the borrower that we would not otherwise consider, the related loan is classified as a TDR. These modified terms may include rate reductions, principal forgiveness, term extensions, payment forbearance and other actions intended to minimize our economic loss and to avoid foreclosure or repossession of the collateral, if applicable. For modifications where we forgive principal, the entire amount of such principal forgiveness is immediately charged off. Loans classified as TDRs, including loans in trial payment periods (trial modifications), are considered impaired loans. Other than resolutions such as foreclosures, sales and transfers to held-for-sale, we may remove loans held for investment from TDR classification, but only if they have been refinanced or restructured at market terms and qualify as a new loan.

PURCHASED CREDIT-IMPAIRED LOANS Loans acquired with evidence of credit deterioration since their origination and where it is probable that we will not collect all contractually required principal and interest payments are PCI loans. PCI loans are recorded at fair value at the date of acquisition, and the historical allowance for credit losses related to these loans is not carried over. Fair value at date of acquisition is generally determined using a discounted cash flow method and any excess cash flow expected to be collected over the carrying value (estimated fair value at acquisition date) is referred to as the accretable yield and is recognized in interest income using an effective yield method over the remaining life of the loan, or pool of loans if aggregated based on common risk characteristics. The difference between contractually required payments and the cash flows expected to be collected at acquisition, considering the impact of prepayments, is referred to as the nonaccretable difference. Based on quarterly evaluations of remaining cash flows expected to be collected, expected decreases may result in recording a provision for loss and expected increases may result

in a prospective yield adjustment after first reversing any allowance for losses related to the loan, or pool of loans.

Resolutions of loans may include sales of loans to third parties, receipt of payments in settlement with the borrower, or foreclosure of the collateral. For individual PCI loans, gains or losses on sales to third parties are included in other noninterest income, and gains or losses as a result of a settlement with the borrower are included in interest income. Our policy is to remove an individual loan from a pool based on comparing the amount received from its resolution with its contractual amount. Any difference between these amounts is absorbed by the nonaccretable difference for the entire pool, which assumes that the amount received from resolution approximates pool performance expectations. Any material change in remaining effective yield caused by this removal method is addressed by our quarterly cash flow evaluation process for each pool. We may also sell groups of loans from a pool and include any gains or losses on sales to third parties in other noninterest income. Any difference between the amount received from the buyer and the contractual amount due from the customer is absorbed by the nonaccretable difference for the entire pool. We maintain the effective yield for the remaining loans in the pool consistent with the yield immediately prior to the sale.

Modified PCI loans are not removed from a pool even if those loans would otherwise be deemed TDRs. Modified PCI loans that are accounted for individually are considered TDRs and removed from PCI accounting if there has been a concession granted in excess of the original nonaccretable difference. We include these TDRs in our impaired loans.

FORECLOSED ASSETS Foreclosed assets obtained through our lending activities primarily include real estate. Generally, loans have been written down to their net realizable value prior to foreclosure. Any further reduction to their net realizable value is recorded with a charge to the allowance for credit losses at foreclosure. We allow up to 90 days after foreclosure to finalize determination of net realizable value. Thereafter, changes in net realizable value are recorded to noninterest expense. The net realizable value of these assets is reviewed and updated periodically depending on the type of property. Certain government-guaranteed mortgage loans upon foreclosure are included in accounts receivable, not foreclosed assets. These receivables were loans predominantly insured by the FHA or guaranteed by the VA and are measured based on the balance expected to be recovered from the FHA or VA.

ALLOWANCE FOR CREDIT LOSSES (ACL) The allowance for credit losses is management's estimate of credit losses inherent in the loan portfolio, including unfunded credit commitments, at the balance sheet date. We have an established process to determine the appropriateness of the allowance for credit losses that assesses the losses inherent in our portfolio and related unfunded credit commitments. We develop and document our allowance methodology at the portfolio segment level – commercial loan portfolio and consumer loan portfolio. While we attribute portions of the allowance to our respective commercial and consumer portfolio segments, the entire allowance is available to absorb credit losses inherent in the total loan portfolio and unfunded credit commitments.

Our process involves procedures to appropriately consider the unique risk characteristics of our commercial and consumer loan portfolio segments. For each portfolio segment, losses are estimated collectively for groups of loans with similar characteristics, individually or pooled for impaired loans or, for

Note 1: Summary of Significant Accounting Policies (continued)

PCI loans, based on the changes in cash flows expected to be collected.

Our allowance levels are influenced by loan volumes, loan grade migration or delinquency status, historic loss experience and other conditions influencing loss expectations, such as economic conditions.

COMMERCIAL PORTFOLIO SEGMENT ACL METHODOLOGY

Generally, commercial loans are assessed for estimated losses by grading each loan using various risk factors as identified through periodic reviews. Our estimation approach for the commercial portfolio reflects the estimated probability of default in accordance with the borrower's financial strength and the severity of loss in the event of default, considering the quality of any underlying collateral. Probability of default and severity at the time of default are statistically derived through historical observations of default and losses after default within each credit risk rating. These estimates are adjusted as appropriate based on additional analysis of long-term average loss experience compared to previously forecasted losses, external loss data or other risks identified from current economic conditions and credit quality trends. The estimated probability of default and severity at the time of default are applied to loan equivalent exposures to estimate losses for unfunded credit commitments.

The allowance also includes an amount for the estimated impairment on nonaccrual commercial loans and commercial loans modified in a TDR, whether on accrual or nonaccrual status.

CONSUMER PORTFOLIO SEGMENT ACL METHODOLOGY

For consumer loans that are not identified as a TDR, we generally determine the allowance on a collective basis utilizing forecasted losses to represent our best estimate of inherent loss. We pool loans, generally by product types with similar risk characteristics, such as residential real estate mortgages and credit cards. As appropriate and to achieve greater accuracy, we may further stratify selected portfolios by sub-product, origination channel, vintage, loss type, geographic location and other predictive characteristics. Models designed for each pool are utilized to develop the loss estimates. We use assumptions for these pools in our forecast models, such as historic delinquency and default, loss severity, home price trends, unemployment trends, and other key economic variables that may influence the frequency and severity of losses in the pool.

In determining the appropriate allowance attributable to our residential mortgage portfolio, we take into consideration portfolios determined to be at elevated risk, such as junior lien mortgages behind delinquent first lien mortgages and junior lien lines of credit subject to near term significant payment increases. We incorporate the default rates and severity of loss for these higher risk portfolios, including the impact of our established loan modification programs. Accordingly, the loss content associated with the effects of loan modifications and higher risk portfolios has been captured in our ACL methodology.

We separately estimate impairment for consumer loans that have been modified in a TDR (including trial modifications), whether on accrual or nonaccrual status.

OTHER ACL MATTERS The allowance for credit losses for both portfolio segments includes an amount for imprecision or uncertainty that may change from period to period. This amount represents management's judgment of risks inherent in the processes and assumptions used in establishing the allowance. This imprecision considers economic environmental factors,

modeling assumptions and performance, process risk, and other subjective factors, including industry trends and emerging risk assessments.

Securitizations and Beneficial Interests

In certain asset securitization transactions that meet the applicable criteria to be accounted for as a sale, assets are sold to an entity referred to as a Special Purpose Entity (SPE), which then issues beneficial interests in the form of senior and subordinated interests collateralized by the assets. In some cases, we may retain beneficial interests issued by the entity. Additionally, from time to time, we may also re-securitize certain assets in a new securitization transaction.

The assets and liabilities transferred to an SPE are excluded from our consolidated balance sheet if the transfer qualifies as a sale and we are not required to consolidate the SPE.

For transfers of financial assets recorded as sales, we recognize and initially measure at fair value all assets obtained (including beneficial interests) and liabilities incurred. We record a gain or loss in noninterest income for the difference between the carrying amount and the fair value of the assets sold. Fair values are based on quoted market prices, quoted market prices for similar assets, or if market prices are not available, then the fair value is estimated using discounted cash flow analyses with assumptions for credit losses, prepayments and discount rates that are corroborated by and verified against market observable data, where possible. Interests retained from and liabilities incurred in securitizations with off-balance sheet entities include debt and equity securities, loans, MSRs, derivative assets and liabilities, other assets, other liabilities, such as liabilities for mortgage repurchase losses or long-term debt and are accounted for as described within this Note.

Mortgage Servicing Rights (MSRs)

We recognize the rights to service mortgage loans for others, or MSRs, as assets whether we purchase the MSRs or the MSRs result from a sale or securitization of loans we originate (asset transfers). We initially record all of our MSRs at fair value. Subsequently, residential loan MSRs are carried at fair value. All of our MSRs related to our commercial mortgage loans are subsequently measured at LOCOM. The valuation and sensitivity of MSRs is discussed further in Note 9 (Securitizations and Variable Interest Entities), Note 10 (Mortgage Banking Activities) and Note 18 (Fair Values of Assets and Liabilities).

For MSRs carried at fair value, changes in fair value are reported in mortgage banking noninterest income in the period in which the change occurs. MSRs subsequently measured at LOCOM are amortized in proportion to, and over the period of, estimated net servicing income. The amortization of MSRs is reported in mortgage banking noninterest income, analyzed monthly and adjusted to reflect changes in prepayment speeds, as well as other factors.

MSRs accounted for at LOCOM are periodically evaluated for impairment based on the fair value of those assets. For purposes of impairment evaluation and measurement, we stratify MSRs based on the predominant risk characteristics of the underlying loans, including investor and product type. If, by individual stratum, the carrying amount of these MSRs exceeds fair value, a valuation allowance is established. The valuation allowance is adjusted as the fair value changes.

Premises and Equipment

Premises and equipment are carried at cost less accumulated depreciation and amortization. Capital leases, where we are the

lessee, are included in premises and equipment at the capitalized amount less accumulated amortization.

We primarily use the straight-line method of depreciation and amortization. Estimated useful lives range up to 40 years for buildings, up to 10 years for furniture and equipment, and the shorter of the estimated useful life (up to 8 years) or the lease term for leasehold improvements. We amortize capitalized leased assets on a straight-line basis over the lives of the respective leases.

Goodwill and Identifiable Intangible Assets

Goodwill is recorded in business combinations under the purchase method of accounting when the purchase price is higher than the fair value of net assets, including identifiable intangible assets.

We assess goodwill for impairment at a reporting unit level on an annual basis or more frequently in certain circumstances. We have determined that our reporting units are one level below the operating segments and distinguish these reporting units based on how the segments and reporting units are managed, taking into consideration the economic characteristics, nature of the products, and customers of the segments and reporting units. At the time we acquire a business, we allocate goodwill to applicable reporting units based on their relative fair value, and if we have a significant business reorganization, we may reallocate the goodwill. If we sell a business, a portion of goodwill is included with the carrying amount of the divested business.

We have the option of performing a qualitative assessment of goodwill. We may also elect to bypass the qualitative test and proceed directly to a quantitative test. If we perform a qualitative assessment of goodwill to test for impairment and conclude it is more likely than not that a reporting unit's fair value is greater than its carrying amount, quantitative tests are not required. However, if we determine it is more likely than not that a reporting unit's fair value is less than its carrying amount, then we complete a quantitative assessment to determine if there is goodwill impairment. We apply various quantitative valuation methodologies, including discounted cash flow and earnings multiple approaches, to determine the estimated fair value, which is compared to the carrying value of each reporting unit. If the fair value is less than the carrying amount, an additional test is required to measure the amount of impairment. We recognize impairment losses as a charge to other noninterest expense (unless related to discontinued operations) and an adjustment to the carrying value of the goodwill asset. Subsequent reversals of goodwill impairment are prohibited.

We amortize core deposit and other customer relationship intangibles on an accelerated basis over useful lives not exceeding 10 years. We review such intangibles for impairment whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. Impairment is indicated if the sum of undiscounted estimated future net cash flows is less than the carrying value of the asset. Impairment is permanently recognized by writing down the asset to the extent that the carrying value exceeds the estimated fair value.

Derivatives and Hedging Activities

DERIVATIVES We recognize all derivatives on the balance sheet at fair value. On the date we enter into a derivative contract, we designate the derivative as (1) qualifying for hedge accounting in a hedge of the fair value of a recognized asset or liability or an unrecognized firm commitment, including hedges of foreign currency exposure ("fair value hedge"), (2) qualifying for hedge accounting in a hedge of a forecasted transaction or of

the variability of cash flows to be received or paid related to a recognized asset or liability ("cash flow hedge"), or (3) held for customer accommodation trading or asset/liability risk management or other purposes, including economic hedges not qualifying for hedge accounting. For derivatives not designated as a fair value or cash flow hedge, we report changes in the fair values in current period noninterest income. For additional information on derivative assets and liabilities used in our trading business, see Note 4 (Trading Activities).

DOCUMENTATION AND EFFECTIVENESS ASSESSMENT FOR ACCOUNTING HEDGES

For fair value and cash flow hedges qualifying for hedge accounting, we formally document at inception the relationship between hedging instruments and hedged items, our risk management objective, strategy and our evaluation of effectiveness for our hedge transactions. This process includes linking all derivatives designated as fair value or cash flow hedges to specific assets and liabilities on the balance sheet or to specific forecasted transactions. We assess hedge effectiveness using regression analysis, both at inception of the hedging relationship and on an ongoing basis. For fair value hedges, the regression analysis involves regressing the periodic change in fair value of the hedging instrument against the periodic changes in fair value of the asset or liability being hedged due to changes in the hedged risk(s). For cash flow hedges, the regression analysis involves regressing the periodic changes in fair value of the hedging instrument against the periodic changes in fair value of the hypothetical derivative. The hypothetical derivative has terms that identically match and offset the cash flows of the forecasted transaction being hedged due to changes in the hedged risk(s). The initial assessment for fair value and cash flow hedges includes an evaluation of the quantitative measures of the regression results used to validate the conclusion of high effectiveness. Periodically, as required, we also formally assess whether the derivative we designated in each hedging relationship is expected to be and has been highly effective in offsetting changes in fair values or cash flows of the hedged item using the regression analysis method.

FAIR VALUE HEDGES For a fair value hedge, we record changes in the fair value of the derivative in current period income, except for certain derivatives in which a portion is recorded to OCI. We record basis adjustments to the amortized cost of the hedged asset or liability due to the changes in fair value related to the hedged risk with the offset recorded in current period net income. We present derivative gains or losses in the same income statement category as the hedged asset or liability, as follows:

- For fair value hedges of interest rate risk, amounts are reflected in net interest income;
- For hedges of foreign currency risk, amounts representing the fair value changes less the accrual for periodic cash flow settlements are reflected in noninterest income. The periodic cash flow settlements are reflected in net interest income;
- For hedges of both interest rate risk and foreign currency risk, amounts representing the fair value change less the accrual for periodic cash flow settlements is attributed to both net interest income and noninterest income. The periodic cash flow settlements are reflected in net interest income.

The entire derivative gain or loss is included in the assessment of hedge effectiveness for all fair value hedge relationships, except for hedges of foreign-currency

Note 1: Summary of Significant Accounting Policies (continued)

denominated available-for-sale debt securities and long-term debt liabilities, as follows:

- When hedged with cross-currency swaps, the change in fair value of the derivative attributable to cross-currency basis spread changes component is excluded from the assessment of hedge effectiveness. The initial fair value of the excluded component is amortized to net interest income. For these hedges, the difference between changes in fair value of the excluded component and the amount recorded in earnings is recorded in OCI;
- When hedged with foreign currency forward derivatives, the change in fair value of the derivative attributable to the time value component related to the changes in the difference between the spot and forward price is excluded from the assessment of hedge effectiveness. For these hedges, the changes in fair value of the excluded component are recorded in net interest income.

CASH FLOW HEDGES For a cash flow hedge, we record changes in the fair value of the derivative in OCI. We subsequently reclassify gains and losses from these changes in fair value from OCI to net income in the same period(s) that the hedged transaction affects net income and in the same income statement category as the hedged item, thus to net interest income. The entire gain or loss on these derivatives is included in the assessment of hedge effectiveness.

DISCONTINUING HEDGE ACCOUNTING We discontinue hedge accounting prospectively when (1) a derivative is no longer highly effective in offsetting changes in the fair value or cash flows of a hedged item, (2) a derivative expires or is sold, terminated or exercised, (3) we elect to discontinue the designation of a derivative as a hedge, or (4) in a cash flow hedge, a derivative is de-designated because it is no longer probable that a forecasted transaction will occur.

When we discontinue fair value hedge accounting, we no longer adjust the previously hedged asset or liability for changes in fair value, and remaining cumulative adjustments to the hedged item and accumulated amounts reported in OCI are accounted for in the same manner as other components of the carrying amount of the asset or liability. If the hedged item is derecognized, the accumulated amounts reported in OCI are immediately reclassified to net income. If the derivative continues to be held after fair value hedge accounting ceases, we carry the derivative on the balance sheet at its fair value with changes in fair value included in noninterest income.

When we discontinue cash flow hedge accounting and it is probable that the forecasted transaction will occur, the accumulated amount reported in OCI at the de-designation date continues to be reported in OCI until the forecasted transaction affects net income at which point the related OCI amount is reclassified to net income. If cash flow hedge accounting is discontinued and it is probable the forecasted transaction will no longer occur, the accumulated gains and losses reported in OCI at the de-designation date is immediately reclassified to net income. If the derivative continues to be held after cash flow hedge accounting ceases, we carry the derivative on the balance sheet at its fair value with changes in fair value included in noninterest income.

EMBEDDED DERIVATIVES We may purchase or originate financial instruments that contain an embedded derivative. At inception of the financial instrument, we assess (1) if the economic characteristics of the embedded derivative are not clearly and closely related to the economic characteristics of the

financial instrument (host contract), (2) if the financial instrument that embodies both the embedded derivative and the host contract is not measured at fair value with changes in fair value reported in net income, and (3) if a separate instrument with the same terms as the embedded instrument would meet the definition of a derivative. If the embedded derivative meets all of these conditions, we separate it from the host contract by recording the bifurcated derivative at fair value and the remaining host contract at the difference between the basis of the hybrid instrument and the fair value of the bifurcated derivative. The bifurcated derivative is carried at fair value with changes recorded in current period noninterest income.

COUNTERPARTY CREDIT RISK AND NETTING By using derivatives, we are exposed to counterparty credit risk, which is the risk that counterparties to the derivative contracts do not perform as expected. If a counterparty fails to perform, our counterparty credit risk is equal to the amount reported as a derivative asset on our balance sheet. The amounts reported as a derivative asset are derivative contracts in a gain position, and to the extent subject to legally enforceable master netting arrangements, net of derivatives in a loss position with the same counterparty and cash collateral received. We minimize counterparty credit risk through credit approvals, limits, monitoring procedures, executing master netting arrangements and obtaining collateral, where appropriate. Counterparty credit risk related to derivatives is considered in determining fair value and our assessment of hedge effectiveness. To the extent derivatives subject to master netting arrangements meet the applicable requirements, including determining the legal enforceability of the arrangement, it is our policy to present derivative balances and related cash collateral amounts net on the balance sheet. In the second quarter of 2017, we adopted Settlement to Market treatment for the cash collateralizing our interest rate derivative contracts with certain centrally cleared counterparties. As a result of this adoption, derivative balances with these counterparties are considered settled by the collateral.

For additional information on our derivatives and hedging activities, see Note 17 (Derivatives).

Equity Securities

Marketable equity securities have readily determinable fair values and include, but are not limited to securities used in our trading activities. Marketable equity securities are recorded at fair value with unrealized gains and losses, due to changes in fair value, reflected in earnings. Unrealized gains and losses are recognized in net gains from trading activities for equity securities related to our trading activities and net gains from equity securities for the remaining securities. Realized gains and losses are recognized in net gains from trading activities for equity securities related to our trading activities and net gains from equity securities for the remaining securities. Interest and dividend income from marketable equity securities is recognized in interest income.

Nonmarketable equity securities do not have readily determinable fair values, and do not include investments for which we hold a controlling interest in the investee. These securities are accounted for under one of the following accounting methods:

- Fair Value: This method is an election. The securities are recorded at fair value with unrealized gains or losses reflected in earnings;
- Equity Method: We use this method when we have the ability to exert significant influence over the investee. These

securities are carried at cost and adjusted for our share of the investee's earnings or losses, less any impairments;

- **Cost Method:** This method is required for specific securities, such as Federal Reserve Bank stock and Federal Home Loan Bank stock. These investments are held at their cost minus impairment. If impaired, the carrying value is written down to the fair value of the security;
- **Measurement Alternative:** This method is followed by all remaining nonmarketable equity securities. These securities are carried at cost less impairment, and adjusted up or down to fair value upon the occurrence of orderly observable transactions of the same or similar security of the same issuer.

Our review for impairment for equity method, cost method and measurement alternative securities typically includes an analysis of the facts and circumstances of each security, the intent or requirement to sell the security, the expectations of cash flows, capital needs and the viability of its business model. For equity method and cost method investments, we reduce the asset's carrying value when we consider declines in value to be other than temporary. For securities accounted for under the measurement alternative, we reduce the asset value when the fair value is less than carrying value, without the consideration of recovery. We recognize all estimated impairment losses as an unrealized loss recorded in net gains on equity securities.

Realized gains and losses on the sale of nonmarketable equity securities are recognized in net gains on equity securities.

Operating Lease Assets

Operating lease rental income for leased assets is recognized in other income on a straight-line basis over the lease term. Related depreciation expense is recorded on a straight-line basis over the estimated useful life, considering the estimated residual value of the leased asset. The useful life may be adjusted to the term of the lease depending on our plans for the asset after the lease term. On a periodic basis, leased assets are reviewed for impairment. Impairment loss is recognized if the carrying amount of leased assets exceeds fair value and is not recoverable. The carrying amount of leased assets is not recoverable if it exceeds the sum of the undiscounted cash flows expected to result from the lease payments and the estimated residual value upon the eventual disposition of the equipment.

Pension Accounting

We account for our defined benefit pension plans using an actuarial model. Two principal assumptions in determining net periodic pension cost are the discount rate and the expected long-term rate of return on plan assets.

A discount rate is used to estimate the present value of our future pension benefit obligations. We use a consistent methodology to determine the discount rate using a yield curve with maturity dates that closely match the estimated timing of the expected benefit payments for our plans. The yield curve is derived from a broad-based universe of high quality corporate bonds as of the measurement date.

Our determination of the reasonableness of our expected long-term rate of return on plan assets is highly quantitative by nature. We evaluate the current asset allocations and expected returns under two sets of conditions: (1) projected returns using several forward-looking capital market assumptions, and (2) historical returns for the main asset classes dating back to 1970 or the earliest period for which historical data was readily available for the asset classes included. Using long-term historical data allows us to capture multiple economic

environments, which we believe is relevant when using historical returns. We place greater emphasis on the forward-looking return and risk assumptions than on historical results. We use the resulting projections to derive a base line expected rate of return and risk level for the Cash Balance Plan's prescribed asset mix. We evaluate the portfolio based on: (1) the established target asset allocations over short term (one-year) and longer term (ten-year) investment horizons, and (2) the range of potential outcomes over these horizons within specific standard deviations. We perform the above analyses to assess the reasonableness of our expected long-term rate of return on plan assets. We consider the expected rate of return to be a long-term average view of expected returns.

At year end, we re-measure our defined benefit plan liabilities and related plan assets and recognize any resulting actuarial gain or loss in other comprehensive income. We generally amortize net actuarial gain or loss in excess of a 5% corridor from accumulated OCI into net periodic pension cost over the estimated average remaining participation period, which at December 31, 2018, is 19 years. See Note 22 (Employee Benefits and Other Expenses) for additional information on our pension accounting.

Income Taxes

We file consolidated and separate company U.S. federal income tax returns, foreign tax returns and various combined and separate company state tax returns.

We evaluate two components of income tax expense: current and deferred income tax expense. Current income tax expense represents our estimated taxes to be paid or refunded for the current period and includes income tax expense related to our uncertain tax positions. Deferred income tax expense results from changes in deferred tax assets and liabilities between periods. We determine deferred income taxes using the balance sheet method. Under this method, the net deferred tax asset or liability is based on the tax effects of the differences between the book and tax bases of assets and liabilities, and recognizes enacted changes in tax rates and laws in the period in which they occur. Deferred tax assets are recognized subject to management's judgment that realization is "more likely than not." Uncertain tax positions that meet the more likely than not recognition threshold are measured to determine the amount of benefit to recognize. An uncertain tax position is measured at the largest amount of benefit that management believes has a greater than 50% likelihood of realization upon settlement. Tax benefits not meeting our realization criteria represent unrecognized tax benefits. We account for interest and penalties as a component of income tax expense. In 2018, we finalized the recognition of the U.S. tax expense associated with a deemed repatriation of undistributed earnings of certain non-U.S. subsidiaries as required under the 2017 Tax Act. We do not intend to distribute these earnings in a taxable manner, and therefore intend to limit distributions to foreign earnings previously taxed in the U.S., that would qualify for the 100% dividends received deduction, and that would not result in any significant state or foreign taxes. All other undistributed foreign earnings will continue to be permanently reinvested outside the U.S.

See Note 23 (Income Taxes) to Financial Statements in this Report for a further description of our provision for income taxes and related income tax assets and liabilities.

Stock-Based Compensation

We have stock-based employee compensation plans as more fully discussed in Note 20 (Common Stock and Stock Plans). Our

Note 1: Summary of Significant Accounting Policies (continued)

Long-Term Incentive Compensation Plan provides for awards of incentive and nonqualified stock options, stock appreciation rights, restricted shares, restricted share rights (RSRs), performance share awards (PSAs) and stock awards without restrictions. For most awards, we measure the cost of employee services received in exchange for an award of equity instruments, such as stock options, RSRs or PSAs, based on the fair value of the award on the grant date. The cost is normally recognized in our income statement over the vesting period of the award; awards with graded vesting are expensed on a straight-line method. Awards that continue to vest after retirement are expensed over the shorter of the period of time between the grant date and the final vesting period or between the grant date and when a team member becomes retirement eligible; awards to team members who are retirement eligible at the grant date are subject to immediate expensing upon grant.

Beginning in 2013, certain RSRs and all PSAs granted include discretionary conditions that can result in forfeiture and are subject to variable accounting. For these awards, the associated compensation expense fluctuates with changes in our stock price. For PSAs, compensation expense also fluctuates based on the estimated outcome of meeting the performance conditions.

Earnings Per Common Share

We compute earnings per common share by dividing net income (after deducting dividends on preferred stock) by the average number of common shares outstanding during the year. We compute diluted earnings per common share by dividing net income (after deducting dividends on preferred stock) by the average number of common shares outstanding during the year plus the effect of common stock equivalents (for example, stock options, restricted share rights, convertible debentures and warrants) that are dilutive.

Fair Value of Financial Instruments

We use fair value measurements in our fair value disclosures and to record certain assets and liabilities at fair value on a recurring basis, such as instruments used in our trading activities, or on a nonrecurring basis, such as measuring impairment on assets carried at amortized cost. We base our fair values on the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. These fair value measurements are based on the exit price notion and are determined by maximizing the use of observable inputs. However, for certain instruments, we must utilize unobservable inputs in determining fair value due to the lack of observable inputs in the market, which requires greater judgment in the measurement of fair value.

In instances where there is limited or no observable market data for the asset or liability, fair value measurements are based on internal models, third-party vendor pricing, broker pricing or a combination of these sources. The valuation models utilize external market information and vendor or broker pricing where available, and consider the economic and competitive environment, the characteristics of the asset or liability, recent prices for products we offer or issue, and other relevant internal and external factors. As with any valuation technique used to estimate fair value, changes in underlying assumptions used, including discount rates and estimates of future cash flows, could significantly affect the results of current or future values. Accordingly, these fair value estimates may not be realized in an actual sale or immediate settlement of the asset or liability.

Our fair value measurements are adjusted, where necessary, to incorporate the lack of market liquidity. Fair value

measurements based on vendor or broker prices may reflect exit prices that inherently consider the lack of market liquidity. When the impact of illiquid markets has not already been incorporated in the fair value measurement, we adjust the vendor or broker price using internal models based on discounted cash flows. For certain residential MLHFS and certain securities where the significant inputs have become unobservable due to illiquid markets and vendor or broker pricing is not used, our discounted cash flow model uses a discount rate that reflects what we believe a market participant would require in light of the illiquid market.

Where markets are inactive and transactions are not orderly, transaction or quoted prices for assets or liabilities in inactive markets may require adjustment due to the uncertainty of whether the underlying transactions are orderly. For items that use price quotes in inactive markets, we analyze the degree of market inactivity and distressed transactions to determine the appropriate adjustment to the price quotes.

We continually assess the level and volume of market activity in our debt and equity security classes in determining adjustments, if any, to price quotes. Given market conditions can change over time, our determination of which securities markets are considered active or inactive can change. If we determine a market to be inactive, the degree to which price quotes require adjustment, can also change. See Note 18 (Fair Values of Assets and Liabilities) for discussion of the fair value hierarchy and valuation methodologies applied to financial instruments to determine fair value.

Private Share Repurchases

During 2018 and 2017, we repurchased approximately 94 million shares and approximately 89 million shares of our common stock, respectively, under private forward repurchase contracts and a written repurchase plan pursuant to Rule 10b5-1 of the Securities Exchange Act of 1934 that we executed in fourth quarter 2018. We enter into these stock repurchase transactions to complement our open-market common stock repurchase strategies, to allow us to manage our share repurchases in a manner consistent with our capital plans, currently submitted under the Comprehensive Capital Analysis and Review (CCAR), and to provide an economic benefit to the Company.

Our payments to the counterparties for the private forward repurchase contracts are recorded in permanent equity in the quarter paid and are not subject to re-measurement. The classification of the up-front payments as permanent equity assures that we have appropriate repurchase timing consistent with our capital plans, which contemplated a fixed dollar amount available per quarter for share repurchases pursuant to Federal Reserve Board (FRB) supervisory guidance. In return, the counterparty agrees to deliver a variable number of shares based on a per share discount to the volume-weighted average stock price over the contract period. There are no scenarios where the contracts would not either physically settle in shares or allow us to choose the settlement method. Our total number of outstanding shares of common stock is not reduced until settlement of the private forward repurchase contract. We had no unsettled private forward repurchase contracts at December 31, 2018, or December 31, 2017.

Under the Rule 10b5-1 repurchase plan, payments and receipt of repurchased shares settle on the same day and the shares repurchased reduce the total number of outstanding shares of common stock upon the settlement of each trade under the plan.

SUPPLEMENTAL CASH FLOW INFORMATION Noncash activities are presented in Table 1.3, including information on transfers affecting MLHFS and debt securities.

Table 1.3: Supplemental Cash Flow Information

(in millions)	Year ended December 31,		
	2018	2017	2016
Trading debt securities retained from securitizations of MLHFS	\$ 37,265	52,435	72,399
Transfers from loans to MLHFS	5,366	5,500	6,894
Transfers from available-for-sale debt securities to held-to-maturity debt securities	16,479	50,405	4,161
Deconsolidation of reverse mortgages previously sold:			
Loans	—	—	3,807
Long-term debt	—	—	3,769

SUBSEQUENT EVENTS We have evaluated the effects of events that have occurred subsequent to December 31, 2018, and there have been no material events that would require recognition in our 2018 consolidated financial statements or disclosure in the Notes to the consolidated financial statements. On February 7, 2019, we experienced system issues caused by an automatic power shutdown at one of our main data center facilities. This power shutdown was triggered by a smoke alarm that resulted from a steam condition created by routine maintenance activities in the building. Although applications and related workloads were systematically re-routed to back-up data centers throughout the day, certain of our services

experienced disruptions that delayed service to our customers. As an example, our online and mobile banking systems and certain ATM functions experienced disruptions for several hours, and certain critical mortgage origination systems experienced disruptions for several days. We are currently assessing these system issues and expect that the Company will incur costs associated with system enhancements that may be necessary to improve the speed of re-routing applications and related workloads to back-up data centers, help ensure that applications are fully operational to the extent an incident occurs, and reduce the likelihood of similar issues occurring in the future.

Note 2: Business Combinations

We regularly explore opportunities to acquire financial services companies and businesses. Generally, we do not make a public announcement about an acquisition opportunity until a definitive agreement has been signed. For information on additional contingent consideration related to acquisitions,

which is considered to be a guarantee, see Note 15 (Guarantees, Pledged Assets and Collateral, and Other Commitments). Business combinations completed in 2017 and 2016 are presented in Table 2.1. There were no new acquisitions during 2018. As of December 31, 2018, we had no pending acquisitions.

Table 2.1: Business Combinations Activity

Name of acquisition	Location	Type of business	Date	Total assets (in millions)
2017:				
Golden Capital Management, LLC	Charlotte, NC	Asset Management	July 1	\$ 83
2016:				
GE Railcar Services	Chicago, IL	Railcar and locomotive leasing	January 1	\$ 4,339
GE Capital's Commercial Distribution Finance and Vendor Finance Businesses	North America, Asia, Australia / New Zealand and EMEA	Specialty Lending	March 1, July 1, August 1 & October 1	32,531
Analytic Investors, LLC	Los Angeles, CA	Asset Management	October 1	106
				\$ 36,976

During 2018, we completed the sale of Wells Fargo Shareowner Services in February, the sale of the automobile lending business of Reliable Financial Services, Inc. and Reliable Finance Holding Company in August, and the sale of 52 branches in Indiana, Ohio, Michigan and part of Wisconsin in November. Included with the branches sale were approximately \$2.0 billion of deposits.

Note 3: Cash, Loan and Dividend Restrictions

Cash and cash equivalents may be restricted as to usage or withdrawal. Federal Reserve Board (FRB) regulations require that each of our subsidiary banks maintain reserve balances on deposit with the Federal Reserve Banks. Table 3.1 provides a summary of restrictions on cash equivalents in addition to the FRB reserve cash balance requirements.

Table 3.1: Nature of Restrictions on Cash Equivalents

(in millions)	Dec 31, 2018	Dec 31, 2017
Average required reserve balance for FRB (1)	\$ 12,428	12,306
Reserve balance for non-U.S. central banks	517	617
Segregated for benefit of brokerage customers under federal and other brokerage regulations	1,135	666
Related to consolidated variable interest entities (VIEs) that can only be used to settle liabilities of VIEs	147	487

(1) FRB required reserve balance represents average for the years ended December 31, 2018, and December 31, 2017.

Federal law restricts the amount and the terms of both credit and non-credit transactions between a bank and its nonbank affiliates. These covered transactions may not exceed 10% of the bank's capital and surplus (which for this purpose represents Tier 1 and Tier 2 capital, as calculated under the risk-based capital (RBC) guidelines, plus the balance of the allowance for credit losses excluded from Tier 2 capital) with any single nonbank affiliate and 20% of the bank's capital and surplus with all its nonbank affiliates. Transactions that are extensions of credit may require collateral to be held to provide added security to the bank. For further discussion of RBC, see Note 28 (Regulatory and Agency Capital Requirements) in this Report.

Dividends paid by our subsidiary banks are subject to various federal and state regulatory limitations. Dividends that may be paid by a national bank without the express approval of the Office of the Comptroller of the Currency (OCC) are limited to that bank's retained net profits for the preceding two calendar years plus retained net profits up to the date of any dividend declaration in the current calendar year. Retained net profits, as defined by the OCC, consist of net income less dividends declared during the period.

We also have a state-chartered subsidiary bank that is subject to state regulations that limit dividends. Under these provisions and regulatory limitations, our national and state-chartered subsidiary banks could have declared additional dividends of \$15.2 billion at December 31, 2018, without obtaining prior regulatory approval. We have elected to retain higher capital at our national and state-chartered subsidiary banks in order to meet internal capital policy minimums and regulatory requirements. Our nonbank subsidiaries are also limited by certain federal and state statutory provisions and regulations covering the amount of dividends that may be paid in any given year. In addition, under a Support Agreement dated June 28, 2017, among Wells Fargo & Company, the parent holding company (the "Parent"), WFC Holdings, LLC, an intermediate holding company and subsidiary of the Parent (the "IHC"), and Wells Fargo Bank, N.A., Wells Fargo Securities, LLC, and Wells Fargo Clearing Services, LLC, each an indirect subsidiary of the Parent, the IHC may be restricted from making dividend payments to the Parent if certain liquidity and/or capital metrics fall below defined triggers. Based on retained earnings at December 31, 2018, our nonbank subsidiaries could have declared additional dividends of \$24.4 billion at December 31, 2018, without obtaining prior approval.

The FRB's Capital Plan Rule (codified at 12 CFR 225.8 of Regulation Y) establishes capital planning and prior notice and approval requirements for capital distributions including dividends by certain large bank holding companies. The FRB has also published guidance regarding its supervisory expectations for capital planning, including capital policies regarding the process relating to common stock dividend and repurchase decisions in the FRB's SR Letter 15-18. The effect of this guidance is to require the approval of the FRB (or specifically under the Capital Plan Rule, a notice of non-objection) for the Company to repurchase or redeem common or perpetual preferred stock as well as to raise the per share quarterly dividend from its current level of \$0.45 per share as declared by the Company's Board of Directors on January 22, 2019, payable on March 1, 2019.

Note 4: Trading Activities

Table 4.1 presents a summary of our trading assets and liabilities measured at fair value through earnings.

Table 4.1: Trading Activities and Liabilities

(in millions)	Dec 31, 2018	Dec 31, 2017
Trading assets:		
Debt securities	\$ 69,989	57,624
Equity securities	19,449	30,004
Loans held for sale	1,469	1,023
Gross trading derivative assets	29,216	31,340
Netting (1)	(19,807)	(19,629)
Total trading derivative assets	9,409	11,711
Total trading assets	100,316	100,362
Trading liabilities:		
Short sale	19,720	18,472
Gross trading derivative liabilities	28,717	31,386
Netting (1)	(21,178)	(23,062)
Total trading derivative liabilities	7,539	8,324
Total trading liabilities	\$ 27,259	26,796

(1) Represents balance sheet netting for trading derivative asset and liability balances, and trading portfolio level counterparty valuation adjustments.

Table 4.2 provides a summary of the net interest income earned from trading securities, and net gains and losses due to the realized and unrealized gains and losses from trading activities.

Table 4.2: Net Interest Income and Net Gains (Losses) on Trading Activities

(in millions)	2018	Year ended December 31,	
		2017	2016
Interest income (1):			
Debt securities	\$ 2,831	2,313	2,047
Equity securities	587	515	383
Loans held for sale	62	38	29
Total interest income	3,480	2,866	2,459
Less: Interest expense (2)	587	416	353
Net interest income	2,893	2,450	2,106
Net gains (losses) from trading activities:			
Debt securities	(824)	125	(444)
Equity securities	(4,240)	3,394	1,213
Loans held for sale	(1)	45	55
Derivatives (3)	5,667	(3,022)	(214)
Total net gains from trading activities (4)	602	542	610
Total trading-related net interest and noninterest income	\$ 3,495	2,992	2,716

(1) Represents interest and dividend income earned on trading securities.

(2) Represents interest and dividend expense incurred on trading securities we have sold but have not yet purchased.

(3) Excludes economic hedging of mortgage banking and asset/liability management activities, for which hedge results (realized and unrealized) are reported with the respective hedged activities.

(4) Represents realized gains (losses) from our trading activities and unrealized gains (losses) due to changes in fair value of our trading positions, attributable to the type of asset or liability.

Note 5: Available-for-Sale and Held-to-Maturity Debt Securities

Table 5.1 provides the amortized cost and fair value by major categories of available-for-sale debt securities, which are carried at fair value, and held-to-maturity debt securities, which are carried at amortized cost. The net unrealized gains (losses) for

available-for-sale debt securities are reported on an after-tax basis as a component of cumulative OCI. Information on debt securities held for trading is included in Note 4 (Trading Activities) to Financial Statements in this Report.

Table 5.1: Amortized Cost and Fair Value

(in millions)	Amortized Cost	Gross unrealized gains	Gross unrealized losses	Fair value
December 31, 2018				
Available-for-sale debt securities:				
Securities of U.S. Treasury and federal agencies	\$ 13,451	3	(106)	13,348
Securities of U.S. states and political subdivisions (1)	48,994	716	(446)	49,264
Mortgage-backed securities:				
Federal agencies	155,974	369	(3,140)	153,203
Residential	2,638	142	(5)	2,775
Commercial	4,207	40	(22)	4,225
Total mortgage-backed securities	162,819	551	(3,167)	160,203
Corporate debt securities	6,230	131	(90)	6,271
Collateralized loan and other debt obligations (2)	35,581	158	(396)	35,343
Other (3)	5,396	100	(13)	5,483
Total available-for-sale debt securities	272,471	1,659	(4,218)	269,912
Held-to-maturity debt securities:				
Securities of U.S. Treasury and federal agencies	44,751	4	(415)	44,340
Securities of U.S. states and political subdivisions	6,286	30	(116)	6,200
Federal agency and other mortgage-backed securities (4)	93,685	112	(2,288)	91,509
Collateralized loan obligations	66	—	—	66
Other (3)	—	—	—	—
Total held-to-maturity debt securities	144,788	146	(2,819)	142,115
Total (5)	\$ 417,259	1,805	(7,037)	412,027
December 31, 2017				
Available-for-sale debt securities:				
Securities of U.S. Treasury and federal agencies	\$ 6,425	2	(108)	6,319
Securities of U.S. states and political subdivisions (1)	50,733	1,032	(439)	51,326
Mortgage-backed securities:				
Federal agencies	160,561	930	(1,272)	160,219
Residential	4,356	254	(2)	4,608
Commercial	4,487	80	(2)	4,565
Total mortgage-backed securities	169,404	1,264	(1,276)	169,392
Corporate debt securities	7,343	363	(40)	7,666
Collateralized loan and other debt obligations (2)	35,675	384	(3)	36,056
Other (3)	5,516	137	(5)	5,648
Total available-for-sale debt securities	275,096	3,182	(1,871)	276,407
Held-to-maturity debt securities:				
Securities of U.S. Treasury and federal agencies	44,720	189	(103)	44,806
Securities of U.S. states and political subdivisions	6,313	84	(43)	6,354
Federal agency and other mortgage-backed securities (4)	87,527	201	(682)	87,046
Collateralized loan obligations	661	4	—	665
Other (3)	114	—	—	114
Total held-to-maturity debt securities	139,335	478	(828)	138,985
Total (5)	\$ 414,431	3,660	(2,699)	415,392

- (1) Available-for-sale debt securities include investments in tax-exempt preferred debt securities issued by investment funds or trusts that predominantly invest in tax-exempt municipal securities. The cost basis and fair value of these types of securities was \$6.3 billion each at December 31, 2018, and \$5.2 billion each at December 31, 2017.
- (2) Available-for-sale debt securities include collateralized debt obligations (CDOs) with a cost basis and fair value of \$662 million and \$800 million, respectively, at December 31, 2018, and \$887 million and \$1.0 billion, respectively, at December 31, 2017.
- (3) The "Other" category of available-for-sale debt securities largely includes asset-backed securities collateralized by student loans. Included in the "Other" category of held-to-maturity debt securities are asset-backed securities collateralized by automobile leases or loans and cash with a cost basis and fair value of \$0 million each at December 31, 2018, and \$114 million each at December 31, 2017.
- (4) Predominantly consists of federal agency mortgage-backed securities at both December 31, 2018, and December 31, 2017.
- (5) At December 31, 2018 and 2017, we held no securities of any single issuer (excluding the U.S. Treasury and federal agencies and government-sponsored entities (GSEs)) with a book value that exceeded 10% of stockholder's equity.

Gross Unrealized Losses and Fair Value

Table 5.2 shows the gross unrealized losses and fair value of available-for-sale and held-to-maturity debt securities by length of time those individual securities in each category have been in a continuous loss position. Debt securities on which we have

taken credit-related OTTI write-downs are categorized as being “less than 12 months” or “12 months or more” in a continuous loss position based on the point in time that the fair value declined to below the cost basis and not the period of time since the credit-related OTTI write-down.

Table 5.2: Gross Unrealized Losses and Fair Value

	Less than 12 months		12 months or more		Total	
	Gross unrealized losses	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses	Fair value
(in millions)						
December 31, 2018						
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	\$ (1)	498	(105)	6,204	(106)	6,702
Securities of U.S. states and political subdivisions	(73)	9,746	(373)	9,017	(446)	18,763
Mortgage-backed securities:						
Federal agencies	(42)	10,979	(3,098)	112,252	(3,140)	123,231
Residential	(3)	398	(2)	69	(5)	467
Commercial	(20)	1,972	(2)	79	(22)	2,051
Total mortgage-backed securities	(65)	13,349	(3,102)	112,400	(3,167)	125,749
Corporate debt securities	(64)	1,965	(26)	298	(90)	2,263
Collateralized loan and other debt obligations	(388)	28,306	(8)	553	(396)	28,859
Other	(7)	819	(6)	159	(13)	978
Total available-for-sale debt securities	(598)	54,683	(3,620)	128,631	(4,218)	183,314
Held-to-maturity debt securities:						
Securities of U.S. Treasury and federal agencies	(3)	895	(412)	41,083	(415)	41,978
Securities of U.S. states and political subdivisions	(4)	598	(112)	3,992	(116)	4,590
Federal agency and other mortgage-backed securities	(5)	4,635	(2,283)	77,741	(2,288)	82,376
Collateralized loan obligations	—	—	—	—	—	—
Total held-to-maturity debt securities	(12)	6,128	(2,807)	122,816	(2,819)	128,944
Total	\$ (610)	60,811	(6,427)	251,447	(7,037)	312,258
December 31, 2017						
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	\$ (27)	4,065	(81)	2,209	(108)	6,274
Securities of U.S. states and political subdivisions	(17)	6,179	(422)	11,766	(439)	17,945
Mortgage-backed securities:						
Federal agencies	(243)	52,559	(1,029)	44,691	(1,272)	97,250
Residential	(1)	47	(1)	58	(2)	105
Commercial	(1)	101	(1)	133	(2)	234
Total mortgage-backed securities	(245)	52,707	(1,031)	44,882	(1,276)	97,589
Corporate debt securities	(4)	239	(36)	503	(40)	742
Collateralized loan and other debt obligations	(1)	373	(2)	146	(3)	519
Other	(1)	37	(4)	483	(5)	520
Total available-for-sale debt securities	(295)	63,600	(1,576)	59,989	(1,871)	123,589
Held-to-maturity debt securities:						
Securities of U.S. Treasury and federal agencies	(69)	11,255	(34)	1,490	(103)	12,745
Securities of U.S. states and political subdivisions	(5)	500	(38)	1,683	(43)	2,183
Federal agency and other mortgage-backed securities	(198)	29,713	(484)	28,244	(682)	57,957
Collateralized loan obligations	—	—	—	—	—	—
Total held-to-maturity debt securities	(272)	41,468	(556)	31,417	(828)	72,885
Total	\$ (567)	105,068	(2,132)	91,406	(2,699)	196,474

Note 5: Available-for-Sale and Held-to Maturity Debt Securities (continued)

We have assessed each debt security with gross unrealized losses included in the previous table for credit impairment. As part of that assessment we evaluated and concluded that we do not intend to sell any of the debt securities and that it is more likely than not that we will not be required to sell prior to recovery of the amortized cost basis. We evaluate, where necessary, whether credit impairment exists by comparing the present value of the expected cash flows to the debt securities' amortized cost basis.

For descriptions of the factors we consider when analyzing debt securities for impairment, see Note 1 (Summary of Significant Accounting Policies) and below.

SECURITIES OF U.S. TREASURY AND FEDERAL AGENCIES AND FEDERAL AGENCY MORTGAGE-BACKED SECURITIES (MBS) The unrealized losses associated with U.S. Treasury and federal agency securities and federal agency MBS are generally driven by changes in interest rates and not due to credit losses given the explicit or implicit guarantees provided by the U.S. government.

SECURITIES OF U.S. STATES AND POLITICAL SUBDIVISIONS The unrealized losses associated with securities of U.S. states and political subdivisions are usually driven by changes in the relationship between municipal and term funding credit curves rather than by changes to the credit quality of the underlying securities. Substantially all of these investments with unrealized losses are investment grade. The securities were generally underwritten in accordance with our own investment standards prior to the decision to purchase. Some of these securities are guaranteed by a bond insurer, but we did not rely on this guarantee when making our investment decision. These investments will continue to be monitored as part of our ongoing impairment analysis but are expected to perform, even if the rating agencies reduce the credit rating of the bond insurers. As a result, we expect to recover the entire amortized cost basis of these securities.

RESIDENTIAL AND COMMERCIAL MBS The unrealized losses associated with private residential MBS and commercial MBS are generally driven by changes in projected collateral losses, credit spreads and interest rates. We assess for credit impairment by estimating the present value of expected cash flows. The key assumptions for determining expected cash flows include default rates, loss severities and/or prepayment rates. We estimate security losses by forecasting the underlying mortgage loans in each transaction. We use forecasted loan performance to project cash flows to the various tranches in the structure. We also consider cash flow forecasts and, as applicable, independent industry analyst reports and forecasts, sector credit ratings, and other independent market data. Based upon our assessment of the expected credit losses and the credit enhancement level of the securities, we expect to recover the entire amortized cost basis of these securities.

CORPORATE DEBT SECURITIES The unrealized losses associated with corporate debt securities are predominantly related to unsecured debt obligations issued by various corporations. We evaluate the financial performance of each issuer on a quarterly basis to determine if the issuer can make all contractual principal and interest payments. Based upon this assessment, we expect to recover the entire amortized cost basis of these securities.

COLLATERALIZED LOAN AND OTHER DEBT OBLIGATIONS The unrealized losses associated with collateralized loan and other debt obligations relate to securities predominantly backed by commercial collateral. The unrealized losses are typically driven by changes in projected collateral losses, credit spreads and interest rates. We assess for credit impairment by estimating the present value of expected cash flows. The key assumptions for determining expected cash flows include default rates, loss severities and prepayment rates. We also consider cash flow forecasts and, as applicable, independent industry analyst reports and forecasts, sector credit ratings, and other independent market data. Based upon our assessment of the expected credit losses and the credit enhancement level of the securities, we expect to recover the entire amortized cost basis of these securities.

OTHER DEBT SECURITIES The unrealized losses associated with other debt securities predominantly relate to other asset-backed securities. The losses are usually driven by changes in projected collateral losses, credit spreads and interest rates. We assess for credit impairment by estimating the present value of expected cash flows. The key assumptions for determining expected cash flows include default rates, loss severities and prepayment rates. Based upon our assessment of the expected credit losses and the credit enhancement level of the securities, we expect to recover the entire amortized cost basis of these securities.

OTHER DEBT SECURITIES MATTERS The fair values of our debt securities could decline in the future if the underlying performance of the collateral for the residential and commercial MBS or other securities deteriorate, and our credit enhancement levels do not provide sufficient protection to our contractual principal and interest. As a result, there is a risk that significant OTTI may occur in the future.

Table 5.3 shows the gross unrealized losses and fair value of the available-for-sale and held-to-maturity debt securities by those rated investment grade and those rated less than investment grade, according to their lowest credit rating by Standard & Poor's Rating Services (S&P) or Moody's Investors Service (Moody's). Credit ratings express opinions about the credit quality of a debt security. Debt securities rated investment grade, that is those rated BBB- or higher by S&P or Baa3 or higher by Moody's, are generally considered by the rating agencies and market participants to be low credit risk. Conversely, debt securities rated below investment grade, labeled as "speculative grade" by the rating agencies, are considered to be distinctively higher credit risk than investment

grade debt securities. We have also included debt securities not rated by S&P or Moody's in the table below based on our internal credit grade of the debt securities (used for credit risk management purposes) equivalent to the credit rating assigned by major credit agencies. The unrealized losses and fair value of unrated debt securities categorized as investment grade based on internal credit grades were \$20 million and \$5.2 billion, respectively, at December 31, 2018, and \$32 million and \$6.9 billion, respectively, at December 31, 2017. If an internal credit grade was not assigned, we categorized the debt security as non-investment grade.

Table 5.3: Gross Unrealized Losses and Fair Value by Investment Grade

(in millions)	Investment grade		Non-investment grade	
	Gross unrealized losses	Fair value	Gross unrealized losses	Fair value
December 31, 2018				
Available-for-sale debt securities:				
Securities of U.S. Treasury and federal agencies	\$ (106)	6,702	—	—
Securities of U.S. states and political subdivisions	(425)	18,447	(21)	316
Mortgage-backed securities:				
Federal agencies	(3,140)	123,231	—	—
Residential	(2)	295	(3)	172
Commercial	(20)	1,999	(2)	52
Total mortgage-backed securities	(3,162)	125,525	(5)	224
Corporate debt securities	(17)	791	(73)	1,472
Collateralized loan and other debt obligations	(396)	28,859	—	—
Other	(7)	726	(6)	252
Total available-for-sale debt securities	(4,113)	181,050	(105)	2,264
Held-to-maturity debt securities:				
Securities of U.S. Treasury and federal agencies	(415)	41,978	—	—
Securities of U.S. states and political subdivisions	(116)	4,590	—	—
Federal agency and other mortgage-backed securities	(2,278)	81,977	(10)	399
Collateralized loan obligations	—	—	—	—
Total held-to-maturity debt securities	(2,809)	128,545	(10)	399
Total	\$ (6,922)	309,595	(115)	2,663
December 31, 2017				
Available-for-sale debt securities:				
Securities of U.S. Treasury and federal agencies	\$ (108)	6,274	—	—
Securities of U.S. states and political subdivisions	(412)	17,763	(27)	182
Mortgage-backed securities:				
Federal agencies	(1,272)	97,250	—	—
Residential	(1)	42	(1)	63
Commercial	(1)	183	(1)	51
Total mortgage-backed securities	(1,274)	97,475	(2)	114
Corporate debt securities	(13)	304	(27)	438
Collateralized loan and other debt obligations	(3)	519	—	—
Other	(2)	469	(3)	51
Total available-for-sale debt securities	(1,812)	122,804	(59)	785
Held-to-maturity debt securities:				
Securities of U.S. Treasury and federal agencies	(103)	12,745	—	—
Securities of U.S. states and political subdivisions	(43)	2,183	—	—
Federal agency and other mortgage-backed securities	(680)	57,789	(2)	168
Collateralized loan obligations	—	—	—	—
Total held-to-maturity debt securities	(826)	72,717	(2)	168
Total	\$ (2,638)	195,521	(61)	953

Note 5: Available-for-Sale and Held-to Maturity Debt Securities (continued)

Contractual Maturities

Table 5.4 shows the remaining contractual maturities and contractual weighted-average yields (taxable-equivalent basis) of available-for-sale debt securities. The remaining contractual

principal maturities for MBS do not consider prepayments. Remaining expected maturities will differ from contractual maturities because borrowers may have the right to prepay obligations before the underlying mortgages mature.

Table 5.4: Contractual Maturities

Remaining contractual maturity										
(in millions)	Total amount	Yield	Within one year		After one year through five years		After five years through ten years		After ten years	
			Amount	Yield	Amount	Yield	Amount	Yield	Amount	Yield
December 31, 2018										
Available-for-sale debt securities (1):										
Fair value:										
Securities of U.S. Treasury and federal agencies	\$ 13,348	1.87%	\$ 1,087	1.52%	\$ 12,213	1.90%	\$ 48	1.89%	\$ —	—%
Securities of U.S. states and political subdivisions	49,264	4.78	3,568	2.92	6,644	3.42	4,635	3.44	34,417	5.42
Mortgage-backed securities:										
Federal agencies	153,203	3.42	—	—	169	3.52	1,909	2.56	151,125	3.43
Residential	2,775	4.01	—	—	14	5.85	6	3.04	2,755	4.00
Commercial	4,225	3.64	—	—	—	—	342	3.60	3,883	3.65
Total mortgage-backed securities	160,203	3.44	—	—	183	3.70	2,257	2.72	157,763	3.45
Corporate debt securities	6,271	5.11	390	6.27	2,525	5.25	2,743	4.68	613	5.67
Collateralized loan and other debt obligations	35,343	3.89	—	—	28	4.18	8,866	3.91	26,449	3.89
Other	5,483	3.17	15	6.02	818	3.84	1,446	2.17	3,204	3.44
Total available-for-sale debt securities at fair value	\$ 269,912	3.70%	\$ 5,060	2.89%	\$ 22,411	2.82%	\$ 19,995	3.64%	\$222,446	3.81%
December 31, 2017										
Available-for-sale debt securities (1):										
Fair value:										
Securities of U.S. Treasury and federal agencies	\$ 6,319	1.59 %	\$ 81	1.37 %	\$ 6,189	1.59 %	\$ 49	1.89 %	\$ —	— %
Securities of U.S. states and political subdivisions	51,326	5.88	2,380	3.47	9,484	3.42	2,276	4.63	37,186	6.75
Mortgage-backed securities:										
Federal agencies	160,219	3.27	15	2.03	210	3.08	5,534	2.82	154,460	3.28
Residential	4,608	3.52	—	—	24	5.67	11	2.46	4,573	3.51
Commercial	4,565	3.45	—	—	—	—	166	2.69	4,399	3.48
Total mortgage-backed securities	169,392	3.28	15	2.03	234	3.35	5,711	2.82	163,432	3.30
Corporate debt securities	7,666	5.12	443	5.54	2,738	5.56	3,549	4.70	936	5.26
Collateralized loan and other debt obligations	36,056	2.98	—	—	50	1.68	15,008	2.96	20,998	3.00
Other	5,648	2.46	71	3.56	463	2.72	1,466	2.13	3,648	2.53
Total available-for-sale debt securities at fair value	\$ 276,407	3.72 %	\$ 2,990	3.70 %	\$ 19,158	3.11 %	\$ 28,059	3.24 %	\$ 226,200	3.83 %

(1) Weighted-average yields displayed by maturity bucket are weighted based on fair value and predominantly represent contractual coupon rates without effect for any related hedging derivatives.

Table 5.5 shows the amortized cost and weighted-average yields of held-to-maturity debt securities by contractual maturity.

Table 5.5: Amortized Cost by Contractual Maturity

Remaining contractual maturity										
(in millions)	Total amount	Yield	Within one year		After one year through five years		After five years through ten years		After ten years	
			Amount	Yield	Amount	Yield	Amount	Yield	Amount	Yield
December 31, 2018										
Held-to-maturity debt securities (1):										
Amortized cost:										
Securities of U.S. Treasury and federal agencies	\$ 44,751	2.12%	\$ —	—%	\$ 32,356	2.04%	\$ 12,395	2.32%	\$ —	—%
Securities of U.S. states and political subdivisions	6,286	4.93	—	—	72	6.04	1,188	4.91	5,026	4.92
Federal agency and other mortgage-backed securities	93,685	3.10	—	—	26	3.52	—	—	93,659	3.10
Collateralized loan obligations	66	3.62	—	—	—	—	66	3.62	—	—
Other	—	—	—	—	—	—	—	—	—	—
Total held-to-maturity debt securities at amortized cost	\$ 144,788	2.87%	\$ —	—%	\$ 32,454	2.05%	\$ 13,649	2.55%	\$ 98,685	3.19%
December 31, 2017										
Held-to-maturity debt securities (1):										
Amortized cost:										
Securities of U.S. Treasury and federal agencies	\$ 44,720	2.12 %	\$ —	— %	\$ 32,330	2.04 %	\$ 12,390	2.32 %	\$ —	— %
Securities of U.S. states and political subdivisions	6,313	6.02	—	—	50	7.18	695	6.31	5,568	5.98
Federal agency and other mortgage-backed securities	87,527	3.11	—	—	15	2.81	11	2.49	87,501	3.11
Collateralized loan obligations	661	2.86	—	—	—	—	661	2.86	—	—
Other	114	1.83	—	—	114	1.83	—	—	—	—
Total held-to-maturity debt securities at amortized cost	\$ 139,335	2.92 %	\$ —	— %	\$ 32,509	2.05 %	\$ 13,757	2.55 %	\$ 93,069	3.28 %

(1) Weighted-average yields displayed by maturity bucket are weighted based on amortized cost and predominantly represent contractual coupon rates.

Table 5.6 shows the fair value of held-to-maturity debt securities by contractual maturity.

Table 5.6: Fair Value by Contractual Maturity

		Remaining contractual maturity			
	Total	Within one	After one year	After five years	
	amount	year	through five years	through ten years	After ten years
(in millions)		Amount	Amount	Amount	Amount

December 31, 2018						
Held-to-maturity debt securities:						
Fair value:						
Securities of U.S. Treasury and federal agencies	\$	44,340	—	32,073	12,267	—
Securities of U.S. states and political subdivisions		6,200	—	70	1,191	4,939
Federal agency and other mortgage-backed securities		91,509	—	26	—	91,483
Collateralized loan obligations		66	—	—	66	—
Other		—	—	—	—	—
Total held-to-maturity debt securities at fair value	\$	142,115	—	32,169	13,524	96,422

December 31, 2017						
Held-to-maturity debt securities:						
Fair value:						
Securities of U.S. Treasury and federal agencies	\$	44,806	—	32,388	12,418	—
Securities of U.S. states and political subdivisions		6,354	—	49	701	5,604
Federal agency and other mortgage-backed securities		87,046	—	15	11	87,020
Collateralized loan obligations		665	—	—	665	—
Other		114	—	114	—	—
Total held-to-maturity debt securities at fair value	\$	138,985	—	32,566	13,795	92,624

Note 5: Available-for-Sale and Held-to Maturity Debt Securities (continued)**Realized Gains and Losses**

Table 5.7 shows the gross realized gains and losses on sales and OTTI write-downs related to available-for-sale debt securities.

Table 5.7: Realized Gains and Losses

(in millions)	Year ended December 31,		
	2018	2017	2016
Gross realized gains	\$ 155	948	1,234
Gross realized losses	(19)	(207)	(103)
OTTI write-downs	(28)	(262)	(189)
Net realized gains from available-for-sale debt securities	\$ 108	479	942

Other-Than-Temporary Impaired Debt Securities

Table 5.8 shows the detail of total OTTI write-downs included in earnings for available-for-sale debt securities. There were no

OTTI write-downs on held-to-maturity debt securities during the years ended December 31, 2018, 2017 or 2016.

Table 5.8: Detail of OTTI Write-downs

(in millions)	Year ended December 31,		
	2018	2017	2016
Debt securities OTTI write-downs included in earnings:			
Securities of U.S. states and political subdivisions	\$ 2	150	63
Mortgage-backed securities:			
Residential	4	11	34
Commercial	18	80	14
Corporate debt securities	—	21	72
Other debt securities	4	—	6
Total debt securities OTTI write-downs included in earnings	\$ 28	262	189

Table 5.9 shows the detail of OTTI write-downs on available-for-sale debt securities included in earnings and the related changes in OCI for the same securities.

Table 5.9: OTTI Write-downs Included in Earnings and the Related Changes in OCI

(in millions)	Year ended December 31,		
	2018	2017	2016
OTTI on debt securities			
Recorded as part of gross realized losses:			
Credit-related OTTI	\$ 27	119	143
Intent-to-sell OTTI	1	143	46
Total recorded as part of gross realized losses	28	262	189
Changes to OCI for losses (reversal of losses) in non-credit-related OTTI (1):			
Securities of U.S. states and political subdivisions	(2)	(5)	8
Residential mortgage-backed securities	2	(1)	(3)
Commercial mortgage-backed securities	(11)	(51)	24
Corporate debt securities	—	1	(13)
Other debt securities	—	(1)	2
Total changes to OCI for non-credit-related OTTI	(11)	(57)	18
Total OTTI losses (reversal of losses) recorded on debt securities	\$ 17	205	207

(1) Represents amounts recorded to OCI for impairment of debt securities, due to factors other than credit, that have also had credit-related OTTI write-downs during the period. Increases represent initial or subsequent non-credit-related OTTI on debt securities. Decreases represent partial to full reversal of impairment due to recoveries in the fair value of debt securities due to non-credit factors.

Table 5.10 presents a rollforward of the OTTI credit loss that has been recognized in earnings as a write-down of available-for-sale debt securities we still own (referred to as “credit-impaired” debt securities) and do not intend to sell. Recognized credit loss represents the difference between the present value of expected

future cash flows discounted using the security’s current effective interest rate and the amortized cost basis of the security prior to considering credit loss.

Table 5.10: Rollforward of OTTI Credit Loss

(in millions)	Year ended December 31,		
	2018	2017	2016
Credit loss recognized, beginning of year	\$ 742	1,043	1,092
Additions:			
For securities with initial credit impairments	1	9	85
For securities with previous credit impairments	26	110	58
Total additions	27	119	143
Reductions:			
For securities sold, matured, or intended/required to be sold	(204)	(414)	(184)
For recoveries of previous credit impairments (1)	(3)	(6)	(8)
Total reductions	(207)	(420)	(192)
Credit loss recognized, end of year	\$ 562	742	1,043

(1) Recoveries of previous credit impairments result from increases in expected cash flows subsequent to credit loss recognition. Such recoveries are reflected prospectively as interest yield adjustments using the effective interest method.

Note 6: Loans and Allowance for Credit Losses

Table 6.1 presents total loans outstanding by portfolio segment and class of financing receivable. Outstanding balances include a total net reduction of \$1.3 billion and \$3.9 billion at December 31, 2018 and 2017, respectively, for unearned income,

net deferred loan fees, and unamortized discounts and premiums, which among other things, reflect the impact of various loan sales.

Table 6.1: Loans Outstanding

(in millions)	December 31,				
	2018	2017	2016	2015	2014
Commercial:					
Commercial and industrial	\$ 350,199	333,125	330,840	299,892	271,795
Real estate mortgage	121,014	126,599	132,491	122,160	111,996
Real estate construction	22,496	24,279	23,916	22,164	18,728
Lease financing	19,696	19,385	19,289	12,367	12,307
Total commercial	513,405	503,388	506,536	456,583	414,826
Consumer:					
Real estate 1-4 family first mortgage	285,065	284,054	275,579	273,869	265,386
Real estate 1-4 family junior lien mortgage	34,398	39,713	46,237	53,004	59,717
Credit card	39,025	37,976	36,700	34,039	31,119
Automobile	45,069	53,371	62,286	59,966	55,740
Other revolving credit and installment	36,148	38,268	40,266	39,098	35,763
Total consumer	439,705	453,382	461,068	459,976	447,725
Total loans	\$ 953,110	956,770	967,604	916,559	862,551

Our foreign loans are reported by respective class of financing receivable in the table above. Substantially all of our foreign loan portfolio is commercial loans. Loans are classified as foreign primarily based on whether the borrower's primary

address is outside of the United States. Table 6.2 presents total commercial foreign loans outstanding by class of financing receivable.

Table 6.2: Commercial Foreign Loans Outstanding

(in millions)	December 31,				
	2018	2017	2016	2015	2014
Commercial foreign loans:					
Commercial and industrial	\$ 62,564	60,106	55,396	49,049	44,707
Real estate mortgage	6,731	8,033	8,541	8,350	4,776
Real estate construction	1,011	655	375	444	218
Lease financing	1,159	1,126	972	274	336
Total commercial foreign loans	\$ 71,465	69,920	65,284	58,117	50,037

Loan Concentrations

Loan concentrations may exist when there are amounts loaned to borrowers engaged in similar activities or similar types of loans extended to a diverse group of borrowers that would cause them to be similarly impacted by economic or other conditions. At December 31, 2018 and 2017, we did not have concentrations representing 10% or more of our total loan portfolio in domestic commercial and industrial loans and lease financing by industry or CRE loans (real estate mortgage and real estate construction) by state or property type. Real estate 1-4 family non-PCI mortgage loans to borrowers in the state of California represented 12% of total loans at both December 31, 2018 and 2017, and PCI loans were under 1% in both years. These California loans are generally diversified among the larger metropolitan areas in California, with no single area consisting of more than 5% of total loans. We continuously monitor changes in real estate values and underlying economic or market conditions for all geographic areas of our real estate 1-4 family mortgage portfolio as part of our credit risk management process.

Some of our real estate 1-4 family first and junior lien mortgage loans include an interest-only feature as part of the loan terms. These interest-only loans were approximately 4% of total loans at both December 31, 2018 and 2017. Substantially all of these interest-only loans at origination were considered to be prime or near prime. We do not offer option adjustable-rate mortgage (ARM) products, nor do we offer variable-rate mortgage products with fixed payment amounts, commonly referred to within the financial services industry as negative amortizing mortgage loans. We acquired an option payment loan portfolio (Pick-a-Pay) from Wachovia at December 31, 2008. A majority of the portfolio was identified as PCI loans. Since the acquisition, we have reduced our exposure to the option payment portion of the portfolio through our modification efforts and loss mitigation actions. At December 31, 2018, approximately 1% of total loans remained with the payment option feature compared with 10% at December 31, 2008.

Our first and junior lien lines of credit products generally have draw periods of 10, 15 or 20 years, with variable interest rate and payment options during the draw period of (1) interest only or (2) 1.5% of total outstanding balance plus accrued

interest. During the draw period, the borrower has the option of converting all or a portion of the line from a variable interest rate to a fixed rate with terms including interest-only payments for a fixed period between three to seven years or a fully amortizing payment with a fixed period between five to 30 years. At the end of the draw period, a line of credit generally converts to an amortizing payment schedule with repayment terms of up to 30 years based on the balance at time of conversion. At December 31, 2018, our lines of credit portfolio had an outstanding balance of \$43.6 billion, of which \$11.1 billion, or 25%, is in its amortization period, another \$1.3 billion, or 3%, of our total outstanding balance, will reach their end of draw period during 2019 through 2020, \$11.3 billion, or 26%, during 2021 through 2023, and \$19.9 billion, or 46%, will convert in subsequent years. This portfolio had unfunded credit commitments of \$60.1 billion at December 31, 2018. The lines that enter their amortization period may experience higher delinquencies and higher loss rates than the lines in their draw period. At December 31, 2018, \$488 million, or 4%, of outstanding lines of credit that are in their amortization period were 30 or more days past due, compared with \$553 million, or 2%, for lines in their draw period. We have considered this increased inherent risk in our allowance for credit loss estimate. In anticipation of our borrowers reaching the end of their contractual commitment, we have created a program to inform, educate and help these borrowers transition from interest-only to fully-amortizing payments or full repayment. We monitor the performance of the borrowers moving through the program in an effort to refine our ongoing program strategy.

Loan Purchases, Sales, and Transfers

Table 6.3 summarizes the proceeds paid or received for purchases and sales of loans and transfers from loans held for investment to mortgages/loans held for sale at lower of cost or fair value. This loan activity primarily includes loans purchased and sales of whole loan or participating interests, whereby we receive or transfer a portion of a loan after origination. The table excludes PCI loans and loans recorded at fair value, including loans originated for sale because their loan activity normally does not impact the allowance for credit losses.

Table 6.3: Loan Purchases, Sales, and Transfers

(in millions)	Year ended December 31,					
	2018			2017		
	Commercial	Consumer (1)	Total	Commercial	Consumer (1)	Total
Purchases	\$ 2,065	16	2,081	3,675	2	3,677
Sales	(1,905)	(261)	(2,166)	(2,066)	(425)	(2,491)
Transfers to MLHFS/LHFS	(617)	(1,995)	(2,612)	(736)	(2)	(738)

(1) Excludes activity in government insured/guaranteed real estate 1-4 family first mortgage loans. As servicer, we are able to buy delinquent insured/guaranteed loans out of the Government National Mortgage Association (GNMA) pools, and manage and/or resell them in accordance with applicable requirements. These loans are predominantly insured by the Federal Housing Administration (FHA) or guaranteed by the Department of Veterans Affairs (VA). Accordingly, these loans have limited impact on the allowance for loan losses.

Note 6: Loans and Allowance for Credit Losses (continued)

Commitments to Lend

A commitment to lend is a legally binding agreement to lend funds to a customer, usually at a stated interest rate, if funded, and for specific purposes and time periods. We generally require a fee to extend such commitments. Certain commitments are subject to loan agreements with covenants regarding the financial performance of the customer or borrowing base formulas on an ongoing basis that must be met before we are required to fund the commitment. We may reduce or cancel consumer commitments, including home equity lines and credit card lines, in accordance with the contracts and applicable law.

We may, as a representative for other lenders, advance funds or provide for the issuance of letters of credit under syndicated loan or letter of credit agreements. Any advances are generally repaid in less than a week and would normally require default of both the customer and another lender to expose us to loss. These temporary advance arrangements totaled approximately \$91 billion at December 31, 2018, and \$85 billion at December 31, 2017.

We issue commercial letters of credit to assist customers in purchasing goods or services, typically for international trade. At December 31, 2018 and 2017, we had \$919 million and \$982 million, respectively, of outstanding issued commercial letters of credit. We also originate multipurpose lending commitments under which borrowers have the option to draw on the facility for different purposes in one of several forms, including a standby letter of credit. See Note 15 (Guarantees, Pledged Assets and Collateral, and Other Commitments) for additional information on standby letters of credit.

When we make commitments, we are exposed to credit risk. The maximum credit risk for these commitments will generally be lower than the contractual amount because a significant portion of these commitments are expected to expire without being used by the customer. In addition, we manage the potential risk in commitments to lend by limiting the total amount of commitments, both by individual customer and in total, by monitoring the size and maturity structure of these commitments and by applying the same credit standards for these commitments as for all of our credit activities.

For loans and commitments to lend, we generally require collateral or a guarantee. We may require various types of collateral, including commercial and consumer real estate, automobiles, other short-term liquid assets such as accounts receivable or inventory and long-lived assets, such as equipment and other business assets. Collateral requirements for each loan or commitment may vary based on the loan product and our assessment of a customer's credit risk according to the specific credit underwriting, including credit terms and structure.

The contractual amount of our unfunded credit commitments, including unissued standby and commercial letters of credit, is summarized by portfolio segment and class of financing receivable in Table 6.4. The table excludes the issued standby and commercial letters of credit and temporary advance arrangements described above.

Table 6.4: Unfunded Credit Commitments

(in millions)	Dec 31, 2018	Dec 31, 2017
Commercial:		
Commercial and industrial	\$ 330,492	326,626
Real estate mortgage	6,984	7,485
Real estate construction	16,400	16,621
Total commercial	353,876	350,732
Consumer:		
Real estate 1-4 family first mortgage	29,736	29,876
Real estate 1-4 family junior lien mortgage	37,719	38,897
Credit card	109,840	108,465
Other revolving credit and installment	27,530	27,541
Total consumer	204,825	204,779
Total unfunded credit commitments	\$ 558,701	555,511

Allowance for Credit Losses

Table 6.5 presents the allowance for credit losses, which consists of the allowance for loan losses and the allowance for unfunded credit commitments.

Table 6.5: Allowance for Credit Losses

(in millions)	Year ended December 31,				
	2018	2017	2016	2015	2014
Balance, beginning of year	\$ 11,960	12,540	12,512	13,169	14,971
Provision for credit losses	1,744	2,528	3,770	2,442	1,395
Interest income on certain impaired loans (1)	(166)	(186)	(205)	(198)	(211)
Loan charge-offs:					
Commercial:					
Commercial and industrial	(727)	(789)	(1,419)	(734)	(627)
Real estate mortgage	(42)	(38)	(27)	(59)	(66)
Real estate construction	—	—	(1)	(4)	(9)
Lease financing	(70)	(45)	(41)	(14)	(15)
Total commercial	(839)	(872)	(1,488)	(811)	(717)
Consumer:					
Real estate 1-4 family first mortgage	(179)	(240)	(452)	(507)	(721)
Real estate 1-4 family junior lien mortgage	(179)	(279)	(495)	(635)	(864)
Credit card	(1,599)	(1,481)	(1,259)	(1,116)	(1,025)
Automobile	(947)	(1,002)	(845)	(742)	(729)
Other revolving credit and installment	(685)	(713)	(708)	(643)	(668)
Total consumer	(3,589)	(3,715)	(3,759)	(3,643)	(4,007)
Total loan charge-offs	(4,428)	(4,587)	(5,247)	(4,454)	(4,724)
Loan recoveries:					
Commercial:					
Commercial and industrial	304	297	263	252	369
Real estate mortgage	70	82	116	127	160
Real estate construction	13	30	38	37	136
Lease financing	23	17	11	8	8
Total commercial	410	426	428	424	673
Consumer:					
Real estate 1-4 family first mortgage	267	288	373	245	212
Real estate 1-4 family junior lien mortgage	219	266	266	259	238
Credit card	307	239	207	175	161
Automobile	363	319	325	325	349
Other revolving credit and installment	118	121	128	134	146
Total consumer	1,274	1,233	1,299	1,138	1,106
Total loan recoveries	1,684	1,659	1,727	1,562	1,779
Net loan charge-offs	(2,744)	(2,928)	(3,520)	(2,892)	(2,945)
Other	(87)	6	(17)	(9)	(41)
Balance, end of year	\$ 10,707	11,960	12,540	12,512	13,169
Components:					
Allowance for loan losses	\$ 9,775	11,004	11,419	11,545	12,319
Allowance for unfunded credit commitments	932	956	1,121	967	850
Allowance for credit losses	\$ 10,707	11,960	12,540	12,512	13,169
Net loan charge-offs as a percentage of average total loans	0.29%	0.31	0.37	0.33	0.35
Allowance for loan losses as a percentage of total loans	1.03	1.15	1.18	1.26	1.43
Allowance for credit losses as a percentage of total loans	1.12	1.25	1.30	1.37	1.53

(1) Certain impaired loans with an allowance calculated by discounting expected cash flows using the loan's effective interest rate over the remaining life of the loan recognize changes in allowance attributable to the passage of time as interest income.

Note 6: Loans and Allowance for Credit Losses (continued)

Table 6.6 summarizes the activity in the allowance for credit losses by our commercial and consumer portfolio segments.

Table 6.6: Allowance Activity by Portfolio Segment

(in millions)	Year ended December 31,					
	2018			2017		
	Commercial	Consumer	Total	Commercial	Consumer	Total
Balance, beginning of year	\$ 6,632	5,328	11,960	7,394	5,146	12,540
Provision (reversal of provision) for credit losses	281	1,463	1,744	(261)	2,789	2,528
Interest income on certain impaired loans	(47)	(119)	(166)	(59)	(127)	(186)
Loan charge-offs	(839)	(3,589)	(4,428)	(872)	(3,715)	(4,587)
Loan recoveries	410	1,274	1,684	426	1,233	1,659
Net loan charge-offs	(429)	(2,315)	(2,744)	(446)	(2,482)	(2,928)
Other	(20)	(67)	(87)	4	2	6
Balance, end of year	\$ 6,417	4,290	10,707	6,632	5,328	11,960

Table 6.7 disaggregates our allowance for credit losses and recorded investment in loans by impairment methodology.

Table 6.7: Allowance by Impairment Methodology

(in millions)	Allowance for credit losses			Recorded investment in loans		
	Commercial	Consumer	Total	Commercial	Consumer	Total
December 31, 2018						
Collectively evaluated (1)	\$ 5,903	3,361	9,264	510,180	421,574	931,754
Individually evaluated (2)	514	929	1,443	3,221	13,126	16,347
PCI (3)	—	—	—	4	5,005	5,009
Total	\$ 6,417	4,290	10,707	513,405	439,705	953,110
December 31, 2017						
Collectively evaluated (1)	\$ 5,927	4,143	10,070	499,342	425,919	925,261
Individually evaluated (2)	705	1,185	1,890	3,960	14,714	18,674
PCI (3)	—	—	—	86	12,749	12,835
Total	\$ 6,632	5,328	11,960	503,388	453,382	956,770

- (1) Represents loans collectively evaluated for impairment in accordance with Accounting Standards Codification (ASC) 450-20, *Loss Contingencies* (formerly FAS 5), and pursuant to amendments by ASU 2010-20 regarding allowance for non-impaired loans.
- (2) Represents loans individually evaluated for impairment in accordance with ASC 310-10, *Receivables* (formerly FAS 114), and pursuant to amendments by ASU 2010-20 regarding allowance for impaired loans.
- (3) Represents the allowance and related loan carrying value determined in accordance with ASC 310-30, *Receivables – Loans and Debt Securities Acquired with Deteriorated Credit Quality* (formerly SOP 3-3) and pursuant to amendments by ASU 2010-20 regarding allowance for PCI loans.

Credit Quality

We monitor credit quality by evaluating various attributes and utilize such information in our evaluation of the appropriateness of the allowance for credit losses. The following sections provide the credit quality indicators we most closely monitor. The credit quality indicators are generally based on information as of our financial statement date, with the exception of updated Fair Isaac Corporation (FICO) scores and updated loan-to-value (LTV)/combined LTV (CLTV). We obtain FICO scores at loan origination and the scores are generally updated at least quarterly, except in limited circumstances, including compliance with the Fair Credit Reporting Act (FCRA). Generally, the LTV and CLTV indicators are updated in the second month of each quarter, with updates no older than September 30, 2018. See the “Purchased Credit-Impaired Loans” section in this Note for credit quality information on our PCI portfolio.

COMMERCIAL CREDIT QUALITY INDICATORS In addition to monitoring commercial loan concentration risk, we manage a consistent process for assessing commercial loan credit quality. Generally, commercial loans are subject to individual risk assessment using our internal borrower and collateral quality ratings. Our ratings are aligned to Pass and Criticized categories. The Criticized category includes Special Mention, Substandard, and Doubtful categories which are defined by bank regulatory agencies.

Table 6.8 provides a breakdown of outstanding commercial loans by risk category. Of the \$14.8 billion in criticized commercial and industrial loans and \$4.8 billion in criticized commercial real estate (CRE) loans at December 31, 2018, \$1.5 billion and \$612 million, respectively, have been placed on nonaccrual status and written down to net realizable collateral value.

Table 6.8: Commercial Loans by Risk Category

(in millions)	Commercial and industrial	Real estate mortgage	Real estate construction	Lease financing	Total
December 31, 2018					
By risk category:					
Pass	\$ 335,412	116,514	22,207	18,671	492,804
Criticized	14,783	4,500	289	1,025	20,597
Total commercial loans (excluding PCI)	350,195	121,014	22,496	19,696	513,401
Total commercial PCI loans (carrying value)	4	—	—	—	4
Total commercial loans	\$ 350,199	121,014	22,496	19,696	513,405
December 31, 2017					
By risk category:					
Pass	\$ 316,431	122,312	23,981	18,162	480,886
Criticized	16,608	4,287	298	1,223	22,416
Total commercial loans (excluding PCI)	333,039	126,599	24,279	19,385	503,302
Total commercial PCI loans (carrying value)	86	—	—	—	86
Total commercial loans	\$ 333,125	126,599	24,279	19,385	503,388

Table 6.9 provides past due information for commercial loans, which we monitor as part of our credit risk management practices.

Table 6.9: Commercial Loans by Delinquency Status

(in millions)	Commercial and industrial	Real estate mortgage	Real estate construction	Lease financing	Total
December 31, 2018					
By delinquency status:					
Current-29 days past due (DPD) and still accruing	\$ 348,158	120,176	22,411	19,443	510,188
30-89 DPD and still accruing	508	207	53	163	931
90+ DPD and still accruing	43	51	—	—	94
Nonaccrual loans	1,486	580	32	90	2,188
Total commercial loans (excluding PCI)	350,195	121,014	22,496	19,696	513,401
Total commercial PCI loans (carrying value)	4	—	—	—	4
Total commercial loans	\$ 350,199	121,014	22,496	19,696	513,405
December 31, 2017					
By delinquency status:					
Current-29 DPD and still accruing	\$ 330,319	125,642	24,107	19,148	499,216
30-89 DPD and still accruing	795	306	135	161	1,397
90+ DPD and still accruing	26	23	—	—	49
Nonaccrual loans	1,899	628	37	76	2,640
Total commercial loans (excluding PCI)	333,039	126,599	24,279	19,385	503,302
Total commercial PCI loans (carrying value)	86	—	—	—	86
Total commercial loans	\$ 333,125	126,599	24,279	19,385	503,388

Note 6: Loans and Allowance for Credit Losses (continued)

CONSUMER CREDIT QUALITY INDICATORS We have various classes of consumer loans that present unique risks. Loan delinquency, FICO credit scores and LTV for loan types are common credit quality indicators that we monitor and utilize in our evaluation of the appropriateness of the allowance for credit losses for the consumer portfolio segment.

Many of our loss estimation techniques used for the allowance for credit losses rely on delinquency-based models; therefore, delinquency is an important indicator of credit quality and the establishment of our allowance for credit losses. Table 6.10 provides the outstanding balances of our consumer portfolio by delinquency status.

Table 6.10: Consumer Loans by Delinquency Status

(in millions)	Real estate 1-4 family first mortgage	Real estate 1-4 family junior lien mortgage	Credit card	Automobile	Other revolving credit and installment	Total
December 31, 2018						
By delinquency status:						
Current-29 DPD	\$ 263,881	33,644	38,008	43,604	35,794	414,931
30-59 DPD	1,411	247	292	1,040	140	3,130
60-89 DPD	549	126	212	314	87	1,288
90-119 DPD	257	74	192	109	80	712
120-179 DPD	225	77	320	2	27	651
180+ DPD	822	213	1	—	20	1,056
Government insured/guaranteed loans (1)	12,688	—	—	—	—	12,688
Loans held at fair value	244	—	—	—	—	244
Total consumer loans (excluding PCI)	280,077	34,381	39,025	45,069	36,148	434,700
Total consumer PCI loans (carrying value)	4,988	17	—	—	—	5,005
Total consumer loans	\$ 285,065	34,398	39,025	45,069	36,148	439,705
December 31, 2017						
By delinquency status:						
Current-29 DPD	\$ 251,786	38,746	36,996	51,445	37,885	416,858
30-59 DPD	1,893	336	287	1,385	155	4,056
60-89 DPD	742	163	201	392	93	1,591
90-119 DPD	369	103	192	146	80	890
120-179 DPD	308	95	298	3	30	734
180+ DPD	1,091	243	2	—	25	1,361
Government insured/guaranteed loans (1)	14,767	—	—	—	—	14,767
Loans held at fair value	376	—	—	—	—	376
Total consumer loans (excluding PCI)	271,332	39,686	37,976	53,371	38,268	440,633
Total consumer PCI loans (carrying value)	12,722	27	—	—	—	12,749
Total consumer loans	\$ 284,054	39,713	37,976	53,371	38,268	453,382

(1) Represents loans whose repayments are predominantly insured by the FHA or guaranteed by the VA. Loans insured/guaranteed by the FHA/VA and 90+ DPD totaled \$7.7 billion at December 31, 2018, compared with \$10.5 billion at December 31, 2017.

Of the \$2.4 billion of consumer loans not government insured/guaranteed that are 90 days or more past due at December 31, 2018, \$885 million was accruing, compared with \$3.0 billion past due and \$1.0 billion accruing at December 31, 2017.

Real estate 1-4 family first mortgage loans 180 days or more past due totaled \$822 million, or 0.3% of total first mortgages (excluding PCI), at December 31, 2018, compared with \$1.1 billion, or 0.4%, at December 31, 2017.

Table 6.11 provides a breakdown of our consumer portfolio by FICO. Most of the scored consumer portfolio has an updated FICO of 680 and above, reflecting a strong current borrower credit profile. FICO is not available for certain loan types, or may not be required if we deem it unnecessary due to strong collateral and other borrower attributes. Substantially all loans not requiring a FICO score are securities-based loans originated through retail brokerage, and totaled \$8.9 billion at December 31, 2018, and \$8.5 billion at December 31, 2017.

Table 6.11: Consumer Loans by FICO

(in millions)	Real estate 1-4 family first mortgage	Real estate 1-4 family junior lien mortgage	Credit card	Automobile	Other revolving credit and installment	Total
December 31, 2018						
By FICO:						
< 600	\$ 4,273	1,454	3,292	7,071	697	16,787
600-639	2,974	994	2,777	4,431	725	11,901
640-679	5,810	1,898	6,464	6,225	1,822	22,219
680-719	13,568	3,908	9,445	7,354	3,384	37,659
720-759	27,258	5,323	7,949	6,853	4,395	51,778
760-799	57,193	6,315	5,227	5,947	5,322	80,004
800+	151,465	13,190	3,794	7,099	8,411	183,959
No FICO available	4,604	1,299	77	89	2,507	8,576
FICO not required	—	—	—	—	8,885	8,885
Government insured/guaranteed loans (1)	12,932	—	—	—	—	12,932
Total consumer loans (excluding PCI)	280,077	34,381	39,025	45,069	36,148	434,700
Total consumer PCI loans (carrying value)	4,988	17	—	—	—	5,005
Total consumer loans	\$ 285,065	34,398	39,025	45,069	36,148	439,705
December 31, 2017						
By FICO:						
< 600	\$ 5,145	1,768	3,525	8,858	863	20,159
600-639	3,487	1,253	3,101	5,615	904	14,360
640-679	6,789	2,387	5,690	7,696	1,959	24,521
680-719	14,977	4,797	7,628	8,825	3,582	39,809
720-759	27,926	6,246	8,097	7,806	5,089	55,164
760-799	55,590	7,323	6,372	6,468	6,257	82,010
800+	136,729	15,144	2,994	7,845	8,455	171,167
No FICO available	5,546	768	569	258	2,648	9,789
FICO not required	—	—	—	—	8,511	8,511
Government insured/guaranteed loans (1)	15,143	—	—	—	—	15,143
Total consumer loans (excluding PCI)	271,332	39,686	37,976	53,371	38,268	440,633
Total consumer PCI loans (carrying value)	12,722	27	—	—	—	12,749
Total consumer loans	\$ 284,054	39,713	37,976	53,371	38,268	453,382

(1) Represents loans whose repayments are predominantly insured by the FHA or guaranteed by the VA.

LTV refers to the ratio comparing the loan's unpaid principal balance to the property's collateral value. CLTV refers to the combination of first mortgage and junior lien mortgage (including unused line amounts for credit line products) ratios. LTVs and CLTVs are updated quarterly using a cascade approach which first uses values provided by automated valuation models (AVMs) for the property. If an AVM is not available, then the value is estimated using the original appraised value adjusted by the change in Home Price Index (HPI) for the property location. If an HPI is not available, the original appraised value is used. The HPI value is normally the only method considered for high value properties, generally with an original value of \$1 million or more, as the AVM values have proven less accurate for these properties.

Table 6.12 shows the most updated LTV and CLTV distribution of the real estate 1-4 family first and junior lien mortgage loan portfolios. We consider the trends in residential real estate markets as we monitor credit risk and establish our allowance for credit losses. In the event of a default, any loss should be limited to the portion of the loan amount in excess of the net realizable value of the underlying real estate collateral value. Certain loans do not have an LTV or CLTV due to industry data availability and portfolios acquired from or serviced by other institutions.

Note 6: Loans and Allowance for Credit Losses (continued)

Table 6.12: Consumer Loans by LTV/CLTV

(in millions)	December 31, 2018			December 31, 2017		
	Real estate 1-4 family first mortgage by LTV	Real estate 1-4 family junior lien mortgage by CLTV	Total	Real estate 1-4 family first mortgage by LTV	Real estate 1-4 family junior lien mortgage by CLTV	Total
By LTV/CLTV:						
0-60%	\$ 147,666	15,753	163,419	133,902	16,301	150,203
60.01-80%	104,477	11,183	115,660	104,639	12,918	117,557
80.01-100%	12,372	4,874	17,246	13,924	6,580	20,504
100.01-120% (1)	1,211	1,596	2,807	1,868	2,427	4,295
> 120% (1)	484	578	1,062	783	1,008	1,791
No LTV/CLTV available	935	397	1,332	1,073	452	1,525
Government insured/guaranteed loans (2)	12,932	—	12,932	15,143	—	15,143
Total consumer loans (excluding PCI)	280,077	34,381	314,458	271,332	39,686	311,018
Total consumer PCI loans (carrying value)	4,988	17	5,005	12,722	27	12,749
Total consumer loans	\$ 285,065	34,398	319,463	284,054	39,713	323,767

(1) Reflects total loan balances with LTV/CLTV amounts in excess of 100%. In the event of default, the loss content would generally be limited to only the amount in excess of 100% LTV/CLTV.

(2) Represents loans whose repayments are predominantly insured by the FHA or guaranteed by the VA.

NONACCRUAL LOANS Table 6.13 provides loans on nonaccrual status. PCI loans are excluded from this table because they continue to earn interest from accretable yield, independent of performance in accordance with their contractual terms.

Table 6.13: Nonaccrual Loans

(in millions)	Dec 31, 2018	Dec 31, 2017
Commercial:		
Commercial and industrial	\$ 1,486	1,899
Real estate mortgage	580	628
Real estate construction	32	37
Lease financing	90	76
Total commercial	2,188	2,640
Consumer:		
Real estate 1-4 family first mortgage (1)	3,183	3,732
Real estate 1-4 family junior lien mortgage	945	1,086
Automobile	130	130
Other revolving credit and installment	50	58
Total consumer	4,308	5,006
Total nonaccrual loans (excluding PCI)	\$ 6,496	7,646

(1) Prior period has been revised to exclude \$390 million of MLHFS, LHFS and loans held at fair value.

LOANS IN PROCESS OF FORECLOSURE Our recorded investment in consumer mortgage loans collateralized by residential real estate property that are in process of foreclosure was \$4.6 billion and \$6.3 billion at December 31, 2018 and 2017, respectively, which included \$3.2 billion and \$4.0 billion, respectively, of loans that are government insured/guaranteed. Under the Consumer Financial Protection Bureau guidelines, we do not commence the foreclosure process on consumer real estate loans until after the loan is 120 days delinquent. Foreclosure procedures and timelines vary depending on whether the property address resides in a judicial or non-judicial state. Judicial states require the foreclosure to be processed through the state's courts while non-judicial states are processed without court intervention. Foreclosure timelines vary according to state law.

LOANS 90 DAYS OR MORE PAST DUE AND STILL ACCRUING

Certain loans 90 days or more past due as to interest or principal are still accruing, because they are (1) well-secured and in the process of collection or (2) real estate 1-4 family mortgage loans or consumer loans exempt under regulatory rules from being classified as nonaccrual until later delinquency, usually 120 days past due. PCI loans of \$370 million at December 31, 2018, and \$1.4 billion at December 31, 2017, are not included in these past due and still accruing loans even when they are 90 days or more contractually past due. These PCI loans are considered to be accruing because they continue to earn interest from accretable yield, independent of performance in accordance with their contractual terms.

Table 6.14 shows non-PCI loans 90 days or more past due and still accruing by class for loans not government insured/guaranteed.

Table 6.14: Loans 90 Days or More Past Due and Still Accruing (1)

	Dec 31,	Dec 31,
(in millions)	2018	2017
Total (excluding PCI):	\$ 8,704	11,532
Less: FHA insured/VA guaranteed (2)	7,725	10,475
Total, not government insured/guaranteed	\$ 979	1,057
By segment and class, not government insured/guaranteed:		
Commercial:		
Commercial and industrial	\$ 43	26
Real estate mortgage	51	23
Total commercial	94	49
Consumer:		
Real estate 1-4 family first mortgage	124	213
Real estate 1-4 family junior lien mortgage	32	60
Credit card	513	492
Automobile	114	143
Other revolving credit and installment	102	100
Total consumer	885	1,008
Total, not government insured/guaranteed	\$ 979	1,057

(1) Financial information for the prior period December 31, 2017 has been revised to exclude MLHFS, LHFS and loans held at fair value, which reduced "Total, not government insured/guaranteed" by \$6 million.

(2) Represents loans whose repayments are predominantly insured by the FHA or guaranteed by the VA.

Note 6: Loans and Allowance for Credit Losses (continued)

IMPAIRED LOANS Table 6.15 summarizes key information for impaired loans. Our impaired loans predominantly include loans on nonaccrual status in the commercial portfolio segment and loans modified in a TDR, whether on accrual or nonaccrual status. These impaired loans generally have estimated losses which are included in the allowance for credit losses. We have impaired loans with no allowance for credit losses when loss content has been previously recognized through charge-offs and we do not anticipate additional charge-offs or losses, or certain

loans are currently performing in accordance with their terms and for which no loss has been estimated. Impaired loans exclude PCI loans. Table 6.15 includes trial modifications that totaled \$149 million at December 31, 2018, and \$194 million at December 31, 2017.

For additional information on our impaired loans and allowance for credit losses, see Note 1 (Summary of Significant Accounting Policies).

Table 6.15: Impaired Loans Summary

(in millions)	Unpaid principal balance (1)	Recorded investment		
		Impaired loans	Impaired loans with related allowance for credit losses	Related allowance for credit losses
December 31, 2018				
Commercial:				
Commercial and industrial	\$ 3,057	2,030	1,730	319
Real estate mortgage	1,228	1,032	1,009	154
Real estate construction	74	47	46	9
Lease financing	146	112	112	32
Total commercial	4,505	3,221	2,897	514
Consumer:				
Real estate 1-4 family first mortgage	12,309	10,738	4,420	525
Real estate 1-4 family junior lien mortgage	1,886	1,694	1,133	183
Credit card	449	449	449	172
Automobile	153	89	43	8
Other revolving credit and installment	162	156	136	41
Total consumer (2)	14,959	13,126	6,181	929
Total impaired loans (excluding PCI)	\$ 19,464	16,347	9,078	1,443
December 31, 2017				
Commercial:				
Commercial and industrial	\$ 3,577	2,568	2,310	462
Real estate mortgage	1,502	1,239	1,207	211
Real estate construction	95	54	45	9
Lease financing	132	99	89	23
Total commercial	5,306	3,960	3,651	705
Consumer:				
Real estate 1-4 family first mortgage	14,020	12,225	6,060	770
Real estate 1-4 family junior lien mortgage	2,135	1,918	1,421	245
Credit card	356	356	356	136
Automobile	157	87	34	5
Other revolving credit and installment	136	128	117	29
Total consumer (2)	16,804	14,714	7,988	1,185
Total impaired loans (excluding PCI)	\$ 22,110	18,674	11,639	1,890

(1) Excludes the unpaid principal balance for loans that have been fully charged off or otherwise have zero recorded investment.

(2) Includes the recorded investment of \$1.3 billion and \$1.4 billion at December 31, 2018 and 2017, respectively, of government insured/guaranteed loans that are predominantly insured by the FHA or guaranteed by the VA and generally do not have an allowance. Impaired loans may also have limited, if any, allowance when the recorded investment of the loan approximates estimated net realizable value as a result of charge-offs prior to a TDR modification.

Commitments to lend additional funds on loans whose terms have been modified in a TDR amounted to \$513 million and \$579 million at December 31, 2018 and 2017, respectively.

Table 6.16 provides the average recorded investment in impaired loans and the amount of interest income recognized on impaired loans by portfolio segment and class.

Table 6.16: Average Recorded Investment in Impaired Loans

(in millions)	Year ended December 31,					
	2018		2017		2016	
	Average recorded investment	Recognized interest income	Average recorded investment	Recognized interest income	Average recorded investment	Recognized interest income
Commercial:						
Commercial and industrial	\$ 2,287	173	3,241	118	3,408	101
Real estate mortgage	1,193	89	1,328	91	1,636	128
Real estate construction	60	7	66	14	115	11
Lease financing	125	1	105	1	88	—
Total commercial	3,665	270	4,740	224	5,247	240
Consumer:						
Real estate 1-4 family first mortgage	11,522	664	13,326	730	15,857	828
Real estate 1-4 family junior lien mortgage	1,804	116	2,041	121	2,294	132
Credit card	407	50	323	36	295	34
Automobile	86	11	86	11	93	11
Other revolving credit and installment	142	10	117	8	89	6
Total consumer	13,961	851	15,893	906	18,628	1,011
Total impaired loans (excluding PCI)	\$ 17,626	1,121	20,633	1,130	23,875	1,251
Interest income:						
Cash basis of accounting	\$	338		299		353
Other (1)		783		831		898
Total interest income	\$	1,121		1,130		1,251

(1) Includes interest recognized on accruing TDRs, interest recognized related to certain impaired loans which have an allowance calculated using discounting, and amortization of purchase accounting adjustments related to certain impaired loans.

TROUBLED DEBT RESTRUCTURINGS (TDRs) When, for economic or legal reasons related to a borrower's financial difficulties, we grant a concession for other than an insignificant period of time to a borrower that we would not otherwise consider, the related loan is classified as a TDR, the balance of which totaled \$15.5 billion and \$17.8 billion at December 31, 2018 and 2017, respectively. We do not consider loan resolutions such as foreclosure or short sale to be a TDR.

We may require some consumer borrowers experiencing financial difficulty to make trial payments generally for a period of three to four months, according to the terms of a planned permanent modification, to determine if they can perform according to those terms. These arrangements represent trial modifications, which we classify and account for as TDRs. While loans are in trial payment programs, their original terms are not considered modified and they continue to advance through delinquency status and accrue interest according to their original terms.

Table 6.17 summarizes our TDR modifications for the periods presented by primary modification type and includes the financial effects of these modifications. For those loans that modify more than once, the table reflects each modification that occurred during the period. Loans that both modify and pay off within the period, as well as changes in recorded investment during the period for loans modified in prior periods, are not included in the table.

Note 6: Loans and Allowance for Credit Losses (continued)

Table 6.17: TDR Modifications

(in millions)	Primary modification type (1)				Financial effects of modifications		
	Principal (2)	Interest rate reduction	Other concessions (3)	Total	Charge-offs (4)	Weighted average interest rate reduction	Recorded investment related to interest rate reduction (5)
Year ended December 31, 2018							
Commercial:							
Commercial and industrial	\$ 13	29	2,310	2,352	58	1.18%	\$ 29
Real estate mortgage	—	44	375	419	—	0.88	44
Real estate construction	—	—	25	25	—	—	—
Lease financing	—	—	63	63	—	—	—
Total commercial	13	73	2,773	2,859	58	1.00	73
Consumer:							
Real estate 1-4 family first mortgage	209	26	1,042	1,277	4	2.25	119
Real estate 1-4 family junior lien mortgage	7	41	113	161	5	2.14	45
Credit card	—	336	—	336	—	12.54	336
Automobile	13	16	55	84	30	6.21	16
Other revolving credit and installment	—	49	12	61	—	7.95	49
Trial modifications (6)	—	—	8	8	—	—	—
Total consumer	229	468	1,230	1,927	39	8.96	565
Total	\$ 242	541	4,003	4,786	97	8.06%	\$ 638
Year ended December 31, 2017							
Commercial:							
Commercial and industrial	\$ 24	45	2,912	2,981	173	0.64 %	\$ 45
Real estate mortgage	5	59	507	571	20	1.28	59
Real estate construction	—	1	26	27	—	0.69	1
Lease financing	—	—	37	37	—	—	—
Total commercial	29	105	3,482	3,616	193	1.00	105
Consumer:							
Real estate 1-4 family first mortgage	231	140	1,035	1,406	15	2.57	257
Real estate 1-4 family junior lien mortgage	25	82	81	188	14	3.26	93
Credit card	—	257	—	257	—	11.98	257
Automobile	2	15	67	84	39	5.89	15
Other revolving credit and installment	—	47	8	55	1	7.47	47
Trial modifications (6)	—	—	(28)	(28)	—	—	—
Total consumer	258	541	1,163	1,962	69	6.70	669
Total	\$ 287	646	4,645	5,578	262	5.92 %	\$ 774
Year ended December 31, 2016							
Commercial:							
Commercial and industrial	\$ 42	130	3,154	3,326	360	1.91 %	\$ 130
Real estate mortgage	2	105	560	667	1	1.15	105
Real estate construction	—	27	72	99	—	1.02	27
Lease financing	—	—	8	8	—	—	—
Total commercial	44	262	3,794	4,100	361	1.51	262
Consumer:							
Real estate 1-4 family first mortgage	338	288	1,411	2,037	49	2.69	507
Real estate 1-4 family junior lien mortgage	23	109	106	238	37	3.07	130
Credit card	—	180	—	180	—	12.09	180
Automobile	2	16	57	75	36	6.07	16
Other revolving credit and installment	1	33	10	44	2	6.83	33
Trial modifications (6)	—	—	44	44	—	—	—
Total consumer	364	626	1,628	2,618	124	4.92	866
Total	\$ 408	888	5,422	6,718	485	4.13 %	\$ 1,128

- (1) Amounts represent the recorded investment in loans after recognizing the effects of the TDR, if any. TDRs may have multiple types of concessions, but are presented only once in the first modification type based on the order presented in the table above. The reported amounts include loans remodified of \$1.9 billion, \$2.1 billion and \$1.6 billion, for the years ended December 31, 2018, 2017, and 2016, respectively.
- (2) Principal modifications include principal forgiveness at the time of the modification, contingent principal forgiveness granted over the life of the loan based on borrower performance, and principal that has been legally separated and deferred to the end of the loan, with a zero percent contractual interest rate.
- (3) Other concessions include loans discharged in bankruptcy, loan renewals, term extensions and other interest and noninterest adjustments, but exclude modifications that also forgive principal and/or reduce the contractual interest rate.
- (4) Charge-offs include write-downs of the investment in the loan in the period it is contractually modified. The amount of charge-off will differ from the modification terms if the loan has been charged down prior to the modification based on our policies. In addition, there may be cases where we have a charge-off/down with no legal principal modification. Modifications resulted in legally forgiving principal (actual, contingent or deferred) of \$28 million, \$32 million and \$67 million for the years ended December 31, 2018, 2017, and 2016, respectively.
- (5) Reflects the effect of reduced interest rates on loans with an interest rate concession as one of their concession types, which includes loans reported as a principal primary modification type that also have an interest rate concession.
- (6) Trial modifications are granted a delay in payments due under the original terms during the trial payment period. However, these loans continue to advance through delinquency status and accrue interest according to their original terms. Any subsequent permanent modification generally includes interest rate related concessions; however, the exact concession type and resulting financial effect are usually not known until the loan is permanently modified. Trial modifications for the period are presented net of previously reported trial modifications that became permanent in the current period.

Table 6.18 summarizes permanent modification TDRs that have defaulted in the current period within 12 months of their permanent modification date. We are reporting these defaulted TDRs based on a payment default definition of 90 days past due for the commercial portfolio segment and 60 days past due for the consumer portfolio segment.

Table 6.18: Defaulted TDRs

(in millions)	Recorded investment of defaults		
	Year ended December 31,		
	2018	2017	2016
Commercial:			
Commercial and industrial	\$ 198	173	124
Real estate mortgage	76	61	66
Real estate construction	36	4	3
Lease financing	—	1	—
Total commercial	310	239	193
Consumer:			
Real estate 1-4 family first mortgage	60	114	138
Real estate 1-4 family junior lien mortgage	14	19	20
Credit card	79	74	56
Automobile	14	15	13
Other revolving credit and installment	6	5	4
Total consumer	173	227	231
Total	\$ 483	466	424

Purchased Credit-Impaired Loans

Substantially all of our PCI loans were acquired from Wachovia on December 31, 2008, at which time we acquired commercial and consumer loans with a carrying value of \$18.7 billion and \$40.1 billion, respectively. The unpaid principal balance on December 31, 2008, was \$98.2 billion for the total of commercial and consumer PCI loans. Table 6.19 presents PCI loans net of any remaining purchase accounting adjustments. Real estate 1-4 family first mortgage PCI loans are predominantly Pick-a-Pay loans.

Table 6.19: PCI Loans

(in millions)	Dec 31, 2018	Dec 31, 2017
Total commercial	\$ 4	86
Consumer:		
Real estate 1-4 family first mortgage	4,988	12,722
Real estate 1-4 family junior lien mortgage	17	27
Total consumer	5,005	12,749
Total PCI loans (carrying value)	\$ 5,009	12,835
Total PCI loans (unpaid principal balance)	\$ 7,348	18,975

Note 6: Loans and Allowance for Credit Losses (continued)

ACCRETABLE YIELD The excess of cash flows expected to be collected over the carrying value of PCI loans is referred to as the accretable yield and is recognized in interest income using an effective yield method over the remaining life of the loan, or pools of loans. The accretable yield is affected by:

- changes in interest rate indices for variable rate PCI loans – expected future cash flows are based on the variable rates in effect at the time of the regular evaluations of cash flows expected to be collected;
- changes in prepayment assumptions – prepayments affect the estimated life of PCI loans which may change the amount of interest income, and possibly principal, expected to be collected; and

- changes in the expected principal and interest payments over the estimated weighted-average life – updates to expected cash flows are driven by the credit outlook and actions taken with borrowers. Changes in expected future cash flows from loan modifications are included in the regular evaluations of cash flows expected to be collected.

The change in the accretable yield related to PCI loans since the merger with Wachovia is presented in Table 6.20. Changes during 2018 also reflect \$2.4 billion in gains on the sale of \$6.2 billion Pick-a-Pay PCI loans.

Table 6.20: Change in Accretable Yield

(in millions)	2018	2017	2016	2009-2015
Total, beginning of period	\$ 8,887	11,216	16,301	10,447
Addition of accretable yield due to acquisitions	—	2	27	132
Accretion into interest income (1)	(1,094)	(1,406)	(1,365)	(14,212)
Accretion into noninterest income due to sales (2)	(2,374)	(334)	(9)	(458)
Reclassification from nonaccretable difference for loans with improving credit-related cash flows	403	642	1,221	9,734
Changes in expected cash flows that do not affect nonaccretable difference (3)	(2,789)	(1,233)	(4,959)	10,658
Total, end of period	\$ 3,033	8,887	11,216	16,301

(1) Includes accretable yield released as a result of settlements with borrowers, which is included in interest income.

(2) Includes accretable yield released as a result of sales to third parties, which is included in noninterest income.

(3) Represents changes in cash flows expected to be collected due to the impact of modifications, changes in prepayment assumptions, changes in interest rates on variable rate PCI loans and sales to third parties.

COMMERCIAL PCI CREDIT QUALITY INDICATORS

Table 6.21 provides a breakdown of commercial PCI loans by risk category.

Table 6.21: Commercial PCI Loans by Risk Category

(in millions)	Dec. 31, 2018	Dec. 31, 2017
By risk category:		
Pass	\$ 1	8
Criticized	3	78
Total commercial PCI loans	\$ 4	86

Table 6.22 provides past due information for commercial PCI loans.

Table 6.22: Commercial PCI Loans by Delinquency Status

(in millions)	Dec. 31, 2018	Dec. 31, 2017
By delinquency status:		
Current-29 DPD and still accruing	\$ 3	86
30-89 DPD and still accruing	1	—
Total commercial PCI loans	\$ 4	86

CONSUMER PCI CREDIT QUALITY INDICATORS Our consumer PCI loans were aggregated into several pools of loans at acquisition. Below, we have provided credit quality indicators based on the unpaid principal balance (adjusted for write-

downs) of the individual loans included in the pool, but we have not allocated the remaining purchase accounting adjustments, which were established at a pool level. Table 6.23 provides the delinquency status of consumer PCI loans.

Table 6.23: Consumer PCI Loans by Delinquency Status

(in millions)	December 31, 2018			December 31, 2017		
	Real estate 1-4 family first mortgage	Real estate 1-4 family junior lien mortgage	Total	Real estate 1-4 family first mortgage	Real estate 1-4 family junior lien mortgage	Total
By delinquency status:						
Current-29 DPD and still accruing	\$ 5,545	117	5,662	13,127	138	13,265
30-59 DPD and still accruing	495	8	503	1,317	8	1,325
60-89 DPD and still accruing	229	3	232	622	3	625
90-119 DPD and still accruing	99	2	101	293	2	295
120-179 DPD and still accruing	54	1	55	219	2	221
180+ DPD and still accruing	353	3	356	1,310	4	1,314
Total consumer PCI loans (adjusted unpaid principal balance)	\$ 6,775	134	6,909	16,888	157	17,045
Total consumer PCI loans (carrying value)	\$ 4,988	17	5,005	12,722	27	12,749

Note 6: Loans and Allowance for Credit Losses (continued)

Table 6.24 provides FICO scores for consumer PCI loans.

Table 6.24: Consumer PCI Loans by FICO

(in millions)	December 31, 2018			December 31, 2017		
	Real estate 1-4 family first mortgage	Real estate 1-4 family junior lien mortgage	Total	Real estate 1-4 family first mortgage	Real estate 1-4 family junior lien mortgage	Total
By FICO:						
< 600	\$ 1,418	27	1,445	4,014	37	4,051
600-639	713	18	731	2,086	20	2,106
640-679	898	20	918	2,393	24	2,417
680-719	970	24	994	2,242	29	2,271
720-759	843	20	863	1,779	23	1,802
760-799	523	11	534	933	12	945
800+	381	6	387	468	6	474
No FICO available	1,029	8	1,037	2,973	6	2,979
Total consumer PCI loans (adjusted unpaid principal balance)	\$ 6,775	134	6,909	16,888	157	17,045
Total consumer PCI loans (carrying value)	\$ 4,988	17	5,005	12,722	27	12,749

Table 6.25 shows the distribution of consumer PCI loans by LTV for real estate 1-4 family first mortgages and by CLTV for real estate 1-4 family junior lien mortgages.

Table 6.25: Consumer PCI Loans by LTV/CLTV

(in millions)	December 31, 2018			December 31, 2017		
	Real estate 1-4 family first mortgage by LTV	Real estate 1-4 family junior lien mortgage by CLTV	Total	Real estate 1-4 family first mortgage by LTV	Real estate 1-4 family junior lien mortgage by CLTV	Total
By LTV/CLTV:						
0-60%	\$ 3,970	44	4,014	8,010	45	8,055
60.01-80%	2,161	53	2,214	6,510	63	6,573
80.01-100%	542	28	570	1,975	35	2,010
100.01-120% (1)	82	8	90	319	10	329
> 120% (1)	19	1	20	73	3	76
No LTV/CLTV available	1	—	1	1	1	2
Total consumer PCI loans (adjusted unpaid principal balance)	\$ 6,775	134	6,909	16,888	157	17,045
Total consumer PCI loans (carrying value)	\$ 4,988	17	5,005	12,722	27	12,749

(1) Reflects total loan balances with LTV/CLTV amounts in excess of 100%. In the event of default, the loss content would generally be limited to only the amount in excess of 100% LTV/CLTV.

Note 7: Premises, Equipment, Lease Commitments and Other Assets

Table 7.1: Premises and Equipment

(in millions)	Dec 31, 2018	Dec 31, 2017
Land	\$ 1,757	1,799
Buildings	8,974	8,865
Furniture and equipment	6,896	7,089
Leasehold improvements	2,387	2,291
Premises and equipment leased under capital leases	75	103
Total premises and equipment	20,089	20,147
Less: Accumulated depreciation and amortization	11,169	11,300
Net book value, premises and equipment	\$ 8,920	8,847

Depreciation and amortization expense for premises and equipment was \$1.3 billion, \$1.2 billion and \$1.2 billion in 2018, 2017 and 2016, respectively.

Dispositions of premises and equipment resulted in net gains of \$32 million, \$128 million and \$44 million in 2018, 2017 and 2016, respectively, included in other noninterest expense.

We have obligations under a number of noncancelable operating leases for premises and equipment. The leases predominantly expire over the next fifteen years, with the longest expiring in 2105, and many provide for periodic adjustment of rentals based on changes in various economic indicators. Some leases also include a renewal option. Table 7.2 provides the future minimum payments of noncancelable operating leases, net of sublease income, with terms greater than one year as of December 31, 2018.

Table 7.2: Minimum Lease Payments of Operating Leases

(in millions)	
Year ended December 31,	
2019	\$ 1,174
2020	1,056
2021	880
2022	713
2023	577
Thereafter	1,654
Total	\$ 6,054

Total minimum lease payments for operating leases above are net of \$427 million of noncancelable sublease income. Operating lease rental expense (predominantly for premises) was \$1.3 billion for the years 2018, 2017 and 2016, net of sublease income of \$73 million, \$76 million and \$86 million for the same years, respectively.

Table 7.3 presents the components of other assets.

Table 7.3: Other Assets

(in millions)	Dec 31, 2018	Dec 31, 2017
Corporate/bank-owned life insurance	\$ 19,751	19,549
Accounts receivable (1)	34,281	39,127
Interest receivable	6,084	5,688
Core deposit intangibles	—	769
Customer relationship and other amortized intangibles	545	841
Foreclosed assets:		
Residential real estate:		
Government insured/guaranteed (1)	88	120
Non-government insured/guaranteed	229	252
Non-residential real estate	134	270
Operating lease assets	9,036	9,666
Due from customers on acceptances	258	177
Other	9,444	13,785
Total other assets	\$ 79,850	90,244

- (1) Certain government-guaranteed residential real estate mortgage loans upon foreclosure are included in Accounts receivable. Both principal and interest related to these foreclosed real estate assets are collectible because the loans were predominantly insured by the FHA or guaranteed by the VA. For more information on the classification of certain government-guaranteed mortgage loans upon foreclosure, see Note 1 (Summary of Significant Accounting Policies).

Note 8: Equity Securities

Table 8.1 provides a summary of our equity securities by business purpose and accounting method, including equity securities with readily determinable fair values (marketable) and those without readily determinable fair values (nonmarketable).

Table 8.1: Equity Securities

(in millions)	Dec 31, 2018	Dec 31, 2017
Held for trading at fair value:		
Marketable equity securities	\$ 19,449	30,004
Not held for trading:		
Fair value:		
Marketable equity securities (1)	4,513	4,356
Nonmarketable equity securities (2)	5,594	4,867
Total equity securities at fair value	10,107	9,223
Equity method:		
LIHTC (3)	10,999	10,269
Private equity	3,832	3,839
Tax-advantaged renewable energy	3,073	1,950
New market tax credit and other	311	294
Total equity method	18,215	16,352
Other:		
Federal Reserve Bank stock and other at cost (4)	5,643	5,828
Private equity (5)	1,734	1,090
Total equity securities not held for trading	35,699	32,493
Total equity securities (6)	\$ 55,148	62,497

- (1) Includes \$3.2 billion and \$3.7 billion at December 31, 2018 and 2017, respectively, related to securities held as economic hedges of our deferred compensation plan obligations.
- (2) Includes \$5.5 billion and \$4.9 billion at December 31, 2018 and 2017, respectively, related to investments for which we elected the fair value option. See Note 18 (Fair Value of Assets and Liabilities) for additional information.
- (3) Represents low-income housing tax credit investments.
- (4) Includes \$5.6 billion and \$5.4 billion at December 31, 2018 and 2017, respectively, related to investments in Federal Reserve Bank and Federal Home Loan Bank stock.
- (5) Represents nonmarketable equity securities for which we have elected to account for the security under the measurement alternative.
- (6) At December 31, 2018 and 2017, we held no securities of any single issuer with a book value that exceeded 10% of stockholder's equity.

Equity Securities Held for Trading

Equity securities held for trading purposes are marketable equity securities traded on organized exchanges. These securities are held as part of our customer accommodation trading activities. For more information on these activities, see Note 4 (Trading Activities).

Equity Securities Not Held for Trading

We also hold equity securities unrelated to trading activities. These securities include private equity and tax credit investments, securities held as economic hedges or to meet regulatory requirements (for example, Federal Reserve Bank and Federal Home Loan Bank stock). Equity securities not held for trading purposes are accounted for at either fair value, equity method, cost or the measurement alternative.

FAIR VALUE Marketable equity securities held for purposes other than trading primarily consist of exchange-traded equity funds held to economically hedge obligations related to our deferred compensation plans and to a lesser extent other holdings of publicly traded equity securities held for investment purposes. We have elected to account for nonmarketable equity securities under the fair value method, and substantially all of these securities are economically hedged with equity derivatives.

EQUITY METHOD Our equity method investments consist of tax credit and private equity investments, the majority of which are our low-income housing tax credit (LIHTC) investments.

We invest in affordable housing projects that qualify for the LIHTC, which are designed to promote private development of low-income housing. These investments generate a return mostly through realization of federal tax credit and other tax benefits. We recognized pre-tax losses of \$1.2 billion for both 2018 and 2017, related to our LIHTC investments. These losses were recognized in other noninterest income. We also recognized total tax benefits of \$1.5 billion for both 2018 and 2017, which included tax credits recorded to income taxes of \$1.2 billion and \$1.1 billion for the same periods, respectively. We are periodically required to provide additional financial support during the investment period. Our liability for unfunded commitments was \$3.9 billion and \$3.6 billion at December 31, 2018 and 2017, respectively. Substantially all of this liability is expected to be paid over the next three years. This liability is included in long-term debt.

OTHER The remaining portion of our nonmarketable equity securities portfolio consists of securities accounted for using the cost or measurement alternative method.

Realized Gains and Losses

Table 8.2 provides a summary of the net gains and losses for equity securities. Gains and losses for securities held for trading are reported in net gains from trading activities.

Table 8.2: Net Gains (Losses) from Equity Securities

(in millions)	Year ended December 31,		
	2018	2017	2016
Net gains (losses) from equity securities carried at fair value:			
Marketable equity securities	\$ (389)	967	525
Nonmarketable equity securities	709	1,557	(21)
Total equity securities carried at fair value	320	2,524	504
Net gains (losses) from nonmarketable equity securities not carried at fair value:			
Impairment write-downs	(352)	(339)	(448)
Net unrealized gains related to measurement alternative observable transactions	418	—	—
Net realized gains on sale	1,504	980	849
All other	33	97	73
Total nonmarketable equity securities not carried at fair value	1,603	738	474
Net gains (losses) from economic hedge derivatives (1)	(408)	(1,483)	125
Total net gains from equity securities	\$ 1,515	1,779	1,103

(1) Includes net gains (losses) on derivatives not designated as hedging instruments.

Measurement Alternative

Table 8.3 provides additional information about the impairment write-downs and observable price adjustments related to

nonmarketable equity securities accounted for under the measurement alternative. Gains and losses related to these adjustments are also included in Table 8.2.

Table 8.3: Measurement Alternative

(in millions)	Year ended December 31,	
	2018	
Net gains (losses) recognized in earnings during the period:		
Gross unrealized gains due to observable price changes	\$	443
Gross unrealized losses due to observable price changes		(25)
Impairment write-downs		(33)
Realized net gains from sale		274
Total net gains recognized during the period	\$	659

The cumulative gross unrealized gains and (losses) due to observable price changes as of December 31, 2018, were \$415 million and \$(25) million, respectively. Cumulative impairment losses as of December 31, 2018, were \$33 million. These cumulative amounts represent carrying value adjustments to equity securities accounted for under the measurement alternative that were recognized on the balance sheet as of December 31, 2018.

Note 9: Securitizations and Variable Interest Entities

Involvement with Special Purpose Entities (SPEs)

In the normal course of business, we enter into various types of on- and off-balance sheet transactions with SPEs, which are corporations, trusts, limited liability companies or partnerships that are established for a limited purpose. Generally, SPEs are formed in connection with securitization transactions. In a securitization transaction, assets are transferred to an SPE, which then issues to investors various forms of interests in those assets and may also enter into derivative transactions. In a securitization transaction where we transferred assets from our balance sheet, we typically receive cash and/or other interests in an SPE as proceeds for the assets we transfer. Also, in certain transactions, we may retain the right to service the transferred receivables and to repurchase those receivables from the SPE if the outstanding balance of the receivables falls to a level where the cost exceeds the benefits of servicing such receivables. In addition, we may purchase the right to service loans in an SPE that were transferred to the SPE by a third party.

In connection with our securitization activities, we have various forms of ongoing involvement with SPEs, which may include:

- underwriting securities issued by SPEs and subsequently making markets in those securities;
- providing liquidity facilities to support short-term obligations of SPEs issued to third-party investors;
- providing credit enhancement on securities issued by SPEs or market value guarantees of assets held by SPEs through the use of letters of credit, financial guarantees, credit default swaps and total return swaps;
- entering into other derivative contracts with SPEs;
- holding senior or subordinated interests in SPEs;
- acting as servicer or investment manager for SPEs; and
- providing administrative or trustee services to SPEs.

SPEs formed in connection with securitization transactions are generally considered variable interest entities (VIEs). SPEs formed for other corporate purposes may be VIEs as well. A VIE is an entity that has either a total equity investment that is insufficient to finance its activities without additional subordinated financial support or whose equity investors lack the ability to control the entity's activities or lack the ability to receive expected benefits or absorb obligations in a manner that's consistent with their investment in the entity. A VIE is consolidated by its primary beneficiary, the party that has both the power to direct the activities that most significantly impact the VIE and a variable interest that could potentially be significant to the VIE. A variable interest is a contractual, ownership or other interest whose value changes with changes in the fair value of the VIE's net assets. To determine whether or not a variable interest we hold could potentially be significant to the VIE, we consider both qualitative and quantitative factors regarding the nature, size and form of our involvement with the VIE. We assess whether or not we are the primary beneficiary of a VIE on an on-going basis.

We have segregated our involvement with VIEs between those VIEs which we consolidate, those which we do not consolidate and those for which we account for the transfers of financial assets as secured borrowings. Secured borrowings are transactions involving transfers of our financial assets to third parties that are accounted for as financings with the assets pledged as collateral. Accordingly, the transferred assets remain recognized on our balance sheet. Subsequent tables within this Note further segregate these transactions by structure type.

Table 9.1 provides the classifications of assets and liabilities in our balance sheet for our transactions with VIEs.

Table 9.1: Balance Sheet Transactions with VIEs

(in millions)	VIEs that we do not consolidate	VIEs that we consolidate	Transfers that we account for as secured borrowings	Total
December 31, 2018				
Cash and due from banks	\$ —	139	—	139
Interest-earning deposits with banks	—	8	—	8
Debt securities:				
Trading debt securities	2,110	45	200	2,355
Available-for-sale debt securities (1)	2,686	—	317	3,003
Held-to-maturity debt securities	510	—	—	510
Loans	1,433	13,564	94	15,091
Mortgage servicing rights	14,761	—	—	14,761
Derivative assets	53	—	—	53
Equity securities	11,041	85	—	11,126
Other assets	—	221	6	227
Total assets	32,594	14,062	617	47,273
Short-term borrowings	—	—	493	493
Derivative liabilities	26	— (2)	—	26
Accrued expenses and other liabilities	231	191 (2)	8	430
Long-term debt	3,870	816 (2)	93	4,779
Total liabilities	4,127	1,007	594	5,728
Noncontrolling interests	—	34	—	34
Net assets	\$ 28,467	13,021	23	41,511
December 31, 2017				
Cash and due from banks	\$ —	116	—	116
Interest-earning deposits with banks	—	371	—	371
Debt securities:				
Trading debt securities	1,305	—	201	1,506
Available-for-sale debt securities (1)	3,288	—	358	3,646
Held-to-maturity debt securities	485	—	—	485
Loans	4,274	12,482	110	16,866
Mortgage servicing rights	13,628	—	—	13,628
Derivative assets	44	—	—	44
Equity securities	10,740	306	—	11,046
Other assets	—	342	6	348
Total assets	33,764	13,617	675	48,056
Short-term borrowings	—	—	522	522
Derivative liabilities	106	5 (2)	—	111
Accrued expenses and other liabilities	244	132 (2)	10	386
Long-term debt	3,590	1,479 (2)	111	5,180
Total liabilities	3,940	1,616	643	6,199
Noncontrolling interests	—	283	—	283
Net assets	\$ 29,824	11,718	32	41,574

(1) Excludes certain debt securities related to loans serviced for the Federal National Mortgage Association (FNMA), Federal Home Loan Mortgage Corporation (FHLMC) and GNMA.

(2) There were no VIE liabilities with recourse to the general credit of Wells Fargo for the periods presented.

Transactions with Unconsolidated VIEs

Our transactions with unconsolidated VIEs include securitizations of residential mortgage loans, CRE loans, student loans, automobile loans and leases, certain dealer floorplan loans; investment and financing activities involving collateralized debt obligations (CDOs) backed by asset-backed and CRE securities, tax credit structures, collateralized loan obligations (CLOs) backed by corporate loans, and other types of

structured financing. We have various forms of involvement with VIEs, including servicing, holding senior or subordinated interests, entering into liquidity arrangements, credit default swaps and other derivative contracts. Involvements with these unconsolidated VIEs are recorded on our balance sheet in debt and equity securities, loans, MSRs, derivative assets and liabilities, other assets, other liabilities, and long-term debt, as appropriate.

Note 9: Securitizations and Variable Interest Entities (continued)

Table 9.2 provides a summary of unconsolidated VIEs with which we have significant continuing involvement, but we are not the primary beneficiary. We do not consider our continuing involvement in an unconsolidated VIE to be significant when it relates to third-party sponsored VIEs for which we were not the transferor (unless we are servicer and have other significant forms of involvement) or if we were the sponsor only or sponsor and servicer but do not have any other forms of significant involvement.

Significant continuing involvement includes transactions where we were the sponsor or transferor and have other significant forms of involvement. Sponsorship includes transactions with unconsolidated VIEs where we solely or materially participated in the initial design or structuring of the entity or marketing of the transaction to investors. When we transfer assets to a VIE and account for the transfer as a sale, we

are considered the transferor. We consider investments in securities (other than those held temporarily in trading), loans, guarantees, liquidity agreements, written options and servicing of collateral to be other forms of involvement that may be significant. We have excluded certain transactions with unconsolidated VIEs from the balances presented in the following table where we have determined that our continuing involvement is not significant due to the temporary nature and size of our variable interests, because we were not the transferor or because we were not involved in the design of the unconsolidated VIEs. We also exclude from the table secured borrowing transactions with unconsolidated VIEs (for information on these transactions, see the Transactions with Consolidated VIEs and Secured Borrowings section in this Note).

Table 9.2: Unconsolidated VIEs

(in millions)	Carrying value – asset (liability)					
	Total VIE assets	Debt and equity interests (1)	Servicing assets	Derivatives	Other commitments and guarantees	Net assets
December 31, 2018						
Residential mortgage loan securitizations:						
Conforming (2)	\$ 1,172,833	2,377	13,811	—	(171)	16,017
Other/nonconforming	10,596	453	57	—	—	510
Commercial mortgage securitizations	153,350	2,409	893	(22)	(40)	3,240
Collateralized debt obligations:						
Debt securities	659	—	—	5	(20)	(15)
Loans (3)	—	—	—	—	—	—
Asset-based finance structures	304	205	—	—	—	205
Tax credit structures	35,185	12,087	—	—	(3,870)	8,217
Collateralized loan obligations	2	—	—	—	—	—
Investment funds	185	42	—	—	—	42
Other (4)	1,688	207	—	44	—	251
Total	\$ 1,374,802	17,780	14,761	27	(4,101)	28,467
Maximum exposure to loss						
		Debt and equity interests (1)	Servicing assets	Derivatives	Other commitments and guarantees	Total exposure
Residential mortgage loan securitizations:						
Conforming	\$	2,377	13,811	—	1,183	17,371
Other/nonconforming		453	57	—	—	510
Commercial mortgage securitizations		2,409	893	28	11,563	14,893
Collateralized debt obligations:						
Debt securities		—	—	5	20	25
Loans (3)		—	—	—	—	—
Asset-based finance structures		205	—	—	71	276
Tax credit structures		12,087	—	—	1,420	13,507
Collateralized loan obligations		—	—	—	—	—
Investment funds		42	—	—	—	42
Other (4)		207	—	45	158	410
Total	\$	17,780	14,761	78	14,415	47,034

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(in millions)	Carrying value - asset (liability)					
	Total VIE assets	Debt and equity interests (1)	Servicing assets	Derivatives	Other commitments and guarantees	Net assets
December 31, 2017						
Residential mortgage loan securitizations:						
Conforming (2)	\$ 1,169,410	2,100	12,665	—	(190)	14,575
Other/nonconforming	14,175	598	73	—	—	671
Commercial mortgage securitizations	144,650	2,198	890	28	(34)	3,082
Collateralized debt obligations:						
Debt securities	1,031	—	—	5	(20)	(15)
Loans (3)	1,481	1,443	—	—	—	1,443
Asset-based finance structures	2,333	1,867	—	—	—	1,867
Tax credit structures	31,852	11,258	—	—	(3,590)	7,668
Collateralized loan obligations	23	1	—	—	—	1
Investment funds	225	50	—	—	—	50
Other (4)	2,257	577	—	(95)	—	482
Total	\$ 1,367,437	20,092	13,628	(62)	(3,834)	29,824
						Maximum exposure to loss
		Debt and equity interests (1)	Servicing assets	Derivatives	Other commitments and guarantees	Total exposure
Residential mortgage loan securitizations:						
Conforming	\$	2,100	12,665	—	1,137	15,902
Other/nonconforming		598	73	—	—	671
Commercial mortgage securitizations		2,198	890	42	10,202	13,332
Collateralized debt obligations:						
Debt securities		—	—	5	20	25
Loans (3)		1,443	—	—	—	1,443
Asset-based finance structures		1,867	—	—	71	1,938
Tax credit structures		11,258	—	—	1,175	12,433
Collateralized loan obligations		1	—	—	—	1
Investment funds		50	—	—	—	50
Other (4)		577	—	120	157	854
Total	\$	20,092	13,628	167	12,762	46,649

- (1) Includes total equity interests of \$11.0 billion and \$10.7 billion at December 31, 2018 and 2017, respectively. Also includes debt interests in the form of both loans and securities. Excludes certain debt securities held related to loans serviced for FNMA, FHLMC and GNMA.
- (2) Excludes assets and related liabilities with a recorded carrying value on our balance sheet of \$1.2 billion and \$2.2 billion at December 31, 2018 and 2017, respectively, for certain delinquent loans that are eligible for repurchase from GNMA loan securitizations. The recorded carrying value represents the amount that would be payable if the Company was to exercise the repurchase option. The carrying amounts are excluded from the table because the loans eligible for repurchase do not represent interests in the VIEs.
- (3) Represents senior loans to trusts that are collateralized by asset-backed securities. The trusts invested in senior tranches from a diversified pool of U.S. asset securitizations, of which all were current and 100% were rated as investment grade by the primary rating agencies at December 31, 2017. These senior loans were accounted for at amortized cost and were subject to the Company's allowance and credit charge-off policies. The securitization was terminated in first quarter 2018.
- (4) Includes structured financing and credit-linked note structures. At December 31, 2017, also contains investments in auction rate securities (ARS) issued by VIEs that we did not sponsor and, accordingly, are unable to obtain the total assets of the entity.

In Table 9.2, "Total VIE assets" represents the remaining principal balance of assets held by unconsolidated VIEs using the most current information available. For VIEs that obtain exposure to assets synthetically through derivative instruments, the remaining notional amount of the derivative is included in the asset balance. "Carrying value" is the amount in our consolidated balance sheet related to our involvement with the unconsolidated VIEs. "Maximum exposure to loss" from our involvement with off-balance sheet entities, which is a required disclosure under GAAP, is determined as the carrying value of our involvement with off-balance sheet (unconsolidated) VIEs plus the remaining undrawn liquidity and lending commitments, the notional amount of net written derivative contracts, and generally the notional amount of, or stressed loss estimate for, other commitments and guarantees. It represents estimated loss

that would be incurred under severe, hypothetical circumstances, for which we believe the possibility is extremely remote, such as where the value of our interests and any associated collateral declines to zero, without any consideration of recovery or offset from any economic hedges. Accordingly, this required disclosure is not an indication of expected loss.

RESIDENTIAL MORTGAGE LOANS Residential mortgage loan securitizations are financed through the issuance of fixed-rate or floating-rate asset-backed securities, which are collateralized by the loans transferred to a VIE. We typically transfer loans we originated to these VIEs, account for the transfers as sales, retain the right to service the loans and may hold other beneficial interests issued by the VIEs. We also may be exposed to limited liability related to recourse agreements and repurchase

Note 9: Securitizations and Variable Interest Entities (continued)

agreements we make to our issuers and purchasers, which are included in other commitments and guarantees. In certain instances, we may service residential mortgage loan securitizations structured by third parties whose loans we did not originate or transfer. Our residential mortgage loan securitizations consist of conforming and nonconforming securitizations.

Conforming residential mortgage loan securitizations are those that are guaranteed by the GSEs, including GNMA. Because of the power of the GSEs over the VIEs that hold the assets from these conforming residential mortgage loan securitizations, we do not consolidate them.

The loans sold to the VIEs in nonconforming residential mortgage loan securitizations are those that do not qualify for a GSE guarantee. We may hold variable interests issued by the VIEs, including senior securities. We do not consolidate the nonconforming residential mortgage loan securitizations included in the table because we either do not hold any variable interests, hold variable interests that we do not consider potentially significant or are not the primary servicer for a majority of the VIE assets.

Other commitments and guarantees include amounts related to loans sold that we may be required to repurchase, or otherwise indemnify or reimburse the investor or insurer for losses incurred, due to material breach of contractual representations and warranties as well as other retained recourse arrangements. The maximum exposure to loss for material breach of contractual representations and warranties represents a stressed case estimate we utilize for determining stressed case regulatory capital needs and is considered to be a remote scenario.

COMMERCIAL MORTGAGE LOAN SECURITIZATIONS

Commercial mortgage loan securitizations are financed through the issuance of fixed or floating-rate asset-backed securities, which are collateralized by the loans transferred to the VIE. In a typical securitization, we may transfer loans we originate to these VIEs, account for the transfers as sales, retain the right to service the loans and may hold other beneficial interests issued by the VIEs. In certain instances, we may service commercial mortgage loan securitizations structured by third parties whose loans we did not originate or transfer. We typically serve as primary or master servicer of these VIEs. The primary or master servicer in a commercial mortgage loan securitization typically cannot make the most significant decisions impacting the performance of the VIE and therefore does not have power over the VIE. We do not consolidate the commercial mortgage loan securitizations included in the disclosure because we either do not have power or do not have a variable interest that could potentially be significant to the VIE.

COLLATERALIZED DEBT OBLIGATIONS (CDOs) A CDO is a securitization where a VIE purchases a pool of assets consisting of asset-backed securities and issues multiple tranches of equity or notes to investors. In some CDOs, a portion of the assets are obtained synthetically through the use of derivatives such as credit default swaps or total return swaps.

In addition to our role as arranger, we may have other forms of involvement with these CDOs. Such involvement may include acting as liquidity provider, derivative counterparty, secondary market maker or investor. For certain CDOs, we may also act as the collateral manager or servicer. We receive fees in connection with our role as collateral manager or servicer.

We assess whether we are the primary beneficiary of CDOs based on our role in them in combination with the variable

interests we hold. Subsequently, we monitor our ongoing involvement to determine if the nature of our involvement has changed. We are not the primary beneficiary of these CDOs in most cases because we do not act as the collateral manager or servicer, which generally denotes power. In cases where we are the collateral manager or servicer, we are not the primary beneficiary because we do not hold interests that could potentially be significant to the VIE.

COLLATERALIZED LOAN OBLIGATIONS (CLOs) A CLO is a securitization where an SPE purchases a pool of assets consisting of loans and issues multiple tranches of equity or notes to investors. Generally, CLOs are structured on behalf of a third-party asset manager that typically selects and manages the assets for the term of the CLO. Typically, the asset manager has the power over the significant decisions of the VIE through its discretion to manage the assets of the CLO. We assess whether we are the primary beneficiary of CLOs based on our role in them and the variable interests we hold. In most cases, we are not the primary beneficiary because we do not have the power to manage the collateral in the VIE.

In addition to our role as arranger, we may have other forms of involvement with these CLOs. Such involvement may include acting as underwriter, derivative counterparty, secondary market maker or investor. For certain CLOs, we may also act as the servicer, for which we receive fees in connection with that role. We also earn fees for arranging these CLOs and distributing the securities.

ASSET-BASED FINANCE STRUCTURES We engage in various forms of structured finance arrangements with VIEs that are collateralized by various asset classes including energy contracts, automobile and other transportation loans and leases, intellectual property, equipment and general corporate credit. We typically provide senior financing, and may act as an interest rate swap or commodity derivative counterparty when necessary. In most cases, we are not the primary beneficiary of these structures because we do not have power over the significant activities of the VIEs involved in them.

For example, we have investments in asset-backed securities that are collateralized by automobile leases or loans and cash. These fixed-rate and variable-rate securities have been structured as single-tranche, fully amortizing, unrated bonds that are equivalent to investment-grade securities due to their significant overcollateralization. The securities are issued by VIEs that have been formed by third-party automobile financing institutions primarily because they require a source of liquidity to fund ongoing vehicle sales operations. The third-party automobile financing institutions manage the collateral in the VIEs, which is indicative of power in them and we therefore do not consolidate these VIEs.

TAX CREDIT STRUCTURES We co-sponsor and make investments in affordable housing and sustainable energy projects that are designed to generate a return primarily through the realization of federal tax credits. In some instances, our investments in these structures may require that we fund future capital commitments at the discretion of the project sponsors. While the size of our investment in a single entity may at times exceed 50% of the outstanding equity interests, we do not consolidate these structures due to the project sponsor's ability to manage the projects, which is indicative of power in them.

INVESTMENT FUNDS We voluntarily waived a portion of our management fees for certain money market funds that are exempt from the consolidation analysis to ensure the funds maintained a minimum level of daily net investment income. The amount of fees waived in 2018, 2017 and 2016 was \$45 million, \$53 million, and \$109 million, respectively.

OTHER TRANSACTIONS WITH VIEs Other VIEs include certain entities that issue auction rate securities (ARS) which are debt instruments with long-term maturities, that re-price more frequently, and preferred equities with no maturity. At December 31, 2018, we held no ARS issued by VIEs, compared with \$400 million at December 31, 2017. We acquired the ARS pursuant to agreements entered into in 2008 and 2009. All ARS were sold during 2018.

We did not consolidate the VIEs that issued the ARS because we did not have power over the activities of the VIEs.

TRUST PREFERRED SECURITIES VIEs that we wholly own issue debt securities or preferred equity to third-party investors. All of the proceeds of the issuance are invested in debt securities or preferred equity that we issue to the VIEs. The VIEs' operations and cash flows relate only to the issuance, administration and repayment of the securities held by third parties. We do not consolidate these VIEs because the sole assets of the VIEs are receivables from us, even though we own all of the voting equity shares of the VIEs, have fully guaranteed the obligations of the VIEs and may have the right to redeem the

third-party securities under certain circumstances. In our consolidated balance sheet at December 31, 2018 and 2017, we reported the debt securities issued to the VIEs as long-term junior subordinated debt with a carrying value of \$2.0 billion at both dates, and the preferred equity securities issued to the VIEs as preferred stock with a carrying value of \$2.5 billion at both dates. These amounts are in addition to the involvements in these VIEs included in the preceding table.

In 2017, we redeemed \$150 million of trust preferred securities which were partially included in Tier 2 capital (50% credit in 2017) in the transitional framework and were not included under the fully-phased framework under the Basel III standards.

Loan Sales and Securitization Activity

We periodically transfer consumer and CRE loans and other types of financial assets in securitization and whole loan sale transactions. We typically retain the servicing rights from these sales and may continue to hold other beneficial interests in the transferred financial assets. We may also provide liquidity to investors in the beneficial interests and credit enhancements in the form of standby letters of credit. Through these transfers we may be exposed to liability under limited amounts of recourse as well as standard representations and warranties we make to purchasers and issuers. Table 9.3 presents the cash flows for our transfers accounted for as sales in which we have a continuing involvement with the transferred financial assets.

Table 9.3: Cash Flows From Sales and Securitization Activity

(in millions)	Year ended December 31,					
	2018		2017		2016	
	Mortgage loans	Other financial assets	Mortgage loans	Other financial assets	Mortgage loans	Other financial assets
Proceeds from securitizations and whole loan sales	\$ 193,721	—	228,282	25	252,723	347
Fees from servicing rights retained	3,337	—	3,352	—	3,492	—
Cash flows from other interests held (1)	698	1	2,218	1	2,898	1
Repurchases of assets/loss reimbursements (2):						
Non-agency securitizations and whole loan transactions	3	—	12	—	26	—
Agency securitizations (3)	96	—	92	—	133	—
Servicing advances, net of repayments	(154)	—	(269)	—	(218)	—

(1) Cash flows from other interests held include principal and interest payments received on retained bonds and excess cash flows received on interest-only strips.

(2) Consists of cash paid to repurchase loans from investors and cash paid to investors to reimburse them for losses on individual loans that are already liquidated. In addition, during 2018 and 2017, we paid nothing to third-party investors to settle repurchase liabilities on pools of loans, compared with \$11 million in 2016.

(3) Represent loans repurchased from GNMA, FNMA, and FHLMC under representation and warranty provisions included in our loan sales contracts. Excludes \$7.8 billion in delinquent insured/guaranteed loans that we service and have exercised our option to purchase out of GNMA pools in 2018, compared with \$8.6 billion and \$9.9 billion in 2017 and 2016, respectively. These loans are predominantly insured by the FHA or guaranteed by the VA.

Note 9: Securitizations and Variable Interest Entities (continued)

In 2018, 2017, and 2016, we recognized net gains of \$270 million, \$701 million and \$524 million, respectively, from transfers accounted for as sales of financial assets, in which we have a continuing involvement with the transferred assets. These net gains largely relate to commercial mortgage securitizations, and residential mortgage securitizations where the loans were not already carried at fair value.

Sales with continuing involvement during 2018, 2017 and 2016 largely related to securitizations of residential mortgages that are sold to the government-sponsored entities (GSEs), including FNMA, FHLMC and GNMA (conforming residential mortgage securitizations). During 2018, 2017 and 2016 we transferred \$177.8 billion, \$213.6 billion and \$236.6 billion, respectively, in fair value of residential mortgages to unconsolidated VIEs and third-party investors and recorded the transfers as sales. Substantially all of these transfers did not result in a gain or loss because the loans were already carried at fair value. In connection with all of these transfers, in 2018 we recorded a \$1.9 billion servicing asset, measured at fair value using a Level 3 measurement technique, securities of \$5.0 billion, classified as Level 2, and a \$17 million liability for repurchase losses which reflects management's estimate of probable losses related to various representations and warranties for the loans transferred, initially measured at fair value. In 2017, we recorded a \$2.1 billion servicing asset, securities of \$1.4 billion and a \$24 million liability. In 2016, we recorded a \$2.1 billion servicing asset, securities of \$4.4 billion and a \$36 million liability.

Table 9.4 presents the key weighted-average assumptions we used to measure residential mortgage servicing rights at the date of securitization.

During 2018, 2017 and 2016, we transferred \$17.9 billion, \$16.7 billion and \$18.3 billion, respectively, in carrying value of commercial mortgages to unconsolidated VIEs and third-party investors and recorded the transfers as sales. These transfers resulted in gains of \$280 million in 2018, \$359 million in 2017 and \$429 million in 2016, respectively, because the loans were carried at lower of cost or fair value (LOCOM). In connection with these transfers, in 2018 we recorded a servicing asset of \$158 million, initially measured at fair value using a Level 3 measurement technique, and securities of \$81 million, classified as Level 2. In 2017, we recorded a servicing asset of \$166 million and securities of \$65 million. In 2016, we recorded a servicing asset of \$270 million and securities of \$258 million.

Retained Interests from Unconsolidated VIEs

Table 9.5 provides key economic assumptions and the sensitivity of the current fair value of residential mortgage servicing rights and other interests held to immediate adverse changes in those assumptions. "Other interests held" relate to residential and commercial mortgage loan securitizations. Residential mortgage-backed securities retained in securitizations issued through GSEs, such as FNMA, FHLMC and GNMA, are excluded from the table because these securities have a remote risk of credit loss due to the GSE guarantee. These securities also have economic characteristics similar to GSE mortgage-backed securities that we purchase, which are not included in the table. Subordinated interests include only those bonds whose credit rating was below AAA by a major rating agency at issuance. Senior interests include only those bonds whose credit rating was AAA by a major rating agency at issuance. The information presented excludes trading positions held in inventory.

Table 9.4: Residential Mortgage Servicing Rights

	Residential mortgage servicing rights		
	2018	2017	2016
Year ended December 31,			
Prepayment speed (1)	10.6%	11.5	11.7
Discount rate	7.4	7.0	6.5
Cost to service (\$ per loan) (2)	\$ 128	132	132

- (1) The prepayment speed assumption for residential mortgage servicing rights includes a blend of prepayment speeds and default rates. Prepayment speed assumptions are influenced by mortgage interest rate inputs as well as our estimation of drivers of borrower behavior.
- (2) Includes costs to service and unreimbursed foreclosure costs, which can vary period to period depending on the mix of modified government-guaranteed loans sold to GNMA.

Table 9.5: Retained Interests from Unconsolidated VIEs

	Residential mortgage servicing rights (1)	Other interests held		
		Interest-only strips	Commercial (2)	
(\$ in millions, except cost to service amounts)			Subordinated bonds	Senior bonds
Fair value of interests held at December 31, 2018	\$ 14,649	16	668	309
Expected weighted-average life (in years)	6.5	3.6	7.0	5.7
Key economic assumptions:				
Prepayment speed assumption (3)	9.9%	17.7		
Decrease in fair value from:				
10% adverse change	\$ 530	1		
25% adverse change	1,301	1		
Discount rate assumption	8.1%	14.5	4.3	3.7
Decrease in fair value from:				
100 basis point increase	\$ 615	—	37	14
200 basis point increase	1,176	1	72	28
Cost to service assumption (\$ per loan)	106			
Decrease in fair value from:				
10% adverse change	316			
25% adverse change	787			
Credit loss assumption			5.1%	—
Decrease in fair value from:				
10% higher losses			\$ 2	—
25% higher losses			5	—
Fair value of interests held at December 31, 2017	\$ 13,625	19	596	468
Expected weighted-average life (in years)	6.2	3.3	6.7	5.2
Key economic assumptions:				
Prepayment speed assumption (3)	10.5 %	20.0		
Decrease in fair value from:				
10% adverse change	\$ 565	1		
25% adverse change	1,337	2		
Discount rate assumption	6.9 %	14.8	4.1	3.1
Decrease in fair value from:				
100 basis point increase	\$ 652	—	32	20
200 basis point increase	1,246	1	61	39
Cost to service assumption (\$ per loan)	143			
Decrease in fair value from:				
10% adverse change	467			
25% adverse change	1,169			
Credit loss assumption			1.8 %	—
Decrease in fair value from:				
10% higher losses			\$ —	—
25% higher losses			—	—

(1) See narrative following this table for a discussion of commercial mortgage servicing rights.

(2) Prepayment speed assumptions do not significantly impact the value of commercial mortgage securitization bonds as the underlying commercial mortgage loans experience significantly lower prepayments due to certain contractual restrictions, impacting the borrower's ability to prepay the mortgage.

(3) The prepayment speed assumption for residential mortgage servicing rights includes a blend of prepayment speeds and default rates. Prepayment speed assumptions are influenced by mortgage interest rate inputs as well as our estimation of drivers of borrower behavior.

Note 9: Securitizations and Variable Interest Entities (continued)

In addition to residential mortgage servicing rights (MSRs) included in the previous table, we have a small portfolio of commercial MSRs with a fair value of \$2.3 billion and \$2.0 billion at December 31, 2018 and 2017, respectively. The nature of our commercial MSRs, which are carried at LOCOM, is different from our residential MSRs. Prepayment activity on serviced loans does not significantly impact the value of commercial MSRs because, unlike residential mortgages, commercial mortgages experience significantly lower prepayments due to certain contractual restrictions, impacting the borrower's ability to prepay the mortgage. Additionally, for our commercial MSR portfolio, we are typically master/primary servicer, but not the special servicer, who is separately responsible for the servicing and workout of delinquent and foreclosed loans. It is the special servicer, similar to our role as servicer of residential mortgage loans, who is affected by higher servicing and foreclosure costs due to an increase in delinquent and foreclosed loans. Accordingly, prepayment speeds and costs to service are not key assumptions for commercial MSRs as they do not significantly impact the valuation. The primary economic driver impacting the fair value of our commercial MSRs is forward interest rates, which are derived from market observable yield curves used to price capital markets instruments. Market interest rates significantly affect interest earned on custodial deposit balances. The sensitivity of the current fair value to an immediate adverse 25% change in the assumption about interest earned on deposit balances at December 31, 2018 and 2017, results in a decrease in fair value of \$320 million and \$278 million, respectively. See Note 10

(Mortgage Banking Activities) for further information on our commercial MSRs.

The sensitivities in the preceding paragraph and table are hypothetical and caution should be exercised when relying on this data. Changes in value based on variations in assumptions generally cannot be extrapolated because the relationship of the change in the assumption to the change in value may not be linear. Also, the effect of a variation in a particular assumption on the value of the other interests held is calculated independently without changing any other assumptions. In reality, changes in one factor may result in changes in others (for example, changes in prepayment speed estimates could result in changes in the credit losses), which might magnify or counteract the sensitivities.

Off-Balance Sheet Loans

Table 9.6 presents information about the principal balances of off-balance sheet loans that were sold or securitized, including residential mortgage loans sold to FNMA, FHLMC, GNMA and other investors, for which we have some form of continuing involvement (including servicer). Delinquent loans include loans 90 days or more past due and loans in bankruptcy, regardless of delinquency status. For loans sold or securitized where servicing is our only form of continuing involvement, we would only experience a loss if we were required to repurchase a delinquent loan or foreclosed asset due to a breach in representations and warranties associated with our loan sale or servicing contracts.

Table 9.6: Off-Balance Sheet Loans Sold or Securitized

	Total loans		Delinquent loans and foreclosed assets (1)		Net charge-offs	
	December 31,		December 31,		Year ended	
	2018	2017	2018	2017	2018	2017
(in millions)						
Commercial:						
Real estate mortgage	\$ 105,173	100,875	1,008	2,839	739	1,027
Total commercial	105,173	100,875	1,008	2,839	739	1,027
Consumer:						
Real estate 1-4 family first mortgage	1,097,128	1,126,208	8,947	13,393	466	735
Total consumer	1,097,128	1,126,208	8,947	13,393	466	735
Total off-balance sheet sold or securitized loans (2)	\$ 1,202,301	1,227,083	9,955	16,232	1,205	1,762

(1) Includes \$675 million and \$1.2 billion of commercial foreclosed assets and \$582 million and \$879 million of consumer foreclosed assets at December 31, 2018 and 2017, respectively.

(2) At December 31, 2018 and 2017, the table includes total loans of \$1.1 trillion at both dates, delinquent loans of \$6.4 billion and \$9.1 billion, and foreclosed assets of \$442 million and \$619 million, respectively, for FNMA, FHLMC and GNMA. Net charge-offs exclude loans sold to FNMA, FHLMC and GNMA as we do not service or manage the underlying real estate upon foreclosure and, as such, do not have access to net charge-off information.

Transactions with Consolidated VIEs and Secured Borrowings

Table 9.7 presents a summary of financial assets and liabilities for asset transfers accounted for as secured borrowings and involvements with consolidated VIEs. Carrying values of “Assets” are presented using GAAP measurement methods, which may include fair value, credit impairment or other

adjustments, and therefore in some instances will differ from “Total VIE assets.” For VIEs that obtain exposure synthetically through derivative instruments, the remaining notional amount of the derivative is included in “Total VIE assets.” On the consolidated balance sheet, we separately disclose the consolidated assets of certain VIEs that can only be used to settle the liabilities of those VIEs.

Table 9.7: Transactions with Consolidated VIEs and Secured Borrowings

		Carrying value			
(in millions)	Total VIE assets	Assets	Liabilities	Noncontrolling interests	Net assets
December 31, 2018					
Secured borrowings:					
Municipal tender option bond securitizations	\$ 627	523	(501)	—	22
Residential mortgage securitizations	95	94	(93)	—	1
Total secured borrowings	722	617	(594)	—	23
Consolidated VIEs:					
Commercial and industrial loans and leases	8,215	8,204	(477)	(14)	7,713
Nonconforming residential mortgage loan securitizations	1,947	1,732	(521)	—	1,211
Commercial real estate loans	3,957	3,957	—	—	3,957
Structured asset finance	—	—	—	—	—
Investment funds	155	155	(5)	(15)	135
Other	14	14	(4)	(5)	5
Total consolidated VIEs	14,288	14,062	(1,007)	(34)	13,021
Total secured borrowings and consolidated VIEs	\$ 15,010	14,679	(1,601)	(34)	13,044
December 31, 2017					
Secured borrowings:					
Municipal tender option bond securitizations	\$ 658	565	(532)	—	33
Residential mortgage securitizations	113	110	(111)	—	(1)
Total secured borrowings	771	675	(643)	—	32
Consolidated VIEs:					
Commercial and industrial loans and leases	9,116	8,626	(915)	(29)	7,682
Nonconforming residential mortgage loan securitizations	2,515	2,212	(694)	—	1,518
Commercial real estate loans	2,378	2,378	—	—	2,378
Structured asset finance	10	6	(4)	—	2
Investment funds	305	305	(2)	(230)	73
Other	100	90	(1)	(24)	65
Total consolidated VIEs	14,424	13,617	(1,616)	(283)	11,718
Total secured borrowings and consolidated VIEs	\$ 15,195	14,292	(2,259)	(283)	11,750

We have raised financing through the securitization of certain financial assets in transactions with VIEs accounted for as secured borrowings. We also consolidate VIEs where we are the primary beneficiary. In certain transactions, we provide contractual support in the form of limited recourse and liquidity to facilitate the remarketing of short-term securities issued to third-party investors. Other than this limited contractual support, the assets of the VIEs are the sole source of repayment of the securities held by third parties.

MUNICIPAL TENDER OPTION BOND SECURITIZATIONS As part of our normal investment portfolio activities, we consolidate municipal bond trusts that hold highly rated, long-term, fixed-rate municipal bonds, the majority of which are rated AA or better. Our residual interests in these trusts generally allow us to capture the economics of owning the securities outright, and constructively make decisions that significantly impact the economic performance of the municipal bond vehicle, primarily by directing the sale of the municipal bonds owned by the

vehicle. In addition, the residual interest owners have the right to receive benefits and bear losses that are proportional to owning the underlying municipal bonds in the trusts. The trusts obtain financing by issuing floating-rate trust certificates that reprice on a weekly or other basis to third-party investors. Under certain conditions, if we elect to terminate the trusts and withdraw the underlying assets, the third-party investors are entitled to a small portion of any unrealized gain on the underlying assets. We may 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, often with as little as seven days’ notice. Should we be unable to remarket the tendered certificates, we are generally obligated to purchase them at par under standby liquidity facilities unless the bond’s credit rating has declined below investment grade or there has been an event of default or bankruptcy of the issuer and insurer.

Note 9: Securitizations and Variable Interest Entities (continued)

COMMERCIAL AND INDUSTRIAL LOANS AND LEASES In conjunction with the GE Capital business acquisitions, on March 1, 2016, we acquired certain consolidated SPE entities. The most significant of these SPEs is a revolving master trust entity that purchases dealer floorplan loans and issues senior and subordinated notes. The senior notes are held by third parties and the subordinated notes and residual equity interests are held by us. At December 31, 2018 and 2017, total assets held by the master trust were \$6.7 billion and \$7.6 billion, respectively, and the outstanding senior notes were \$299 million and \$773 million, respectively. The other SPEs acquired included securitization term trust entities, which purchased vendor finance lease and loan assets and issued notes to investors, and an SPE that engages in leasing activities to specific vendors. The securitization term trusts were dissolved during 2017. The remaining other SPE held \$1.5 billion and \$1.4 billion in total assets at December 31, 2018 and 2017, respectively. We are the primary beneficiary of these acquired SPEs due to our ability to direct the significant activities of the SPEs, such as our role as servicer, and because we hold variable interests that are considered significant.

NONCONFORMING RESIDENTIAL MORTGAGE LOAN SECURITIZATIONS We have consolidated certain of our nonconforming residential mortgage loan securitizations in accordance with consolidation accounting guidance. We have determined we are the primary beneficiary of these securitizations because we have the power to direct the most significant activities of the entity through our role as primary servicer and also hold variable interests that we have determined to be significant. The nature of our variable interests in these entities may include beneficial interests issued by the VIE, mortgage servicing rights and recourse or repurchase reserve liabilities. The beneficial interests issued by the VIE that we hold include either subordinate or senior securities held in an amount that we consider potentially significant.

Note 10: Mortgage Banking Activities

Mortgage banking activities, included in the Community Banking and Wholesale Banking operating segments, consist of residential and commercial mortgage originations, sale activity and servicing.

We apply the amortization method to commercial MSRs and apply the fair value method to residential MSRs. Table 10.1 presents the changes in MSRs measured using the fair value method.

Table 10.1: Analysis of Changes in Fair Value MSRs

(in millions)	Year ended December 31,		
	2018	2017	2016
Fair value, beginning of year	\$ 13,625	12,959	12,415
Purchases	—	541	—
Servicing from securitizations or asset transfers (1)	2,010	2,263	2,204
Sales and other (2)	(71)	(23)	(65)
Net additions	1,939	2,781	2,139
Changes in fair value:			
Due to changes in valuation model inputs or assumptions:			
Mortgage interest rates (3)	1,337	(103)	543
Servicing and foreclosure costs (4)	818	96	106
Discount rates (5)	(830)	13	—
Prepayment estimates and other (6)	(365)	(132)	(84)
Net changes in valuation model inputs or assumptions	960	(126)	565
Changes due to collection/realization of expected cash flows over time	(1,875)	(1,989)	(2,160)
Total changes in fair value	(915)	(2,115)	(1,595)
Fair value, end of year	\$ 14,649	13,625	12,959

(1) Includes impacts associated with exercising our right to repurchase delinquent loans from GNMA loan securitization pools.

(2) Includes sales and transfers of MSRs, which can result in an increase of total reported MSRs if the sales or transfers are related to nonperforming loan portfolios or portfolios with servicing liabilities.

(3) Includes prepayment speed changes as well as other valuation changes due to changes in mortgage interest rates (such as changes in estimated interest earned on custodial deposit balances).

(4) Includes costs to service and unreimbursed foreclosure costs. The amount for the year ended December 31, 2018, reflects updated information obtained regarding market participants' views of servicing and foreclosure costs.

(5) Reflects discount rate assumption change, excluding portion attributable to changes in mortgage interest rates. The amount for the year ended December 31, 2018, reflects updated information obtained regarding market participants' views of discount rates.

(6) Represents changes driven by other valuation model inputs or assumptions including prepayment speed estimation changes and other assumption updates. Prepayment speed estimation changes are influenced by observed changes in borrower behavior and other external factors that occur independent of interest rate changes.

Table 10.2 presents the changes in amortized MSRs.

Table 10.2: Analysis of Changes in Amortized MSRs

(in millions)	Year ended December 31,		
	2018	2017	2016
Balance, beginning of year	\$ 1,424	1,406	1,308
Purchases	127	115	97
Servicing from securitizations or asset transfers	158	166	270
Amortization	(266)	(263)	(269)
Balance, end of year (1)	\$ 1,443	1,424	1,406
Fair value of amortized MSRs:			
Beginning of year	\$ 2,025	1,956	1,680
End of year	2,288	2,025	1,956

(1) Commercial amortized MSRs are evaluated for impairment purposes by the following risk strata: agency (GSEs) for multi-family properties and non-agency. There was no valuation allowance recorded for the periods presented on the commercial amortized MSRs.

Note 10: Mortgage Banking Activities (continued)

We present the components of our managed servicing portfolio in Table 10.3 at unpaid principal balance for loans serviced and subserviced for others and at book value for owned loans serviced.

Table 10.3: Managed Servicing Portfolio

(in billions)	Dec 31, 2018	Dec 31, 2017
Residential mortgage servicing:		
Serviced for others	\$ 1,164	1,209
Owned loans serviced	334	342
Subserviced for others	4	3
Total residential servicing	1,502	1,554
Commercial mortgage servicing:		
Serviced for others	543	495
Owned loans serviced	121	127
Subserviced for others	9	9
Total commercial servicing	673	631
Total managed servicing portfolio	\$ 2,175	2,185
Total serviced for others	\$ 1,707	1,704
Ratio of MSR to related loans serviced for others	0.94%	0.88

Table 10.4 presents the components of mortgage banking noninterest income.

Table 10.4: Mortgage Banking Noninterest Income

(in millions)	Year ended December 31,		
	2018	2017	2016
Servicing income, net:			
Servicing fees:			
Contractually specified servicing fees	\$ 3,613	3,603	3,778
Late charges	162	172	180
Ancillary fees	182	199	229
Unreimbursed direct servicing costs (1)	(331)	(582)	(819)
Net servicing fees	3,626	3,392	3,368
Changes in fair value of MSRs carried at fair value:			
Due to changes in valuation model inputs or assumptions (2)	(A) 960	(126)	565
Changes due to collection/realization of expected cash flows over time	(1,875)	(1,989)	(2,160)
Total changes in fair value of MSRs carried at fair value	(915)	(2,115)	(1,595)
Amortization	(266)	(263)	(269)
Net derivative gains (losses) from economic hedges (3)	(B) (1,072)	413	261
Total servicing income, net	1,373	1,427	1,765
Net gains on mortgage loan origination/sales activities	1,644	2,923	4,331
Total mortgage banking noninterest income	\$ 3,017	4,350	6,096
Market-related valuation changes to MSRs, net of hedge results (2)(3)	(A)+(B) (112)	287	826

(1) Includes costs associated with foreclosures, unreimbursed interest advances to investors, and other interest costs.

(2) Refer to the analysis of changes in fair value MSRs presented in Table 10.1 in this Note for more detail.

(3) Represents results from economic hedges used to hedge the risk of changes in fair value of MSRs. See Note 17 (Derivatives) for additional discussion and detail.

Note 11: Intangible Assets

Table 11.1 presents the gross carrying value of intangible assets and accumulated amortization.

Table 11.1: Intangible Assets

(in millions)	December 31, 2018			December 31, 2017		
	Gross carrying value	Accumulated amortization	Net carrying value	Gross carrying value	Accumulated amortization	Net carrying value
Amortized intangible assets (1):						
MSRs (2)	\$ 4,161	(2,718)	1,443	3,876	(2,452)	1,424
Core deposit intangibles	12,834	(12,834)	—	12,834	(12,065)	769
Customer relationship and other intangibles	3,994	(3,449)	545	3,994	(3,153)	841
Total amortized intangible assets	\$ 20,989	(19,001)	1,988	20,704	(17,670)	3,034
Unamortized intangible assets:						
MSRs (carried at fair value) (2)	\$ 14,649			13,625		
Goodwill	26,418			26,587		
Trademark	14			14		

(1) Excludes fully amortized intangible assets.

(2) See Note 10 (Mortgage Banking Activities) for additional information on MSRs.

Table 11.2 provides the current year and estimated future amortization expense for amortized intangible assets. We based our projections of amortization expense shown below on existing

asset balances at December 31, 2018. Future amortization expense may vary from these projections.

Table 11.2: Amortization Expense for Intangible Assets

(in millions)	Amortized MSRs	Core deposit intangibles	Customer relationship and other intangibles (1)	Total
Year ended December 31, 2018 (actual)	\$ 266	769	299	1,334
Estimate for year ended December 31,				
2019	\$ 260	—	116	376
2020	233	—	97	330
2021	200	—	83	283
2022	178	—	69	247
2023	150	—	59	209

(1) The year ended December 31, 2018, balance includes \$10 million for lease intangible amortization.

Note 11: Intangible Assets *(continued)*

Table 11.3 shows the allocation of goodwill to our reportable operating segments.

Table 11.3: Goodwill

(in millions)	Community Banking	Wholesale Banking	Wealth and Investment Management	Consolidated Company
December 31, 2016	\$ 16,849	8,585	1,259	26,693
Reclassification of goodwill held for sale to other assets (2)	—	(116)	—	(116)
Reduction in goodwill related to divested businesses and other (2)	—	(14)	—	(14)
Goodwill from business combinations	—	—	24	24
December 31, 2017 (1)	\$ 16,849	8,455	1,283	26,587
Reclassification of goodwill held for sale to other assets	(155)	—	—	(155)
Reduction in goodwill related to divested businesses and other	(9)	(5)	—	(14)
December 31, 2018 (1)	\$ 16,685	8,450	1,283	26,418

(1) At December 31, 2017, other assets included Goodwill classified as held-for-sale of \$13 million related to the sales agreement for Wells Fargo Shareowner Services. At December 31, 2018, there was no Goodwill classified as held-for-sale in other assets.

(2) The prior period has been revised to conform with the current period presentation.

We assess goodwill for impairment at a reporting unit level, which is one level below the operating segments. Our goodwill was not impaired at December 31, 2018 and 2017. The fair values exceeded the carrying amount of our respective reporting units by approximately 42% to 544% at December 31, 2018. See Note 26 (Operating Segments) for further information on management reporting.

Note 12: Deposits

Table 12.1 presents a summary of the time certificates of deposit (CDs) and other time deposits issued by domestic and foreign offices.

Table 12.1: Time Certificates of Deposits and Other Time Deposits

	Dec 31, 2018	Dec 31, 2017
(in billions)		
Total domestic and foreign	\$ 130.6	128.6
Domestic:		
\$100,000 or more	42.5	52.7
\$250,000 or more	37.1	46.9
Foreign:		
\$100,000 or more	4.6	13.4
\$250,000 or more	4.6	13.4

Substantially all CDs and other time deposits issued by domestic and foreign offices were interest bearing and a significant portion of our foreign time deposits with a denomination of \$100,000 or more have maturities of less than 7 days.

The contractual maturities of these deposits are presented in Table 12.2.

Table 12.2: Contractual Maturities of CDs and Other Time Deposits

(in millions)	December 31, 2018
2019	\$ 88,435
2020	25,986
2021	6,324
2022	3,320
2023	2,868
Thereafter	3,712
Total	\$ 130,645

The contractual maturities of the domestic time deposits with a denomination of \$100,000 or more are presented in Table 12.3.

Table 12.3: Contractual Maturities of Domestic Time Deposits

(in millions)	2018
Three months or less	\$ 13,724
After three months through six months	12,292
After six months through twelve months	12,945
After twelve months	3,504
Total	\$ 42,465

Demand deposit overdrafts of \$624 million and \$371 million were included as loan balances at December 31, 2018 and 2017, respectively.

Note 13: Short-Term Borrowings

Table 13.1 shows selected information for short-term borrowings, which generally mature in less than 30 days. We pledge certain financial instruments that we own to collateralize repurchase agreements and other securities financings. For

additional information, see the “Pledged Assets” section of Note 15 (Guarantees, Pledged Assets and Collateral, and Other Commitments).

Table 13.1: Short-Term Borrowings

(in millions)	2018		2017		2016	
	Amount	Rate	Amount	Rate	Amount	Rate
As of December 31,						
Federal funds purchased and securities sold under agreements to repurchase	\$ 92,430	2.65%	\$ 88,684	1.30%	\$ 78,124	0.17%
Commercial paper	—	—	—	—	120	0.93
Other short-term borrowings	13,357	1.63	14,572	0.72	18,537	0.28
Total	\$ 105,787	2.52	\$ 103,256	1.22	\$ 96,781	0.19
Year ended December 31,						
Average daily balance						
Federal funds purchased and securities sold under agreements to repurchase	\$ 90,348	1.78	\$ 82,507	0.90	\$ 99,955	0.33
Commercial paper	—	—	16	0.95	256	0.86
Other short-term borrowings	13,919	0.79	16,399	0.13	14,976	0.02
Total	\$ 104,267	1.65	\$ 98,922	0.77	\$ 115,187	0.29
Maximum month-end balance						
Federal funds purchased and securities sold under agreements to repurchase (1)	\$ 93,918	N/A	\$ 91,604	N/A	\$ 109,645	N/A
Commercial paper (2)	—	N/A	78	N/A	519	N/A
Other short-term borrowings (3)	16,924	N/A	19,439	N/A	18,537	N/A

N/A- Not applicable

(1) Highest month-end balance in each of the last three years was November 2018, November 2017 and October 2016.

(2) There were no month-end balances in 2018; highest month-end balance in the remaining years was January 2017 and March 2016.

(3) Highest month-end balance in each of the last three years was January 2018, February 2017 and December 2016.

Note 14: Long-Term Debt

We issue long-term debt denominated in multiple currencies, largely in U.S. dollars. Our issuances have both fixed and floating interest rates. As a part of our overall interest rate risk management strategy, we often use derivatives to manage our exposure to interest rate risk. We also use derivatives to manage our exposure to foreign currency risk. As a result, approximately half of the long-term debt presented below is hedged in a fair value or cash flow hedge relationship. See Note 17 (Derivatives) for further information on qualifying hedge contracts.

Table 14.1 presents a summary of our long-term debt carrying values, reflecting unamortized debt discounts and premiums, and purchase accounting adjustments, where applicable. The interest rates displayed represent the range of contractual rates in effect at December 31, 2018. These interest rates do not include the effects of any associated derivatives designated in a hedge accounting relationship.

Table 14.1: Long-Term Debt

	December 31,			
			2018	2017
(in millions)	Maturity date(s)	Stated interest rate(s)		
Wells Fargo & Company (Parent only)				
Senior				
Fixed-rate notes (1)	2019-2045	0.38-6.75%	\$ 77,742	84,652
Floating-rate notes	2019-2048	0.10-4.08%	19,553	22,463
FixFloat notes	2028	3.58%	2,901	2,961
Structured notes (2)	2019-2056		7,984	7,442
Total senior debt - Parent			108,180	117,518
Subordinated				
Fixed-rate notes (3)	2023-2046	3.45-7.57%	25,428	27,132
Total subordinated debt - Parent			25,428	27,132
Junior subordinated				
Fixed-rate notes - hybrid trust securities	2029-2036	5.95-7.95%	1,308	1,369
Floating-rate notes	2027	2.94-3.44%	308	299
Total junior subordinated debt - Parent (4)			1,616	1,668
Total long-term debt - Parent (3)			135,224	146,318
Wells Fargo Bank, N.A. and other bank entities (Bank)				
Senior				
Fixed-rate notes	2019-2023	1.75-3.63%	14,222	7,732
Floating-rate notes	2019-2053	2.33-3.57%	6,617	4,317
FixFloat notes	2021	3.33%	1,998	—
Fixed-rate advances - Federal Home Loan Bank (FHLB) (5)	2019-2031	3.83-7.50%	51	62
Floating-rate advances - FHLB (5)	2019-2021	2.44-3.28%	53,825	47,825
Structured notes (2)	2019-2037		1,646	743
Capital leases	2019-2029	2.87-17.78%	36	39
Total senior debt - Bank			78,395	60,718
Subordinated				
Fixed-rate notes	2023-2038	5.25-7.74%	5,199	5,408
Total subordinated debt - Bank			5,199	5,408
Junior subordinated				
Floating-rate notes	2027	3.09-3.19%	352	342
Total junior subordinated debt - Bank (4)			352	342
Long-term debt issued by VIE - Fixed rate (6)	2020-2047	6.00%	160	268
Long-term debt issued by VIE - Floating rate (6)	2020-2047	2.46-13.02%	656	1,211
Mortgage notes and other debt (7)	2019-2057	0.20-9.20%	6,637	7,291
Total long-term debt - Bank			91,399	75,238

(continued on following page)

Note 14: Long-Term Debt (continued)

(continued from previous page)

	December 31,			
			2018	2017
(in millions)	Maturity date(s)	Stated interest rate(s)		
Other consolidated subsidiaries				
Senior				
Fixed-rate notes	2019-2023	2.94-3.46%	2,383	3,390
Structured notes (2)	2021-2028		6	1
Total senior debt - Other consolidated subsidiaries			2,389	3,391
Mortgage notes and other (7)	2026	4.08%	32	73
Total long-term debt - Other consolidated subsidiaries			2,421	3,464
Total long-term debt			\$ 229,044	225,020

(1) Includes \$59 million of outstanding zero coupon callable notes at December 31, 2018.

(2) Included in the table are certain structured notes that have coupon or repayment terms linked to the performance of debt or equity securities, an embedded equity, commodity, or currency index, or basket of indices accounted for separately from the note as a free-standing derivative, and the maturity may be accelerated based on the value of a referenced index or security. For information on embedded derivatives, see the "Derivatives Not Designated as Hedging Instruments" section in Note 17 (Derivatives). In addition, a major portion consists of zero coupon callable notes where interest is paid as part of the final redemption amount.

(3) Includes fixed-rate subordinated notes issued by the Parent at a discount of \$131 million and \$133 million in 2018 and 2017, respectively, and debt issuance costs of \$2 million in both 2018 and 2017, to effect a modification of Wells Fargo Bank, NA notes. These subordinated notes are carried at their par amount on the balance sheet of the Parent presented in Note 27 (Parent-Only Financial Statements). In addition, Parent long-term debt presented in Note 27 also includes affiliate related issuance costs of \$278 million and \$323 million in 2018 and 2017, respectively.

(4) Represents junior subordinated debentures held by unconsolidated wholly-owned trusts formed for the sole purpose of issuing trust preferred securities. See Note 9 (Securitizations and Variable Interest Entities) for additional information on our trust preferred security structures.

(5) At December 31, 2018 and 2017, FHLB advances were secured by residential loan collateral.

(6) For additional information on VIEs, see Note 9 (Securitizations and Variable Interest Entities).

(7) A major portion related to securitizations and secured borrowings, see Note 9 (Securitizations and Variable Interest Entities).

We issue long-term debt in a variety of maturities and currencies to achieve cost-efficient funding and to maintain an appropriate maturity profile. Long-term debt of \$229.0 billion at December 31, 2018, increased \$4.0 billion from December 31, 2017. We issued \$47.6 billion of long-term debt in 2018.

The aggregate carrying value of long-term debt that matures (based on contractual payment dates) as of December 31, 2018, in each of the following five years and thereafter is presented in Table 14.2.

Table 14.2: Maturity of Long-Term Debt

(in millions)	December 31, 2018						
	2019	2020	2021	2022	2023	Thereafter	Total
Wells Fargo & Company (Parent Only)							
Senior notes	\$ 6,713	13,459	17,923	17,772	10,932	41,381	108,180
Subordinated notes	—	—	—	—	3,544	21,884	25,428
Junior subordinated notes	—	—	—	—	—	1,616	1,616
Total long-term debt - Parent	6,713	13,459	17,923	17,772	14,476	64,881	135,224
Wells Fargo Bank, N.A. and other bank entities (Bank)							
Senior notes	36,653	18,498	20,218	40	2,807	179	78,395
Subordinated notes	—	—	—	—	1,043	4,156	5,199
Junior subordinated notes	—	—	—	—	—	352	352
Securitizations and other bank debt	2,084	1,647	574	268	119	2,761	7,453
Total long-term debt - Bank	38,737	20,145	20,792	308	3,969	7,448	91,399
Other consolidated subsidiaries							
Senior notes	1,097	—	920	—	367	5	2,389
Securitizations and other bank debt	—	—	—	—	—	32	32
Total long-term debt - Other consolidated subsidiaries	1,097	—	920	—	367	37	2,421
Total long-term debt	\$ 46,547	33,604	39,635	18,080	18,812	72,366	229,044

As part of our long-term and short-term borrowing arrangements, we are subject to various financial and operational covenants. Some of the agreements under which debt has been issued have provisions that may limit the merger or sale of certain subsidiary banks and the issuance of capital stock or convertible securities by certain subsidiary banks. At December 31, 2018, we were in compliance with all the covenants.

Note 15: Guarantees, Pledged Assets and Collateral, and Other Commitments

Guarantees are contracts that contingently require us to make payments to a guaranteed party based on an event or a change in an underlying asset, liability, rate or index. Guarantees are generally in the form of standby letters of credit, securities

lending and other indemnifications, written put options, recourse obligations, and other types of arrangements. Table 15.1 shows carrying value, maximum exposure to loss on our guarantees and the related non-investment grade amounts.

Table 15.1: Guarantees – Carrying Value and Maximum Exposure to Loss

(in millions)	Carrying value of obligation (asset)	Maximum exposure to loss						
		Expires in one year or less	Expires after one year through three years	Expires after three years through five years	Expires after five years	Total	Non-investment grade	
December 31, 2018								
Standby letters of credit (1)	\$ 40	14,636	7,897	3,398	497	26,428	8,027	
Securities lending and other indemnifications (2)	—	—	1	—	1,044	1,045	1	
Written put options (3)	(185)	17,243	10,502	3,066	400	31,211	21,732	
Loans and MLHFS sold with recourse (4)	54	104	653	1,207	10,163	12,127	9,079	
Factoring guarantees	—	889	—	—	—	889	751	
Other guarantees	1	—	—	3	2,959	2,962	1	
Total guarantees	\$ (90)	32,872	19,053	7,674	15,063	74,662	39,591	
December 31, 2017								
Standby letters of credit (1)	\$ 39	15,357	7,908	3,068	645	26,978	8,773	
Securities lending and other indemnifications (2)	—	—	—	2	809	811	2	
Written put options (3)	(455)	14,758	12,706	3,890	1,038	32,392	19,087	
Loans and MLHFS sold with recourse (4)	51	165	533	934	9,385	11,017	8,155	
Factoring guarantees	—	747	—	—	—	747	668	
Other guarantees	1	7	—	2	4,175	4,184	7	
Total guarantees	\$ (364)	31,034	21,147	7,896	16,052	76,129	36,692	

- (1) Total maximum exposure to loss includes direct pay letters of credit (DPLCs) of \$7.5 billion and \$8.1 billion at December 31, 2018 and 2017, respectively. We issue DPLCs to provide credit enhancements for certain bond issuances. Beneficiaries (bond trustees) may draw upon these instruments to make scheduled principal and interest payments, redeem all outstanding bonds because a default event has occurred, or for other reasons as permitted by the agreement. We also originate multipurpose lending commitments under which borrowers have the option to draw on the facility in one of several forms, including as a standby letter of credit. Total maximum exposure to loss includes the portion of these facilities for which we have issued standby letters of credit under the commitments.
- (2) Includes indemnifications provided to certain third-party clearing agents. Outstanding customer obligations under these arrangements were \$70 million and \$92 million with related collateral of \$974 million and \$717 million at December 31, 2018 and 2017, respectively. Estimated maximum exposure to loss was \$1.0 billion at December 31, 2018, and \$809 million at December 31, 2017.
- (3) Written put options, which are in the form of derivatives, are also included in the derivative disclosures in Note 17 (Derivatives). Carrying value net asset position is a result of certain deferred premium option trades.
- (4) Represent recourse provided, predominantly to the GSEs, on loans sold under various programs and arrangements. Under these arrangements, we repurchased \$3 million and \$5 million of loans associated with these agreements during 2018 and 2017, respectively.

“Maximum exposure to loss” and “Non-investment grade” are required disclosures under GAAP. Non-investment grade represents those guarantees on which we have a higher risk of being required to perform under the terms of the guarantee. If the underlying assets under the guarantee are non-investment grade (that is, an external rating that is below investment grade or an internal credit default grade that is equivalent to a below investment grade external rating), we consider the risk of performance to be high. Internal credit default grades are determined based upon the same credit policies that we use to evaluate the risk of payment or performance when making loans and other extensions of credit. Credit quality indicators we usually consider in evaluating risk of payments or performance are described in Note 6 (Loans and Allowance for Credit Losses).

Maximum exposure to loss represents the estimated loss that would be incurred under an assumed hypothetical circumstance, despite what we believe is a remote possibility, where the value of our interests and any associated collateral declines to zero. Maximum exposure to loss estimates in Table 15.1 do not reflect economic hedges or collateral we could use to offset or recover losses we may incur under our guarantee agreements. Accordingly, this required disclosure is not an

indication of expected loss. We believe the carrying value, which is either fair value for derivative-related products or the allowance for lending-related commitments, is more representative of our exposure to loss than maximum exposure to loss.

STANDBY LETTERS OF CREDIT We issue standby letters of credit, which include performance and financial guarantees, for customers in connection with contracts between our customers and third parties. Standby letters of credit are agreements where we are obligated to make payment to a third party on behalf of a customer if the customer fails to meet their contractual obligations. We consider the credit risk in standby letters of credit and commercial and similar letters of credit in determining the allowance for credit losses.

SECURITIES LENDING AND OTHER INDEMNIFICATIONS As a securities lending agent, we lend debt and equity securities from participating institutional clients’ portfolios to third-party borrowers. These arrangements are for an indefinite period of time, and we indemnify our clients against default by the borrower in returning these lent securities. This indemnity is

Note 15: Guarantees, Pledged Assets and Collateral, and Other Commitments (*continued*)

supported by collateral received from the borrowers and is generally in the form of cash or highly liquid securities that are marked to market daily.

We use certain third-party clearing agents to clear and settle transactions on behalf of some of our institutional brokerage customers. We indemnify the clearing agents against loss that could occur for non-performance by our customers on transactions that are not sufficiently collateralized. Transactions subject to the indemnifications may include customer obligations related to the settlement of margin accounts and short positions, such as written call options and securities borrowing transactions.

We enter into other types of indemnification agreements in the ordinary course of business under which we agree to indemnify third parties against any damages, losses and expenses incurred in connection with legal and other proceedings arising from relationships or transactions with us. These relationships or transactions include those arising from service as a director or officer of the Company, underwriting agreements relating to our securities, acquisition agreements and various other business transactions or arrangements. Because the extent of our obligations under these agreements depends entirely upon the occurrence of future events, we are unable to determine our potential future liability under these agreements. We do, however, record a liability for residential mortgage loans that we expect to repurchase pursuant to various representations and warranties.

WRITTEN PUT OPTIONS Written put options are contracts that give the counterparty the right to sell to us an underlying instrument held by the counterparty at a specified price and may include options, floors, caps and credit default swaps. These written put option contracts generally permit net settlement. While these derivative transactions expose us to risk if the option is exercised, we manage this risk by entering into offsetting trades or by taking short positions in the underlying instrument. We offset market risk related to put options written to customers with cash securities or other offsetting derivative transactions. Additionally, for certain of these contracts, we require the counterparty to pledge the underlying instrument as collateral for the transaction. Our ultimate obligation under written put options is based on future market conditions and is only quantifiable at settlement. See Note 17 (Derivatives) for additional information regarding written derivative contracts.

LOANS AND MLHFS SOLD WITH RECOURSE In certain sales and securitizations of loans, including mortgage loans, we provide recourse to the buyer whereby we are required to indemnify the buyer for any loss on the loan up to par value plus accrued interest. We provide recourse, predominantly to GSEs, on loans sold under various programs and arrangements. Substantially all of these programs and arrangements require that we share in the loans' credit exposure for their remaining life by providing recourse to the GSE, up to 33.33% of actual losses incurred on a pro-rata basis in the event of borrower default. Under the remaining recourse programs and arrangements, if certain events occur within a specified period of time from transfer date, we have to provide limited recourse to the buyer to indemnify them for losses incurred for the remaining life of the loans. The maximum exposure to loss reported in Table 15.1 represents the outstanding principal balance of the loans sold or securitized that are subject to recourse provisions or the maximum losses per the contractual agreements. However, we believe the likelihood of loss of the entire balance due to these recourse agreements is remote, and amounts paid can be recovered in whole or in part from the sale of collateral. We also provide representation and warranty guarantees on loans sold under the various recourse programs and arrangements. Our loss exposure relative to these guarantees is separately considered and provided for, as necessary, in determination of our liability for loan repurchases due to breaches of representation and warranties.

FACTORING GUARANTEES Under certain factoring arrangements, we may be required to purchase trade receivables from third parties, if receivable debtors default on their payment obligations.

OTHER GUARANTEES We are members of exchanges and clearing houses that we use to clear our trades and those of our customers. It is common that all members in these organizations are required to collectively guarantee the performance of other members. Our obligations under the guarantees are based on either a fixed amount or a multiple of the collateral we are required to maintain with these organizations. We have not recorded a liability for these arrangements as of the dates presented in Table 15.1 because we believe the likelihood of loss is remote.

We also have contingent performance arrangements related to various customer relationships and lease transactions. We are required to pay the counterparties to these agreements if third parties default on certain obligations.

Pledged Assets

As part of our liquidity management strategy, we pledge various assets to secure trust and public deposits, borrowings and letters of credit from the FHLB and FRB, securities sold under agreements to repurchase (repurchase agreements), securities lending arrangements, and for other purposes as required or permitted by law or insurance statutory requirements. The types of collateral we pledge include securities issued by federal agencies, GSEs, domestic and foreign companies and various commercial and consumer loans. Table 15.2 provides the total carrying amount of pledged assets by asset type and pledged off-

balance sheet securities for securities financings. The table excludes pledged consolidated VIE assets of \$14.1 billion and \$13.6 billion at December 31, 2018 and 2017, respectively, which can only be used to settle the liabilities of those entities. The table also excludes \$617 million and \$675 million in assets pledged in transactions with VIE's accounted for as secured borrowings at December 31, 2018 and 2017, respectively. See Note 9 (Securitizations and Variable Interest Entities) for additional information on consolidated VIE assets and secured borrowings.

Table 15.2: Pledged Assets

(in millions)	Dec 31, 2018	Dec 31, 2017
Held for trading:		
Debt securities	\$ 96,616	96,993
Equity securities	9,695	12,161
Total pledged assets held for trading (1)	106,311	109,154
Not held for trading:		
Debt securities and other (2)	62,438	73,592
Mortgage loans held for sale and loans (3)	453,894	469,554
Total pledged assets not held for trading	516,332	543,146
Total pledged assets	\$ 622,643	652,300

- (1) Consists of pledged assets held for trading of \$45.5 billion and \$41.9 billion at December 31, 2018 and 2017, respectively, and off-balance sheet securities of \$60.8 billion and \$67.3 billion as of the same dates, respectively, that are pledged as collateral for repurchase agreements and other securities financings. Total pledged assets held for trading includes \$106.2 billion and \$109.0 billion at December 31, 2018 and 2017, respectively, that permit the secured parties to sell or repledge the collateral.
- (2) Includes carrying value of \$4.2 billion and \$5.0 billion (fair value of \$4.1 billion and \$5.0 billion) in collateral for repurchase agreements at December 31, 2018 and 2017, respectively, which are pledged under agreements that do not permit the secured parties to sell or repledge the collateral. Also includes \$68 million and \$64 million in collateral pledged under repurchase agreements at December 31, 2018 and 2017, respectively, that permit the secured parties to sell or repledge the collateral. Substantially all other pledged securities are pursuant to agreements that do not permit the secured party to sell or repledge the collateral.
- (3) Includes mortgage loans held for sale of \$7.4 billion and \$2.6 billion at December 31, 2018 and 2017, respectively. Substantially all of the total mortgage loans held for sale and loans are pledged under agreements that do not permit the secured parties to sell or repledge the collateral. Amounts exclude \$1.2 billion and \$2.2 billion at December 31, 2018 and 2017, respectively, of pledged loans recorded on our balance sheet representing certain delinquent loans that are eligible for repurchase from GNMA loan securitizations.

Securities Financing Activities

We enter into resale and repurchase agreements and securities borrowing and lending agreements (collectively, "securities financing activities") typically to finance trading positions (including securities and derivatives), acquire securities to cover short trading positions, accommodate customers' financing needs, and settle other securities obligations. These activities are conducted through our broker-dealer subsidiaries and to a lesser extent through other bank entities. Most of our securities financing activities involve high quality, liquid securities such as U.S. Treasury securities and government agency securities, and to a lesser extent, less liquid securities, including equity securities, corporate bonds and asset-backed securities. We account for these transactions as collateralized financings in which we typically receive or pledge securities as collateral. We believe these financing transactions generally do not have material credit risk given the collateral provided and the related monitoring processes.

OFFSETTING OF SECURITIES FINANCING ACTIVITIES Table 15.3 presents resale and repurchase agreements subject to master repurchase agreements (MRA) and securities borrowing and lending agreements subject to master securities lending agreements (MSLA). We account for transactions subject to these agreements as collateralized financings, and those with a single counterparty are presented net on our balance sheet, provided certain criteria are met that permit balance sheet netting. Most transactions subject to these agreements do not

meet those criteria and thus are not eligible for balance sheet netting.

Collateral we pledged consists of non-cash instruments, such as securities or loans, and is not netted on the balance sheet against the related liability. Collateral we received includes securities or loans and is not recognized on our balance sheet. Collateral pledged or received may be increased or decreased over time to maintain certain contractual thresholds, as the assets underlying each arrangement fluctuate in value. Generally, these agreements require collateral to exceed the asset or liability recognized on the balance sheet. The following table includes the amount of collateral pledged or received related to exposures subject to enforceable MRAs or MSLAs. While these agreements are typically over-collateralized, U.S. GAAP requires disclosure in this table to limit the reported amount of such collateral to the amount of the related recognized asset or liability for each counterparty.

In addition to the amounts included in Table 15.3, we also have balance sheet netting related to derivatives that is disclosed in Note 17 (Derivatives).

Note 15: Guarantees, Pledged Assets and Collateral, and Other Commitments (continued)

Table 15.3: Offsetting – Securities Financing Activities

(in millions)	Dec 31, 2018	Dec 31, 2017
Assets:		
Resale and securities borrowing agreements		
Gross amounts recognized	\$ 112,662	121,135
Gross amounts offset in consolidated balance sheet (1)	(15,258)	(23,188)
Net amounts in consolidated balance sheet (2)	97,404	97,947
Collateral not recognized in consolidated balance sheet (3)	(96,734)	(96,829)
Net amount (4)	\$ 670	1,118
Liabilities:		
Repurchase and securities lending agreements		
Gross amounts recognized (5)	\$ 106,248	111,488
Gross amounts offset in consolidated balance sheet (1)	(15,258)	(23,188)
Net amounts in consolidated balance sheet (6)	90,990	88,300
Collateral pledged but not netted in consolidated balance sheet (7)	(90,798)	(87,918)
Net amount (8)	\$ 192	382

- (1) Represents recognized amount of resale and repurchase agreements with counterparties subject to enforceable MRAs that have been offset in the consolidated balance sheet.
- (2) At December 31, 2018 and 2017, includes \$80.1 billion and \$78.9 billion, respectively, classified on our consolidated balance sheet in federal funds sold and securities purchased under resale agreements. Balance also includes securities purchased under long-term resale agreements (generally one year or more) classified in loans, which totaled \$17.3 billion and \$19.0 billion, at December 31, 2018 and 2017, respectively.
- (3) Represents the fair value of collateral we have received under enforceable MRAs or MSLAs, limited for table presentation purposes to the amount of the recognized asset due from each counterparty. At December 31, 2018 and 2017, we have received total collateral with a fair value of \$123.1 billion and \$130.8 billion, respectively, all of which we have the right to sell or repledge. These amounts include securities we have sold or repledged to others with a fair value of \$60.8 billion at December 31, 2018, and \$66.3 billion at December 31, 2017.
- (4) Represents the amount of our exposure that is not collateralized and/or is not subject to an enforceable MRA or MSLA.
- (5) For additional information on underlying collateral and contractual maturities, see the "Repurchase and Securities Lending Agreements" section in this Note.
- (6) Amount is classified in short-term borrowings on our consolidated balance sheet.
- (7) Represents the fair value of collateral we have pledged, related to enforceable MRAs or MSLAs, limited for table presentation purposes to the amount of the recognized liability owed to each counterparty. At December 31, 2018 and 2017, we have pledged total collateral with a fair value of \$108.8 billion and \$113.6 billion, respectively, of which, the counterparty does not have the right to sell or repledge \$4.4 billion as of December 31, 2018, and \$5.2 billion as of December 31, 2017.
- (8) Represents the amount of our obligation that is not covered by pledged collateral and/or is not subject to an enforceable MRA or MSLA.

REPURCHASE AND SECURITIES LENDING AGREEMENTS

Securities sold under repurchase agreements and securities lending arrangements are effectively short-term collateralized borrowings. In these transactions, we receive cash in exchange for transferring securities as collateral and recognize an obligation to reacquire the securities for cash at the transaction's maturity. These types of transactions create risks, including (1) the counterparty may fail to return the securities at maturity, (2) the fair value of the securities transferred may decline below the amount of our obligation to reacquire the securities, and therefore create an obligation for us to pledge additional amounts, and (3) the counterparty may accelerate the maturity on demand, requiring us to reacquire the security prior to contractual maturity. We attempt to mitigate these risks by the fact that most of our securities financing activities involve highly liquid securities, we underwrite and monitor the financial strength of our counterparties, we monitor the fair value of collateral pledged relative to contractually required repurchase amounts, and we monitor that our collateral is properly returned through the clearing and settlement process in advance of our cash repayment. Table 15.4 provides the underlying collateral types of our gross obligations under repurchase and securities lending agreements.

Table 15.4: Underlying Collateral Types of Gross Obligations

(in millions)	Dec 31, 2018	Dec 31, 2017
Repurchase agreements:		
Securities of U.S. Treasury and federal agencies (1)	\$ 38,408	40,507
Securities of U.S. States and political subdivisions	159	92
Federal agency mortgage-backed securities (1)	47,241	45,336
Non-agency mortgage-backed securities	1,875	1,324
Corporate debt securities (1)	6,191	8,020
Asset-backed securities	2,074	2,034
Equity securities	992	838
Other (1)	340	1,602
Total repurchases	97,280	99,753
Securities lending:		
Securities of U.S. Treasury and federal agencies	222	186
Federal agency mortgage-backed securities	2	—
Corporate debt securities	389	619
Equity securities (2)	8,349	10,930
Other	6	—
Total securities lending	8,968	11,735
Total repurchases and securities lending	\$ 106,248	111,488

(1) Amounts for December 31, 2017, have been revised to conform with the current period classification of certain collateral.

(2) Equity securities are generally exchange traded and either re-hypothecated under margin lending agreements or obtained through contemporaneous securities borrowing transactions with other counterparties.

Table 15.5 provides the contractual maturities of our gross obligations under repurchase and securities lending agreements.

Table 15.5: Contractual Maturities of Gross Obligations

(in millions)	Overnight/ continuous	Up to 30 days	30-90 days	>90 days	Total gross obligation
December 31, 2018					
Repurchase agreements	\$ 86,574	3,244	2,153	5,309	97,280
Securities lending	8,669	—	299	—	8,968
Total repurchases and securities lending (1)	\$ 95,243	3,244	2,452	5,309	106,248
December 31, 2017					
Repurchase agreements	\$ 83,780	7,922	3,286	4,765	99,753
Securities lending	9,634	584	1,363	154	11,735
Total repurchases and securities lending (1)	\$ 93,414	8,506	4,649	4,919	111,488

(1) Securities lending is executed under agreements that allow either party to terminate the transaction without notice, while repurchase agreements have a term structure to them that technically matures at a point in time. The overnight/continuous repurchase agreements require election of both parties to roll the trade rather than the election to terminate the arrangement as in securities lending.

OTHER COMMITMENTS To meet the financing needs of our customers, we may enter into commitments to purchase debt and equity securities to provide capital for their funding, liquidity or other future needs. As of December 31, 2018 and 2017, we had commitments to purchase debt securities of \$335 million and \$194 million, respectively, and commitments to purchase equity securities of \$2.5 billion and \$2.2 billion, respectively.

As part of maintaining our memberships in certain clearing organizations, we are required to stand ready to provide liquidity meant to sustain market clearing activity in the event unforeseen events occur or are deemed likely to occur. This includes commitments we have entered into to purchase securities under resale agreements from a central clearing organization that, at its option, require us to provide funding under such agreements. We do not have any outstanding amounts funded, and the amount of our unfunded contractual commitment was

\$9.8 billion and \$2.8 billion as of December 31, 2018 and 2017, respectively.

The Parent fully and unconditionally guarantees the payment of principal, interest, and any other amounts that may be due on securities that its 100% owned finance subsidiary, Wells Fargo Finance LLC, may issue. These guaranteed liabilities were \$5 million and \$0 million at December 31, 2018 and 2017, respectively. These guarantees rank on parity with all of the Parent's other unsecured and unsubordinated indebtedness.

Note 16: Legal Actions

Wells Fargo and certain of our subsidiaries are involved in a number of judicial, regulatory, arbitration, and other proceedings concerning matters arising from the conduct of our business activities, and many of those proceedings expose Wells Fargo to potential financial loss. These proceedings include actions brought against Wells Fargo and/or our subsidiaries with respect to corporate-related matters and transactions in which Wells Fargo and/or our subsidiaries were involved. In addition, Wells Fargo and our subsidiaries may be requested to provide information or otherwise cooperate with government authorities in the conduct of investigations of other persons or industry groups.

Although there can be no assurance as to the ultimate outcome, Wells Fargo and/or our subsidiaries have generally denied, or believe we have a meritorious defense and will deny, liability in all significant legal actions pending against us, including the matters described below, and we intend to defend vigorously each case, other than matters we describe as having settled. We establish accruals for legal actions when potential losses associated with the actions become probable and the costs can be reasonably estimated. For such accruals, we record the amount we consider to be the best estimate within a range of potential losses that are both probable and estimable; however, if we cannot determine a best estimate, then we record the low end of the range of those potential losses. The actual costs of resolving legal actions may be substantially higher or lower than the amounts accrued for those actions.

ATM ACCESS FEE LITIGATION In October 2011, plaintiffs filed a putative class action, *Mackmin, et al. v. Visa, Inc. et al.*, against Wells Fargo & Company, Wells Fargo Bank, N.A., Visa, MasterCard, and several other banks in the United States District Court for the District of Columbia. Plaintiffs allege that the Visa and MasterCard requirement that if an ATM operator charges an access fee on Visa and MasterCard transactions, then that fee cannot be greater than the access fee charged for transactions on other networks, violates antitrust rules. Plaintiffs seek treble damages, restitution, injunctive relief, and attorneys' fees where available under federal and state law. Two other antitrust cases that make similar allegations were filed in the same court, but these cases did not name Wells Fargo as a defendant. On February 13, 2013, the district court granted defendants' motions to dismiss the three actions. Plaintiffs appealed the dismissals and, on August 4, 2015, the United States Court of Appeals for the District of Columbia Circuit vacated the district court's decisions and remanded the three cases to the district court for further proceedings. On June 28, 2016, the United States Supreme Court granted defendants' petitions for writ of certiorari to review the decisions of the United States Court of Appeals for the District of Columbia. On November 17, 2016, the United States Supreme Court dismissed the petitions as improvidently granted, and the three cases returned to the district court for further proceedings.

AUTOMOBILE LENDING MATTERS On April 20, 2018, the Company entered into consent orders with the Office of the Comptroller of the Currency (OCC) and the Consumer Financial Protection Bureau (CFPB) to resolve, among other things, investigations by the agencies into the Company's compliance risk management program and its past practices involving certain automobile collateral protection insurance (CPI) policies and, as discussed below, certain mortgage interest rate lock

extensions. The consent orders require remediation to customers and the payment of a total of \$1.0 billion in civil money penalties to the agencies. In July 2017, the Company announced a plan to remediate customers who may have been financially harmed due to issues related to automobile CPI policies purchased through a third-party vendor on their behalf. Multiple putative class action cases alleging, among other things, unfair and deceptive practices relating to these CPI policies, have been filed against the Company and consolidated into one multi-district litigation in the United States District Court for the Central District of California. A putative class of shareholders also filed a securities fraud class action against the Company and its executive officers alleging material misstatements and omissions of CPI-related information in the Company's public disclosures. Former team members have also alleged retaliation for raising concerns regarding automobile lending practices. In addition, the Company has identified certain issues related to the unused portion of guaranteed automobile protection (GAP) waiver or insurance agreements between the customer and dealer and, by assignment, the lender, which will result in remediation to customers in certain states. Allegations related to the CPI and GAP programs are among the subjects of shareholder derivative lawsuits pending in federal and state court in California. The court dismissed the state court action in September 2018, but plaintiffs filed an amended complaint in November 2018. Subject to full documentation and court approval, the parties have reached agreements in principle to resolve the shareholder derivative lawsuits pursuant to which the Company will pay plaintiffs' attorneys' fees and undertake certain business and governance practices. These and other issues related to the origination, servicing, and/or collection of consumer automobile loans, including related insurance products, have also subjected the Company to formal or informal inquiries, investigations, or examinations from federal and state government agencies. In December 2018, the Company entered into an agreement with all 50 state Attorneys General and the District of Columbia to resolve an investigation into the Company's retail sales practices, CPI and GAP, and mortgage interest rate lock matters, pursuant to which the Company paid \$575 million.

CONSUMER DEPOSIT ACCOUNT RELATED REGULATORY INVESTIGATION The CFPB is conducting an investigation into whether customers were unduly harmed by the Company's procedures regarding the freezing (and, in many cases, closing) of consumer deposit accounts after the Company detected suspected fraudulent activity (by third-parties or account holders) that affected those accounts. A former team member has brought a state court action alleging retaliation for raising concerns about these procedures.

FIDUCIARY AND CUSTODY ACCOUNT FEE CALCULATIONS Federal government agencies are conducting formal or informal inquiries, investigations, or examinations regarding fee calculations within certain fiduciary and custody accounts in the Company's investment and fiduciary services business, which is part of the wealth management business within WIM. The Company has determined that there have been instances of incorrect fees being applied to certain assets and accounts, resulting in both overcharges and undercharges to customers.

FOREIGN EXCHANGE BUSINESS Federal government agencies, including the United States Department of Justice (Department of Justice), are investigating or examining certain

activities in the Company's foreign exchange business. The Company has accrued amounts to remediate customers that may have received pricing inconsistent with commitments made to those customers, and to rebate customers where historic pricing, while consistent with contracts entered into with those customers, does not conform to the Company's recently implemented standards and pricing.

INTERCHANGE LITIGATION Plaintiffs representing a putative class of merchants have filed putative class actions, and individual merchants have filed individual actions, against Wells Fargo Bank, N.A., Wells Fargo & Company, Wachovia Bank, N.A., and Wachovia Corporation regarding the interchange fees associated with Visa and MasterCard payment card transactions. Visa, MasterCard, and several other banks and bank holding companies are also named as defendants in these actions. These actions have been consolidated in the United States District Court for the Eastern District of New York. The amended and consolidated complaint asserts claims against defendants based on alleged violations of federal and state antitrust laws and seeks damages, as well as injunctive relief. Plaintiff merchants allege that Visa, MasterCard, and payment card issuing banks unlawfully colluded to set interchange rates. Plaintiffs also allege that enforcement of certain Visa and MasterCard rules and alleged tying and bundling of services offered to merchants are anticompetitive. Wells Fargo and Wachovia, along with other defendants and entities, are parties to Loss and Judgment Sharing Agreements, which provide that they, along with other entities, will share, based on a formula, in any losses from the Interchange Litigation. On July 13, 2012, Visa, MasterCard, and the financial institution defendants, including Wells Fargo, signed a memorandum of understanding with plaintiff merchants to resolve the consolidated class action and reached a separate settlement in principle of the consolidated individual actions. The settlement payments to be made by all defendants in the consolidated class and individual actions totaled approximately \$6.6 billion before reductions applicable to certain merchants opting out of the settlement. The class settlement also provided for the distribution to class merchants of 10 basis points of default interchange across all credit rate categories for a period of 8 consecutive months. The district court granted final approval of the settlement, which was appealed to the United States Court of Appeals for the Second Circuit by settlement objector merchants. Other merchants opted out of the settlement and are pursuing several individual actions. On June 30, 2016, the Second Circuit vacated the settlement agreement and reversed and remanded the consolidated action to the United States District Court for the Eastern District of New York for further proceedings. On November 23, 2016, prior class counsel filed a petition to the United States Supreme Court, seeking review of the reversal of the settlement by the Second Circuit, and the Supreme Court denied the petition on March 27, 2017. On November 30, 2016, the district court appointed lead class counsel for a damages class and an equitable relief class. The parties have entered into a settlement agreement to resolve the money damages class claims pursuant to which defendants will pay a total of approximately \$6.2 billion, which includes approximately \$5.3 billion of funds remaining from the 2012 settlement and \$900 million in additional funding. The Company's allocated responsibility for the additional funding is approximately \$94.5 million. The court granted preliminary approval of the settlement in January 2019, and scheduled a final approval hearing for November 7, 2019. Several of the opt-out litigations were settled during the pendency of the Second Circuit appeal

while others remain pending. Discovery is proceeding in the opt-out litigations and the equitable relief class case.

LOW INCOME HOUSING TAX CREDITS Federal government agencies have undertaken formal or informal inquiries or investigations regarding the manner in which the Company purchased, and negotiated the purchase of, certain federal low income housing tax credits in connection with the financing of low income housing developments.

MORTGAGE BANKRUPTCY LOAN MODIFICATION LITIGATION Plaintiffs, representing a putative class of mortgage borrowers who were debtors in Chapter 13 bankruptcy cases, filed a putative class action, *Cotton, et al. v. Wells Fargo, et al.*, against Wells Fargo & Company and Wells Fargo Bank, N.A. in the United States Bankruptcy Court for the Western District of North Carolina on June 7, 2017. Plaintiffs allege that Wells Fargo improperly and unilaterally modified the mortgages of borrowers who were debtors in Chapter 13 bankruptcy cases. Plaintiffs allege that Wells Fargo implemented these modifications by improperly filing mortgage payment change notices in Chapter 13 bankruptcy cases, in violation of bankruptcy rules and process. The amended complaint asserts claims based on, among other things, alleged fraud, violations of bankruptcy rules and laws, and unfair and deceptive trade practices. The amended complaint seeks monetary damages, attorneys' fees, and declaratory and injunctive relief. The parties have entered into a settlement agreement pursuant to which the Company will pay \$13.5 million to resolve the claims. On October 24, 2018, the court granted preliminary approval of the settlement and scheduled a final fairness hearing for March 4, 2019.

MORTGAGE INTEREST RATE LOCK RELATED REGULATORY INVESTIGATION On April 20, 2018, the Company entered into consent orders with the OCC and CFPB to resolve, among other things, investigations by the agencies into the Company's compliance risk management program and its past practices involving certain automobile CPI policies and certain mortgage interest rate lock extensions. The consent orders require remediation to customers and the payment of a total of \$1.0 billion in civil money penalties to the agencies. On October 4, 2017, the Company announced plans to reach out to all home lending customers who paid fees for mortgage rate lock extensions requested from September 16, 2013, through February 28, 2017, and to provide refunds, with interest, to customers who believe they should not have paid those fees. The Company was named in a putative class action, filed in the United States District Court for the Northern District of California, alleging violations of federal and state consumer fraud statutes relating to mortgage rate lock extension fees. The Company filed a motion to dismiss and the court granted the motion. Subsequently, a putative class action was filed in the United States District Court for the District of Oregon, raising similar allegations. The Company filed a motion to dismiss this action. In addition, former team members have asserted claims, including in pending litigation, that they were terminated for raising concerns regarding mortgage interest rate lock extension practices. Allegations related to mortgage interest rate lock extension fees are also among the subjects of two shareholder derivative lawsuits filed in California state court. This matter has also subjected the Company to formal or informal inquiries, investigations or examinations from other federal and state government agencies. In December 2018, the Company entered into an agreement with all 50 state Attorneys General and the

Note 16: Legal Actions (continued)

District of Columbia to resolve an investigation into the Company's retail sales practices, CPI and GAP, and mortgage interest rate lock matters, pursuant to which the Company paid \$575 million.

MORTGAGE LOAN MODIFICATION LITIGATION Plaintiffs representing a putative class of mortgage borrowers have filed separate putative class actions, *Hernandez v. Wells Fargo, et al.*, and *Coordes v. Wells Fargo, et al.*, against Wells Fargo Bank, N.A. in the United States District Court for the Northern District of California and the United States District Court for the District of Washington, respectively. Plaintiffs allege that Wells Fargo improperly denied mortgage loan modifications or repayment plans to customers in the foreclosure process due to the overstatement of foreclosure attorneys' fees that were included for purposes of determining whether a customer in the foreclosure process qualified for a mortgage loan modification or repayment plan.

MORTGAGE RELATED REGULATORY INVESTIGATIONS Federal and state government agencies, including the Department of Justice, have been investigating or examining certain mortgage related activities of Wells Fargo and predecessor institutions. Wells Fargo, for itself and for predecessor institutions, has responded, or continues to respond, to requests from these agencies seeking information regarding the origination, underwriting, and securitization of residential mortgages, including sub-prime mortgages. These agencies have advanced theories of purported liability with respect to certain of these activities. An agreement, pursuant to which the Company paid \$2.09 billion, was reached in August 2018 to resolve the Department of Justice investigation, which related to certain 2005-2007 residential mortgage-backed securities activities. In addition, the Company reached an agreement with the Attorney General of the State of Illinois in November 2018 pursuant to which the Company paid \$17 million in restitution to certain Illinois state pension funds to resolve a claim relating to certain residential mortgage-backed securities activities. Other financial institutions have entered into similar settlements with these agencies, the nature of which related to the specific activities of those financial institutions, including the imposition of significant financial penalties and remedial actions.

OFAC RELATED INVESTIGATION The Company has self-identified an issue whereby certain foreign banks utilized a Wells Fargo software-based solution to conduct import/export trade-related financing transactions with countries and entities prohibited by the Office of Foreign Assets Control (OFAC) of the United States Department of the Treasury. We do not believe any funds related to these transactions flowed through accounts at Wells Fargo as a result of the aforementioned conduct. The Company has made voluntary self-disclosures to OFAC and is cooperating with an inquiry from the Department of Justice.

ORDER OF POSTING LITIGATION Plaintiffs filed a series of putative class actions against Wachovia Bank, N.A. and Wells Fargo Bank, N.A., as well as many other banks, challenging the "high to low" order in which the banks post debit card transactions to consumer deposit accounts. Most of these actions were consolidated in multi-district litigation proceedings (MDL proceedings) in the United States District Court for the Southern District of Florida. The court in the MDL proceedings has certified a class of putative plaintiffs, and Wells Fargo moved to compel arbitration of the claims of unnamed class members.

The court denied the motions to compel arbitration in October 2016, and Wells Fargo appealed this decision to the United States Court of Appeals for the Eleventh Circuit. In May 2018, the Eleventh Circuit ruled in Wells Fargo's favor and found that Wells Fargo had not waived its arbitration rights and remanded the case to the district court for further proceedings. Plaintiffs filed a petition for rehearing to the Eleventh Circuit, which was denied in August 2018. Plaintiffs petitioned for certiorari from the United States Supreme Court, and that petition was denied in January 2019.

RETAIL SALES PRACTICES MATTERS Federal, state, and local government agencies, including the Department of Justice, the United States Securities and Exchange Commission (SEC), and the United States Department of Labor; state attorneys general, including the New York Attorney General; and prosecutors' offices, as well as Congressional committees, have undertaken formal or informal inquiries, investigations or examinations arising out of certain retail sales practices of the Company that were the subject of settlements with the CFPB, the OCC, and the Office of the Los Angeles City Attorney announced by the Company on September 8, 2016. These matters are at varying stages. The Company has responded, and continues to respond, to requests from a number of the foregoing. In October 2018, the Company entered into an agreement to resolve the New York Attorney General's investigation pursuant to which the Company paid \$65 million to the State of New York. In December 2018, the Company entered into an agreement with all 50 state Attorneys General and the District of Columbia to resolve an investigation into the Company's retail sales practices, CPI and GAP, and mortgage interest rate lock matters, pursuant to which the Company paid \$575 million. The Company has also engaged in preliminary and/or exploratory resolution discussions with the Department of Justice and the SEC, although there can be no assurance as to the outcome of these discussions.

In addition, a number of lawsuits have also been filed by non-governmental parties seeking damages or other remedies related to these retail sales practices. First, various class plaintiffs purporting to represent consumers who allege that they received products or services without their authorization or consent have brought separate putative class actions against the Company in the United States District Court for the Northern District of California and various other jurisdictions. In April 2017, the Company entered into a settlement agreement in the first-filed action, *Jabbari v. Wells Fargo Bank, N.A.*, to resolve claims regarding certain products or services provided without authorization or consent for the time period May 1, 2002 to April 20, 2017. Pursuant to the settlement, the Company will pay \$142 million for remediation, attorneys' fees, and settlement fund claims administration. In the unlikely event that the \$142 million settlement total is not enough to provide remediation, pay attorneys' fees, pay settlement fund claims administration costs, and have at least \$25 million left over to distribute to all class members, the Company will contribute additional funds to the settlement. In addition, in the unlikely event that the number of unauthorized accounts identified by settlement class members in the claims process and not disputed by the claims administrator exceeds plaintiffs' 3.5 million account estimate, the Company will proportionately increase the \$25 million reserve so that the ratio of reserve to unauthorized accounts is no less than what was implied by plaintiffs' estimate at the time of the district court's preliminary approval of the settlement in July 2017. The district court issued an order

granting final approval of the settlement on June 14, 2018. Several appeals of the district court's order granting final approval of the settlement have been filed with the United States Court of Appeals for the Ninth Circuit. Second, Wells Fargo shareholders brought a consolidated securities fraud class action in the United States District Court for the Northern District of California alleging certain misstatements and omissions in the Company's disclosures related to sales practices matters. The Company entered into a settlement agreement to resolve this matter pursuant to which the Company paid \$480 million. The district court issued an order granting final approval of the settlement on December 20, 2018. Third, Wells Fargo shareholders have brought numerous shareholder derivative lawsuits asserting breach of fiduciary duty claims, among others, against current and former directors and officers for their alleged failure to detect and prevent sales practices issues. These actions have been filed or transferred to the United States District Court for the Northern District of California and California state court for coordinated proceedings. An additional lawsuit asserting similar claims in Delaware state court has been stayed. Subject to full documentation and court approval, the parties have reached an agreement in principle to resolve the shareholder derivative lawsuits pursuant to which insurance carriers will pay the Company approximately \$240 million for alleged damage to the Company, and the Company will pay plaintiffs' attorneys' fees. Fourth, multiple employment litigation matters have been brought against Wells Fargo, including an Employee Retirement Income Security Act (ERISA) class action in the United States District Court for the District of Minnesota on behalf of 401(k) plan participants that has been dismissed and is now on appeal; a class action in the United States District Court for the Northern District of California on behalf of team members who allege that they protested sales practice misconduct and/or were terminated for not meeting sales goals that has now been dismissed, and we have entered into a framework with plaintiffs' counsel to address individual claims that have been asserted; various wage and hour class actions brought in federal and state court in California (which have been settled), New Jersey, and Pennsylvania on behalf of non-exempt branch based team members alleging that sales pressure resulted in uncompensated overtime; and multiple single plaintiff Sarbanes-Oxley Act complaints and state law whistleblower actions filed with the United States Department of Labor or in various state courts alleging adverse employment actions for raising sales practice misconduct issues.

RMBS TRUSTEE LITIGATION In November 2014, a group of institutional investors (Institutional Investor Plaintiffs), including funds affiliated with BlackRock, Inc., filed a putative class action in the United States District Court for the Southern District of New York against Wells Fargo Bank, N.A., alleging claims against the Company in its capacity as trustee for a number of residential mortgage-backed securities (RMBS) trusts (Federal Court Complaint). Similar complaints have been filed against other trustees in various courts, including in the Southern District of New York, in New York state court, and in other states, by RMBS investors. The Federal Court Complaint alleges that Wells Fargo Bank, N.A., as trustee, caused losses to investors and asserts causes of action based upon, among other things, the trustee's alleged failure to notify and enforce repurchase obligations of mortgage loan sellers for purported breaches of representations and warranties, notify investors of alleged events of default, and abide by appropriate standards of care following alleged events of default. Plaintiffs seek money damages in an unspecified amount, reimbursement of expenses,

and equitable relief. In December 2014 and December 2015, certain other investors filed four complaints alleging similar claims against Wells Fargo Bank, N.A. in the Southern District of New York (Related Federal Cases), and the various cases pending against Wells Fargo are proceeding before the same judge. On January 19, 2016, the Southern District of New York entered an order in connection with the Federal Court Complaint dismissing claims related to certain of the trusts at issue (Dismissed Trusts). The Company's motion to dismiss the Federal Court Complaint and the complaints for the Related Federal Cases was granted in part and denied in part in March 2017. In May 2017, the Company filed third-party complaints against certain investment advisors affiliated with the Institutional Investor Plaintiffs seeking contribution with respect to claims alleged in the Federal Court Complaint (Third-Party Claims). The investment advisors have moved to dismiss those complaints. On April 17, 2018, the Southern District of New York denied class certification in the Related Federal Case brought by Royal Park Investments SA/NV (Royal Park Action).

A complaint raising similar allegations to those in the Federal Court Complaint was filed in May 2016 in New York state court by a different plaintiff investor. In December 2016, the Institutional Investor Plaintiffs filed a new putative class action complaint in New York state court in respect of 261 RMBS trusts, including the Dismissed Trusts, for which Wells Fargo Bank, N.A. serves or served as trustee (State Court Action).

In July 2017, certain of the plaintiffs from the State Court Action filed a civil complaint relating to Wells Fargo Bank, N.A.'s setting aside reserves for legal fees and expenses in connection with the liquidation of eleven RMBS trusts at issue in the State Court Action (Declaratory Judgment Action). The complaint seeks, among other relief, declarations that Wells Fargo Bank, N.A. is not entitled to indemnification, the advancement of funds, or the taking of reserves from trust funds for legal fees and expenses it incurs in defending the claims in the State Court Action. In November 2017, the Company's motion to dismiss the complaint was granted. Plaintiffs filed a notice of appeal in January 2018.

In November 2018, the Institutional Investor Plaintiffs and the Company entered into a settlement agreement pursuant to which, among other terms, the Company will pay \$43 million to resolve the Federal Court Complaint and the State Court Action. The settlement will also resolve the Third Party Claims and the Declaratory Judgment Action. The New York state court has scheduled a fairness hearing on the settlement for May 6, 2019. In addition, Royal Park Investments SA/NV and Wells Fargo Bank, N.A. have reached an agreement resolving the Royal Park Action. Other than the Royal Park Action, the Related Federal Cases are not covered by these settlement agreements.

SEMINOLE TRIBE TRUSTEE LITIGATION The Seminole Tribe of Florida filed a complaint in Florida state court alleging that Wells Fargo, as trustee, charged excess fees in connection with the administration of a minor's trust and failed to invest the assets of the trust prudently. The complaint was later amended to include three individual current and former beneficiaries as plaintiffs and to remove the Tribe as a party to the case. In December 2016, the Company filed a motion to dismiss the amended complaint on the grounds that the Tribe is a necessary party and that the individual beneficiaries lack standing to bring claims. The motion was denied in June 2018. Trial is scheduled for October 2019.

Note 16: Legal Actions (continued)

WHOLESALE BANKING CONSENT ORDER INVESTIGATION

On November 19, 2015, the Company entered into a consent order with the OCC, pursuant to which the Wholesale Banking group was required to implement customer due diligence standards that include collection of current beneficial ownership information for certain business customers. The Company is responding to inquiries from various federal government agencies regarding potentially inappropriate conduct in connection with the collection of beneficial ownership information.

OUTLOOK As described above, the Company establishes accruals for legal actions when potential losses associated with the actions become probable and the costs can be reasonably estimated. The high end of the range of reasonably possible potential losses in excess of the Company's accrual for probable and estimable losses was approximately \$2.7 billion as of December 31, 2018. The increase in the high end of the range from September 30, 2018, was due to a variety of matters, including the Company's existing retail sales practices matters. The outcomes of legal actions are unpredictable and subject to significant uncertainties, and it is inherently difficult to determine whether any loss is probable or even possible. It is also inherently difficult to estimate the amount of any loss and there may be matters for which a loss is probable or reasonably possible but not currently estimable. Accordingly, actual losses may be in excess of the established accrual or the range of reasonably possible loss. Wells Fargo is unable to determine whether the ultimate resolution of the retail sales practices matters will have a material adverse effect on its consolidated financial condition. Based on information currently available, advice of counsel, available insurance coverage, and established reserves, Wells Fargo believes that the eventual outcome of other actions against Wells Fargo and/or its subsidiaries will not, individually or in the aggregate, have a material adverse effect on Wells Fargo's consolidated financial condition. However, it is possible that the ultimate resolution of a matter, if unfavorable, may be material to Wells Fargo's results of operations for any particular period.

Note 17: Derivatives

We use derivatives to manage exposure to market risk, including interest rate risk, credit risk and foreign currency risk, and to assist customers with their risk management objectives. We designate certain derivatives as hedging instruments in a qualifying hedge accounting relationship (fair value or cash flow hedge). Our remaining derivatives consist of economic hedges that do not qualify for hedge accounting and derivatives held for customer accommodation trading or other purposes.

Our asset/liability management approach to interest rate, foreign currency and certain other risks includes the use of derivatives. Such derivatives are typically designated as fair value or cash flow hedges, or economic hedges. We use derivatives to help minimize significant, unplanned fluctuations in earnings, fair values of assets and liabilities, and cash flows caused by interest rate, foreign currency and other market risk volatility. This approach involves modifying the repricing characteristics of certain assets and liabilities so that changes in interest rates, foreign currency and other exposures, which may cause the hedged assets and liabilities to gain or lose fair value, do not have a significantly adverse effect on the net interest margin, cash flows and earnings. In a fair value or economic hedge, the effect of change in fair value will generally be offset by the unrealized gain or loss on the derivatives linked to the hedged assets and liabilities. In a cash flow hedge, where we manage the variability of cash payments due to interest rate fluctuations by the effective use of derivatives linked to hedged assets and liabilities, the hedged asset or liability is not adjusted and the unrealized gain or loss on the derivative is recorded in other comprehensive income.

We also offer various derivatives, including interest rate, commodity, equity, credit and foreign exchange contracts, as an accommodation to our customers as part of our trading businesses. These derivative transactions, which involve our engaging in market-making activities or acting as an intermediary, are conducted in an effort to help customers manage their market risks. We usually offset our exposure from such derivatives by entering into other financial contracts, such as separate derivative or security transactions. These customer accommodations and any offsetting derivatives are treated as customer accommodation trading and other derivatives in our disclosures. Additionally, embedded derivatives that are required to be accounted for separately from their host contracts are included in the customer accommodation trading and other derivatives disclosures as applicable.

Table 17.1 presents the total notional or contractual amounts and fair values for our derivatives. Derivative transactions can be measured in terms of the notional amount, but this amount is not recorded on the balance sheet and is not, when viewed in isolation, a meaningful measure of the risk profile of the instruments. The notional amount is generally not exchanged, but is used only as the basis on which interest and other payments are determined.

Note 17: Derivatives (continued)

Table 17.1: Notional or Contractual Amounts and Fair Values of Derivatives

(in millions)	December 31, 2018			December 31, 2017		
	Notional or contractual amount	Fair value		Notional or contractual amount	Fair value	
		Asset derivatives	Liability derivatives		Asset derivatives	Liability derivatives
Derivatives designated as hedging instruments						
Interest rate contracts (1)	\$ 177,511	2,237	636	209,677	2,492	1,092
Foreign exchange contracts (1)	34,176	573	1,376	34,135	1,482	1,137
Total derivatives designated as qualifying hedging instruments		2,810	2,012		3,974	2,229
Derivatives not designated as hedging instruments						
Economic hedges:						
Interest rate contracts (2)	173,215	849	369	220,558	159	201
Equity contracts	13,920	1,362	79	12,315	716	138
Foreign exchange contracts	19,521	225	80	15,976	78	309
Credit contracts - protection purchased	100	27	—	111	37	—
Subtotal		2,463	528		990	648
Customer accommodation trading and other derivatives:						
Interest rate contracts	9,162,821	15,349	15,303	6,434,673	14,979	14,179
Commodity contracts	66,173	1,588	2,336	62,530	2,354	1,335
Equity contracts	217,890	6,183	5,931	213,750	6,291	8,363
Foreign exchange contracts	364,982	5,916	5,657	362,896	7,413	7,122
Credit contracts - protection sold	11,741	76	182	9,021	147	214
Credit contracts - protection purchased	20,880	175	98	17,406	207	208
Subtotal		29,287	29,507		31,391	31,421
Total derivatives not designated as hedging instruments		31,750	30,035		32,381	32,069
Total derivatives before netting		34,560	32,047		36,355	34,298
Netting (3)		(23,790)	(23,548)		(24,127)	(25,502)
Total		\$ 10,770	8,499		12,228	8,796

- (1) Notional amounts presented at December 31, 2017, exclude \$500 million of interest rate contracts for certain derivatives that are combined for designation as a hedge in a single relationship. No such hedging relationships existed at December 31, 2018. The notional amount for foreign exchange contracts at December 31, 2018 and 2017, excludes \$11.2 billion and \$13.5 billion, respectively for certain derivatives that are combined for designation as a hedge on a single relationship.
- (2) Includes economic hedge derivatives used to hedge the risk of changes in the fair value of residential MSRs, MLHFS, loans, derivative loan commitments and other interests held.
- (3) Represents balance sheet netting of derivative asset and liability balances, related cash collateral and portfolio level counterparty valuation adjustments. See the next table in this Note for further information.

Table 17.2 provides information on the gross fair values of derivative assets and liabilities, the balance sheet netting adjustments and the resulting net fair value amount recorded on our balance sheet, as well as the non-cash collateral associated with such arrangements. We execute substantially all of our derivative transactions under master netting arrangements and reflect all derivative balances and related cash collateral subject to enforceable master netting arrangements on a net basis within the balance sheet. The “Gross amounts recognized” column in the following table includes \$30.9 billion and \$28.4 billion of gross derivative assets and liabilities, respectively, at December 31, 2018, and \$30.0 billion and \$29.9 billion, respectively, at December 31, 2017, with counterparties subject to enforceable master netting arrangements that are carried on the balance sheet net of offsetting amounts. The remaining gross derivative assets and liabilities of \$3.7 billion and \$3.6 billion, respectively, at December 31, 2018, and \$6.4 billion and \$4.4 billion, respectively, at December 31, 2017, include those with counterparties subject to master netting arrangements for which we have not assessed the enforceability because they are with counterparties where we do not currently have positions to offset, those subject to master netting arrangements where we have not been able to confirm the enforceability and those not subject to master netting arrangements. As such, we do not net derivative balances or collateral within the balance sheet for these counterparties.

We determine the balance sheet netting adjustments based on the terms specified within each master netting arrangement. We disclose the balance sheet netting amounts within the column titled “Gross amounts offset in consolidated balance sheet.” Balance sheet netting adjustments are determined at the counterparty level for which there may be multiple contract types. For disclosure purposes, we allocate these netting adjustments to the contract type for each counterparty

proportionally based upon the “Gross amounts recognized” by counterparty. As a result, the net amounts disclosed by contract type may not represent the actual exposure upon settlement of the contracts.

We do not net non-cash collateral that we receive and pledge on the balance sheet. For disclosure purposes, we present the fair value of this non-cash collateral in the column titled “Gross amounts not offset in consolidated balance sheet (Disclosure-only netting)” within the table. We determine and allocate the Disclosure-only netting amounts in the same manner as balance sheet netting amounts.

The “Net amounts” column within Table 17.2 represents the aggregate of our net exposure to each counterparty after considering the balance sheet and Disclosure-only netting adjustments. We manage derivative exposure by monitoring the credit risk associated with each counterparty using counterparty specific credit risk limits, using master netting arrangements and obtaining collateral. Derivative contracts executed in over-the-counter markets include bilateral contractual arrangements that are not cleared through a central clearing organization but are typically subject to master netting arrangements. The percentage of our bilateral derivative transactions outstanding at period end in such markets, based on gross fair value, is provided within the following table. Other derivative contracts executed in over-the-counter or exchange-traded markets are settled through a central clearing organization and are excluded from this percentage. In addition to the netting amounts included in the table, we also have balance sheet netting related to resale and repurchase agreements that are disclosed within Note 15 (Guarantees, Pledged Assets and Collateral, and Other Commitments).

Note 17: Derivatives (continued)

Table 17.2: Gross Fair Values of Derivative Assets and Liabilities

(in millions)	Gross amounts recognized	Gross amounts offset in consolidated balance sheet (1)	Net amounts in consolidated balance sheet	Gross amounts not offset in consolidated balance sheet (Disclosure-only netting) (2)	Net amounts	Percent exchanged in over-the-counter market (3)
December 31, 2018						
Derivative assets						
Interest rate contracts	\$ 18,435	(12,029)	6,406	(80)	6,326	90%
Commodity contracts	1,588	(849)	739	(4)	735	57
Equity contracts	7,545	(5,318)	2,227	(755)	1,472	78
Foreign exchange contracts	6,714	(5,355)	1,359	(35)	1,324	100
Credit contracts-protection sold	76	(73)	3	—	3	12
Credit contracts-protection purchased	202	(166)	36	(1)	35	78
Total derivative assets	\$ 34,560	(23,790)	10,770	(875)	9,895	
Derivative liabilities						
Interest rate contracts	\$ 16,308	(13,152)	3,156	(567)	2,589	92%
Commodity contracts	2,336	(727)	1,609	(8)	1,601	85
Equity contracts	6,010	(3,877)	2,133	(110)	2,023	75
Foreign exchange contracts	7,113	(5,522)	1,591	(188)	1,403	100
Credit contracts-protection sold	182	(180)	2	(2)	—	67
Credit contracts-protection purchased	98	(90)	8	—	8	11
Total derivative liabilities	\$ 32,047	(23,548)	8,499	(875)	7,624	
December 31, 2017						
Derivative assets						
Interest rate contracts	\$ 17,630	(11,929)	5,701	(145)	5,556	99%
Commodity contracts	2,354	(966)	1,388	(4)	1,384	88
Equity contracts	7,007	(4,233)	2,774	(596)	2,178	76
Foreign exchange contracts	8,973	(6,656)	2,317	(25)	2,292	100
Credit contracts-protection sold	147	(145)	2	—	2	10
Credit contracts-protection purchased	244	(198)	46	(3)	43	89
Total derivative assets	\$ 36,355	(24,127)	12,228	(773)	11,455	
Derivative liabilities						
Interest rate contracts	\$ 15,472	(13,226)	2,246	(1,078)	1,168	99%
Commodity contracts	1,335	(648)	687	(1)	686	76
Equity contracts	8,501	(4,041)	4,460	(400)	4,060	85
Foreign exchange contracts	8,568	(7,189)	1,379	(204)	1,175	100
Credit contracts-protection sold	214	(204)	10	(9)	1	85
Credit contracts-protection purchased	208	(194)	14	—	14	9
Total derivative liabilities	\$ 34,298	(25,502)	8,796	(1,692)	7,104	

- (1) Represents amounts with counterparties subject to enforceable master netting arrangements that have been offset in the consolidated balance sheet, including related cash collateral and portfolio level counterparty valuation adjustments. Counterparty valuation adjustments were \$353 million and \$245 million related to derivative assets and \$152 million and \$95 million related to derivative liabilities as of December 31, 2018 and 2017, respectively. Cash collateral totaled \$3.7 billion and \$3.6 billion, netted against derivative assets and liabilities, respectively, at December 31, 2018, and \$2.7 billion and \$4.2 billion, respectively, at December 31, 2017.
- (2) Represents the fair value of non-cash collateral pledged and received against derivative assets and liabilities with the same counterparty that are subject to enforceable master netting arrangements. U.S. GAAP does not permit netting of such non-cash collateral balances in the consolidated balance sheet but requires disclosure of these amounts.
- (3) Represents derivatives executed in over-the-counter markets not settled through a central clearing organization. Over-the-counter percentages are calculated based on Gross amounts recognized as of the respective balance sheet date. The remaining percentage represents derivatives settled through a central clearing organization, which are executed in either over-the-counter or exchange-traded markets.

Fair Value and Cash Flow Hedges

For fair value hedges, we use interest rate swaps to convert certain of our fixed-rate long-term debt and time certificates of deposit to floating rates to hedge our exposure to interest rate risk. We also enter into cross-currency swaps, cross-currency interest rate swaps and forward contracts to hedge our exposure to foreign currency risk and interest rate risk associated with the issuance of non-U.S. dollar denominated long-term debt. In addition, we use interest rate swaps, cross-currency swaps, cross-currency interest rate swaps and forward contracts to hedge against changes in fair value of certain investments in available-for-sale debt securities due to changes in interest rates, foreign currency rates, or both. We also use interest rate swaps to hedge against changes in fair value for certain mortgage loans held for sale.

For cash flow hedges, we use interest rate swaps to hedge the variability in interest payments received on certain floating-rate commercial loans and paid on certain floating-rate debt due to changes in the contractually specified interest rate.

We estimate \$293 million pre-tax of deferred net losses primarily related to cash flow hedges in OCI at December 31, 2018, will be reclassified into net interest income during the next twelve months. The deferred losses expected to be reclassified into net interest income are primarily related to discontinued hedges of floating rate loans. We are hedging our foreign exposure to the variability of future cash flows for all forecasted transactions for a maximum of 8 years.

Table 17.3 shows the net gains (losses) related to derivatives in fair value and cash flow hedging relationships.

Table 17.3: Gains (Losses) Recognized in Consolidated Statement of Income on Fair Value and Cash Flow Hedging Relationships (1)

	Net interest income					Noninterest Income	
(in millions)	Debt securities	Loans	Mortgage loans held for sale	Deposits	Long-term debt	Other	Total
Year ended December 31, 2018							
Total amounts presented in the consolidated statement of income	\$ 14,406	43,974	777	(5,622)	(6,703)	2,473	49,305
Gains (losses) on fair value hedging relationships							
Interest rate contracts							
Amounts related to interest settlements on derivatives (2)	(187)	—	(3)	(41)	292	—	61
Recognized on derivatives	845	1	15	27	(1,923)	—	(1,035)
Recognized on hedged items	(877)	(1)	(22)	(33)	1,843	—	910
Foreign exchange contracts							
Amounts related to interest settlements on derivatives (2)(3)	33	—	—	—	(434)	—	(401)
Recognized on derivatives (4)	7	—	—	—	135	(1,204)	(1,062)
Recognized on hedged items	(1)	—	—	—	(82)	1,114	1,031
Net income (expense) recognized on fair value hedges	(180)	—	(10)	(47)	(169)	(90)	(496)
Gains (losses) on cash flow hedging relationships							
Interest contracts							
Realized gains (losses) (pre tax) reclassified from cumulative OCI into net income (5)	—	(292)	—	—	1	—	(291)
Foreign exchange contracts							
Realized gains (losses) (pre-tax) reclassified from cumulative OCI into net income (5)	—	—	—	—	(3)	—	(3)
Net income (expense) recognized on cash flow hedges	\$ —	(292)	—	—	(2)	—	(294)

(continued on following page)

Note 17: Derivatives (continued)
(continued from previous page)

	Net interest income					Noninterest Income	
(in millions)	Debt securities	Loans	Mortgage loans held for sale	Deposits	Long-term debt	Other	Total
Year ended December 31, 2017							
Total amounts presented in the consolidated statement of income	\$ 12,946	41,388	786	(3,013)	(5,157)	1,603	48,553
Gains (losses) on fair value hedging relationships							
Interest rate contracts							
Amounts related to interest settlements on derivatives (2)	(469)	(1)	(5)	36	1,286	—	847
Recognized on derivatives	(43)	1	(5)	(20)	(912)	—	(979)
Recognized on hedged items	(52)	(1)	(4)	36	938	—	917
Foreign exchange contracts							
Amounts related to interest settlements on derivatives (2)(3)	14	—	—	—	(210)	—	(196)
Recognized on derivatives (4)	13	—	—	—	(230)	3,118	2,901
Recognized on hedged items	(10)	—	—	—	255	(2,855)	(2,610)
Net income (expense) recognized on fair value hedges	(547)	(1)	(14)	52	1,127	263	880
Gains (losses) on cash flow hedging relationships							
Interest contracts							
Realized gains (losses) (pre tax) reclassified from cumulative OCI into net income (5)	—	551	—	—	(8)	—	543
Foreign exchange contracts							
Realized gains (losses) (pre-tax) reclassified from cumulative OCI into net income (5)	—	—	—	—	—	—	—
Net income (expense) recognized on cash flow hedges	\$ —	551	—	—	(8)	—	543
Year ended December 31, 2016							
Total amounts presented in the consolidated statement of income	\$ 11,244	39,505	784	(1,395)	(3,830)	1,289	47,597
Gains (losses) on fair value hedging relationships							
Interest rate contracts							
Amounts related to interest settlements on derivatives (2)	(582)	—	(6)	62	1,830	—	1,304
Recognized on derivatives	—	—	—	—	—	(2,175)	(2,175)
Recognized on hedged items	—	—	—	—	—	2,157	2,157
Foreign exchange contracts							
Amounts related to interest settlements on derivatives (2)(3)	9	—	—	—	31	—	40
Recognized on derivatives	—	—	—	—	—	(274)	(274)
Recognized on hedged items	—	—	—	—	—	286	286
Net income (expense) recognized on fair value hedges	(573)	—	(6)	62	1,861	(6)	1,338
Gains (losses) on cash flow hedging relationships							
Interest contracts							
Realized gains (losses) (pre tax) reclassified from cumulative OCI into net income (5)	—	1,043	—	—	(14)	—	1,029
Gains (losses) (before tax) recognized in income for hedge ineffectiveness	—	—	—	—	—	(1)	(1)
Foreign exchange contracts							
Realized gains (losses) (pre-tax) reclassified from cumulative OCI into net income (5)	—	—	—	—	—	—	—
Net income (expense) recognized on cash flow hedges	\$ —	1,043	—	—	(14)	(1)	1,028

- (1) Year ended December 31, 2016, gain or loss amounts and presentation location were not conformed to new hedge accounting guidance that we adopted in 2017.
- (2) Includes changes in fair value due to the passage of time associated with the non-zero fair value amount at hedge inception.
- (3) Includes \$(2) million, \$(3) million and \$(13) million for years ended December 31, 2018, 2017, and 2016, respectively, of the time value component recognized as net interest income (expense) on forward derivatives hedging foreign currency available-for-sale securities and long-term debt that were excluded from the assessment of hedge effectiveness.
- (4) For certain fair value hedges of foreign currency risk, changes in fair value of cross-currency swaps attributable to changes in cross-currency basis spreads are excluded from the assessment of hedge effectiveness and recorded in other comprehensive income. See Note 25 (Other Comprehensive Income) for the amounts recognized in other comprehensive income.
- (5) See Note 25 (Other Comprehensive Income) for details of amounts reclassified to net income.

Table 17.4 shows the carrying amount and associated cumulative basis adjustment related to the application of hedge accounting that is included in the carrying amount of hedged assets and liabilities in fair value hedging relationships.

Table 17.4: Hedged Items in Fair Value Hedging Relationship

(in millions)	Hedged Items Currently Designated		Hedged Items No Longer Designated (1)	
	Carrying Amount of Assets/(Liabilities) (2)(4)	Hedge Accounting Basis Adjustment Assets/(Liabilities) (3)	Carrying Amount of Assets/(Liabilities) (4)	Hedge Accounting Basis Adjustment Assets/(Liabilities)
December 31, 2018				
Available-for-sale debt securities (5)	\$ 37,857	(157)	4,938	238
Loans	—	—	—	—
Mortgage loans held for sale	448	7	—	—
Deposits	(56,535)	115	—	—
Long-term debt	(104,341)	(742)	(25,539)	366
December 31, 2017				
Available-for-sale debt securities (5)	\$ 32,498	870	5,221	343
Loans	140	(1)	—	—
Mortgage loans held for sale	465	(1)	—	—
Deposits	(23,679)	158	—	—
Long-term debt	(128,950)	(2,154)	(1,953)	16

- (1) Represents hedged items no longer designated in qualifying fair value hedging relationships for which an associated basis adjustment exists at the balance sheet date.
(2) Does not include the carrying amount of hedged items where only foreign currency risk is the designated hedged risk. The carrying amount excluded for debt securities is \$1.6 billion and for long-term debt is \$(6.3) billion as of December 31, 2018, and \$1.5 billion for debt securities and for long-term debt is \$(7.7) billion as of December 31, 2017.
(3) The balance includes \$1.4 billion and \$66 million of debt securities and long-term debt cumulative basis adjustments as of December 31, 2018, respectively, and \$2.1 billion and \$297 million of debt securities and long-term debt cumulative basis adjustments as of December 31, 2017, respectively, on terminated hedges whereby the hedged items have subsequently been re-designated into existing hedges.
(4) Represents the full carrying amount of the hedged asset or liability item as of the balance sheet date, except for circumstances in which only a portion of the asset or liability was designated as the hedged item in which case only the portion designated is presented.
(5) Carrying amount represents the amortized cost.

Derivatives Not Designated as Hedging Instruments

We use economic hedge derivatives to hedge the risk of changes in the fair value of certain residential MLHFS, residential MSRs measured at fair value, derivative loan commitments and other interests held. We also use economic hedge derivatives to mitigate the periodic earnings volatility caused by mismatches between the changes in fair value of the hedged item and hedging instrument recognized on our fair value accounting hedges. The resulting gain or loss on these economic hedge derivatives is reflected in mortgage banking noninterest income, net gains (losses) from equity securities and other noninterest income.

The derivatives used to hedge MSRs measured at fair value, which include swaps, swaptions, constant maturity mortgages, forwards, Eurodollar and Treasury futures and options contracts, resulted in net derivative gains (losses) of \$(1.1) billion, \$413 million, and \$261 million in 2018, 2017, and 2016, respectively, which are included in mortgage banking noninterest income. The aggregate fair value of these derivatives was a net asset of \$757 million at December 31, 2018, and a net asset of \$89 million at December 31, 2017. The change in fair value of these derivatives for each period end is due to changes in the underlying market indices and interest rates as well as the purchase and sale of derivative financial instruments throughout the period as part of our dynamic MSR risk management process.

Loan commitments for mortgage loans that we intend to sell are considered derivatives. Our interest rate exposure on these derivative loan commitments, as well as residential MLHFS, is hedged with economic hedge derivatives such as swaps, forwards and options, Eurodollar futures and options, and Treasury futures, forwards and options contracts. The derivative loan commitments, economic hedge derivatives and residential

MLHFS are carried at fair value with changes in fair value included in mortgage banking noninterest income. For the fair value measurement of derivative loan commitments we include, at inception and during the life of the loan commitment, the expected net future cash flows related to the associated servicing of the loan. Fair value changes subsequent to inception are based on changes in fair value of the underlying loan resulting from the exercise of the commitment and changes in the probability that the loan will not fund within the terms of the commitment (referred to as a fall-out factor). The value of the underlying loan is affected by changes in interest rates and the passage of time. However, changes in investor demand can also cause changes in the value of the underlying loan value that cannot be hedged. The aggregate fair value of derivative loan commitments on the balance sheet was a net positive fair value of \$60 million and \$17 million at December 31, 2018 and 2017, respectively, and is included in the caption "Interest rate contracts" under "Customer accommodation trading and other derivatives" in Table 17.1.

We also enter into various derivatives as an accommodation to our customers as part of our trading businesses. These derivatives are not linked to specific assets and liabilities on the balance sheet or to forecasted transactions in an accounting hedge relationship and, therefore, do not qualify for hedge accounting. We also enter into derivatives for risk management that do not otherwise qualify for hedge accounting. They are carried at fair value with changes in fair value recorded in noninterest income.

Customer accommodation trading and other derivatives also include embedded derivatives that are required to be accounted for separately from their host contract. We periodically issue hybrid long-term notes and CDs where the performance of the hybrid instrument notes is linked to an equity, commodity or

Note 17: Derivatives (continued)

currency index, or basket of such indices. These notes contain explicit terms that affect some or all of the cash flows or the value of the note in a manner similar to a derivative instrument and therefore are considered to contain an “embedded” derivative instrument. The indices on which the performance of the hybrid instrument is calculated are not clearly and closely related to the host debt instrument. The “embedded” derivative is separated from the host contract and accounted for as a derivative. Additionally, we may invest in hybrid instruments that contain embedded derivatives, such as credit derivatives,

that are not clearly and closely related to the host contract. In such instances, we either elect fair value option for the hybrid instrument or separate the embedded derivative from the host contract and account for the host contract and derivative separately.

Table 17.5 shows the net gains (losses), recognized by income statement lines, related to derivatives not designated as hedging instruments.

Table 17.5: Gains (Losses) on Derivatives Not Designated as Hedging Instruments

	Noninterest income				
(in millions)	Mortgage banking	Net gains (losses) from equity securities	Net gains (losses) from trading activities	Other	Total
Year ended December 31, 2018					
Net gains (losses) recognized on economic hedges derivatives:					
Interest rate contracts (1)	\$ (215)	—	—	(15)	(230)
Equity contracts	—	(408)	—	4	(404)
Foreign exchange contracts	—	—	—	669	669
Credit contracts	—	—	—	—	—
Subtotal (2)	(215)	(408)	—	658	35
Net gains (losses) recognized on customer accommodation trading and other derivatives:					
Interest rate contracts (3)	(352)	—	446	—	94
Equity contracts	—	—	4,499	(403)	4,096
Foreign exchange contracts	—	—	638	—	638
Credit contracts	—	—	1	—	1
Commodity contracts	—	—	83	—	83
Other	—	—	—	—	—
Subtotal	(352)	—	5,667	(403)	4,912
Net gains (losses) recognized related to derivatives not designated as hedging instruments	\$ (567)	(408)	5,667	255	4,947

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					Noninterest income
(in millions)	Mortgage banking	Net gains (losses) from equity securities	Net gains (losses) from trading activities	Other	Total
Year ended December 31, 2017					
Net gains (losses) recognized on economic hedges derivatives:					
Interest rate contracts (1)	\$ 448	—	—	(75)	373
Equity contracts	—	(1,483)	—	17	(1,466)
Foreign exchange contracts	—	—	—	(866)	(866)
Credit contracts	—	—	—	5	5
Subtotal (2)	448	(1,483)	—	(919)	(1,954)
Net gains (losses) recognized on customer accommodation trading and other derivatives:					
Interest rate contracts (3)	614	—	160	—	774
Equity contracts	—	—	(3,932)	1	(3,931)
Foreign exchange contracts	—	—	638	—	638
Credit contracts	—	—	(81)	—	(81)
Commodity contracts	—	—	178	—	178
Other	—	—	—	—	—
Subtotal	614	—	(3,037)	1	(2,422)
Net gains (losses) recognized related to derivatives not designated as hedging instruments	\$ 1,062	(1,483)	(3,037)	(918)	(4,376)
Year ended December 31, 2016					
Net gains (losses) recognized on economic hedges derivatives:					
Interest rate contracts (1)	\$ 1,029	—	—	(51)	978
Equity contracts	—	125	—	(11)	114
Foreign exchange contracts	—	—	—	954	954
Credit contracts	—	—	—	21	21
Subtotal (2)	1,029	125	—	913	2,067
Net gains (losses) recognized on customer accommodation trading and other derivatives:					
Interest contracts (3)	818	—	255	—	1,073
Equity contracts	—	—	(1,643)	—	(1,643)
Foreign exchange contracts	—	—	1,077	—	1,077
Credit contracts	—	—	(105)	—	(105)
Commodity contracts	—	—	216	—	216
Other	—	—	11	—	11
Subtotal	818	—	(189)	—	629
Net gains (losses) recognized related to derivatives not designated as hedging instruments	\$ 1,847	125	(189)	913	2,696

(1) Includes gains (losses) on the derivatives used as economic hedges of MSRs measured at fair value, derivative loan commitments and mortgages held for sale.

(2) Includes hedging gains (losses) of \$9 million, \$(71) million, and \$(8) million for the years ended December 31, 2018, 2017, and 2016, respectively, which partially offset hedge accounting ineffectiveness.

(3) Amounts presented in mortgage banking noninterest income are gains (losses) on derivative loan commitments.

Credit Derivatives

Credit derivative contracts are arrangements whose value is derived from the transfer of credit risk of a reference asset or entity from one party (the purchaser of credit protection) to another party (the seller of credit protection). We use credit derivatives to assist customers with their risk management objectives. We may also use credit derivatives in structured product transactions or liquidity agreements written to special purpose vehicles. The maximum exposure of sold credit derivatives is managed through posted collateral, purchased credit derivatives and similar products in order to achieve our desired credit risk profile. This credit risk management provides an ability to recover a significant portion of any amounts that would be paid under the sold credit derivatives. We would be

required to perform under the sold credit derivatives in the event of default by the referenced obligors. Events of default include events such as bankruptcy, capital restructuring or lack of principal and/or interest payment. In certain cases, other triggers may exist, such as the credit downgrade of the referenced obligors or the inability of the special purpose vehicle for which we have provided liquidity to obtain funding.

Table 17.6 provides details of sold and purchased credit derivatives.

Note 17: Derivatives (continued)

Table 17.6: Sold and Purchased Credit Derivatives

	Notional amount						
(in millions)	Fair value liability	Protection sold (A)	Protection sold - non-investment grade	Protection purchased with identical underlyings (B)	Net protection sold (A)-(B)	Other protection purchased	Range of maturities
December 31, 2018							
Credit default swaps on:							
Corporate bonds	\$ 59	2,037	441	1,374	663	1,460	2019 - 2027
Structured products	62	133	128	121	12	113	2022 - 2047
Credit protection on:							
Default swap index	1	3,618	582	1,998	1,620	2,896	2019 - 2028
Commercial mortgage-backed securities index	49	389	109	363	26	51	2047 - 2058
Asset-backed securities index	9	42	42	42	—	1	2045 - 2046
Other	2	5,522	5,327	—	5,522	12,561	2018 - 2048
Total credit derivatives	\$ 182	11,741	6,629	3,898	7,843	17,082	
December 31, 2017							
Credit default swaps on:							
Corporate bonds	\$ 35	2,007	510	1,575	432	946	2018 - 2027
Structured products	86	267	252	232	35	153	2022 - 2047
Credit protection on:							
Default swap index	—	2,626	540	308	2,318	3,932	2018 - 2027
Commercial mortgage-backed securities index	83	423	—	401	22	87	2047 - 2058
Asset-backed securities index	9	42	—	42	—	1	2045 - 2046
Other	1	3,656	3,306	—	3,656	9,840	2018 - 2031
Total credit derivatives	\$ 214	9,021	4,608	2,558	6,463	14,959	

Protection sold represents the estimated maximum exposure to loss that would be incurred under an assumed hypothetical circumstance, where the value of our interests and any associated collateral declines to zero, without any consideration of recovery or offset from any economic hedges. We believe this hypothetical circumstance to be an extremely remote possibility and accordingly, this required disclosure is not an indication of expected loss. The amounts under non-investment grade represent the notional amounts of those credit derivatives on which we have a higher risk of being required to perform under the terms of the credit derivative and are a function of the underlying assets.

We consider the risk of performance to be high if the underlying assets under the credit derivative have an external rating that is below investment grade or an internal credit default grade that is equivalent thereto. We believe the net protection sold, which is representative of the net notional amount of protection sold and purchased with identical underlyings, in combination with other protection purchased, is more representative of our exposure to loss than either non-investment grade or protection sold. Other protection purchased represents additional protection, which may offset the exposure to loss for protection sold, that was not purchased with an identical underlying of the protection sold.

Credit-Risk Contingent Features

Certain of our derivative contracts contain provisions whereby if the credit rating of our debt were to be downgraded by certain major credit rating agencies, the counterparty could demand additional collateral or require termination or replacement of derivative instruments in a net liability position. The aggregate fair value of all derivative instruments with such credit-risk-related contingent features that are in a net liability position was \$7.4 billion at December 31, 2018, and \$8.3 billion at December 31, 2017, respectively, for which we posted \$5.6 billion and \$7.1 billion, respectively, in collateral in the normal course of business. If the credit rating of our debt had been downgraded below investment grade, which is the credit-risk-related contingent feature that if triggered requires the

maximum amount of collateral to be posted, on December 31, 2018, or December 31, 2017, we would have been required to post additional collateral of \$1.8 billion or \$1.2 billion, respectively, or potentially settle the contract in an amount equal to its fair value. Some contracts require that we provide more collateral than the fair value of derivatives that are in a net liability position if a downgrade occurs.

Counterparty Credit Risk

By using derivatives, we are exposed to counterparty credit risk if counterparties to the derivative contracts do not perform as expected. If a counterparty fails to perform, our counterparty credit risk is equal to the amount reported as a derivative asset on our balance sheet. The amounts reported as a derivative asset are derivative contracts in a gain position, and to the extent subject to legally enforceable master netting arrangements, net of derivatives in a loss position with the same counterparty and cash collateral received. We minimize counterparty credit risk through credit approvals, limits, monitoring procedures, executing master netting arrangements and obtaining collateral, where appropriate. To the extent the master netting arrangements and other criteria meet the applicable requirements, including determining the legal enforceability of the arrangement, it is our policy to present derivative balances and related cash collateral amounts net on the balance sheet. We incorporate credit valuation adjustments (CVA) to reflect counterparty credit risk in determining the fair value of our derivatives. Such adjustments, which consider the effects of enforceable master netting agreements and collateral arrangements, reflect market-based views of the credit quality of each counterparty. Our CVA calculation is determined based on observed credit spreads in the credit default swap market and indices indicative of the credit quality of the counterparties to our derivatives.

Note 18: Fair Values of Assets and Liabilities

We use fair value measurements to record fair value adjustments to certain assets and liabilities and to determine fair value disclosures. Assets and liabilities recorded at fair value on a recurring basis are presented in Table 18.2 in this Note. From time to time, we may be required to record fair value adjustments on a nonrecurring basis. These nonrecurring fair value adjustments typically involve application of LOCOM accounting, write-downs of individual assets or application of the measurement alternative for nonmarketable equity securities. Assets recorded on a nonrecurring basis are presented in Table 18.12 in this Note.

Following is a discussion of the fair value hierarchy and the valuation methodologies we use for assets and liabilities recorded at fair value on a recurring or nonrecurring basis and for estimating fair value for financial instruments that are not recorded at fair value.

FAIR VALUE HIERARCHY We group our assets and liabilities measured at fair value in three levels based on the markets in which the assets and liabilities are traded and the reliability of the assumptions used to determine fair value. These levels are:

- Level 1 – Valuation is based upon quoted prices for identical instruments traded in active markets.
- Level 2 – Valuation is based upon quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market.
- Level 3 – Valuation is generated from techniques that use significant assumptions that are not observable in the market. These unobservable assumptions reflect estimates of assumptions that market participants would use in pricing the asset or liability. Valuation techniques include use of option pricing models, discounted cash flow models and similar techniques.

We do not classify equity securities in the fair value hierarchy if we use the non-published net asset value (NAV) per share (or its equivalent) that has been communicated to us as an investor as a practical expedient to measure fair value. We generally use NAV per share as the fair value measurement for certain nonmarketable equity fund investments. Marketable equity securities with published NAVs are classified in the fair value hierarchy.

In the determination of the classification of financial instruments in Level 2 or Level 3 of the fair value hierarchy, we consider all available information, including observable market data, indications of market liquidity and orderliness, and our understanding of the valuation techniques and significant inputs used. For securities in inactive markets, we use a predetermined percentage to evaluate the impact of fair value adjustments derived from weighting both external and internal indications of value to determine if the instrument is classified as Level 2 or Level 3. Otherwise, the classification of Level 2 or Level 3 is based upon the specific facts and circumstances of each instrument or instrument category and judgments are made regarding the significance of the Level 3 inputs to the instruments' fair value measurement in its entirety. If Level 3 inputs are considered significant, the instrument is classified as Level 3.

Assets

SHORT-TERM FINANCIAL ASSETS Short-term financial assets include cash and due from banks, interest-earning deposits with banks, federal funds sold and securities purchased under resale agreements and due from customers on acceptances (classified in Other Assets). These assets are carried at historical cost. The carrying amount is a reasonable estimate of fair value because of the relatively short time between the origination of the instrument and its expected realization.

TRADING DEBT SECURITIES Trading debt securities are recorded at fair value on a recurring basis. These securities are valued using internal trader prices that are subject to price verification procedures. The fair values derived using internal valuation techniques are verified against multiple pricing sources, including prices obtained from third-party vendors. Vendors compile prices from various sources and often apply matrix pricing for similar securities when no price is observable. We review pricing methodologies provided by the vendors in order to determine if observable market information is being used versus unobservable inputs. When evaluating the appropriateness of an internal trader price compared with vendor prices, considerations include the range and quality of vendor prices. Vendor prices are used to ensure the reasonableness of a trader price; however, valuing financial instruments involves judgments acquired from knowledge of a particular market. If a trader asserts that a vendor price is not reflective of market value, justification for using the trader price, including recent sales activity where possible, must be provided to and approved by the appropriate levels of management.

AVAILABLE-FOR-SALE AND HELD-TO-MATURITY DEBT SECURITIES Available-for-sale (AFS) debt securities are recorded at fair value on a recurring basis and held-to-maturity (HTM) debt securities are recorded at amortized cost. HTM debt securities are subject to impairment and fair value measurement is recorded if the fair value declines below amortized cost and we do not expect to recover the entire amortized cost basis of the security. Fair value measurement for AFS and HTM debt securities is based upon various sources of market pricing. We use quoted prices in active markets, where available, and classify such instruments within Level 1 of the fair value hierarchy. For example, highly liquid government securities, such as U.S. Treasuries, are classified as Level 1. When instruments are traded in secondary markets and quoted market prices do not exist for such securities, we generally rely on internal valuation techniques or on prices obtained from vendors (predominantly third-party pricing services), and accordingly, we classify these instruments as Level 2 or 3.

AFS debt securities traded in secondary markets are typically valued using unadjusted vendor prices or vendor prices adjusted by weighting them with internal discounted cash flow techniques, these prices are reviewed and, if deemed inappropriate by a trader who has the most knowledge of a particular market, can be adjusted. These securities, which include those measured using unadjusted vendor prices, are generally classified as Level 2 and typically involve using quoted market prices for the same or similar securities, pricing models, discounted cash flow analyses using significant inputs observable in the market where available or a combination of multiple valuation techniques. Examples include certain residential and commercial MBS, other asset-backed securities

Note 18: Fair Values of Assets and Liabilities (continued)

municipal bonds, U.S. government and agency MBS, and corporate debt securities.

Debt security fair value measurements using significant inputs that are unobservable in the market due to limited activity or a less liquid market are classified as Level 3 in the fair value hierarchy. Such measurements include securities valued using internal models or a combination of multiple valuation techniques where the unobservable inputs are significant to the overall fair value measurement. Securities classified as Level 3 include certain residential and commercial MBS, other asset-backed securities, CDOs and certain CLOs, and certain residual and retained interests in residential mortgage loan securitizations. We value CDOs using the prices of similar instruments, the pricing of completed or pending third-party transactions or the pricing of the underlying collateral within the CDO. Where vendor prices are not readily available, we use management's best estimate.

MORTGAGE LOANS HELD FOR SALE (MLHFS) MLHFS are carried at LOCOM or at fair value. We carry substantially all of our residential MLHFS portfolio at fair value. Fair value is based on quoted market prices, where available, or the prices for other mortgage whole loans with similar characteristics. As necessary, these prices are adjusted for typical securitization activities, including servicing value, portfolio composition, market conditions and liquidity. Predominantly all of our MLHFS are classified as Level 2. For the portion where market pricing data is not available, we use a discounted cash flow model to estimate fair value and, accordingly, classify as Level 3.

LOANS HELD FOR SALE (LHFS) LHFS are carried at LOCOM or at fair value. Loans used in our trading business are recorded at fair value on a recurring basis, and the fair value is based on current offerings in secondary markets for loans with similar characteristics. Loans that are subject to nonrecurring fair value adjustments are classified as Level 2.

LOANS For information on how we report the carrying value of loans, see Note 1 (Summary of Significant Accounting Policies). Although most loans are not recorded at fair value on a recurring basis, reverse mortgages are recorded at fair value on a recurring basis. In addition, we record nonrecurring fair value adjustments to loans to reflect partial write-downs that are based on the observable market price of the loan or current appraised value of the collateral.

We provide fair value estimates that are based on an exit price notion in this disclosure for loans that are not recorded at fair value on a recurring or nonrecurring basis. The fair value estimates of these loans are differentiated by their financial characteristics, such as product classification, loan category, pricing features and remaining maturity. Prepayment and credit loss estimates are evaluated and used in the valuation process.

DERIVATIVES All derivatives are recorded at fair value on a recurring basis. Derivative valuation includes the use of available market prices for our exchange-traded derivatives, such as certain interest rate futures and option contracts, which we classify as Level 1. However, substantially all of our derivatives are traded in over-the-counter (OTC) markets where quoted market prices are not always readily available. Therefore we value most OTC derivatives using internal valuation techniques. Valuation techniques and inputs to internally-developed models depend on the type of derivative and nature of the underlying rate, price or index upon which the derivative's value is based. Key inputs can include yield curves, credit curves, foreign

exchange rates, prepayment rates, volatility measurements and correlation of such inputs. Where model inputs can be observed in a liquid market and the model does not require significant judgment, such derivatives are typically classified as Level 2 of the fair value hierarchy. Examples of derivatives classified as Level 2 include generic interest rate swaps, foreign currency swaps, commodity swaps, and certain option and forward contracts. When instruments are traded in less liquid markets and significant inputs are unobservable, such derivatives are classified as Level 3. Examples of derivatives classified as Level 3 include complex and highly structured derivatives, certain credit default swaps, derivative loan commitments written for our mortgage loans that we intend to sell and long-dated equity options where volatility is not observable. Additionally, significant judgments are required when classifying financial instruments within the fair value hierarchy, particularly between Level 2 and 3, as is the case for certain derivatives.

MORTGAGE SERVICING RIGHTS (MSRs) AND CERTAIN OTHER INTERESTS HELD IN SECURITIZATIONS MSRs and certain other interests held in securitizations (e.g., interest-only strips) do not trade in an active market with readily observable prices. Accordingly, we determine the fair value of MSRs using a valuation model that calculates the present value of estimated future net servicing income cash flows. The model incorporates assumptions that market participants use in estimating future net servicing income cash flows, including estimates of prepayment speeds (including housing price volatility), discount rates, default rates, cost to service (including delinquency and foreclosure costs), escrow account earnings, contractual servicing fee income, ancillary income and late fees. Commercial MSRs are carried at LOCOM and, therefore, can be subject to fair value measurements on a nonrecurring basis. Changes in the fair value of MSRs occur primarily due to the collection/realization of expected cash flows as well as changes in valuation inputs and assumptions. For other interests held in securitizations (such as interest-only strips), we use a valuation model that calculates the present value of estimated future cash flows. The model incorporates our own estimates of assumptions market participants use in determining the fair value, including estimates of prepayment speeds, discount rates, defaults and contractual fee income. Interest-only strips are recorded as trading assets. Our valuation approach is validated by our internal valuation model validation group. Fair value measurements of our MSRs and interest-only strips use significant unobservable inputs and, accordingly, we classify them as Level 3.

EQUITY SECURITIES Marketable equity securities and certain nonmarketable equity securities for which we have elected to account for under the fair value method are recorded at fair value on a recurring basis. Our remaining nonmarketable equity securities are accounted for using the equity method, cost method or measurement alternative. These securities can be subject to nonrecurring fair value adjustments to record impairment write-downs or, for equity securities accounted for under the measurement alternative, adjustments to the carrying value due to the occurrence of observable transactions.

We use quoted prices to determine the fair value of marketable equity securities as the securities are publicly traded. Quoted prices are typically not available for nonmarketable equity securities. We therefore use other methods, such as market comparable pricing or discounted cash flow valuation techniques, to determine fair value for such securities. We use all available information in making this determination, which

includes observable transaction prices for the same or similar security, vendor prices, broker quotes, trading multiples of comparable public companies and discounted cash flow models. Where appropriate we make adjustments to observed market data to reflect the comparative differences between the market data and the attributes of our equity security, such as differences with public companies and other investment-specific considerations like liquidity, marketability or differences in terms of the instruments. Substantially all of our nonmarketable equity securities accounted for under the cost method include Federal Reserve Bank stock and Federal Home Loan Bank stock, of which their carrying value approximate their fair value.

FORECLOSED ASSETS Foreclosed assets are carried at net realizable value, which represents fair value less costs to sell. Fair value is generally based upon independent market prices or appraised values of the collateral and, accordingly, we classify foreclosed assets as Level 2.

Liabilities

DEPOSIT AND SHORT-TERM FINANCIAL LIABILITIES

Deposit and short-term financial liabilities are recorded at historical cost. For this disclosure, we estimate the fair value of deposit liabilities with a contractual or defined maturity and short-term financial liabilities, which include federal funds purchased, securities sold under repurchase agreements, commercial paper and other short-term borrowings. The carrying value of our short-term financial liabilities is a reasonable estimate of their fair value because of the relatively short time between their origination and expected realization.

OTHER LIABILITIES Other liabilities recorded at fair value on a recurring basis predominantly include short sale liabilities. Short sale liabilities are predominantly classified as either Level 1 or Level 2, generally depending upon whether the underlying securities have readily available quoted prices in active markets.

LONG-TERM DEBT Long-term debt is recorded at amortized cost. For this disclosure, we estimate the fair value of our long-term debt, which is largely denominated in U.S. dollars that are issued with a fixed or floating rate at varying levels of seniority and maturity.

Level 3 Asset and Liability Valuation Processes

We generally determine fair value of our Level 3 assets and liabilities by using internally-developed models and, to a lesser extent, prices obtained from vendors, which predominantly consist of third-party pricing services. Our valuation processes vary depending on which approach is utilized.

INTERNAL MODEL VALUATIONS Our internally-developed models largely use discounted cash flow techniques. Use of such techniques requires determining relevant inputs, some of which are unobservable. Unobservable inputs are generally derived from historic performance of similar assets or determined from previous market trades in similar instruments. These unobservable inputs usually consist of discount rates, default rates, loss severity upon default, volatilities, correlations and prepayment rates, which are inherent within our Level 3 instruments. Such inputs can be correlated to similar portfolios with known historic experience or recent trades where particular unobservable inputs may be implied, but due to the nature of various inputs being reflected within a particular trade, the value of each input is considered unobservable. We attempt to

correlate each unobservable input to historic experience and other third-party data where available.

Internal valuation models are subject to review prescribed within our model risk management policies and procedures, which include model validation. The purpose of model validation includes ensuring the model is appropriate for its intended use and the appropriate controls exist to help mitigate risk of invalid valuations. Model validation assesses the adequacy and appropriateness of the model, including reviewing its key components, such as inputs, processing components, logic or theory, output results and supporting model documentation. Validation also includes ensuring significant unobservable model inputs are appropriate given observable market transactions or other market data within the same or similar asset classes. This process ensures modeled approaches are appropriate given similar product valuation techniques and are in line with their intended purpose.

We have ongoing monitoring procedures in place for our Level 3 assets and liabilities that use such internal valuation models. These procedures, which are designed to provide reasonable assurance that models continue to perform as expected after approved, include:

- ongoing analysis and benchmarking to market transactions and other independent market data (including pricing vendors, if available);
- back-testing of modeled fair values to actual realized transactions; and
- review of modeled valuation results against expectations, including review of significant or unusual value fluctuations.

We update model inputs and methodologies periodically to reflect these monitoring procedures. Additionally, procedures and controls are in place to ensure existing models are subject to periodic reviews, and we perform full model revalidations as necessary.

All internal valuation models are subject to ongoing review by business-unit-level management, and all models are subject to additional oversight by a corporate-level risk management department. Corporate oversight responsibilities include evaluating the adequacy of business unit risk management programs, maintaining company-wide model validation policies and standards and reporting the results of these activities to management and our Corporate Model Risk Committee. This committee consists of senior executive management and reports on top model risk issues to the Company's Risk Committee of the Board.

VENDOR-DEVELOPED VALUATIONS In certain limited circumstances, we obtain pricing from third-party vendors for the value of our Level 3 assets or liabilities. We have processes in place to approve such vendors to ensure information obtained and valuation techniques used are appropriate. Once these vendors are approved to provide pricing information, we monitor and review the results to ensure the fair values are reasonable and in line with market experience in similar asset classes. While the input amounts used by the pricing vendor in determining fair value are not provided, and therefore unavailable for our review, we do perform one or more of the following procedures to validate the prices received:

- comparison to other pricing vendors (if available);
- variance analysis of prices;
- corroboration of pricing by reference to other independent market data, such as market transactions and relevant benchmark indices;

Note 18: Fair Values of Assets and Liabilities (continued)

- review of pricing by Company personnel familiar with market liquidity and other market-related conditions; and
- investigation of prices on a specific instrument-by-instrument basis.

Fair Value Measurements from Vendors

For certain assets and liabilities, we obtain fair value measurements from vendors, which predominantly consist of third-party pricing services, and record the unadjusted fair value in our financial statements. For instruments where we utilize vendor prices to record the price of an instrument, we perform additional procedures (see the “Vendor-Developed Valuations”

section). Methodologies employed, controls relied upon and inputs used by third-party pricing vendors are subject to additional review when such services are provided. This review may consist of, in part, obtaining and evaluating control reports issued and pricing methodology materials distributed.

Table 18.1 presents unadjusted fair value measurements provided by brokers or third-party pricing services by fair value hierarchy level. Fair value measurements obtained from brokers or third-party pricing services that we have adjusted to determine the fair value recorded in our financial statements are excluded from Table 18.1.

Table 18.1: Fair Value Measurements by Brokers or Third-Party Pricing Services

(in millions)	Brokers			Third-party pricing services		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 3
December 31, 2018						
Trading debt securities	\$ —	—	—	899	256	—
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	—	—	—	10,399	2,949	—
Securities of U.S. states and political subdivisions	—	—	—	—	48,377	43
Mortgage-backed securities	—	—	—	—	160,162	41
Other debt securities (1)	—	45	129	—	44,292	758
Total available-for-sale debt securities	—	45	129	10,399	255,780	842
Equity securities:						
Marketable	—	—	—	—	158	—
Nonmarketable	—	—	—	—	1	—
Total equity securities	—	—	—	—	159	—
Derivative assets	—	—	—	17	—	—
Derivative liabilities	—	—	—	(12)	—	—
Other liabilities (2)	—	—	—	—	—	—
December 31, 2017						
Trading debt securities	\$ —	—	—	926	215	—
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	—	—	—	3,389	2,930	—
Securities of U.S. states and political subdivisions	—	—	—	—	50,401	49
Mortgage-backed securities	—	33	—	—	168,948	75
Other debt securities (1)	—	307	1,158	—	44,465	22
Total available-for-sale debt securities	—	340	1,158	3,389	266,744	146
Equity securities:						
Marketable	—	—	—	—	227	—
Nonmarketable	—	—	—	—	—	—
Total equity securities	—	—	—	—	227	—
Derivative assets	—	—	—	19	—	—
Derivative liabilities	—	—	—	(19)	—	—
Other liabilities (2)	—	—	—	—	—	—

(1) Includes corporate debt securities, collateralized loan and other debt obligations, asset-backed securities, and other debt securities.

(2) Includes short sale liabilities and other liabilities.

Assets and Liabilities Recorded at Fair Value on a Recurring Basis

Table 18.2 presents the balances of assets and liabilities recorded at fair value on a recurring basis.

Table 18.2: Fair Value on a Recurring Basis

(in millions)	Level 1	Level 2	Level 3	Netting	Total
December 31, 2018					
Trading debt securities:					
Securities of U.S. Treasury and federal agencies	\$ 20,525	2,892	—	—	23,417
Securities of U.S. states and political subdivisions	—	3,272	3	—	3,275
Collateralized loan obligations	—	673	237	—	910
Corporate debt securities	—	10,723	34	—	10,757
Mortgage-backed securities	—	30,715	—	—	30,715
Asset-backed securities	—	893	—	—	893
Other trading debt securities	—	6	16	—	22
Total trading debt securities	20,525	49,174	290	—	69,989
Available-for-sale debt securities:					
Securities of U.S. Treasury and federal agencies	10,399	2,949	—	—	13,348
Securities of U.S. states and political subdivisions	—	48,820	444	—	49,264
Mortgage-backed securities:					
Federal agencies	—	153,203	—	—	153,203
Residential	—	2,775	—	—	2,775
Commercial	—	4,184	41	—	4,225
Total mortgage-backed securities	—	160,162	41	—	160,203
Corporate debt securities	34	5,867	370	—	6,271
Collateralized loan and other debt obligations (1)	—	34,543	800	—	35,343
Asset-backed securities:					
Automobile loans and leases	—	925	—	—	925
Home equity loans	—	112	—	—	112
Other asset-backed securities	—	4,056	389	—	4,445
Total asset-backed securities	—	5,093	389	—	5,482
Other debt securities	—	1	—	—	1
Total available-for-sale debt securities	10,433	257,435	2,044 (2)	—	269,912
Mortgage loans held for sale	—	10,774	997	—	11,771
Loans held for sale	—	1,409	60	—	1,469
Loans	—	—	244	—	244
Mortgage servicing rights (residential)	—	—	14,649	—	14,649
Derivative assets:					
Interest rate contracts	46	18,294	95	—	18,435
Commodity contracts	—	1,535	53	—	1,588
Equity contracts	1,648	4,582	1,315	—	7,545
Foreign exchange contracts	17	6,689	8	—	6,714
Credit contracts	—	179	99	—	278
Netting	—	—	—	(23,790) (3)	(23,790)
Total derivative assets	1,711	31,279	1,570	(23,790)	10,770
Equity securities - excluding securities at NAV:					
Marketable	23,205	757	—	—	23,962
Nonmarketable	—	24	5,468	—	5,492
Total equity securities	23,205	781	5,468	—	29,454
Total assets included in the fair value hierarchy	\$ 55,874	350,852	25,322	(23,790)	408,258
Equity securities at NAV (4)					102
Total assets recorded at fair value					408,360
Derivative liabilities:					
Interest rate contracts	\$ (21)	(16,217)	(70)	—	(16,308)
Commodity contracts	—	(2,287)	(49)	—	(2,336)
Equity contracts	(1,492)	(3,186)	(1,332)	—	(6,010)
Foreign exchange contracts	(12)	(7,067)	(34)	—	(7,113)
Credit contracts	—	(216)	(64)	—	(280)
Netting	—	—	—	23,548 (3)	23,548
Total derivative liabilities	(1,525)	(28,973)	(1,549)	23,548	(8,499)
Short sale liabilities:					
Securities of U.S. Treasury and federal agencies	(11,850)	(411)	—	—	(12,261)
Mortgage-backed securities	—	(47)	—	—	(47)
Corporate debt securities	—	(4,505)	—	—	(4,505)
Equity securities	(2,902)	(2)	—	—	(2,904)
Other securities	—	(3)	—	—	(3)
Total short sale liabilities	(14,752)	(4,968)	—	—	(19,720)
Other liabilities	—	—	(2)	—	(2)
Total liabilities recorded at fair value	\$ (16,277)	(33,941)	(1,551)	23,548	(28,221)

(1) Includes collateralized debt obligations of \$800 million.

(2) A significant portion of the balance consists of securities that are investment grade based on ratings received from the ratings agencies or internal credit grades categorized as investment grade if external ratings are not available. The securities are classified as Level 3 due to limited market activity.

(3) Represents balance sheet netting of derivative asset and liability balances and related cash collateral. See Note 17 (Derivatives) for additional information.

(4) Consists of certain nonmarketable equity securities that are measured at fair value using NAV per share (or its equivalent) as a practical expedient and are excluded from the fair value hierarchy.

(continued on following page)

Note 18: Fair Values of Assets and Liabilities (continued)

(continued from previous page)

(in millions)	Level 1	Level 2	Level 3	Netting	Total
December 31, 2017					
Trading debt securities:					
Securities of U.S. Treasury and federal agencies	\$ 12,491	2,383	—	—	14,874
Securities of U.S. states and political subdivisions	—	3,732	3	—	3,735
Collateralized loan obligations	—	565	354	—	919
Corporate debt securities	—	11,760	31	—	11,791
Mortgage-backed securities	—	25,273	—	—	25,273
Asset-backed securities	—	993	—	—	993
Other trading debt securities	—	20	19	—	39
Total trading debt securities	12,491	44,726	407	—	57,624
Available-for-sale debt securities:					
Securities of U.S. Treasury and federal agencies	3,389	2,930	—	—	6,319
Securities of U.S. states and political subdivisions	—	50,401	925	—	51,326
Mortgage-backed securities:					
Federal agencies	—	160,219	—	—	160,219
Residential	—	4,607	1	—	4,608
Commercial	—	4,490	75	—	4,565
Total mortgage-backed securities	—	169,316	76	—	169,392
Corporate debt securities	56	7,203	407	—	7,666
Collateralized loan and other debt obligations (1)	—	35,036	1,020	—	36,056
Asset-backed securities:					
Automobile loans and leases	—	553	—	—	553
Home equity loans	—	149	—	—	149
Other asset-backed securities	—	4,380	566	—	4,946
Total asset-backed securities	—	5,082	566	—	5,648
Other debt securities	—	—	—	—	—
Total available-for-sale debt securities	3,445	269,968	2,994 (2)	—	276,407
Mortgage loans held for sale	—	15,118	998	—	16,116
Loans held for sale	—	1,009	14	—	1,023
Loans	—	—	376	—	376
Mortgage servicing rights (residential)	—	—	13,625	—	13,625
Derivative assets:					
Interest rate contracts	17	17,479	134	—	17,630
Commodity contracts	—	2,318	36	—	2,354
Equity contracts	1,698	3,970	1,339	—	7,007
Foreign exchange contracts	19	8,944	10	—	8,973
Credit contracts	—	269	122	—	391
Netting	—	—	—	(24,127) (3)	(24,127)
Total derivative assets	1,734	32,980	1,641	(24,127)	12,228
Equity securities - excluding securities at NAV:					
Marketable	33,931	429	—	—	34,360
Nonmarketable	—	46	4,821	—	4,867
Total equity securities	33,931	475	4,821	—	39,227
Total assets included in the fair value hierarchy	\$ 51,601	364,276	24,876	(24,127)	416,626
Equity securities at NAV (4)					—
Total assets recorded at fair value					416,626
Derivative liabilities:					
Interest rate contracts	\$ (17)	(15,392)	(63)	—	(15,472)
Commodity contracts	—	(1,318)	(17)	—	(1,335)
Equity contracts	(1,313)	(5,338)	(1,850)	—	(8,501)
Foreign exchange contracts	(19)	(8,546)	(3)	—	(8,568)
Credit contracts	—	(336)	(86)	—	(422)
Netting	—	—	—	25,502 (3)	25,502
Total derivative liabilities	(1,349)	(30,930)	(2,019)	25,502	(8,796)
Short sale liabilities:					
Securities of U.S. Treasury and federal agencies	(10,420)	(568)	—	—	(10,988)
Mortgage-backed securities	—	—	—	—	—
Corporate debt securities	—	(4,986)	—	—	(4,986)
Equity securities	(2,168)	(45)	—	—	(2,213)
Other securities	—	(285)	—	—	(285)
Total short sale liabilities	(12,588)	(5,884)	—	—	(18,472)
Other liabilities	—	—	(3)	—	(3)
Total liabilities recorded at fair value	\$ (13,937)	(36,814)	(2,022)	25,502	(27,271)

(1) Includes collateralized debt obligations of \$1.0 billion.

(2) Balance primarily consists of securities that are investment grade based on ratings received from the ratings agencies or internal credit grades categorized as investment grade if external ratings are not available. The securities are classified as Level 3 due to limited market activity.

(3) Represents balance sheet netting of derivative asset and liability balances and related cash collateral. See Note 17 (Derivatives) for additional information.

(4) Consists of certain nonmarketable equity investments that are measured at fair value using NAV per share (or its equivalent) as a practical expedient and are excluded from the fair value hierarchy.

Changes in Fair Value Levels

We monitor the availability of observable market data to assess the appropriate classification of financial instruments within the fair value hierarchy and transfer between Level 1, Level 2, and Level 3 accordingly. Observable market data includes but is not limited to quoted prices and market transactions. Changes in economic conditions or market liquidity generally will drive

changes in availability of observable market data. Changes in availability of observable market data, which also may result in changing the valuation technique used, are generally the cause of transfers between Level 1, Level 2, and Level 3. The amounts reported as transfers represent the fair value as of the beginning of the quarter in which the transfer occurred.

The changes in Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2018, are presented in Table 18.3.

Table 18.3: Changes in Level 3 Fair Value Assets and Liabilities on a Recurring Basis – 2018

		Total net gains (losses) included in						Net unrealized gains (losses) included in income related to assets and liabilities held at period end	
(in millions)	Balance, beginning of period	Net income	Other compre- hensive income	Purchases, sales, issuances and settlements, net (1)	Transfers into Level 3 (2)	Transfers out of Level 3 (3)	Balance, end of period		(4)
Year ended December 31, 2018									
Trading debt securities:									
Securities of U.S. states and political subdivisions	\$ 3	—	—	—	—	—	3	—	
Collateralized loan obligations	354	(12)	—	(101)	—	(4)	237	(14)	
Corporate debt securities	31	(1)	—	16	—	(12)	34	(1)	
Other trading debt securities	19	(3)	—	—	—	—	16	—	
Total trading debt securities	407	(16)	—	(85)	—	(16)	290	(15)	(5)
Available-for-sale debt securities:									
Securities of U.S. states and political subdivisions	925	8	(8)	(137)	—	(344)	444	—	
Mortgage-backed securities:									
Residential	1	—	—	(1)	—	—	—	—	
Commercial	75	—	(1)	(33)	—	—	41	(1)	
Total mortgage-backed securities	76	—	(1)	(34)	—	—	41	(1)	
Corporate debt securities	407	4	(3)	(38)	—	—	370	—	
Collateralized loan and other debt obligations	1,020	72	5	(297)	—	—	800	—	
Asset-backed securities:									
Other asset-backed securities	566	5	(11)	(171)	—	—	389	(3)	
Total asset-backed securities	566	5	(11)	(171)	—	—	389	(3)	
Total available-for-sale debt securities	2,994	89	(18)	(677)	—	(344)	2,044	(4)	(6)
Mortgage loans held for sale	998	(27)	—	(36)	72	(10)	997	(22)	(7)
Loans held for sale	14	2	—	(36)	80	—	60	1	
Loans	376	(1)	—	(131)	—	—	244	(11)	(7)
Mortgage servicing rights (residential) (8)	13,625	(915)	—	1,939	—	—	14,649	960	(7)
Net derivative assets and liabilities:									
Interest rate contracts	71	(397)	—	351	—	—	25	(42)	
Commodity contracts	19	3	—	(11)	(7)	—	4	(1)	
Equity contracts	(511)	(108)	—	522	(1)	81	(17)	(169)	
Foreign exchange contracts	7	(42)	—	9	—	—	(26)	(26)	
Credit contracts	36	5	—	(6)	—	—	35	(1)	
Other derivative contracts	—	—	—	—	—	—	—	—	
Total derivative contracts	(378)	(539)	—	865	(8)	81	21	(239)	(9)
Equity securities:									
Marketable	—	—	—	—	—	—	—	—	
Nonmarketable (10)	5,203	703	—	(450)	16	(4)	5,468	642	
Total equity securities	5,203	703	—	(450)	16	(4)	5,468	642	(11)
Short sale liabilities	—	—	—	—	—	—	—	—	(5)
Other liabilities	(3)	1	—	—	—	—	(2)	—	(7)

(1) See Table 18.4 for detail.

(2) All assets and liabilities transferred into level 3 were previously classified within level 2.

(3) All assets and liabilities transferred out of level 3 are classified as level 2.

(4) Represents only net gains (losses) that are due to changes in economic conditions and management's estimates of fair value and excludes changes due to the collection/realization of cash flows over time.

(5) Included in net gains (losses) from trading activities in the income statement.

(6) Included in net gains (losses) from debt securities in the income statement.

(7) Included in mortgage banking and other noninterest income in the income statement.

(8) For more information on the changes in mortgage servicing rights, see Note 10 (Mortgage Banking Activities).

(9) Included in mortgage banking, trading activities, equity securities and other noninterest income in the income statement.

(10) Beginning balance includes \$382 million of auction rate securities, which changed from the cost to fair value method of accounting in connection with our adoption of ASU 2016-01 in first quarter 2018.

(11) Included in net gains (losses) from equity securities in the income statement.

(continued on following page)

Note 18: Fair Values of Assets and Liabilities (continued)

(continued from previous page)

Table 18.4 presents gross purchases, sales, issuances and settlements related to the changes in Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2018.

Table 18.4: Gross Purchases, Sales, Issuances and Settlements – Level 3 – 2018

(in millions)	Purchases	Sales	Issuances	Settlements	Net
Year ended December 31, 2018					
Trading debt securities:					
Securities of U.S. states and political subdivisions	\$ —	—	—	—	—
Collateralized loan obligations	408	(348)	—	(161)	(101)
Corporate debt securities	20	(4)	—	—	16
Other trading debt securities	—	—	—	—	—
Total trading debt securities	428	(352)	—	(161)	(85)
Available-for-sale debt securities:					
Securities of U.S. states and political subdivisions	—	(6)	79	(210)	(137)
Mortgage-backed securities:					
Residential	—	—	—	(1)	(1)
Commercial	—	—	—	(33)	(33)
Total mortgage-backed securities	—	—	—	(34)	(34)
Corporate debt securities	33	—	—	(71)	(38)
Collateralized loan and other debt obligations	61	(149)	—	(209)	(297)
Asset-backed securities:					
Other asset-backed securities	25	(12)	166	(350)	(171)
Total asset-backed securities	25	(12)	166	(350)	(171)
Total available-for-sale debt securities	119	(167)	245	(874)	(677)
Mortgage loans held for sale	87	(320)	353	(156)	(36)
Loans held for sale	4	(40)	—	—	(36)
Loans	8	—	17	(156)	(131)
Mortgage servicing rights (residential) (1)	—	(71)	2,010	—	1,939
Net derivative assets and liabilities:					
Interest rate contracts	—	—	—	351	351
Commodity contracts	—	—	—	(11)	(11)
Equity contracts	3	(37)	—	556	522
Foreign exchange contracts	—	—	—	9	9
Credit contracts	12	(7)	—	(11)	(6)
Other derivative contracts	—	—	—	—	—
Total derivative contracts	15	(44)	—	894	865
Equity securities:					
Marketable	—	—	—	—	—
Nonmarketable	—	(51)	—	(399)	(450)
Total equity securities	—	(51)	—	(399)	(450)
Short sale liabilities	—	—	—	—	—
Other liabilities	—	—	—	—	—

(1) For more information on the changes in mortgage servicing rights, see Note 10 (Mortgage Banking Activities).

The changes in Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2017, are presented in Table 18.5.

Table 18.5: Changes in Level 3 Fair Value Assets and Liabilities on a Recurring Basis – 2017

		Total net gains (losses) included in		Purchases, sales, issuances and settlements, net (1)	Transfers into Level 3 (2)	Transfers out of Level 3 (3)	Balance, end of period	Net unrealized gains (losses) included in income related to assets and liabilities held at period end	(4)
(in millions)	Balance, beginning of period	Net income	Other compre- hensive income						
Year ended December 31, 2017									
Trading debt securities:									
Securities of U.S. states and political subdivisions	\$ 3	—	—	—	—	—	3	—	
Collateralized loan obligations	309	3	—	42	—	—	354	(13)	
Corporate debt securities	34	2	—	(7)	6	(4)	31	2	
Other trading debt securities	28	(9)	—	—	—	—	19	(4)	
Total trading debt securities	374	(4)	—	35	6	(4)	407	(15)	(5)
Available-for-sale debt securities:									
Securities of U.S. states and political subdivisions	1,140	4	5	1,105	5	(1,334)	925	—	
Mortgage-backed securities:									
Residential	1	—	—	—	—	—	1	—	
Commercial	91	(4)	—	(12)	—	—	75	(11)	
Total mortgage-backed securities	92	(4)	—	(12)	—	—	76	(11)	
Corporate debt securities	432	(1)	23	(47)	—	—	407	—	
Collateralized loan and other debt obligations	879	22	103	16	—	—	1,020	—	
Asset-backed securities:									
Other asset-backed securities	962	1	3	(400)	—	—	566	—	
Total asset-backed securities	962	1	3	(400)	—	—	566	—	
Total available-for-sale debt securities	3,505	22	134	662	5	(1,334)	2,994	(11)	(6)
Mortgage loans held for sale	985	(36)	—	(75)	134	(10)	998	(34)	(7)
Loans held for sale	—	1	—	(3)	34	(18)	14	—	
Loans	758	(6)	—	(376)	—	—	376	(12)	(7)
Mortgage servicing rights (residential) (8)	12,959	(2,115)	—	2,781	—	—	13,625	(126)	(7)
Net derivative assets and liabilities:									
Interest rate contracts	121	604	—	(654)	—	—	71	(52)	
Commodity contracts	23	(17)	—	13	2	(2)	19	15	
Equity contracts	(267)	(199)	—	(37)	(53)	45	(511)	(259)	
Foreign exchange contracts	12	(5)	—	—	—	—	7	6	
Credit contracts	77	24	—	(65)	—	—	36	(62)	
Other derivative contracts	(47)	27	—	20	—	—	—	—	
Total derivative contracts	(81)	434	—	(723)	(51)	43	(378)	(352)	(9)
Equity securities:									
Marketable	—	—	—	—	—	—	—	—	
Nonmarketable	3,259	1,563	—	(2)	1	—	4,821	1,569	
Total equity securities	3,259	1,563	—	(2)	1	—	4,821	1,569	(10)
Short sale liabilities	—	—	—	—	—	—	—	—	(5)
Other liabilities	(4)	1	—	—	—	—	(3)	—	(7)

(1) See Table 18.6 for detail.

(2) All assets and liabilities transferred into level 3 were previously classified within level 2.

(3) All assets and liabilities transferred out of level 3 are classified as level 2.

(4) Represents only net gains (losses) that are due to changes in economic conditions and management's estimates of fair value and excludes changes due to the collection/realization of cash flows over time.

(5) Included in net gains (losses) from trading activities in the income statement.

(6) Included in net gains (losses) from debt securities in the income statement.

(7) Included in mortgage banking and other noninterest income in the income statement.

(8) For more information on the changes in mortgage servicing rights, see Note 10 (Mortgage Banking Activities)

(9) Included in mortgage banking, trading activities, equity securities and other noninterest income in the income statement.

(10) Included in net gains (losses) from equity securities in the income statement.

(continued on following page)

Note 18: Fair Values of Assets and Liabilities (continued)

(continued from previous page)

Table 18.6 presents gross purchases, sales, issuances and settlements related to the changes in Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2017.

Table 18.6: Gross Purchases, Sales, Issuances and Settlements – Level 3 – 2017

(in millions)	Purchases	Sales	Issuances	Settlements	Net
Year ended December 31, 2017					
Trading debt securities:					
Securities of U.S. states and political subdivisions	\$ 37	(36)	—	(1)	—
Collateralized loan obligations	439	(250)	—	(147)	42
Corporate debt securities	25	(32)	—	—	(7)
Other trading debt securities	—	—	—	—	—
Total trading debt securities	501	(318)	—	(148)	35
Available-for-sale debt securities:					
Securities of U.S. states and political subdivisions	—	(68)	1,369	(196)	1,105
Mortgage-backed securities:					
Residential	—	—	—	—	—
Commercial	—	—	—	(12)	(12)
Total mortgage-backed securities	—	—	—	(12)	(12)
Corporate debt securities	14	(4)	—	(57)	(47)
Collateralized loan and other debt obligations	135	—	—	(119)	16
Asset-backed securities:					
Other asset-backed securities	—	—	211	(611)	(400)
Total asset-backed securities	—	—	211	(611)	(400)
Total available-for-sale debt securities	149	(72)	1,580	(995)	662
Mortgage loans held for sale	79	(485)	489	(158)	(75)
Loans held for sale	—	(2)	—	(1)	(3)
Loans	6	(129)	19	(272)	(376)
Mortgage servicing rights (residential) (1)	541	(24)	2,263	1	2,781
Net derivative assets and liabilities:					
Interest rate contracts	—	—	—	(654)	(654)
Commodity contracts	—	—	—	13	13
Equity contracts	—	(118)	—	81	(37)
Foreign exchange contracts	—	—	—	—	—
Credit contracts	6	(3)	—	(68)	(65)
Other derivative contracts	—	—	—	20	20
Total derivative contracts	6	(121)	—	(608)	(723)
Equity securities:					
Marketable	—	—	—	—	—
Nonmarketable	—	(2)	—	—	(2)
Total equity securities	—	(2)	—	—	(2)
Short sale liabilities	3	(3)	—	—	—
Other liabilities	—	—	—	—	—

(1) For more information on the changes in mortgage servicing rights, see Note 10 (Mortgage Banking Activities).

The changes in Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2016, are presented in Table 18.7.

Table 18.7: Changes in Level 3 Fair Value Assets and Liabilities on a Recurring Basis – 2016

(in millions)	Balance, beginning of period	Total net gains (losses) included in		Purchases, sales, issuances and settlements, net (1)	Transfers into Level 3 (2)	Transfers out of Level 3 (3)	Balance, end of period	Net unrealized gains (losses) included in income related to assets and liabilities held at period end	(4)
		Net income	Other compre- hensive income						
Year ended December 31, 2016									
Trading debt securities:									
Securities of U.S. states and political subdivisions	\$ 8	—	—	(5)	—	—	3	—	
Collateralized loan obligations	343	(38)	—	15	—	(11)	309	(42)	
Corporate debt securities	56	(7)	—	(13)	—	(2)	34	—	
Other trading debt securities	34	(6)	—	(1)	1	—	28	1	
Total trading debt securities	441	(51)	—	(4)	1	(13)	374	(41)	(5)
Available-for-sale debt securities:									
Securities of U.S. states and political subdivisions	1,500	6	(25)	60	80	(481)	1,140	—	
Mortgage-backed securities:									
Residential	1	—	—	—	—	—	1	—	
Commercial	73	—	1	17	—	—	91	(1)	
Total mortgage-backed securities	74	—	1	17	—	—	92	(1)	
Corporate debt securities	405	21	35	(29)	—	—	432	(2)	
Collateralized loan and other debt obligations	565	50	(1)	265	—	—	879	—	
Asset-backed securities:									
Other asset-backed securities	1,182	2	(8)	(214)	—	—	962	(4)	
Total asset-backed securities	1,182	2	(8)	(214)	—	—	962	(4)	
Total available-for-sale debt securities	3,726	79	2	99	80	(481)	3,505	(7)	(6)
Mortgage loans held for sale	1,082	(19)	—	(159)	98	(17)	985	(24)	(7)
Loans held for sale	—	—	—	—	—	—	—	—	
Loans	5,316	(59)	—	(4,499)	—	—	758	(24)	(7)
Mortgage servicing rights (residential) (8)	12,415	(1,595)	—	2,139	—	—	12,959	565	(7)
Net derivative assets and liabilities:									
Interest rate contracts	288	843	—	(1,003)	—	(7)	121	170	
Commodity contracts	12	10	—	(2)	4	(1)	23	11	
Equity contracts	(111)	(80)	—	(156)	21	59	(267)	(176)	
Foreign exchange contracts	—	(3)	—	(1)	16	—	12	(4)	
Credit contracts	(3)	31	—	49	—	—	77	26	
Other derivative contracts	(58)	11	—	—	—	—	(47)	11	
Total derivative contracts	128	812	—	(1,113)	41	51	(81)	38	(9)
Equity securities:									
Marketable	—	—	—	(1)	1	—	—	—	
Nonmarketable	3,065	(30)	—	224	—	—	3,259	(30)	
Total equity securities	3,065	(30)	—	223	1	—	3,259	(30)	(10)
Short sale liabilities	—	—	—	—	—	—	—	—	(5)
Other liabilities	(30)	1	—	25	—	—	(4)	—	(7)

(1) See Table 18.8 for detail.

(2) All assets and liabilities transferred into level 3 were previously classified within level 2.

(3) All assets and liabilities transferred out of level 3 are classified as level 2.

(4) Represents only net gains (losses) that are due to changes in economic conditions and management's estimates of fair value and excludes changes due to the collection/realization of cash flows over time.

(5) Included in net gains (losses) from trading activities in the income statement.

(6) Included in net gains (losses) from debt securities in the income statement.

(7) Included in mortgage banking and other noninterest income in the income statement.

(8) For more information on the changes in mortgage servicing rights, see Note 10 (Mortgage Banking Activities).

(9) Included in mortgage banking, trading activities, equity securities and other noninterest income in the income statement.

(10) Included in net gains (losses) from equity securities in the income statement.

(continued on following page)

Note 18: Fair Values of Assets and Liabilities (continued)

(continued from previous page)

Table 18.8 presents gross purchases, sales, issuances and settlements related to the changes in Level 3 assets and liabilities measured at fair value on a recurring basis for the year ended December 31, 2016.

Table 18.8: Gross Purchases, Sales, Issuances and Settlements – Level 3 – 2016

(in millions)	Purchases	Sales	Issuances	Settlements	Net
Year ended December 31, 2016					
Trading debt securities:					
Securities of U.S. states and political subdivisions	\$ 2	(2)	—	(5)	(5)
Collateralized loan obligations	372	(357)	—	—	15
Corporate debt securities	37	(50)	—	—	(13)
Other trading debt securities	—	(1)	—	—	(1)
Total trading debt securities	411	(410)	—	(5)	(4)
Available-for-sale debt securities:					
Securities of U.S. states and political subdivisions	28	(24)	547	(491)	60
Mortgage-backed securities:					
Residential	—	—	—	—	—
Commercial	22	—	—	(5)	17
Total mortgage-backed securities	22	—	—	(5)	17
Corporate debt securities	36	(12)	—	(53)	(29)
Collateralized loan and other debt obligations	618	(54)	—	(299)	265
Asset-backed securities:					
Other asset-backed securities	50	(28)	235	(471)	(214)
Total asset-backed securities	50	(28)	235	(471)	(214)
Total available-for-sale debt securities	754	(118)	782	(1,319)	99
Mortgage loans held for sale	87	(618)	565	(193)	(159)
Loans held for sale	—	—	—	—	—
Loans	21	(3,791)	302	(1,031)	(4,499)
Mortgage servicing rights (residential) (1)	—	(66)	2,204	1	2,139
Net derivative assets and liabilities:					
Interest rate contracts	—	—	—	(1,003)	(1,003)
Commodity contracts	—	—	—	(2)	(2)
Equity contracts	29	(147)	—	(38)	(156)
Foreign exchange contracts	—	—	—	(1)	(1)
Credit contracts	7	(4)	—	46	49
Other derivative contracts	—	—	—	—	—
Total derivative contracts	36	(151)	—	(998)	(1,113)
Equity securities:					
Marketable	—	(1)	—	—	(1)
Nonmarketable	225	—	—	(1)	224
Total equity securities	225	(1)	—	(1)	223
Short sale liabilities	—	—	—	—	—
Other liabilities	—	—	—	25	25

(1) For more information on the changes in mortgage servicing rights, see Note 10 (Mortgage Banking Activities).

Table 18.9 and Table 18.10 provide quantitative information about the valuation techniques and significant unobservable inputs used in the valuation of substantially all of our Level 3 assets and liabilities measured at fair value on a recurring basis for which we use an internal model.

The significant unobservable inputs for Level 3 assets and liabilities that are valued using fair values obtained from third-party vendors are not included in the table, as the specific inputs applied are not provided by the vendor (see discussion regarding vendor-developed valuations within the “Level 3 Asset and Liability Valuation Processes” section previously within this Note).

In addition, the table excludes the valuation techniques and significant unobservable inputs for certain classes of Level 3 assets and liabilities measured using an internal model that we consider, both individually and in the aggregate, insignificant relative to our overall Level 3 assets and liabilities. We made this determination based upon an evaluation of each class, which considered the magnitude of the positions, nature of the unobservable inputs and potential for significant changes in fair value due to changes in those inputs.

Table 18.9: Valuation Techniques – Recurring Basis – 2018

(\$ in millions, except cost to service amounts)	Fair Value Level 3	Valuation Technique(s)	Significant Unobservable Input	Range of Inputs			Weighted Average (1)
December 31, 2018							
Trading and available-for-sale debt securities:							
Securities of U.S. states and political subdivisions:							
Government, healthcare and other revenue bonds	\$ 404	Discounted cash flow	Discount rate	2.1 - 6.4	%	3.4	
	43	Vendor priced					
Collateralized loan and other debt obligations (2)	298	Market comparable pricing	Comparability adjustment	(13.5) - 22.1		3.2	
	739	Vendor priced					
Asset-backed securities:							
Diversified payment rights (3)	171	Discounted cash flow	Discount rate	3.4 - 6.2		4.4	
Other commercial and consumer	198 (4)	Discounted cash flow	Discount rate	4.6 - 5.2		4.7	
			Weighted average life	1.1 - 1.5	yrs	1.1	
	20	Vendor priced					
Mortgage loans held for sale (residential)	982	Discounted cash flow	Default rate	0.0 - 15.6	%	0.8	
			Discount rate	1.1 - 6.6		5.5	
			Loss severity	0.0 - 43.3		23.4	
			Prepayment rate	3.2 - 13.4		4.6	
	15	Market comparable pricing	Comparability adjustment	(56.3) - (6.3)		(36.3)	
Loans	244 (5)	Discounted cash flow	Discount rate	3.4 - 6.4		4.2	
			Prepayment rate	2.9 - 100.0		87.2	
			Loss severity	0.0 - 34.8		10.2	
Mortgage servicing rights (residential)	14,649	Discounted cash flow	Cost to service per loan (6)	\$ 62 - 507		106	
			Discount rate	7.1 - 15.3	%	8.1	
			Prepayment rate (7)	9.0 - 23.5		9.9	
Net derivative assets and (liabilities):							
Interest rate contracts	(35)	Discounted cash flow	Default rate	0.0 - 5.0		2.0	
			Loss severity	50.0 - 50.0		50.0	
			Prepayment rate	2.8 - 25.0		13.8	
Interest rate contracts: derivative loan commitments	60	Discounted cash flow	Fall-out factor	1.0 - 99.0		19.4	
			Initial-value servicing	(36.6) - 91.7	bps	18.5	
Equity contracts	104	Discounted cash flow	Conversion factor	(9.3) - 0.0	%	(7.8)	
			Weighted average life	1.0 - 3.0	yrs	1.8	
	(121)	Option model	Correlation factor	(77.0) - 99.0	%	21.6	
			Volatility factor	6.5 - 100.0		21.8	
Credit contracts	3	Market comparable pricing	Comparability adjustment	(15.5) - 40.0		3.5	
	32	Option model	Credit spread	0.9 - 21.5		1.3	
			Loss severity	13.0 - 60.0		45.2	
Nonmarketable equity securities	5,468	Market comparable pricing	Comparability adjustment	(20.6) - (4.3)		(15.8)	
Insignificant Level 3 assets, net of liabilities	497 (8)						
Total Level 3 assets, net of liabilities	\$ 23,771 (9)						

- (1) Weighted averages are calculated using outstanding unpaid principal balance for cash instruments, such as loans and securities, and notional amounts for derivative instruments.
- (2) Includes \$800 million of collateralized debt obligations.
- (3) Securities backed by specified sources of current and future receivables generated from foreign originators.
- (4) Predominantly consists of investments in asset-backed securities that are revolving in nature, for which the timing of advances and repayments of principal are uncertain.
- (5) Consists of reverse mortgage loans.
- (6) The high end of the range of inputs is for servicing modified loans. For non-modified loans the range is \$62 - \$204.
- (7) Includes a blend of prepayment speeds and expected defaults. Prepayment speeds are influenced by mortgage interest rates as well as our estimation of drivers of borrower behavior.
- (8) Represents the aggregate amount of Level 3 assets and liabilities measured at fair value on a recurring basis that are individually and in the aggregate insignificant. The amount includes corporate debt securities, mortgage-backed securities, other trading positions, loans held for sale, other liabilities and certain net derivative assets and liabilities, such as commodity contracts and foreign exchange contracts.
- (9) Consists of total Level 3 assets of \$25.3 billion and total Level 3 liabilities of \$1.6 billion, before netting of derivative balances.

Note 18: Fair Values of Assets and Liabilities (continued)

Table 18.10: Valuation Techniques – Recurring Basis – 2017

(\$ in millions, except cost to service amounts)	Fair Value Level 3	Valuation Technique(s)	Significant Unobservable Input	Range of Inputs	Weighted Average (1)
December 31, 2017					
Trading and available-for-sale debt securities:					
Securities of U.S. states and political subdivisions:					
Government, healthcare and other revenue bonds	\$ 868	Discounted cash flow	Discount rate	1.7 - 5.8 %	2.7
Other municipal bonds	11	Discounted cash flow	Discount rate	4.7 - 4.9	4.8
	49	Vendor priced			
Collateralized loan and other debt obligations (2)	354	Market comparable pricing	Comparability adjustment	(22.0) - 19.5 %	3.0
	1,020	Vendor priced			
Asset-backed securities:					
Diversified payment rights (3)	292	Discounted cash flow	Discount rate	2.4 - 3.9	3.1
Other commercial and consumer	248 (4)	Discounted cash flow	Discount rate	3.7 - 5.2	3.9
			Weighted average life	2.0 - 2.3 yrs	2.1
	26	Vendor priced			
Mortgage loans held for sale (residential)	974	Discounted cash flow	Default rate	0.0 - 7.1 %	1.3
			Discount rate	2.6 - 7.3	5.6
			Loss severity	0.1 - 41.4	19.6
			Prepayment rate	6.5 - 15.9	9.1
	24	Market comparable pricing	Comparability adjustment	(56.3) - (6.3)	(42.7)
Loans	376 (5)	Discounted cash flow	Discount rate	3.1 - 7.5	4.2
			Prepayment rate	8.7 - 100.0	91.9
			Loss severity	0.0 - 33.9	6.6
Mortgage servicing rights (residential)	13,625	Discounted cash flow	Cost to service per loan (6)	\$ 78 - 587	143
			Discount rate	6.6 - 12.9 %	6.9
			Prepayment rate (7)	9.7 - 20.5	10.5
Net derivative assets and (liabilities):					
Interest rate contracts					
	54	Discounted cash flow	Default rate	0.0 - 5.0	2.1
			Loss severity	50.0 - 50.0	50.0
			Prepayment rate	2.8 - 12.5	10.5
Interest rate contracts: derivative loan commitments					
	17	Discounted cash flow	Fall-out factor	1.0 - 99.0	15.2
			Initial-value servicing	(59.9) - 101.1 bps	2.7
Equity contracts					
	102	Discounted cash flow	Conversion factor	(9.7) - 0.0 %	(7.6)
			Weighted average life	0.5 - 3.0 yrs	1.6
	(613)	Option model	Correlation factor	(77.0) - 98.0 %	24.2
			Volatility factor	5.7 - 95.5	19.2
Credit contracts					
	(3)	Market comparable pricing	Comparability adjustment	(29.9) - 17.3	(0.2)
	39	Option model	Credit spread	0.0 - 63.7	1.3
			Loss severity	13.0 - 60.0	50.7
Nonmarketable equity securities					
	8	Discounted cash flow	Discount rate	10.0 - 10.0	10.0
			Volatility Factor	0.5 - 1.9	1.4
	4,813	Market comparable pricing	Comparability adjustment	(21.1) - (5.5)	(15.0)
Insignificant Level 3 assets, net of liabilities	570 (8)				
Total level 3 assets, net of liabilities	\$ 22,854 (9)				

- (1) Weighted averages are calculated using outstanding unpaid principal balance for cash instruments such as loans and securities, and notional amounts for derivative instruments.
- (2) Includes \$1.0 billion of collateralized debt obligations.
- (3) Securities backed by specified sources of current and future receivables generated from foreign originators.
- (4) A significant portion of the balance consists of investments in asset-backed securities that are revolving in nature, for which the timing of advances and repayments of principal are uncertain.
- (5) Consists of reverse mortgage loans.
- (6) The high end of the range of inputs is for servicing modified loans. For non-modified loans the range is \$78 - \$252.
- (7) Includes a blend of prepayment speeds and expected defaults. Prepayment speeds are influenced by mortgage interest rates as well as our estimation of drivers of borrower behavior.
- (8) Represents the aggregate amount of Level 3 assets and liabilities measured at fair value on a recurring basis that are individually and in the aggregate insignificant. The amount includes corporate debt securities, mortgage-backed securities, other trading positions, other liabilities and certain net derivative assets and liabilities, such as commodity contracts and foreign exchange contracts.
- (9) Consists of total Level 3 assets of \$24.9 billion and total Level 3 liabilities of \$2.0 billion, before netting of derivative balances.

The valuation techniques used for our Level 3 assets and liabilities, as presented in the previous tables, are described as follows:

- Discounted cash flow – Discounted cash flow valuation techniques generally consist of developing an estimate of future cash flows that are expected to occur over the life of an instrument and then discounting those cash flows at a rate of return that results in the fair value amount.
- Market comparable pricing – Market comparable pricing valuation techniques are used to determine the fair value of certain instruments by incorporating known inputs, such as recent transaction prices, pending transactions, or prices of other similar investments that require significant adjustment to reflect differences in instrument characteristics.
- Option model – Option model valuation techniques are generally used for instruments in which the holder has a contingent right or obligation based on the occurrence of a future event, such as the price of a referenced asset going above or below a predetermined strike price. Option models estimate the likelihood of the specified event occurring by incorporating assumptions such as volatility estimates, price of the underlying instrument and expected rate of return.
- Vendor-priced – Prices obtained from third-party pricing vendors or brokers that are used to record the fair value of the asset or liability for which the related valuation technique and significant unobservable inputs are not provided.

Significant unobservable inputs presented in the previous tables are those we consider significant to the fair value of the Level 3 asset or liability. We consider unobservable inputs to be significant if by their exclusion the fair value of the Level 3 asset or liability would be impacted by a predetermined percentage change. We also consider qualitative factors, such as nature of the instrument, type of valuation technique used, and the significance of the unobservable inputs relative to other inputs used within the valuation. Following is a description of the significant unobservable inputs provided in the table.

- Comparability adjustment – is an adjustment made to observed market data, such as a transaction price in order to reflect dissimilarities in underlying collateral, issuer, rating, or other factors used within a market valuation approach, expressed as a percentage of an observed price.
- Conversion Factor – is the risk-adjusted rate in which a particular instrument may be exchanged for another instrument upon settlement, expressed as a percentage change from a specified rate.
- Correlation factor – is the likelihood of one instrument changing in price relative to another based on an established relationship expressed as a percentage of relative change in price over a period over time.

- Cost to service – is the expected cost per loan of servicing a portfolio of loans, which includes estimates for unreimbursed expenses (including delinquency and foreclosure costs) that may occur as a result of servicing such loan portfolios.
- Credit spread – is the portion of the interest rate in excess of a benchmark interest rate, such as Overnight Index Swap (OIS), LIBOR or U.S. Treasury rates, that when applied to an investment captures changes in the obligor's creditworthiness.
- Default rate – is an estimate of the likelihood of not collecting contractual amounts owed expressed as a constant default rate (CDR).
- Discount rate – is a rate of return used to calculate the present value of the future expected cash flow to arrive at the fair value of an instrument. The discount rate consists of a benchmark rate component and a risk premium component. The benchmark rate component, for example, OIS, LIBOR or U.S. Treasury rates, is generally observable within the market and is necessary to appropriately reflect the time value of money. The risk premium component reflects the amount of compensation market participants require due to the uncertainty inherent in the instruments' cash flows resulting from risks such as credit and liquidity.
- Fall-out factor – is the expected percentage of loans associated with our interest rate lock commitment portfolio that are likely of not funding.
- Initial-value servicing – is the estimated value of the underlying loan, including the value attributable to the embedded servicing right, expressed in basis points of outstanding unpaid principal balance.
- Loss severity – is the estimated percentage of contractual cash flows lost in the event of a default.
- Prepayment rate – is the estimated rate at which forecasted prepayments of principal of the related loan or debt instrument are expected to occur, expressed as a constant prepayment rate (CPR).
- Volatility factor – is the extent of change in price an item is estimated to fluctuate over a specified period of time expressed as a percentage of relative change in price over a period over time.
- Weighted average life – is the weighted average number of years an investment is expected to remain outstanding based on its expected cash flows reflecting the estimated date the issuer will call or extend the maturity of the instrument or otherwise reflecting an estimate of the timing of an instrument's cash flows whose timing is not contractually fixed.

Note 18: Fair Values of Assets and Liabilities (continued)

Significant Recurring Level 3 Fair Value Asset and Liability Input Sensitivity

We generally use discounted cash flow or similar internal modeling techniques to determine the fair value of our Level 3 assets and liabilities. Use of these techniques requires determination of relevant inputs and assumptions, some of which represent significant unobservable inputs as indicated in the preceding tables. Accordingly, changes in these unobservable inputs may have a significant impact on fair value.

Certain of these unobservable inputs will (in isolation) have a directionally consistent impact on the fair value of the instrument for a given change in that input. Alternatively, the fair value of the instrument may move in an opposite direction for a given change in another input. Where multiple inputs are used within the valuation technique of an asset or liability, a change in one input in a certain direction may be offset by an opposite change in another input having a potentially muted impact to the overall fair value of that particular instrument. Additionally, a change in one unobservable input may result in a change to another unobservable input (that is, changes in certain inputs are interrelated to one another), which may counteract or magnify the fair value impact.

SECURITIES, LOANS, MORTGAGE LOANS HELD FOR SALE and NONMARKETABLE EQUITY INVESTMENTS The fair values of predominantly all Level 3 trading securities, mortgage loans held for sale, loans, other nonmarketable equity investments, and available-for-sale securities have consistent inputs, valuation techniques and correlation to changes in underlying inputs. The internal models used to determine fair value for these Level 3 instruments use certain significant unobservable inputs within a discounted cash flow or market comparable pricing valuation technique. Such inputs include discount rate, prepayment rate, default rate, loss severity, comparability adjustment and weighted average life.

These Level 3 assets would decrease (increase) in value based upon an increase (decrease) in discount rate, default rate, loss severity, or weighted average life inputs and would generally decrease (increase) in value based upon an increase (decrease) in prepayment rate. Generally, a change in the assumption used for default rate is accompanied by a directionally similar change in the risk premium component of the discount rate (specifically, the portion related to credit risk) and a directionally opposite change in the assumption used for prepayment rates. The comparability adjustment input may have a positive or negative impact on fair value depending on the change in fair value the comparability adjustment references. Unobservable inputs for comparability adjustment, loss severity, and weighted average life do not increase or decrease based on movements in the other significant unobservable inputs for these Level 3 assets.

DERIVATIVE INSTRUMENTS Level 3 derivative instruments are valued using market comparable pricing, option pricing and discounted cash flow valuation techniques. We utilize certain unobservable inputs within these techniques to determine the fair value of the Level 3 derivative instruments. The significant unobservable inputs consist of credit spread, a comparability adjustment, prepayment rate, default rate, loss severity, initial-value servicing, fall-out factor, volatility factor, weighted average life, conversion factor, and correlation factor.

Level 3 derivative assets (liabilities) where we are long the underlying would decrease (increase) in value upon an increase (decrease) in default rate, fall-out factor, credit spread, conversion factor, or loss severity inputs. Conversely, Level 3 derivative assets (liabilities) would generally increase (decrease) in value upon an increase (decrease) in prepayment rate, initial-value servicing, weighted average life, or volatility factor inputs. The inverse of the above relationships would occur for instruments in which we are short the underlying. The correlation factor and comparability adjustment inputs may have a positive or negative impact on the fair value of these derivative instruments depending on the change in value of the item the correlation factor and comparability adjustment is referencing. The correlation factor and comparability adjustment are considered independent from movements in other significant unobservable inputs for derivative instruments.

Generally, for derivative instruments for which we are subject to changes in the value of the underlying referenced instrument, a change in the assumption used for default rate is accompanied by directionally similar change in the risk premium component of the discount rate (specifically, the portion related to credit risk) and a directionally opposite change in the assumption used for prepayment rates. Unobservable inputs for loss severity, fall-out factor, initial-value servicing, weighted average life, conversion factor, and volatility do not increase or decrease based on movements in other significant unobservable inputs for these Level 3 instruments.

MORTGAGE SERVICING RIGHTS We use a discounted cash flow valuation technique to determine the fair value of Level 3 mortgage servicing rights. These models utilize certain significant unobservable inputs including prepayment rate, discount rate and costs to service. An increase in any of these unobservable inputs will reduce the fair value of the mortgage servicing rights and alternatively, a decrease in any one of these inputs would result in the mortgage servicing rights increasing in value. Generally, a change in the assumption used for the default rate is accompanied by a directionally similar change in the assumption used for cost to service and a directionally opposite change in the assumption used for prepayment. The sensitivity of our residential MSRs is discussed further in Note 9 (Securitizations and Variable Interest Entities).

Assets and Liabilities Recorded at Fair Value on a Nonrecurring Basis

We may be required, from time to time, to measure certain assets at fair value on a nonrecurring basis in accordance with GAAP. These adjustments to fair value usually result from application of LOCOM accounting, write-downs of individual assets or commencing in 2018 with our adoption of

ASU 2016-01, use of the measurement alternative for nonmarketable equity securities. Table 18.12 provides the fair value hierarchy and fair value at the date of the nonrecurring fair value adjustment for all assets that were still held as of December 31, 2018 and 2017, and for which a nonrecurring fair value adjustment was recorded during the years then ended.

Table 18.12: Fair Value on a Nonrecurring Basis

(in millions)	December 31, 2018				December 31, 2017			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Mortgage loans held for sale (LOCOM) (1)	\$ —	1,213	1,233	2,446	—	1,646	1,333	2,979
Loans held for sale	—	313	—	313	—	108	—	108
Loans:								
Commercial	—	339	—	339	—	374	—	374
Consumer	—	346	1	347	—	502	10	512
Total loans (2)	—	685	1	686	—	876	10	886
Nonmarketable equity securities (3)	—	774	157	931	—	—	136	136
Other assets (4)	—	149	6	155	—	177	161	338
Total assets at fair value on a nonrecurring basis (5)	\$ —	3,134	1,397	4,531	—	2,807	1,640	4,447

(1) Consists of commercial mortgages and residential real estate 1-4 family first mortgage loans.

(2) Represents the carrying value of loans for which nonrecurring adjustments are based on the appraised value of the collateral.

(3) Consists of certain nonmarketable equity securities that are measured at fair value on a nonrecurring basis, including observable price adjustments for nonmarketable equity securities carried under the measurement alternative.

(4) Includes the fair value of foreclosed real estate, other collateral owned and operating lease assets.

(5) Prior period balances exclude \$6 million of nonmarketable equity securities at NAV.

Table 18.13 presents the increase (decrease) in value of certain assets held at the end of the respective reporting periods presented for which a nonrecurring fair value adjustment was recognized during the periods presented.

Table 18.13: Change in Value of Assets with Nonrecurring Fair Value Adjustment

(in millions)	Year ended December 31,	
	2018	2017
Mortgage loans held for sale (LOCOM)	\$ 21	10
Loans held for sale	(39)	(2)
Loans:		
Commercial	(221)	(335)
Consumer	(284)	(424)
Total loans (1)	(505)	(759)
Nonmarketable equity securities (2)	265	(178)
Other assets (3)	(40)	(121)
Total	\$ (298)	(1,050)

(1) Represents write-downs of loans based on the appraised value of the collateral.

(2) Includes impairment losses and observable price adjustments for certain nonmarketable equity securities.

(3) Includes the losses on foreclosed real estate and other collateral owned that were measured at fair value subsequent to their initial classification as foreclosed assets.

Note 18: Fair Values of Assets and Liabilities (continued)

Table 18.14 provides quantitative information about the valuation techniques and significant unobservable inputs used in the valuation of substantially all of our Level 3 assets that are measured at fair value on a nonrecurring basis using an internal model. The table is limited to financial instruments that had nonrecurring fair value adjustments during the periods presented.

We have excluded from the table valuation techniques and significant unobservable inputs for certain classes of Level 3

assets measured using an internal model that we consider, both individually and in the aggregate, insignificant relative to our overall Level 3 nonrecurring measurements. We made this determination based upon an evaluation of each class that considered the magnitude of the positions, nature of the unobservable inputs and potential for significant changes in fair value due to changes in those inputs.

Table 18.14: Valuation Techniques – Nonrecurring Basis

(\$ in millions)	Fair Value Level 3	Valuation Technique(s) (1)	Significant Unobservable Inputs (1)	Range of inputs	Weighted Average (2)
December 31, 2018					
Residential mortgage loans held for sale (LOCOM)	\$ 1,233 (3)	Discounted cash flow	Default rate (4)	0.2 – 2.3%	1.4%
			Discount rate	1.5 – 8.5	4.0
			Loss severity	0.5 – 66.0	1.7
			Prepayment rate (5)	3.5 – 100.0	46.5
Nonmarketable equity securities	7	Discounted cash flow	Discount rate	10.5 – 10.5	10.5
Insignificant level 3 assets	157				
Total	\$ 1,397				
December 31, 2017					
Residential mortgage loans held for sale (LOCOM)	\$ 1,333 (3)	Discounted cash flow	Default rate (4)	0.1 – 4.1 %	1.7 %
			Discount rate	1.5 – 8.5	3.8
			Loss severity	0.7 – 52.9	2.2
			Prepayment rate (5)	5.4 – 100.0	50.6
Nonmarketable equity securities	122	Discounted cash flow	Discount rate	5.0 – 10.5	10.2
Insignificant level 3 assets	185				
Total	\$ 1,640				

(1) Refer to the narrative following Table 18.10 for a definition of the valuation technique(s) and significant unobservable inputs.

(2) For residential MLHFS, weighted averages are calculated using the outstanding unpaid principal balance of the loans.

(3) Consists of approximately \$1.2 billion and \$1.3 billion of government insured/guaranteed loans purchased from GNMA-guaranteed mortgage securitizations at December 31, 2018 and 2017, respectively, and \$27 million and \$26 million of other mortgage loans that are not government insured/guaranteed at December 31, 2018 and 2017, respectively.

(4) Applies only to non-government insured/guaranteed loans.

(5) Includes the impact on prepayment rate of expected defaults for government insured/guaranteed loans, which impact the frequency and timing of early resolution of loans.

Fair Value Option

The fair value option is an irrevocable election, generally only permitted upon initial recognition of financial assets or liabilities, to measure eligible financial instruments at fair value with changes in fair value reflected in earnings. We may elect the fair value option to align the measurement model with how the financial assets or liabilities are managed or to reduce complexity or accounting asymmetry. Following is a discussion of the portfolios for which we elected the fair value option.

MORTGAGE LOANS HELD FOR SALE (MLHFS) We measure MLHFS at fair value for MLHFS originations for which an active secondary market and readily available market prices exist to reliably support fair value pricing models used for these loans. Loan origination fees on these loans are recorded when earned, and related direct loan origination costs are recognized when incurred. We also measure at fair value certain of our other interests held related to residential loan sales and securitizations. We believe fair value measurement for MLHFS and other interests held, which we hedge with economic hedge derivatives along with our MSRs measured at fair value, reduces certain timing differences and better matches changes in the

value of these assets with changes in the value of derivatives used as economic hedges for these assets.

LOANS HELD FOR SALE (LHFS) We engage in holding loans for market-making purposes to support the buying and selling demands of our customers. These loans are generally held for a short period of time and managed within parameters of internally approved market risk limits. We have elected to measure and carry them at fair value, which best aligns with our risk management practices. Fair value for these loans is generally determined using readily available market data based on recent transaction prices for similar loans.

LOANS Loans that we measure at fair value consist predominantly of reverse mortgage loans previously transferred under a GNMA reverse mortgage securitization program accounted for as a secured borrowing. Before the transfer, they were classified as MLHFS measured at fair value and, as such, remain carried on our balance sheet under the fair value option.

EQUITY SECURITIES We elected to measure at fair value certain nonmarketable equity securities that are hedged with derivative instruments to better reflect the economics of the transactions.

Table 18.15 reflects differences between the fair value carrying amount of the assets for which we have elected the fair value option and the contractual aggregate unpaid principal amount at maturity.

Table 18.15: Fair Value Option

(in millions)	December 31, 2018			December 31, 2017		
	Fair value carrying amount	Aggregate unpaid principal	Fair value carrying amount less aggregate unpaid principal	Fair value carrying amount	Aggregate unpaid principal	Fair value carrying amount less aggregate unpaid principal
Mortgage loans held for sale:						
Total loans	\$ 11,771	11,573	198	16,116	15,827	289
Nonaccrual loans	127	158	(31)	127	165	(38)
Loans 90 days or more past due and still accruing	7	9	(2)	16	21	(5)
Loans held for sale:						
Total loans	1,469	1,536	(67)	1,023	1,075	(52)
Nonaccrual loans	21	32	(11)	34	56	(22)
Loans:						
Total loans	244	274	(30)	376	404	(28)
Nonaccrual loans	179	208	(29)	253	281	(28)
Equity securities (1)	5,455	N/A	N/A	4,867	N/A	N/A

(1) Consists of nonmarketable equity securities carried at fair value.

The assets accounted for under the fair value option are initially measured at fair value. Gains and losses from initial measurement and subsequent changes in fair value are recognized in earnings. The changes in fair value related to

initial measurement and subsequent changes in fair value included in earnings for these assets measured at fair value are shown in Table 18.16 by income statement line item. Amounts recorded as interest income are excluded from Table 18.16.

Table 18.16: Fair Value Option – Changes in Fair Value Included in Earnings

(in millions)	Year ended December 31,											
	2018				2017				2016			
	Mortgage banking noninterest income	Net gains (losses) from trading activities	Net gains (losses) from equity securities	Other noninterest income	Mortgage banking noninterest income	Net gains (losses) from trading activities	Net gains (losses) from equity securities	Other noninterest income	Mortgage banking noninterest income	Net gains (losses) from trading activities	Net gains (losses) from equity securities	Other noninterest income
Mortgage loans held for sale	\$ 462	—	—	—	1,229	—	—	—	1,456	—	—	—
Loans held for sale	—	(1)	—	1	—	45	—	2	—	55	—	3
Loans	—	—	—	(1)	—	—	—	—	—	—	—	(60)
Equity securities	—	—	683	—	—	—	1,592	—	—	—	(12)	—
Other interests held (1)	—	(3)	—	—	—	(9)	—	—	—	(5)	—	—

(1) Includes retained interests in securitizations.

For performing loans, instrument-specific credit risk gains or losses were derived principally by determining the change in fair value of the loans due to changes in the observable or implied credit spread. Credit spread is the market yield on the loans less the relevant risk-free benchmark interest rate. For nonperforming loans, we attribute all changes in fair value to instrument-specific credit risk. Table 18.17 shows the estimated gains and losses from earnings attributable to instrument-specific credit risk related to assets accounted for under the fair value option.

Table 18.17: Fair Value Option – Gains/Losses Attributable to Instrument-Specific Credit Risk

(in millions)	Year ended December 31,		
	2018	2017	2016
Gains (losses) attributable to instrument-specific credit risk:			
Mortgage loans held for sale	\$ (16)	(12)	3
Loans held for sale	—	45	55
Total	\$ (16)	33	58

Note 18: Fair Values of Assets and Liabilities (continued)

Disclosures about Fair Value of Financial Instruments

Table 18.18 is a summary of fair value estimates for financial instruments, excluding financial instruments recorded at fair value on a recurring basis, as they are included within Table 18.2 in this Note. In connection with our adoption of ASU 2016-01 in first quarter 2018, the valuation methodologies for estimating the fair value of financial instruments in Table 18.18 have been changed, where necessary, to conform with an exit price notion. Under an exit price notion, fair value estimates are based upon the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the balance sheet date. For certain loans and deposit liabilities, the estimated fair values prior to our adoption

of ASU 2016-01 followed an entrance price notion that based fair values on recent prices offered to customers for loans and deposits with similar characteristics. The carrying amounts in the following table are recorded on the balance sheet under the indicated captions.

We have not included assets and liabilities that are not financial instruments in our disclosure, such as the value of the long-term relationships with our deposit, credit card and trust customers, amortized MSRs, premises and equipment, goodwill and other intangibles, deferred taxes and other liabilities.

The total of the fair value calculations presented does not represent, and should not be construed to represent, the underlying value of the Company.

Table 18.18: Fair Value Estimates for Financial Instruments

		Estimated fair value			
(in millions)	Carrying amount	Level 1	Level 2	Level 3	Total
December 31, 2018					
Financial assets					
Cash and due from banks (1)	\$ 23,551	23,551	—	—	23,551
Interest-earning deposits with banks (1)	149,736	149,542	194	—	149,736
Federal funds sold and securities purchased under resale agreements (1)	80,207	—	80,207	—	80,207
Held-to-maturity debt securities	144,788	44,339	97,275	501	142,115
Mortgage loans held for sale	3,355	—	2,129	1,233	3,362
Loans held for sale	572	—	572	—	572
Loans, net (2)(3)	923,703	—	45,190	872,725	917,915
Nonmarketable equity securities (cost method) (4)	5,643	—	—	5,675	5,675
Total financial assets	\$ 1,331,555	217,432	225,567	880,134	1,323,133
Financial liabilities					
Deposits (3)(5)	\$ 130,645	—	107,448	22,641	130,089
Short-term borrowings	105,787	—	105,789	—	105,789
Long-term debt (6)	229,008	—	225,904	2,230	228,134
Total financial liabilities	\$ 465,440	—	439,141	24,871	464,012
December 31, 2017					
Financial assets					
Cash and due from banks (1)	\$ 23,367	23,367	—	—	23,367
Interest-earning deposits with banks (1)	192,580	192,455	125	—	192,580
Federal funds sold and securities purchased under resale agreements (1)	80,025	1,002	78,954	69	80,025
Held-to-maturity debt securities	139,335	44,806	93,694	485	138,985
Mortgage loans held for sale	3,954	—	2,625	1,333	3,958
Loans held for sale	108	—	108	—	108
Loans, net (2)(3)	926,273	—	51,713	886,622	938,335
Nonmarketable equity securities (cost method)	7,136	—	23	7,605	7,628
Total financial assets (7)	\$ 1,372,778	261,630	227,242	896,114	1,384,986
Financial liabilities					
Deposits (3)(5)	\$ 128,594	—	108,146	19,768	127,914
Short-term borrowings	103,256	—	103,256	—	103,256
Long-term debt (6)	224,981	—	227,109	3,159	230,268
Total financial liabilities	\$ 456,831	—	438,511	22,927	461,438

(1) Amounts consist of financial instruments for which carrying value approximates fair value.

(2) Excludes lease financing with a carrying amount of \$19.7 billion and \$19.4 billion at December 31, 2018 and 2017, respectively.

(3) In connection with our adoption of ASU 2016-01, the valuation methodologies used to estimate the fair value at December 31, 2018, for a portion of loans and deposit liabilities with a defined or contractual maturity has been changed to conform to an exit price notion. The fair value estimates at December 31, 2017 have not been revised to reflect application of the modified methodology.

(4) Excludes \$1.7 billion of nonmarketable equity securities accounted for under the measurement alternative at December 31, 2018, that were accounted for under the cost method in prior periods.

(5) Excludes deposit liabilities with no defined or contractual maturity of \$1.2 trillion at both December 31, 2018 and 2017.

(6) Excludes capital lease obligations under capital leases of \$36 million and \$39 million at December 31, 2018 and 2017, respectively.

(7) Excludes \$27 million of carrying value and \$30 million of fair value relating to nonmarketable equity securities at NAV at December 31, 2017.

Loan commitments, standby letters of credit and commercial and similar letters of credit are not included in Table 18.18. A reasonable estimate of the fair value of these instruments is the carrying value of deferred fees plus the allowance for unfunded credit commitments, which totaled \$1.0 billion at both December 31, 2018 and 2017.

Note 19: Preferred Stock

We are authorized to issue 20 million shares of preferred stock and 4 million shares of preference stock, both without par value. Preferred shares outstanding rank senior to common shares both as to dividends and liquidation preference but have no general voting rights. We have not issued any preference shares

under this authorization. If issued, preference shares would be limited to one vote per share. Our total authorized, issued and outstanding preferred stock is presented in the following two tables along with the Employee Stock Ownership Plan (ESOP) Cumulative Convertible Preferred Stock.

Table 19.1: Preferred Stock Shares

	December 31, 2018		December 31, 2017	
	Liquidation preference per share	Shares authorized and designated	Liquidation preference per share	Shares authorized and designated
DEP Shares				
Dividend Equalization Preferred Shares (DEP)	\$ 10	97,000	\$ 10	97,000
Series I				
Floating Class A Preferred Stock (1)	100,000	25,010	100,000	25,010
Series J				
8.00% Non-Cumulative Perpetual Class A Preferred Stock (2)	—	—	1,000	2,300,000
Series K				
Floating Non-Cumulative Perpetual Class A Preferred Stock (3)	1,000	3,500,000	1,000	3,500,000
Series L				
7.50% Non-Cumulative Perpetual Convertible Class A Preferred Stock	1,000	4,025,000	1,000	4,025,000
Series N				
5.20% Non-Cumulative Perpetual Class A Preferred Stock	25,000	30,000	25,000	30,000
Series O				
5.125% Non-Cumulative Perpetual Class A Preferred Stock	25,000	27,600	25,000	27,600
Series P				
5.25% Non-Cumulative Perpetual Class A Preferred Stock	25,000	26,400	25,000	26,400
Series Q				
5.85% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	25,000	69,000	25,000	69,000
Series R				
6.625% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	25,000	34,500	25,000	34,500
Series S				
5.90% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	25,000	80,000	25,000	80,000
Series T				
6.00% Non-Cumulative Perpetual Class A Preferred Stock	25,000	32,200	25,000	32,200
Series U				
5.875% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	25,000	80,000	25,000	80,000
Series V				
6.00% Non-Cumulative Perpetual Class A Preferred Stock	25,000	40,000	25,000	40,000
Series W				
5.70% Non-Cumulative Perpetual Class A Preferred Stock	25,000	40,000	25,000	40,000
Series X				
5.50% Non-Cumulative Perpetual Class A Preferred Stock	25,000	46,000	25,000	46,000
Series Y				
5.625% Non-Cumulative Perpetual Class A Preferred Stock	25,000	27,600	25,000	27,600
ESOP				
Cumulative Convertible Preferred Stock (4)	—	1,406,460	—	1,556,104
Total		9,586,770		12,036,414

(1) Floating rate for Preferred Stock, Series I, is the greater of three-month LIBOR plus 0.93% and 5.56975%.

(2) Preferred Stock, Series J, was redeemed in third quarter 2018.

(3) Effective June 15, 2018, Preferred Stock, Series K, converted from a fixed to a floating coupon rate of three-month LIBOR plus 3.77%.

(4) See the ESOP Cumulative Convertible Preferred Stock section in this Note for additional information about the liquidation preference for the ESOP Cumulative Convertible Preferred Stock.

Note 19: Preferred Stock (continued)

Table 19.2: Preferred Stock – Shares Issued and Carrying Value

(in millions, except shares)	December 31, 2018				December 31, 2017			
	Shares issued and outstanding	Liquidation preference value	Carrying value	Discount	Shares issued and outstanding	Liquidation preference value	Carrying value	Discount
DEP Shares								
Dividend Equalization Preferred Shares (DEP)	96,546	\$ —	—	—	96,546	\$ —	—	—
Series I (1)(2)								
Floating Class A Preferred Stock	25,010	2,501	2,501	—	25,010	2,501	2,501	—
Series J (1)(3)								
8.00% Non-Cumulative Perpetual Class A Preferred Stock	—	—	—	—	2,150,375	2,150	1,995	155
Series K (1)(4)								
Floating Non-Cumulative Perpetual Class A Preferred Stock	3,352,000	3,352	2,876	476	3,352,000	3,352	2,876	476
Series L (1)								
7.50% Non-Cumulative Perpetual Convertible Class A Preferred Stock	3,968,000	3,968	3,200	768	3,968,000	3,968	3,200	768
Series N (1)								
5.20% Non-Cumulative Perpetual Class A Preferred Stock	30,000	750	750	—	30,000	750	750	—
Series O (1)								
5.125% Non-Cumulative Perpetual Class A Preferred Stock	26,000	650	650	—	26,000	650	650	—
Series P (1)								
5.25% Non-Cumulative Perpetual Class A Preferred Stock	25,000	625	625	—	25,000	625	625	—
Series Q (1)								
5.85% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	69,000	1,725	1,725	—	69,000	1,725	1,725	—
Series R (1)								
6.625% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	33,600	840	840	—	33,600	840	840	—
Series S (1)								
5.90% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	80,000	2,000	2,000	—	80,000	2,000	2,000	—
Series T (1)								
6.00% Non-Cumulative Perpetual Class A Preferred Stock	32,000	800	800	—	32,000	800	800	—
Series U (1)								
5.875% Fixed-to-Floating Non-Cumulative Perpetual Class A Preferred Stock	80,000	2,000	2,000	—	80,000	2,000	2,000	—
Series V (1)								
6.00% Non-Cumulative Perpetual Class A Preferred Stock	40,000	1,000	1,000	—	40,000	1,000	1,000	—
Series W (1)								
5.70% Non-Cumulative Perpetual Class A Preferred Stock	40,000	1,000	1,000	—	40,000	1,000	1,000	—
Series X (1)								
5.50% Non-Cumulative Perpetual Class A Preferred Stock	46,000	1,150	1,150	—	46,000	1,150	1,150	—
Series Y (1)								
5.625% Non-Cumulative Perpetual Class A Preferred Stock	27,600	690	690	—	27,600	690	690	—
ESOP								
Cumulative Convertible Preferred Stock	1,406,460	1,407	1,407	—	1,556,104	1,556	1,556	—
Total	9,377,216	\$ 24,458	23,214	1,244	11,677,235	\$ 26,757	25,358	1,399

(1) Preferred shares qualify as Tier 1 capital.

(2) Floating rate for Preferred Stock, Series I, is the greater of three-month LIBOR plus 0.93% and 5.56975%.

(3) Preferred Stock, Series J, was redeemed in third quarter 2018.

(4) Effective June 15, 2018, Preferred Stock, Series K, converted from a fixed to a floating coupon rate of three-month LIBOR plus 3.77%.

See Note 9 (Securitizations and Variable Interest Entities) for additional information on our trust preferred securities.

ESOP CUMULATIVE CONVERTIBLE PREFERRED STOCK All shares of our ESOP Cumulative Convertible Preferred Stock (ESOP Preferred Stock) were issued to a trustee acting on behalf of the Wells Fargo & Company 401(k) Plan (the 401(k) Plan). Dividends on the ESOP Preferred Stock are cumulative from the date of initial issuance and are payable quarterly at annual rates based upon the year of issuance. Each share of ESOP Preferred Stock released from the unallocated reserve of the 401(k) Plan is converted into shares of our common stock based on the stated value of the ESOP Preferred Stock and the then current market

price of our common stock. The ESOP Preferred Stock is also convertible at the option of the holder at any time, unless previously redeemed. We have the option to redeem the ESOP Preferred Stock at any time, in whole or in part, at a redemption price per share equal to the higher of (a) \$1,000 per share plus accrued and unpaid dividends or (b) the fair market value, as defined in the Certificates of Designation for the ESOP Preferred Stock.

Table 19.3: ESOP Preferred Stock

(in millions, except shares)	Shares issued and outstanding		Carrying value		Adjustable dividend rate	
	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Minimum	Maximum
ESOP Preferred Stock						
\$1,000 liquidation preference per share						
2018	336,945	—	\$ 337	—	7.00%	8.00%
2017	222,210	273,210	222	273	7.00	8.00
2016	233,835	322,826	234	323	9.30	10.30
2015	144,338	187,436	144	187	8.90	9.90
2014	174,151	237,151	174	237	8.70	9.70
2013	133,948	201,948	134	202	8.50	9.50
2012	77,634	128,634	78	129	10.00	11.00
2011	61,796	129,296	62	129	9.00	10.00
2010	21,603	75,603	22	76	9.50	10.50
Total ESOP Preferred Stock (1)	1,406,460	1,556,104	\$ 1,407	1,556		
Unearned ESOP shares (2)			\$ (1,502)	(1,678)		

(1) At December 31, 2018 and 2017, additional paid-in capital included \$95 million and \$122 million, respectively, related to ESOP preferred stock.

(2) We recorded a corresponding charge to unearned ESOP shares in connection with the issuance of the ESOP Preferred Stock. The unearned ESOP shares are reduced as shares of the ESOP Preferred Stock are committed to be released.

Note 20: Common Stock and Stock Plans

Common Stock

Table 20.1 presents our reserved, issued and authorized shares of common stock at December 31, 2018.

Table 20.1: Common Stock Shares

	Number of shares
Dividend reinvestment and common stock purchase plans	9,114,931
Director plans	447,526
Stock plans (1)	369,893,237
Convertible securities and warrants	65,835,468
Total shares reserved	445,291,162
Shares issued	5,481,811,474
Shares not reserved or issued	3,072,897,364
Total shares authorized	9,000,000,000

(1) Includes employee options, restricted shares and restricted share rights, 401(k) profit sharing and compensation deferral plans.

In connection with our participation in the Capital Purchase Program (CPP), a part of the Troubled Asset Relief Program (TARP), we issued to the U.S. Treasury Department warrants to purchase 110,261,688 shares of our common stock with an original exercise price of \$34.01 per share. The warrants expired on October 29, 2018, and the holders of 110,646 unexercised warrants as of the expiration date are no longer entitled to receive any shares of our common stock. Holders exercised 23,217,208 and 9,774,052 warrants to purchase shares of our common stock in 2018 and 2017, respectively.

Dividend Reinvestment and Common Stock Purchase Plans

Participants in our dividend reinvestment and common stock direct purchase plans may purchase shares of our common stock at fair market value by reinvesting dividends and/or making optional cash payments, under the plan's terms.

Employee Stock Plans

We offer stock-based employee compensation plans as described below. For information on our accounting for stock-based compensation plans, see Note 1 (Summary of Significant Accounting Policies).

LONG-TERM INCENTIVE COMPENSATION PLANS Our Long-Term Incentive Compensation Plan (LTICP) provides for awards of incentive and nonqualified stock options, stock appreciation rights, restricted shares, restricted share rights (RSRs), performance share awards (PSAs), performance units and stock awards with or without restrictions.

Beginning in 2010, we granted RSRs and performance shares as our primary long-term incentive awards instead of stock options. Holders of RSRs are entitled to the related shares of common stock at no cost generally vesting over three to five years after the RSRs were granted. Subject to compliance with applicable laws, rules and regulations, RSRs generally continue to vest and are distributed after retirement according to the original vesting schedule. Except for retirement and other limited circumstances, RSRs are canceled when employment ends.

Holders of each vested PSA are entitled to the related shares of common stock at no cost. Subject to compliance with applicable laws, rules, and regulations, PSAs continue to vest and are distributed after retirement according to the original vesting schedule subject to satisfying the performance criteria and other vesting conditions.

Holders of RSRs and PSAs may be entitled to receive additional RSRs and PSAs (dividend equivalents) or cash payments equal to the cash dividends that would have been paid had the RSRs or PSAs been issued and outstanding shares of common stock. RSRs and PSAs granted as dividend equivalents are subject to the same vesting schedule and conditions as the underlying award.

Stock options must have an exercise price at or above fair market value (as defined in the plan) of the stock at the date of grant (except for substitute or replacement options granted in connection with mergers or other acquisitions) and a term of no more than 10 years. Options generally become exercisable over three years beginning on the first anniversary of the date of grant. Except as otherwise permitted under the plan, if employment is ended for reasons other than retirement, permanent disability or death, the option exercise period is reduced or the options are canceled.

Compensation expense for most of our RSRs, and PSAs granted prior to 2013 is based on the quoted market price of the related stock at the grant date; beginning in 2013 certain RSRs and all PSAs granted include discretionary conditions that can result in forfeiture and are subject to variable accounting. For these awards, the associated compensation expense fluctuates with changes in our stock price. Table 20.2 summarizes the major components of stock incentive compensation expense and the related recognized tax benefit.

Table 20.2: Stock Incentive Compensation Expense

	Year ended December 31,		
(in millions)	2018	2017	2016
RSRs (1)	\$ 1,013	743	692
Performance shares	9	112	87
Stock options	—	(6)	—
Total stock incentive compensation expense (2)	\$ 1,022	849	779
Related recognized tax benefit	\$ 252	320	294

- (1) In February 2018, a total of 11.9 million RSRs were granted to all eligible team members in the U.S., and eligible team members outside the U.S., referred to as broad-based RSRs.
- (2) Amounts for the year-ended December 31, 2018, were net of \$19 million related to reversal of previously accrued RSR costs. Year-ended December 31, 2017, were net of \$26 million related to clawback credits taken against a prior PSA awarded under our LTICP.

For various acquisitions and mergers, we converted employee and director stock options of acquired or merged companies into stock options to purchase our common stock based on the terms of the original stock option plan and the agreed-upon exchange ratio. In addition, we converted restricted stock awards into awards that entitle holders to our stock after the vesting conditions are met. Holders receive cash dividends on outstanding awards if provided in the original award.

The total number of shares of common stock available for grant under the plans at December 31, 2018, was 92 million.

Director Awards

Beginning in 2011, we granted only common stock awards under the LTICP to non-employee directors elected or re-elected at the annual meeting of stockholders and prorated awards to directors who join the Board at any other time. Stock awards vest immediately. Options also were granted to directors prior to 2011 and can be exercised after 12 months through the tenth anniversary of the grant date.

Restricted Share Rights

A summary of the status of our RSRs and restricted share awards at December 31, 2018, and changes during 2018 is presented in Table 20.3.

Table 20.3: Restricted Share Rights

	Number	Weighted-average grant-date fair value
Nonvested at January 1, 2018	34,894,376	\$ 50.95
Granted	28,023,158	58.47
Vested	(14,571,562)	52.12
Canceled or forfeited	(2,773,474)	56.76
Nonvested at December 31, 2018	45,572,498	54.85

The weighted-average grant date fair value of RSRs granted during 2017 and 2016 was \$57.54 and \$48.31, respectively.

At December 31, 2018, there was \$1.1 billion of total unrecognized compensation cost related to nonvested RSRs. The cost is expected to be recognized over a weighted-average period of 2.0 years. The total fair value of RSRs that vested during 2018, 2017 and 2016 was \$824 million, \$865 million and \$1.1 billion, respectively.

Performance Share Awards

Holders of PSAs are entitled to the related shares of common stock at no cost subject to the Company's achievement of specified performance criteria over a three-year period. PSAs are granted at a target number; based on the Company's performance, the number of awards that vest can be adjusted downward to zero and upward to a maximum of either 125% or 150% of target. The awards vest in the quarter after the end of the performance period. For PSAs whose performance period ended December 31, 2018, the determination of the number of performance shares that will vest will occur in first quarter of 2019 after review of the Company's performance by the Human Resources Committee of the Board of Directors. Beginning in 2013, PSAs granted include discretionary conditions that can result in forfeiture and are subject to variable accounting. For these awards, the associated compensation expense fluctuates with changes in our stock price and the estimated outcome of meeting the performance conditions. The total expense that will be recognized on these awards cannot be finalized until the determination of the awards that will vest.

A summary of the status of our PSAs at December 31, 2018, and changes during 2018 is in Table 20.4, based on the performance adjustments recognized as of December 2018.

Table 20.4: Performance Share Awards

	Number	Weighted-average grant-date fair value (1)
Nonvested at January 1, 2018	5,492,104	\$ 47.81
Granted	2,570,300	58.62
Vested	(1,879,523)	55.21
Canceled or forfeited	(198,195)	54.48
Nonvested at December 31, 2018	5,984,686	49.91

(1) Reflects approval date fair value for grants subject to variable accounting.

The weighted-average grant date fair value of performance awards granted during 2017 and 2016 was \$57.14 and \$44.73, respectively.

At December 31, 2018, there was \$26 million of total unrecognized compensation cost related to nonvested performance awards. The cost is expected to be recognized over a weighted-average period of 1.5 years. The total fair value of PSAs that vested during 2018, 2017 and 2016 was \$107 million, \$117 million, and \$220 million, respectively.

Note 20: Common Stock and Stock Plans (continued)**Stock Options**

Table 20.5 summarizes stock option activity and related information for the stock plans. Options assumed in mergers are included in the activity and related information for Incentive

Compensation Plans if originally issued under an employee plan, and in the activity and related information for Director Awards if originally issued under a director plan.

Table 20.5: Stock Option Activity

	Number	Weighted-average exercise price	Weighted-average remaining contractual term (in yrs.)	Aggregate intrinsic value (in millions)
Incentive compensation plans				
Options outstanding as of December 31, 2017	20,179,179	\$ 32.80		
Canceled or forfeited	(1,886,251)	172.36		
Exercised	(9,949,771)	22.50		
Options exercisable and outstanding as of December 31, 2018	8,343,157	13.46	0.2	\$ 272
Director awards				
Options outstanding as of December 31, 2017	104,900	29.87		
Exercised	(104,900)	29.88		
Options exercisable and outstanding as of December 31, 2018	—	—	0.0	—

The total intrinsic value to option holders, which is the stock market value in excess of the option exercise price, of options exercised during 2018, 2017 and 2016 was \$375 million, \$623 million and \$546 million, respectively.

Cash received from the exercise of stock options for 2018, 2017 and 2016 was \$227 million, \$602 million and \$893 million, respectively.

We do not have a specific policy on repurchasing shares to satisfy share option exercises. Rather, we have a general policy on repurchasing shares to meet common stock issuance requirements for our benefit plans (including share option exercises), conversion of our convertible securities, acquisitions and other corporate purposes. Various factors determine the amount and timing of our share repurchases, including our capital requirements, the number of shares we expect to issue for acquisitions and employee benefit plans, market conditions (including the trading price of our stock), and regulatory and legal considerations. These factors can change at any time, and there can be no assurance as to the number of shares we will repurchase or when we will repurchase them.

Employee Stock Ownership Plan

The Wells Fargo & Company 401(k) Plan (401(k) Plan) is a defined contribution plan with an Employee Stock Ownership Plan (ESOP) feature. The ESOP feature enables the 401(k) Plan to borrow money to purchase our preferred or common stock. From 1994 through 2018, with the exception of 2009, we loaned money to the 401(k) Plan to purchase shares of our ESOP preferred stock. As our employer contributions are made to the 401(k) Plan and are used by the 401(k) Plan to make ESOP loan payments, the ESOP preferred stock in the 401(k) Plan is released and converted into our common stock shares. Dividends on the common stock shares allocated as a result of the release and conversion of the ESOP preferred stock reduce retained earnings, and the shares are considered outstanding for computing earnings per share. Dividends on the unallocated ESOP preferred stock do not reduce retained earnings, and the shares are not considered to be common stock equivalents for computing earnings per share. Loan principal and interest payments are made from our employer contributions to the 401(k) Plan, along with dividends paid on the ESOP preferred stock. With each principal and interest payment, a portion of the ESOP preferred stock is released and converted to common stock shares, which are allocated to the 401(k) Plan participants and invested in the Wells Fargo ESOP Fund within the 401(k) Plan.

Table 20.6 presents the balance of common stock and unreleased preferred stock held in the Wells Fargo ESOP fund, the fair value of unreleased ESOP preferred stock and the

dividends on allocated shares of common stock and unreleased ESOP Preferred Stock paid to the 401(k) Plan.

Table 20.6: Common Stock and Unreleased Preferred Stock in the Wells Fargo ESOP Fund

(in millions, except shares)	Shares outstanding		
	December 31,		
	2018	2017	2016
Allocated shares (common)	138,182,911	124,670,717	128,189,305
Unreleased shares (preferred)	1,406,460	1,556,104	1,439,181
Fair value of unreleased ESOP preferred shares	\$ 1,407	1,556	1,439

	Dividends paid		
	Year ended December 31,		
	2018	2017	2016
Allocated shares (common)	\$ 213	195	208
Unreleased shares (preferred)	159	166	169

Deferred Compensation Plan for Independent Sales Agents

WF Deferred Compensation Holdings, Inc. is a wholly-owned subsidiary of the Parent formed solely to sponsor a deferred compensation plan for independent sales agents who provide investment, financial and other qualifying services for or with respect to participating affiliates.

The Nonqualified Deferred Compensation Plan for Independent Contractors, which became effective January 1, 2002, allowed participants to defer all or part of their eligible compensation payable to them by a participating affiliate. The plan was frozen for new compensation deferrals effective January 1, 2012. The Parent has fully and unconditionally guaranteed the deferred compensation obligations of WF Deferred Compensation Holdings, Inc. under the plan.

Note 21: Revenue from Contracts with Customers

Our revenue includes net interest income on financial instruments and noninterest income. Table 21.1 presents our revenue by operating segment. The “Other” segment for each of the tables below includes the elimination of certain items that are included in more than one business segment, most of which represents products and services for WIM customers served through Community Banking distribution channels. For additional description of our operating segments, including additional financial information and the underlying management accounting process, see Note 26 (Operating Segments) to Financial Statements in this Report.

We adopted ASU 2014-09 – *Revenue from Contracts with Customers* (“the new revenue recognition guidance”) on a modified retrospective basis as of January 1, 2018. Under this method of adoption, prior period financial information for 2017 and 2016 was not adjusted. Rather, this ASU resulted in a cumulative-effect adjustment that decreased the beginning balance of retained earnings by \$32 million on January 1, 2018, and changed the presentation of certain revenues and expenses prospectively. For details on the impact of the adoption of this ASU, see Note 1 (Summary of Significant Accounting Policies).

Table 21.1: Revenue by Operating Segment

Year ended December 31, 2018					
(in millions)	Community Banking	Wholesale Banking	Wealth and Investment Management	Other (3)	Consolidated Company
Net interest income (1)	\$ 29,219	18,690	4,441	(2,355)	49,995
Noninterest income:					
Service charges on deposit accounts	2,641	2,074	16	(15)	4,716
Trust and investment fees:					
Brokerage advisory, commissions and other fees	1,887	317	9,161	(1,929)	9,436
Trust and investment management	910	445	2,893	(932)	3,316
Investment banking	(35)	1,783	9	—	1,757
Total trust and investment fees	2,762	2,545	12,063	(2,861)	14,509
Card fees	3,543	362	6	(4)	3,907
Other fees:					
Lending related charges and fees (1)(2)	278	1,247	7	(6)	1,526
Cash network fees	478	3	—	—	481
Commercial real estate brokerage commissions	—	468	—	—	468
Wire transfer and other remittance fees	264	209	8	(4)	477
All other fees (1)	339	92	2	(1)	432
Total other fees	1,359	2,019	17	(11)	3,384
Mortgage banking (1)	2,659	362	(11)	7	3,017
Insurance (1)	83	312	82	(48)	429
Net gains from trading activities (1)	28	516	57	1	602
Net gains (losses) on debt securities (1)	(3)	102	9	—	108
Net gains from equity investments (1)	1,505	293	(283)	—	1,515
Lease income (1)	—	1,753	—	—	1,753
Other income of the segment (1)	3,117	(322)	(21)	(301)	2,473
Total noninterest income	17,694	10,016	11,935	(3,232)	36,413
Revenue	\$ 46,913	28,706	16,376	(5,587)	86,408
Year ended December 31, 2017					
Net interest income (1)	\$ 28,658	18,810	4,641	(2,552)	49,557
Noninterest income:					
Service charges on deposit accounts	2,909	2,201	17	(16)	5,111
Trust and investment fees:					
Brokerage advisory, commissions and other fees	1,830	304	9,072	(1,848)	9,358
Trust and investment management	889	523	2,877	(917)	3,372
Investment banking	(59)	1,827	(2)	(1)	1,765
Total trust and investment fees	2,660	2,654	11,947	(2,766)	14,495
Card fees	3,613	345	6	(4)	3,960
Other fees:					
Lending related charges and fees (1)(2)	311	1,257	8	(8)	1,568
Cash network fees	498	8	—	—	506
Commercial real estate brokerage commissions	1	461	—	—	462
Wire transfer and other remittance fees	239	204	9	(4)	448
All other fees (1)	448	124	1	—	573
Total other fees	1,497	2,054	18	(12)	3,557
Mortgage banking (1)	3,895	458	(10)	7	4,350
Insurance (1)	139	872	88	(50)	1,049
Net gains from trading activities (1)	(251)	701	92	—	542
Net gains (losses) on debt securities (1)	709	(232)	2	—	479
Net gains from equity investments (1)	1,455	116	208	—	1,779
Lease income (1)	—	1,907	—	—	1,907
Other income of the segment (1)	1,734	114	63	(308)	1,603
Total noninterest income	18,360	11,190	12,431	(3,149)	38,832
Revenue	\$ 47,018	30,000	17,072	(5,701)	88,389

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Year ended December 31, 2016					
	Community Banking	Wholesale Banking	Wealth and Investment Management	Other (3)	Consolidated Company
Net interest income (1)	\$ 27,333	18,699	4,249	(2,527)	47,754
Noninterest income:					
Service charges on deposit accounts	3,111	2,260	19	(18)	5,372
Trust and investment fees:					
Brokerage advisory, commissions and other fees	1,854	368	8,870	(1,876)	9,216
Trust and investment management	849	473	2,891	(877)	3,336
Investment banking	(141)	1,833	(1)	—	1,691
Total trust and investment fees	2,562	2,674	11,760	(2,753)	14,243
Card fees	3,598	336	6	(4)	3,936
Other fees:					
Lending related charges and fees (1)(2)	364	1,198	8	(8)	1,562
Cash network fees	528	9	—	—	537
Commercial real estate brokerage commissions	—	494	—	—	494
Wire transfer and other remittance fees	219	178	8	(4)	401
All other fees (1)	525	206	2	—	733
Total other fees	1,636	2,085	18	(12)	3,727
Mortgage banking (1)	5,624	475	(9)	6	6,096
Insurance (1)	112	1,156	—	—	1,268
Net gains from trading activities (1)	(148)	677	81	—	610
Net gains (losses) on debt securities (1)	933	8	1	—	942
Net gains from equity investments (1)	804	199	100	—	1,103
Lease income (1)	—	1,927	—	—	1,927
Other income of the segment (1)	948	551	53	(263)	1,289
Total noninterest income	19,180	12,348	12,029	(3,044)	40,513
Revenue	\$ 46,513	31,047	16,278	(5,571)	88,267

- (1) Most of our revenue is not within the scope of Accounting Standards Update (ASU) 2014-09 – *Revenue from Contracts with Customers*, and additional details are included in other footnotes to our financial statements. The scope explicitly excludes net interest income as well as many other revenues for financial assets and liabilities, including loans, leases, securities, and derivatives.
- (2) Represents combined amount of previously reported "Charges and fees on loans" and "Letters of credit fees".
- (3) Includes the elimination of certain items that are included in more than one business segment, most of which represents products and services for WIM customers served through Community Banking distribution channels.

We provide services to customers which have related performance obligations that we complete to recognize revenue. Our revenues are generally recognized either immediately upon the completion of our service or over time as we perform services. Any services performed over time generally require that we render services each period and therefore we measure our progress in completing these services based upon the passage of time.

SERVICE CHARGES ON DEPOSIT ACCOUNTS are earned on depository accounts for commercial and consumer customers and include fees for account and overdraft services. Account

charges include fees for periodic account maintenance activities and event-driven services such as stop payment fees. Our obligation for event-driven services is satisfied at the time of the event when the service is delivered, while our obligation for maintenance services is satisfied over the course of each month. Our obligation for overdraft services is satisfied at the time of the overdraft.

Table 21.2 presents our service charges on deposit accounts by operating segment.

Table 21.2: Service Charges on Deposit Accounts by Operating Segment

Year ended December 31,														
(in millions)	Community Banking			Wholesale Banking			Wealth and Investment Management			Other			Consolidated Company	
	2018	2017	2016	2018	2017	2016	2018	2017	2016	2018	2017	2016	2018	2016
Overdraft fees	\$ 1,776	1,941	2,024	5	6	6	1	1	—	—	—	—	1,782	2,030
Account charges	865	968	1,087	2,069	2,195	2,254	15	16	19	(15)	(16)	(18)	2,934	3,342
Service charges on deposit accounts	\$ 2,641	2,909	3,111	2,074	2,201	2,260	16	17	19	(15)	(16)	(18)	4,716	5,372

BROKERAGE ADVISORY, COMMISSIONS AND OTHER FEES are earned for providing full-service and discount brokerage services predominantly to retail brokerage clients. These revenues include fees earned on asset-based and transactional accounts and other brokerage advisory services.

Asset-based revenues are charged based on the market value of the client's assets. The services and related obligations associated with certain of these revenues, which include investment advice, active management of client assets, or assistance with selecting and engaging a third-party advisory

manager, are generally satisfied over a month or quarter. The remaining revenues include trailing commissions which are earned for selling shares to investors. Our obligation associated with earning trailing commissions is satisfied at the time shares are sold. However, these fees are received and recognized over time during the period the customer owns the shares and we remain the broker of record. The amount of trailing commissions is variable based on the length of time the customer holds the shares and on changes in the value of the underlying assets.

Note 21: Revenue from Contracts with Customers (continued)

Transactional revenues are earned for executing transactions at the client's direction. Our obligation is generally satisfied upon the execution of the transaction and the fees are based on the size and number of transactions executed.

Other revenues earned from other brokerage advisory services include omnibus and networking fees received from

mutual fund companies in return for providing record keeping and other administrative services, and annual account maintenance fees charged to customers.

Table 21.3 presents our brokerage advisory, commissions and other fees by operating segment.

Table 21.3: Brokerage Advisory, Commissions and Other Fees by Operating Segment

(in millions)	Year ended December 31,														
	Community Banking			Wholesale Banking			Wealth and Investment Management			Other			Consolidated Company		
	2018	2017	2016	2018	2017	2016	2018	2017	2016	2018	2017	2016	2018	2017	2016
Asset-based revenue (1)	\$ 1,482	1,372	1,243	1	1	2	6,899	6,630	6,164	(1,484)	(1,371)	(1,241)	6,898	6,632	6,168
Transactional revenue	340	382	454	70	40	55	1,618	1,802	2,032	(380)	(400)	(477)	1,648	1,824	2,064
Other revenue	65	76	157	246	263	311	644	640	674	(65)	(77)	(158)	890	902	984
Brokerage advisory, commissions and other fees	\$ 1,887	1,830	1,854	317	304	368	9,161	9,072	8,870	(1,929)	(1,848)	(1,876)	9,436	9,358	9,216

(1) We earned trailing commissions of \$1.3 billion for each of the years ended December 31, 2018, 2017, and 2016.

TRUST AND INVESTMENT MANAGEMENT FEES are earned for providing trust, investment management and other related services.

Investment management services include managing and administering assets, including mutual funds, and institutional separate accounts. Fees for these services are generally determined based on a tiered scale relative to the market value of assets under management (AUM). In addition to AUM we have client assets under administration (AUA) that earn various administrative fees which are generally based on the extent of the services provided to administer the account. Services with AUM and AUA-based fees are generally performed over time.

Trust services include acting as a trustee or agent for corporate trust, personal trust, and agency assets. Obligations for trust services are generally satisfied over time, while obligations for activities that are transactional in nature are satisfied at the time of the transaction.

Other related services include the custody and safekeeping of accounts. Our obligation for these services is generally satisfied over time.

Table 21.4 presents our trust and investment management fees by operating segment.

Table 21.4: Trust and Investment Management Fees by Operating Segment

(in millions)	Year ended December 31,														
	Community Banking			Wholesale Banking			Wealth and Investment Management			Other			Consolidated Company		
	2018	2017	2016	2018	2017	2016	2018	2017	2016	2018	2017	2016	2018	2017	2016
Investment management fees	\$ —	1	—	—	—	—	2,087	2,053	2,079	—	—	—	2,087	2,054	2,079
Trust fees	908	887	847	329	421	399	728	757	738	(932)	(916)	(875)	1,033	1,149	1,109
Other revenue	2	1	2	116	102	74	78	67	74	—	(1)	(2)	196	169	148
Trust and investment management fees	\$ 910	889	849	445	523	473	2,893	2,877	2,891	(932)	(917)	(877)	3,316	3,372	3,336

INVESTMENT BANKING FEES are earned for underwriting debt and equity securities, arranging loan syndications and performing other advisory services. Our obligation for these services is generally satisfied at closing of the transaction. Substantially all of these fees are in the Wholesale Banking operating segment.

CARD FEES include credit and debit card interchange and network revenues and various card-related fees. Credit and debit

card interchange and network revenues are earned on credit and debit card transactions conducted through payment networks such as Visa, MasterCard, and American Express. Our obligation is satisfied concurrently with the delivery of services on a daily basis.

Table 21.5 presents our card fees by operating segment.

Table 21.5: Card Fees by Operating Segment

(in millions)	Year ended December 31,														
	Community Banking			Wholesale Banking			Wealth and Investment Management			Other			Consolidated Company		
	2018	2017	2016	2018	2017	2016	2018	2017	2016	2018	2017	2016	2018	2017	2016
Credit card interchange and network revenues (1)	\$ 792	944	959	361	345	329	6	6	6	(4)	(4)	(4)	1,155	1,291	1,290
Debit card interchange and network revenues	2,053	1,964	1,889	—	—	7	—	—	—	—	—	—	2,053	1,964	1,896
Late fees, cash advance fees, balance transfer fees, and annual fees	698	705	750	1	—	—	—	—	—	—	—	—	699	705	750
Card fees (1)	\$ 3,543	3,613	3,598	362	345	336	6	6	6	(4)	(4)	(4)	3,907	3,960	3,936

(1) The cost of credit card rewards and rebates of \$1.4 billion, \$1.2 billion and \$1.0 billion for the years ended December 31, 2018, 2017 and 2016, respectively, are presented net against the related revenues.

CASH NETWORK FEES are earned for processing ATM transactions. Our obligation is completed daily upon settlement of ATM transactions. Substantially all of these fees are in the Community Banking operating segment.

COMMERCIAL REAL ESTATE BROKERAGE COMMISSIONS are earned for assisting customers in the sale of real estate property. Our obligation is satisfied upon the successful brokering of a transaction. Fees are based on a fixed percentage of the sales price. All of these fees are in the Wholesale Banking operating segment.

WIRE TRANSFER AND OTHER REMITTANCE FEES consist of fees earned for funds transfer services and issuing cashier's checks and money orders. Our obligation is satisfied at the time of the funds transfer services or upon issuance of the cashier's check or money order. Substantially all of these fees are in the Community Banking and Wholesale Banking operating segments.

ALL OTHER FEES include various types of fees earned on services to customers which have related performance obligations that we complete to recognize revenue. A significant portion of the revenue is earned from providing business payroll services and merchant services, which are generally recognized over time as we perform the services. Most of these fees are in the Community Banking operating segment.

Note 22: Employee Benefits and Other Expenses

Pension and Postretirement Plans

We sponsor a frozen noncontributory qualified defined benefit retirement plan, the Wells Fargo & Company Cash Balance Plan (Cash Balance Plan), which covers eligible employees of Wells Fargo. The Cash Balance Plan was frozen on July 1, 2009, and no new benefits accrue after that date.

Prior to July 1, 2009, eligible employees' Cash Balance Plan accounts were allocated a compensation credit based on a percentage of their certified compensation; the freeze discontinued the allocation of compensation credits after June 30, 2009. Investment credits continue to be allocated to participants' accounts based on their accumulated balances.

We did not make a contribution to our Cash Balance Plan in 2018. We do not expect that we will be required to make a contribution to the Cash Balance Plan in 2019; however, this is dependent on the finalization of the actuarial valuation in 2019. Our decision of whether to make a contribution in 2019 will be based on various factors including the actual investment performance of plan assets during 2019. Given these uncertainties, we cannot estimate at this time the amount, if any, that we will contribute in 2019 to the Cash Balance Plan. For the nonqualified pension plans and postretirement benefit plans, there is no minimum required contribution beyond the amount needed to fund benefit payments; we may contribute more to our postretirement benefit plans dependent on various factors.

We recognize settlement losses for our Cash Balance Plan based on assessing whether lump sum payments will, in aggregate for the year, exceed the sum of its annual service and interest cost (threshold). In 2018, lump sum payments (included in the "Benefits paid" line in Table 22.1) exceeded this threshold. Settlement losses of \$134 million were recognized in 2018, representing the pro rata portion of the net loss in cumulative other comprehensive income based on the percentage reduction in the Cash Balance Plan's projected benefit obligation attributable to 2018 lump sum payments.

We sponsored the Pension and Life Assurance Plan of Wachovia Bank to employees in the United Kingdom (UK Pension Plan). In September 2017, an annuity contract was entered into that effected a full settlement of this UK Pension Plan, resulting in a plan settlement of \$74 million and a settlement loss of \$7 million.

Our nonqualified defined benefit plans are unfunded and provide supplemental defined benefit pension benefits to certain eligible employees. The benefits under these plans were frozen in prior years.

We provide health care and life insurance benefits for certain retired employees, and we reserve the right to amend, modify or terminate any of the benefits at any time.

The benefit obligation for the qualified plans, nonqualified plans and other benefits plans was \$10.1 billion, \$557 million and \$555 million, respectively, at December 31, 2018, a decrease from \$11.1 billion, \$621 million and \$611 million, respectively, at December 31, 2017. The decreases were primarily due to benefits paid (net of participant contributions), and actuarial gains, reflecting an increase in the discount rates, see Table 22.5. The information set forth in the following tables is based on current actuarial reports using the measurement date of December 31 for our pension and postretirement benefit plans.

Table 22.1 presents the changes in the benefit obligation and the fair value of plan assets, the funded status, and the amounts recognized on the balance sheet.

Table 22.1: Changes in Benefit Obligation and Fair Value of Plan Assets

(in millions)	December 31, 2018			December 31, 2017		
	Pension benefits		Other benefits	Pension benefits		Other benefits
	Qualified	Non-qualified		Qualified	Non-qualified	
Change in benefit obligation:						
Benefit obligation at beginning of year	\$ 11,110	621	611	10,774	630	731
Service cost	11	—	—	5	—	—
Interest cost	392	21	21	412	24	28
Plan participants' contributions	—	—	48	—	—	40
Actuarial loss (gain)	(674)	(27)	(33)	634	46	(102)
Benefits paid	(719)	(57)	(92)	(651)	(79)	(88)
Medicare Part D subsidy	—	—	2	—	—	1
Amendment	1	—	—	—	—	—
Settlement	—	—	—	(74)	—	—
Other	13	—	—	—	—	—
Foreign exchange impact	(5)	(1)	(2)	10	—	1
Benefit obligation at end of year	10,129	557	555	11,110	621	611
Change in plan assets:						
Fair value of plan assets at beginning of year	10,667	—	565	10,120	—	549
Actual return on plan assets	(478)	—	(17)	1,253	—	56
Employer contribution	10	57	5	11	79	7
Plan participants' contributions	—	—	48	—	—	40
Benefits paid	(719)	(57)	(92)	(651)	(79)	(88)
Medicare Part D subsidy	—	—	2	—	—	1
Settlement	—	—	—	(74)	—	—
Other	1	—	—	—	—	—
Foreign exchange impact	(4)	—	—	8	—	—
Fair value of plan assets at end of year	9,477	—	511	10,667	—	565
Funded status at end of year	\$ (652)	(557)	(44)	(443)	(621)	(46)
Amounts recognized on the balance sheet at end of year:						
Assets	\$ 1	—	—	—	—	—
Liabilities	(653)	(557)	(44)	(443)	(621)	(46)

Table 22.2 provides information for pension and post retirement plans with benefit obligations in excess of plan assets.

Table 22.2: Plans with Benefit Obligations in Excess of Plan Assets

(in millions)	December 31, 2018		December 31, 2017	
	Pension Benefits	Other Benefits	Pension Benefits	Other Benefits
Projected benefit obligation	\$ 10,640	N/A	11,721	N/A
Accumulated benefit obligation	10,627	555	11,717	611
Fair value of plan assets	9,429	511	10,656	565

Note 22: Employee Benefits and Other Expenses (continued)

Table 22.3 presents the components of net periodic benefit cost and other comprehensive income (OCI).

Table 22.3: Net Periodic Benefit Cost and Other Comprehensive Income

(in millions)	December 31, 2018			December 31, 2017			December 31, 2016		
	Pension benefits			Pension benefits			Pension benefits		
	Qualified	Non-qualified	Other benefits	Qualified	Non-qualified	Other benefits	Qualified	Non-qualified	Other benefits
Service cost	\$ 11	—	—	5	—	—	3	—	—
Interest cost (1)	392	21	21	412	24	28	422	26	39
Expected return on plan assets (1)	(641)	—	(31)	(652)	—	(30)	(608)	—	(30)
Amortization of net actuarial loss (gain) (1)	131	14	(18)	148	11	(9)	146	12	(5)
Amortization of prior service credit (1)	—	—	(10)	—	—	(10)	—	—	(2)
Settlement loss (1)	134	2	—	7	6	—	5	2	—
Net periodic benefit cost	27	37	(38)	(80)	41	(21)	(32)	40	2
Other changes in plan assets and benefit obligations recognized in other comprehensive income:									
Net actuarial loss (gain)	445	(27)	15	33	46	(128)	302	9	(82)
Amortization of net actuarial gain (loss)	(131)	(14)	18	(148)	(11)	9	(146)	(12)	5
Prior service cost (credit) (2)	1	—	—	1	—	—	—	—	(177)
Amortization of prior service credit	—	—	10	—	—	10	—	—	2
Settlement	(134)	(2)	—	(8)	(6)	—	(5)	(2)	—
Total recognized in other comprehensive income	181	(43)	43	(122)	29	(109)	151	(5)	(252)
Total recognized in net periodic benefit cost and other comprehensive income	\$ 208	(6)	5	(202)	70	(130)	119	35	(250)

- (1) Effective January 1, 2018, we adopted ASU 2017-07 – Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost. Accordingly, 2018 balances are reported in other noninterest expense on the consolidated statement of income. For 2017 and 2016, these balances were reported in employee benefits.
- (2) In 2016, a prior service credit of \$177 million was recognized for an amendment that reduced the Wells Fargo & Company Retiree Plan obligation.

Table 22.4 provides the amounts recognized in cumulative OCI (pre tax).

Table 22.4: Benefits Recognized in Cumulative OCI

(in millions)	December 31, 2018			December 31, 2017		
	Pension benefits			Pension benefits		
	Qualified	Non-qualified	Other benefits	Qualified	Non-qualified	Other benefits
Net actuarial loss (gain)	\$ 3,336	149	(327)	3,156	192	(360)
Net prior service cost (credit)	1	—	(156)	—	—	(166)
Total	\$ 3,337	149	(483)	3,156	192	(526)

Plan Assumptions

For additional information on our pension accounting assumptions, see Note 1 (Summary of Significant Accounting Policies). Table 22.5 presents the weighted-average assumptions used to estimate the projected benefit obligation for pension benefits.

Table 22.5: Weighted-Average Assumptions Used to Estimate Projected Benefit Obligation

	December 31, 2018			December 31, 2017		
	Pension benefits			Pension benefits		
	Qualified	Non-qualified	Other benefits	Qualified	Non-qualified	Other benefits
Discount rate	4.30%	4.20	4.24	3.65	3.55	3.54
Interest crediting rate	3.22	2.18	N/A	2.74	1.54	N/A

Table 22.6 presents the weighted-average assumptions used to determine the net periodic benefit cost.

Table 22.6: Weighted-Average Assumptions Used to Determine Net Periodic Benefit Cost

	December 31, 2018			December 31, 2017			December 31, 2016		
	Pension benefits			Pension benefits			Pension benefits		
	Qualified	Non-qualified	Other benefits	Qualified	Non-qualified	Other benefits	Qualified	Non-qualified	Other benefits
Discount rate (1)	3.65%	3.65	3.54	3.98	3.93	4.00	3.99	4.11	4.16
Interest crediting rate (1)	2.74	1.68	N/A	2.92	1.85	N/A	3.03	2.02	N/A
Expected return on plan assets	6.24	N/A	5.75	6.70	N/A	5.75	6.75	N/A	5.75

(1) Includes the impact of interim re-measurements as applicable.

To account for postretirement health care plans, we used health care cost trend rates to recognize the effect of expected changes in future health care costs due to medical inflation, utilization changes, new technology, regulatory requirements and Medicare cost shifting. In determining the end of year benefit obligation, we assumed an average annual increase of approximately 8.40% for health care costs in 2019. This rate is assumed to trend down 0.50%-0.60% per year until the trend rate reaches an ultimate rate of 4.50% in 2026. The 2018 periodic benefit cost was determined using an initial annual trend rate of 9.00%. This rate was assumed to decrease 0.40%-0.70% per year until the trend rate reached an ultimate rate of 4.50% in 2026.

Investment Strategy and Asset Allocation

We seek to achieve the expected long-term rate of return with a prudent level of risk, given the benefit obligations of the pension plans and their funded status. Our overall investment strategy is designed to provide our Cash Balance Plan with long-term growth opportunities while ensuring that risk is mitigated through diversification across numerous asset classes and various investment strategies. We target the asset allocation for our Cash Balance Plan at a target mix range of 25%-45% equities, 45%-65% fixed income, and approximately 10% in real estate, venture capital, private equity and other investments. The Employee Benefit Review Committee (EBRC), which includes several members of senior management, formally reviews the investment risk and performance of our Cash Balance Plan on a quarterly basis. Annual Plan liability analysis and periodic asset/liability evaluations are also conducted.

Other benefit plan assets include (1) assets held in a 401(h) trust, which are invested with a target mix of 40%-60% for both equities and fixed income, and (2) assets held in the Retiree Medical Plan Voluntary Employees' Beneficiary Association (VEBA) trust, which are invested with a general target asset mix of 20%-40% equities and 60%-80% fixed income. Members of the EBRC formally review the investment risk and performance of these assets on a quarterly basis.

Projected Benefit Payments

Future benefits that we expect to pay under the pension and other benefit plans are presented in Table 22.7.

Table 22.7: Projected Benefit Payments

(in millions)	Pension benefits		
	Qualified	Non-qualified	Other Benefits
Year ended December 31,			
2019	\$ 784	52	46
2020	771	50	48
2021	767	49	48
2022	759	46	47
2023	711	44	46
2024-2028	3,381	199	198

Note 22: Employee Benefits and Other Expenses (continued)

Fair Value of Plan Assets

Table 22.8 presents the balances of pension plan assets and other benefit plan assets measured at fair value. See Note 18 (Fair Values of Assets and Liabilities) for fair value hierarchy level definitions.

Table 22.8: Pension and Other Benefit Plan Assets

(in millions)	Carrying value at year end							
	Pension plan assets				Other benefits plan assets			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
December 31, 2018								
Cash and cash equivalents	\$ 2	284	—	286	69	22	—	91
Long duration fixed income (1)	902	4,414	—	5,316	—	—	—	—
Intermediate (core) fixed income (2)	—	118	—	118	—	183	—	183
High-yield fixed income	—	114	—	114	—	—	—	—
International fixed income	55	186	—	241	—	—	—	—
Domestic large-cap stocks (3)	582	238	—	820	—	115	—	115
Domestic mid-cap stocks	167	89	—	256	—	28	—	28
Domestic small-cap stocks	141	7	—	148	—	17	—	17
Global stocks (4)	72	357	—	429	—	—	—	—
International stocks (5)	449	110	—	559	9	40	—	49
Emerging market stocks	—	205	—	205	—	—	—	—
Real estate	148	33	14	195	—	—	—	—
Hedge funds/absolute return	63	32	—	95	—	—	—	—
Other	34	44	8	86	4	—	24	28
Plan investments - excluding investments at NAV	\$ 2,615	6,231	22	8,868	82	405	24	511
Investments at NAV (6)				566				—
Net receivables				43				—
Total plan assets				\$ 9,477				511
December 31, 2017								
Cash and cash equivalents	\$ 1	234	—	235	85	23	—	108
Long duration fixed income (1)	875	4,424	—	5,299	—	—	—	—
Intermediate (core) fixed income (2)	—	255	—	255	—	185	—	185
High-yield fixed income	—	267	—	267	—	—	—	—
International fixed income	60	223	—	283	—	—	—	—
Domestic large-cap stocks (3)	825	300	—	1,125	—	130	—	130
Domestic mid-cap stocks	227	133	—	360	—	34	—	34
Domestic small-cap stocks	224	12	—	236	—	20	—	20
Global stocks (4)	89	391	—	480	—	—	—	—
International stocks (5)	542	257	—	799	23	38	—	61
Emerging market stocks	—	305	—	305	—	—	—	—
Real estate	157	31	20	208	—	—	—	—
Hedge funds/absolute return	62	28	—	90	—	—	—	—
Other	—	72	8	80	3	—	23	26
Plan investments - excluding investments at NAV	\$ 3,062	6,932	28	10,022	111	430	23	564
Investments at NAV (6)				594				—
Net receivables				51				1
Total plan assets				\$ 10,667				565

- (1) This category includes a diversified mix of assets, which are being managed in accordance with a duration target of approximately 10 years and an emphasis on corporate credit bonds combined with investments in U.S. Treasury securities and other U.S. agency and non-agency bonds.
- (2) This category includes assets that are intermediate duration, investment grade bonds held in investment strategies benchmarked to the Bloomberg Barclays Capital U.S. Aggregate Bond Index, including U.S. Treasury securities, agency and non-agency asset-backed bonds and corporate bonds.
- (3) This category covers a broad range of investment styles, including active, enhanced index and passive approaches, as well as style characteristics of value, core and growth emphasized strategies. Assets in this category are currently diversified across eight unique investment strategies with no single investment manager strategy representing more than 2.0% of total plan assets.
- (4) This category consists of five unique investment strategies providing exposure to broadly diversified, global equity investments, which generally have an allocation of 40-60% in U.S. domiciled equities and an equivalent allocation range in non-U.S. equities, with no single strategy representing more than 1.5% of total Plan assets.
- (5) This category includes assets diversified across four unique investment strategies providing exposure to companies in developed market, non-U.S. countries with no single strategy representing more than 2.5% of total plan assets.
- (6) Consists of certain investments that are measured at fair value using NAV per share (or its equivalent) as a practical expedient and are excluded from the fair value hierarchy.

Table 22.9 presents the changes in Level 3 pension plan and other benefit plan assets measured at fair value.

Table 22.9: Fair Value Level 3 Pension and Other Benefit Plan Assets

(in millions)	Balance beginning of year	Gains (losses)		Purchases, sales and settlements (net)	Transfers Into/ (Out of) Level 3	Balance end of year
		Realized	Unrealized (1)			
Quarter ended December 31, 2018						
Pension plan assets:						
Real estate	\$ 20	(2)	(1)	(3)	—	14
Other	8	—	—	—	—	8
Total pension plan assets	\$ 28	(2)	(1)	(3)	—	22
Other benefits plan assets:						
Other	\$ 23	1	—	—	—	24
Total other benefit plan assets	\$ 23	1	—	—	—	24
Quarter ended December 31, 2017						
Pension plan assets:						
Long duration fixed income	\$ 19	—	—	—	(19)	—
Real estate	25	(3)	5	(4)	(3)	20
Other	8	—	—	—	—	8
Total pension plan assets	\$ 52	(3)	5	(4)	(22)	28
Other benefits plan assets:						
Other	\$ 23	—	—	—	—	23
Total other benefit plan assets	\$ 23	—	—	—	—	23

(1) All unrealized gains (losses) relate to instruments held at period end.

VALUATION METHODOLOGIES Following is a description of the valuation methodologies used for assets measured at fair value.

Cash and Cash Equivalents – includes investments in collective investment funds valued at fair value based upon the fund's NAV per share held at year-end. The NAV per share is quoted on a private market that is not active; however, the NAV per share is based on underlying investments traded on an active market. This group of assets also includes investments in registered investment companies valued at the NAV per share held at year-end and in interest-bearing bank accounts.

Long Duration, Intermediate (Core), High-Yield, and International Fixed Income – includes investments traded on the secondary markets; prices are measured by using quoted market prices for similar securities, pricing models, and discounted cash flow analyses using significant inputs observable in the market where available, or a combination of multiple valuation techniques. This group of assets also includes highly liquid government securities such as U.S. Treasuries, limited partnerships valued at the NAV, registered investment companies and collective investment funds described above.

Domestic, Global, International and Emerging Market Stocks – investments in exchange-traded equity securities are valued at quoted market values. This group of assets also includes investments in registered investment companies and collective investment funds described above.

Real Estate – includes investments in real estate, which are valued at fair value based on an income capitalization valuation approach. Market values are estimates, and the actual market price of the real estate can only be determined by negotiation between independent third parties in sales transactions. This group of assets also includes investments in exchange-traded equity securities and collective investment funds described above.

Hedge Funds / Absolute Return – includes investments in registered investment companies, and limited partnerships, as described above.

Other – insurance contracts that are stated at cash surrender value. This group of assets also includes investments in registered investment companies and collective investment funds described above.

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. While we believe our 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 fair value measurement at the reporting date.

Note 22: Employee Benefits and Other Expenses (continued)

Defined Contribution Retirement Plans

We sponsor a qualified defined contribution retirement plan, the Wells Fargo & Company 401(k) Plan (401(k) Plan). Under the 401(k) Plan, after one month of service, eligible employees may contribute up to 50% of their certified compensation, subject to statutory limits. Eligible employees who complete one year of service are eligible for quarterly company matching contributions, which are generally dollar for dollar up to 6% of an employee's eligible certified compensation. Matching contributions are 100% vested. The 401(k) Plan includes an employer discretionary profit sharing contribution feature to allow us to make a contribution to eligible employees' 401(k) Plan accounts for a plan year. Eligible employees who complete one year of service are eligible for profit sharing contributions. Profit sharing contributions are vested after three years of service. Total defined contribution retirement plan expenses were \$1.2 billion in each of the following years, 2018, 2017 and 2016.

Other Expenses

Table 22.10 presents expenses exceeding 1% of total interest income and noninterest income in any of the years presented that are not otherwise shown separately in the financial statements or Notes to Financial Statements.

Table 22.10: Other Expenses

(in millions)	Year ended December 31,		
	2018	2017	2016
Outside professional services	\$ 3,306	3,813	3,138
Operating losses	3,124	5,492	1,608
Contract services (1)	2,192	1,638	1,497
Credit card rewards and rebates (2)	1,401	1,201	1,047
Operating leases	1,334	1,351	1,329
Outside data processing	660	891	888

- (1) The periods prior to 2018 have been revised to conform with the current period presentation whereby temporary help is included in contract services rather than in all other noninterest expense.
- (2) Noninterest income from card fees is net of cardholder rewards and rebates expense.

Note 23: Income Taxes

On December 22, 2017, the Tax Cuts & Jobs Act (Tax Act) was enacted resulting in significant changes to both domestic tax law and the U.S. taxation of foreign subsidiaries. In 2018, we re-measured our provisional estimates of the tax impacts that were recorded in 2017. As a result, during 2018 the Company recognized a \$164 million discrete tax expense for adjustments to the provisional tax impacts of the Tax Act included in its consolidated financial statement for the year ended December 31, 2017. The accounting was completed in fourth quarter 2018.

Table 23.1 presents the components of income tax expense.

Table 23.1: Income Tax Expense

(in millions)	Year ended December 31,		
	2018	2017	2016
Current:			
Federal	\$ 2,382	3,507	6,712
State and local	1,140	561	1,395
Foreign	170	183	175
Total current	3,692	4,251	8,282
Deferred:			
Federal	1,706	156	1,498
State and local	236	564	296
Foreign	28	(54)	(1)
Total deferred	1,970	666	1,793
Total	\$ 5,662	4,917	10,075

The tax effects of our temporary differences that gave rise to significant portions of our deferred tax assets and liabilities are presented in Table 23.2.

Table 23.2: Net Deferred Tax Liability

(in millions)	Dec 31, 2018	Dec 31, 2017
Deferred tax assets		
Allowance for loan losses	\$ 2,644	2,816
Deferred compensation and employee benefits	2,893	2,377
Accrued expenses	815	722
PCI loans	467	1,057
Net unrealized losses on debt securities	1,022	—
Net operating loss and tax credit carry forwards	366	341
Other	1,272	986
Total deferred tax assets	9,479	8,299
Deferred tax assets valuation allowance	(315)	(397)
Deferred tax liabilities		
Mortgage servicing rights	(3,475)	(3,421)
Leasing	(4,271)	(4,084)
Basis difference in investments	(1,203)	(577)
Mark to market, net	(7,252)	(5,816)
Intangible assets	(427)	(539)
Net unrealized gains on debt securities	—	(55)
Insurance reserves	(696)	(750)
Other	(831)	(821)
Total deferred tax liabilities	(18,155)	(16,063)
Net deferred tax liability (1)	\$ (8,991)	(8,161)

(1) The net deferred tax liability is included in accrued expenses and other liabilities.

Note 23: Income Taxes (continued)

Deferred taxes related to net unrealized gains (losses) on debt securities, net unrealized gains (losses) on derivatives, foreign currency translation, and employee benefit plan adjustments are recorded in cumulative OCI (see Note 25 (Other Comprehensive Income)). These associated adjustments increased OCI by \$1.1 billion in 2018. In 2018, we adopted ASU 2018-02 – Income Statement-Reporting Comprehensive Income (Topic 220): *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, and reclassified \$400 million from OCI to retained earnings. See Note 1 (Summary of Significant Accounting Policies) and Note 25 (Other Comprehensive Income) for more information.

We have determined that a valuation allowance is required for 2018 in the amount of \$315 million, predominantly attributable to deferred tax assets in various state and foreign jurisdictions where we believe it is more likely than not that these deferred tax assets will not be realized. In these jurisdictions, carry back limitations, lack of sources of taxable income, and tax planning strategy limitations contributed to our conclusion that the deferred tax assets would not be realizable. We have concluded that it is more likely than not that the remaining deferred tax assets will be realized based on our history of earnings, sources of taxable income in carry back periods, and our ability to implement tax planning strategies.

At December 31, 2018, we had net operating loss carry forwards with related deferred tax assets of \$366 million. If these carry forwards are not utilized, they will mostly expire in varying amounts through December 31, 2038.

In 2018, we finalized the recognition of the U.S. tax expense associated with the deemed repatriation of undistributed earnings of certain non-U.S. subsidiaries as required under the 2017 Tax Act. We do not intend to distribute these earnings in a taxable manner, and therefore intend to limit distributions to foreign earnings previously taxed in the U.S., that would qualify for the 100% dividends received deduction, and that would not result in any significant state or foreign taxes. All other undistributed foreign earnings will continue to be permanently reinvested outside the U.S. and the related tax liability on these earnings is insignificant.

Table 23.3 reconciles the statutory federal income tax expense and rate to the effective income tax expense and rate. Our effective tax rate is calculated by dividing income tax expense by income before income tax expense less the net income from noncontrolling interests.

Table 23.3: Effective Income Tax Expense and Rate

(in millions)	December 31,					
	2018		2017		2016	
	Amount	Rate	Amount	Rate	Amount	Rate
Statutory federal income tax expense and rate	\$ 5,892	21.0%	\$ 9,485	35.0%	\$ 11,204	35.0%
Change in tax rate resulting from:						
State and local taxes on income, net of federal income tax benefit	1,076	3.9	926	3.4	1,004	3.1
Tax-exempt interest	(494)	(1.8)	(812)	(3.0)	(725)	(2.2)
Tax credits	(1,537)	(5.5)	(1,419)	(5.2)	(1,251)	(3.9)
Non-deductible accruals	236	0.8	1,320	4.9	81	0.3
Tax reform	164	0.6	(3,713)	(13.7)	—	—
Other	325	1.2	(870)	(3.3)	(238)	(0.8)
Effective income tax expense and rate	\$ 5,662	20.2%	\$ 4,917	18.1%	\$ 10,075	31.5%

The 2018 effective income tax rate was 20.2%, compared with 18.1% in 2017 and 31.5% in 2016. The 2018 effective income tax rate reflected the reduction to the U.S. federal income tax rate from 35% to 21% resulting from the 2017 Tax Act. It also included income tax expense related to non-deductible litigation accruals and the reconsideration of reserves for state income taxes following the U.S. Supreme Court opinion in *South Dakota v. Wayfair, Inc.* In addition, we recognized \$164 million of income tax expense associated with the final re-measurement of our initial estimates for the impacts of the Tax Act, in accordance with ASC Topic 740, Income Taxes and SEC Accounting Bulletin 118.

The 2017 effective income tax rate included an estimated impact of the Tax Act, including a benefit of \$3.9 billion resulting from the re-measurement of the Company's estimated net deferred tax liability as of December 31, 2017, partially offset by \$173 million of income tax expense for the estimated deemed repatriation of the Company's previously undistributed foreign earnings. The 2017 effective income tax rate also included income tax expense of \$1.3 billion related to the effect of discrete non tax-deductible items, predominantly consisting of litigation accruals. The effective income tax rate for 2016 included net reductions in reserves for uncertain tax positions resulting from settlements with tax authorities, partially offset by a net increase in tax benefits related to tax credit investments.

Table 23.4 presents the change in unrecognized tax benefits.

Table 23.4: Change in Unrecognized Tax Benefits

(in millions)	Year ended December 31,	
	2018	2017
Balance at beginning of year	\$ 5,167	5,029
Additions:		
For tax positions related to the current year	393	367
For tax positions related to prior years	503	158
Reductions:		
For tax positions related to prior years	(262)	(319)
Lapse of statute of limitations	(7)	(48)
Settlements with tax authorities	(44)	(20)
Balance at end of year	\$ 5,750	5,167

Of the \$5.8 billion of unrecognized tax benefits at December 31, 2018, approximately \$3.9 billion would, if recognized, affect the effective tax rate. The remaining \$1.9 billion of unrecognized tax benefits relates to income tax positions on temporary differences.

We recognize interest and penalties related to unrecognized tax benefits as a component of income tax expense. As of December 31, 2018 and 2017, we have accrued approximately \$968 million and \$726 million, respectively, for the payment of interest and penalties. In 2018, we recognized in income tax expense a net tax expense related to interest and penalties of \$200 million. In 2017, we recognized in income tax expense a net tax expense related to interest and penalties of \$96 million.

We are subject to U.S. federal income tax as well as income tax in numerous state and foreign jurisdictions. We are routinely examined by tax authorities in these various jurisdictions. The IRS is currently examining the 2013 through 2016 consolidated U.S. federal income tax returns of Wells Fargo & Company and its subsidiaries. In addition, we are currently subject to examination by various state, local and foreign taxing authorities. With few exceptions, Wells Fargo and its subsidiaries are not subject to federal, state, local and foreign income tax examinations for taxable years prior to 2007.

We are litigating or appealing various issues related to prior IRS examinations for the periods 2003 through 2012. For the 2003 through 2006 periods, we have paid the IRS the contested income tax and interest associated with these issues and refund claims have been filed for the respective years. It is possible that one or more of these examinations, appeals or litigation may be resolved within the next twelve months resulting in a decrease of up to \$700 million to our gross unrecognized tax benefits.

Note 24: Earnings and Dividends Per Common Share

Table 24.1 shows earnings per common share and diluted earnings per common share and reconciles the numerator and denominator of both earnings per common share calculations. See Note 1 (Summary of Significant Accounting Policies) for

discussion of private share repurchases, and the Consolidated Statement of Changes in Equity and Note 20 (Common Stock and Stock Plans) for information about stock and options activity and terms and conditions of warrants.

Table 24.1: Earnings Per Common Share Calculations

(in millions, except per share amounts)	Year ended December 31,		
	2018	2017	2016
Wells Fargo net income	\$ 22,393	22,183	21,938
Less: Preferred stock dividends and other (1)	1,704	1,629	1,565
Wells Fargo net income applicable to common stock (numerator)	\$ 20,689	20,554	20,373
Earnings per common share			
Average common shares outstanding (denominator)	4,799.7	4,964.6	5,052.8
Per share	\$ 4.31	4.14	4.03
Diluted earnings per common share			
Average common shares outstanding	4,799.7	4,964.6	5,052.8
Add: Stock options	8.0	17.1	18.9
Restricted share rights	26.3	24.7	25.9
Warrants	4.4	10.9	10.7
Diluted average common shares outstanding (denominator)	4,838.4	5,017.3	5,108.3
Per share	\$ 4.28	4.10	3.99

(1) The year ended December 31, 2018, includes \$155 million as a result of eliminating the discount on our Series J Preferred Stock, which was redeemed on September 17, 2018.

Table 24.2 presents the outstanding options to purchase shares of common stock that were anti-dilutive (the exercise price was higher than the weighted-average market price), and therefore not included in the calculation of diluted earnings per common share.

Table 24.2: Outstanding Anti-Dilutive Options

(in millions)	Weighted-average shares		
	Year ended December 31,		
	2018	2017	2016
Options	0.3	1.9	3.2

Table 24.3 presents dividends declared per common share.

Table 24.3: Dividends Declared Per Common Share

	Year ended December 31,		
	2018	2017	2016
Per common share	\$ 1.640	1.540	1.515

Note 25: Other Comprehensive Income

Table 25.1 provides the components of other comprehensive income (OCI), reclassifications to net income by income statement line item, and the related tax effects.

Table 25.1: Summary of Other Comprehensive Income

(in millions)	2018			2017			2016		
	Before tax	Tax effect	Net of tax	Before tax	Tax effect	Net of tax	Before tax	Tax effect	Net of tax
Debt securities (1):									
Net unrealized gains (losses) arising during the period	\$(4,493)	1,100	(3,393)	2,719	(1,056)	1,663	(3,458)	1,302	(2,156)
Reclassification of net (gains) losses to net income:									
Interest income on debt securities (2)	357	(88)	269	198	(75)	123	7	(3)	4
Net gains on debt securities	(108)	27	(81)	(479)	181	(298)	(942)	355	(587)
Net gains from equity securities (3)	—	—	—	(456)	172	(284)	(300)	113	(187)
Other noninterest income	(1)	—	(1)	—	—	—	(5)	2	(3)
Subtotal reclassifications to net income	248	(61)	187	(737)	278	(459)	(1,240)	467	(773)
Net change	(4,245)	1,039	(3,206)	1,982	(778)	1,204	(4,698)	1,769	(2,929)
Derivatives and hedging activities:									
Fair Value Hedges:									
Change in fair value of excluded components on fair value hedges (4)	(254)	63	(191)	(253)	95	(158)	—	—	—
Cash Flow Hedges:									
Net unrealized gains (losses) arising during the period on cash flow hedges	(278)	67	(211)	(287)	108	(179)	177	(67)	110
Reclassification of net (gains) losses to net income:									
Interest income on loans	292	(72)	220	(551)	208	(343)	(1,043)	393	(650)
Interest expense on long-term debt	2	—	2	8	(3)	5	14	(5)	9
Subtotal reclassifications to net income	294	(72)	222	(543)	205	(338)	(1,029)	388	(641)
Net change	(238)	58	(180)	(1,083)	408	(675)	(852)	321	(531)
Defined benefit plans adjustments:									
Net actuarial and prior service gains (losses) arising during the period	(434)	106	(328)	49	(12)	37	(52)	(40)	(92)
Reclassification of amounts to noninterest expense and employee benefits (5):									
Amortization of net actuarial loss	127	(31)	96	150	(57)	93	153	(57)	96
Settlements and other	126	(29)	97	3	2	5	5	(1)	4
Subtotal reclassifications to noninterest expense and employee benefits	253	(60)	193	153	(55)	98	158	(58)	100
Net change	(181)	46	(135)	202	(67)	135	106	(98)	8
Foreign currency translation adjustments:									
Net unrealized gains (losses) arising during the period	(156)	1	(155)	96	3	99	(3)	4	1
Net change	(156)	1	(155)	96	3	99	(3)	4	1
Other comprehensive income (loss)	\$(4,820)	1,144	(3,676)	1,197	(434)	763	(5,447)	1,996	(3,451)
Less: Other comprehensive loss from noncontrolling interests, net of tax			(2)			(62)			(17)
Wells Fargo other comprehensive income (loss), net of tax			\$(3,674)			825			(3,434)

- The years ended December 31, 2017 and 2016, include net unrealized gains (losses) arising during the period from equity securities of \$81 million and \$259 million and reclassification of net (gains) losses to net income related to equity securities of \$(456) million and \$(300) million, respectively. In connection with our adoption in first quarter 2018 of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*, the year ended December 31, 2018, reflects net unrealized gains (losses) arising during the period and reclassification of net (gains) losses to net income from only debt securities.
- Represents net unrealized gains and losses amortized over the remaining lives of securities that were transferred from the available-for-sale portfolio to the held-to-maturity portfolio.
- Net gains from equity securities is presented for table presentation purposes. After our adoption of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities* on January 1, 2018, this line will not contain balances as realized and unrealized gains and losses on marketable equity investments will be recorded in earnings.
- Represents changes in fair value of cross-currency swaps attributable to changes in cross-currency basis spreads, which are excluded from the assessment of hedge effectiveness and recorded in other comprehensive income.
- Effective January 1, 2018, we adopted ASU 2017-07 – *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*. Accordingly, 2018 balances are reclassified to other noninterest expense on the consolidated statement of income. For 2017 and 2016, these balances were reclassified to employee benefits.

Note 25: Other Comprehensive Income (continued)

Table 25.2 provides the cumulative OCI balance activity on an after-tax basis.

Table 25.2: Cumulative OCI Balances

(in millions)	Debt securities (1)	Derivatives and hedging activities	Defined benefit plans adjustments	Foreign currency translation adjustments	Cumulative other comprehensive income (loss)
Balance, December 31, 2015	\$ 1,813	620	(1,951)	(185)	297
Net unrealized gains (losses) arising during the period	(2,156)	110	(92)	1	(2,137)
Amounts reclassified from accumulated other comprehensive income	(773)	(641)	100	—	(1,314)
Net change	(2,929)	(531)	8	1	(3,451)
Less: Other comprehensive loss from noncontrolling interests	(17)	—	—	—	(17)
Balance, December 31, 2016	(1,099)	89	(1,943)	(184)	(3,137)
Transition adjustment (2)	—	168	—	—	168
Balance, January 1, 2017	(1,099)	257	(1,943)	(184)	(2,969)
Net unrealized gains (losses) arising during the period	1,663	(337)	37	99	1,462
Amounts reclassified from accumulated other comprehensive income	(459)	(338)	98	—	(699)
Net change	1,204	(675)	135	99	763
Less: Other comprehensive income (loss) from noncontrolling interests	(66)	—	—	4	(62)
Balance, December 31, 2017	171	(418)	(1,808)	(89)	(2,144)
Transition adjustment (3)	(118)	—	—	—	(118)
Balance, January 1, 2018	53	(418)	(1,808)	(89)	(2,262)
Reclassification of certain tax effects to retained earnings (4)	31	(87)	(353)	9	(400)
Net unrealized losses arising during the period	(3,393)	(402)	(328)	(155)	(4,278)
Amounts reclassified from accumulated other comprehensive income	187	222	193	—	602
Net change	(3,175)	(267)	(488)	(146)	(4,076)
Less: Other comprehensive loss from noncontrolling interests	—	—	—	(2)	(2)
Balance, December 31, 2018	\$ (3,122)	(685)	(2,296)	(233)	(6,336)

- (1) The years ended December 31, 2017 and 2016, include net unrealized gains (losses) arising during the period from equity securities of \$81 million and \$259 million and reclassification of net (gains) losses to net income related to equity securities of \$(456) million and \$(300) million, respectively. In connection with our adoption in first quarter 2018 of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*, the year ended December 31, 2018, reflects net unrealized gains (losses) arising during the period and reclassification of net (gains) losses to net income from only debt securities.
- (2) Transition adjustment relates to our adoption of ASU 2017-12 – Derivatives and Hedging (Topic 815): *Targeted Improvements to Accounting for Hedging Activities*. See Note 1 (Summary of Significant Accounting Policies) for more information.
- (3) The transition adjustment relates to our adoption of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*. See Note 1 (Summary of Significant Accounting Policies) for more information.
- (4) Represents the reclassification from other comprehensive income to retained earnings as a result of our adoption of ASU 2018-02 – Income Statement-Reporting Comprehensive Income (Topic 220): *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income* in third quarter 2018. See Note 1 (Summary of Significant Accounting Policies) for more information.

Note 26: Operating Segments

We have three reportable operating segments: Community Banking; Wholesale Banking; and Wealth and Investment Management (WIM). We define our operating segments by product type and customer segment and their results are based on our management accounting process, for which there is no comprehensive, authoritative guidance equivalent to GAAP for financial accounting. The management accounting process measures the performance of the operating segments based on our management structure and is not necessarily comparable with similar information for other financial services companies. If the management structure and/or the allocation process changes, allocations, transfers and assignments may change. Effective first quarter 2018, we adopted a new funds transfer pricing methodology to allow for better comparability of performance across the Company. Under the new methodology, assets and liabilities receive a funding charge or credit that considers interest rate risk, liquidity risk, and other product characteristics on a more granular level. This methodology change affects results across all three of our reportable operating segments and prior period operating segment results have been revised to reflect this methodology change. Our previously reported consolidated financial results were not impacted by the methodology change; however, in connection with our adoption of ASU 2016-01 in first quarter 2018, certain reclassifications have occurred within noninterest income.

Community Banking offers a complete line of diversified financial products and services for consumers and small businesses with annual sales generally up to \$5 million in which the owner generally is the financial decision maker. These financial products and services include checking and savings accounts, credit and debit cards, and automobile, student, mortgage, home equity and small business lending, as well as referrals to Wholesale Banking and WIM business partners.

Community Banking serves customers through a complete range of channels, including traditional and in-supermarket and other small format branches, ATMs, digital (online, mobile, and social), and contact centers (phone, email and correspondence).

The Community Banking segment also includes the results of our Corporate Treasury activities net of allocations (including funds transfer pricing, capital, liquidity and certain corporate expenses) in support of other segments and results of investments in our affiliated venture capital and private equity partnerships.

Wholesale Banking provides financial solutions to businesses across the United States with annual sales generally in excess of \$5 million and to financial institutions globally. Wholesale Banking provides a complete line of commercial, corporate, capital markets, cash management and real estate banking products and services. These include traditional commercial loans and lines of credit, letters of credit, asset-based lending, equipment leasing, international trade facilities, trade financing, collection services, foreign exchange services, treasury management, merchant payment processing, institutional fixed-income sales, interest rate, commodity and equity risk management, online/electronic products such as the *Commercial Electronic Office® (CEO®)* portal, corporate trust fiduciary and agency services, and investment banking services. Wholesale Banking also supports the CRE market with products and services such as construction loans for commercial and residential development, land acquisition and development loans, secured and unsecured lines of credit, interim financing arrangements for completed structures, rehabilitation loans, affordable housing loans and letters of credit, permanent loans for securitization, CRE loan servicing and real estate and mortgage brokerage services.

Wealth and Investment Management provides a full range of personalized wealth management, investment and retirement products and services to clients across U.S. based businesses including Wells Fargo Advisors, The Private Bank, Abbot Downing, Wells Fargo Institutional Retirement and Trust, and Wells Fargo Asset Management. We deliver financial planning, private banking, credit, investment management and fiduciary services to high-net worth and ultra-high-net worth individuals and families. We also serve clients' brokerage needs, supply retirement and trust services to institutional clients and provide investment management capabilities delivered to global institutional clients through separate accounts and the Wells Fargo Funds.

Other includes the elimination of certain items that are included in more than one business segment, most of which represents products and services for Wealth and Investment Management customers served through Community Banking distribution channels.

Note 26: Operating Segments (continued)

Table 26.1 presents our results by operating segment.

Table 26.1: Operating Segments

(income/expense in millions, average balances in billions)	Community Banking	Wholesale Banking	Wealth and Investment Management	Other (1)	Consolidated Company
2018					
Net interest income (2)	\$ 29,219	18,690	4,441	(2,355)	49,995
Provision (reversal of provision) for credit losses	1,783	(58)	(5)	24	1,744
Noninterest income	17,694	10,016	11,935	(3,232)	36,413
Noninterest expense	30,491	16,157	12,938	(3,460)	56,126
Income (loss) before income tax expense (benefit)	14,639	12,607	3,443	(2,151)	28,538
Income tax expense (benefit)	3,784	1,555	861	(538)	5,662
Net income (loss) before noncontrolling interests	10,855	11,052	2,582	(1,613)	22,876
Less: Net income from noncontrolling interests	461	20	2	—	483
Net income (loss) (3)	\$ 10,394	11,032	2,580	(1,613)	22,393
2017 (4)					
Net interest income (2)	\$ 28,658	18,810	4,641	(2,552)	49,557
Provision (reversal of provision) for credit losses	2,555	(19)	(5)	(3)	2,528
Noninterest income	18,360	11,190	12,431	(3,149)	38,832
Noninterest expense	32,615	16,624	12,623	(3,378)	58,484
Income (loss) before income tax expense (benefit)	11,848	13,395	4,454	(2,320)	27,377
Income tax expense (benefit)	634	3,496	1,668	(881)	4,917
Net income (loss) before noncontrolling interests	11,214	9,899	2,786	(1,439)	22,460
Less: Net income (loss) from noncontrolling interests	276	(15)	16	—	277
Net income (loss) (3)	\$ 10,938	9,914	2,770	(1,439)	22,183
2016 (4)					
Net interest income (2)	\$ 27,333	18,699	4,249	(2,527)	47,754
Provision (reversal of provision) for credit losses	2,691	1,073	(5)	11	3,770
Noninterest income	19,180	12,348	12,029	(3,044)	40,513
Noninterest expense	27,655	15,901	12,051	(3,230)	52,377
Income (loss) before income tax expense (benefit)	16,167	14,073	4,232	(2,352)	32,120
Income tax expense (benefit)	5,213	4,159	1,596	(893)	10,075
Net income (loss) before noncontrolling interests	10,954	9,914	2,636	(1,459)	22,045
Less: Net income (loss) from noncontrolling interests	136	(28)	(1)	—	107
Net income (loss) (3)	\$ 10,818	9,942	2,637	(1,459)	21,938
2018					
Average loans	\$ 463.7	465.7	74.6	(58.8)	945.2
Average assets	1,034.1	830.5	83.9	(59.6)	1,888.9
Average deposits	757.2	423.7	165.0	(70.0)	1,275.9
2017 (4)					
Average loans	475.7	465.6	71.9	(57.1)	956.1
Average assets	1,085.5	822.8	82.8	(58.1)	1,933.0
Average deposits	729.6	464.2	189.0	(78.2)	1,304.6

- (1) Includes the elimination of certain items that are included in more than one business segment, most of which represents products and services for Wealth and Investment Management customers served through Community Banking distribution channels.
- (2) Net interest income is the difference between interest earned on assets and the cost of liabilities to fund those assets. Interest earned includes actual interest earned on segment assets as well as interest credits for any funding of a segment available to be provided to other segments. The cost of liabilities includes actual interest expense on segment liabilities as well as funding charges for any funding provided from other segments.
- (3) Represents segment net income (loss) for Community Banking; Wholesale Banking; and Wealth and Investment Management segments and Wells Fargo net income for the consolidated company.
- (4) Prior period operating segment results have been revised to reflect a methodology change of allocating funding charges and credits.

Note 27: Parent-Only Financial Statements

The following tables present Parent-only condensed financial statements.

Table 27.1: Parent-Only Statement of Income

(in millions)	Year ended December 31,		
	2018	2017	2016
Income			
Dividends from subsidiaries (1)	\$ 22,427	20,746	12,776
Interest income from subsidiaries	3,298	1,984	1,615
Other interest income	49	146	155
Other income	(424)	1,238	177
Total income	25,350	24,114	14,723
Expense			
Interest expense:			
Indebtedness to nonbank subsidiaries	644	189	387
Short-term borrowings	2	—	—
Long-term debt	4,541	3,595	2,619
Other	3	5	19
Noninterest expense	286	1,888	1,300
Total expense	5,476	5,677	4,325
Income before income tax benefit and equity in undistributed income of subsidiaries	19,874	18,437	10,398
Income tax benefit	(544)	(319)	(1,152)
Equity in undistributed income of subsidiaries	1,975	3,427	10,388
Net income	\$ 22,393	22,183	21,938

(1) Includes dividends paid from indirect bank subsidiaries of \$20.8 billion, \$17.9 billion and \$12.5 billion in 2018, 2017 and 2016, respectively.

Table 27.2: Parent-Only Statement of Comprehensive Income

(in millions)	Year ended December 31,		
	2018	2017	2016
Net income	\$ 22,393	22,183	21,938
Other comprehensive income (loss), net of tax:			
Debt securities (1)	(12)	94	(76)
Derivatives and hedging activities	(198)	(158)	—
Defined benefit plans adjustment	(132)	118	(20)
Equity in other comprehensive income (loss) of subsidiaries	(3,332)	771	(3,338)
Other comprehensive income (loss), net of tax:	(3,674)	825	(3,434)
Total comprehensive income	\$ 18,719	23,008	18,504

(1) The years ended December 31, 2017 and 2016, includes net unrealized gains arising during the period from equity securities of \$3 million and \$7 million and reclassification of net (gains) to net income related to equity securities of \$(21) million and \$(30) million, respectively. In connection with our adoption in first quarter 2018 of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*, the year ended December 31, 2018, reflects net unrealized gains (losses) arising during the period and reclassification of net (gains) losses to net income from only debt securities.

Note 27: Parent-Only Financial Statements (continued)

Table 27.3: Parent-Only Balance Sheet

(in millions)	Dec 31, 2018	Dec 31, 2017
Assets		
Cash, cash equivalents, and restricted cash due from (1):		
Subsidiary banks	\$ 16,301	23,180
Nonaffiliates	—	1
Debt securities:		
Trading, at fair value (2)	—	24
Available-for-sale, at fair value (2)	1	5
Loans to nonbank subsidiaries	139,163	138,681
Investments in subsidiaries (3)	202,695	206,367
Equity securities (2)	2,164	2,414
Other assets (2)	4,639	4,731
Total assets	\$ 364,963	375,403
Liabilities and equity		
Accrued expenses and other liabilities	\$ 6,986	\$ 7,902
Long-term debt	135,079	146,130
Indebtedness to nonbank subsidiaries	26,732	14,435
Total liabilities	168,797	168,467
Stockholders' equity	196,166	206,936
Total liabilities and equity	\$ 364,963	375,403

- (1) Financial information has been revised to reflect the impact of our adoption in first quarter 2018 of ASU 2016-18 – Statement of Cash Flows (Topic 230): *Restricted Cash* in which we changed the presentation of our cash and cash equivalents to include both cash and due from banks as well as interest-earning deposits with banks, which are inclusive of restricted cash. See Note 1 (Summary of Significant Accounting Policies) for more information.
- (2) Financial information for the prior period has been revised to reflect presentation changes made in connection with our adoption in first quarter 2018 of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*. See Note 1 (Summary of Significant Accounting Policies) for more information.
- (3) The years ended December 31, 2018, and December 31, 2017, include indirect ownership of bank subsidiaries with equity of \$167.6 billion and \$170.5 billion, respectively.

Table 27.4: Parent-Only Statement of Cash Flows

(in millions)	Year ended December 31,		
	2018	2017	2016
Cash flows from operating activities:			
Net cash provided by operating activities (1)	\$ 19,024	22,233	10,654
Cash flows from investing activities:			
Available-for-sale debt securities:			
Proceeds from sales:			
Subsidiary banks	—	8,658	—
Nonaffiliates (1)	—	8,824	5,201
Prepayments and maturities:			
Subsidiary banks	—	10,250	15,000
Purchases:			
Subsidiary banks	—	(3,900)	(15,000)
Nonaffiliates	—	—	(6,544)
Equity securities, not held for trading:			
Proceeds from sales and capital returns (1)	355	743	583
Purchases (1)	(220)	(215)	(314)
Loans:			
Net repayments from (advances to) subsidiaries	(7)	(35,876)	3,174
Capital notes and term loans made to subsidiaries	(2,441)	(73,729)	(32,641)
Principal collected on notes/loans made to subsidiaries	756	69,286	15,164
Net decrease (increase) in investment in subsidiaries	2,407	(2,029)	(606)
Other, net	109	113	18
Net cash provided (used) by investing activities	959	(17,875)	(15,965)
Cash flows from financing activities:			
Net increase (decrease) in short-term borrowings and indebtedness to subsidiaries	12,467	(8,685)	789
Long-term debt:			
Proceeds from issuance	1,876	22,217	34,362
Repayment	(9,162)	(13,709)	(15,096)
Preferred stock:			
Proceeds from issuance	—	677	2,101
Redeemed	(2,150)	—	—
Cash dividends paid	(1,622)	(1,629)	(1,566)
Common stock:			
Proceeds from issuance	632	1,211	1,415
Stock tendered for payment of withholding taxes	(331)	(393)	(494)
Repurchased	(20,633)	(9,908)	(8,116)
Cash dividends paid	(7,692)	(7,480)	(7,472)
Other, net	(248)	(138)	(118)
Net cash provided (used) by financing activities	(26,863)	(17,837)	5,805
Net change in cash, cash equivalents, and restricted cash (2)	(6,880)	(13,479)	494
Cash, cash equivalents, and restricted cash at beginning of year (2)	23,181	36,660	36,166
Cash, cash equivalents, and restricted cash at end of year (2)	\$ 16,301	23,181	36,660

- (1) Financial information for the prior period has been revised to reflect presentation changes made in connection with our adoption in first quarter 2018 of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*. See Note 1 (Summary of Significant Accounting Policies) for more information.
- (2) Financial information has been revised to reflect the impact of our adoption in first quarter 2018 of ASU 2016-18 – Statement of Cash Flows (Topic 230): *Restricted Cash* in which we changed the presentation of our cash and cash equivalents to include both cash and due from banks as well as interest-earning deposits with banks, which are inclusive of restricted cash. See Note 1 (Summary of Significant Accounting Policies) for more information.

Note 28: Regulatory and Agency Capital Requirements

The Company and each of its subsidiary banks are subject to regulatory capital adequacy requirements promulgated by federal bank regulatory agencies. The Federal Reserve establishes capital requirements for the consolidated financial holding company, and the OCC has similar requirements for the Company's national banks, including Wells Fargo Bank, N.A. (the Bank).

Table 28.1 presents regulatory capital information for Wells Fargo & Company and the Bank using Basel III, which increased minimum required capital ratios, and introduced a minimum Common Equity Tier 1 (CET1) ratio. We must report the lower of our CET1, tier 1 and total capital ratios calculated under the Standardized Approach and under the Advanced Approach in the assessment of our capital adequacy. The Standardized Approach applies assigned risk weights to broad risk categories, while the calculation of risk-weighted assets (RWAs) under the Advanced Approach differs by requiring applicable banks to utilize a risk-sensitive methodology, which relies upon the use of internal credit models, and includes an operational risk component. The Basel III capital rules are being

phased-in effective January 1, 2014, through the end of 2021. Beginning January 1, 2018, the requirements for calculating CET1 and tier 1 capital, along with RWAs, became fully phased-in. Accordingly, the information presented reflects fully phased-in CET1 capital, tier 1 capital, and RWAs, but reflects total capital still in accordance with Transition Requirements.

The Bank is an approved seller/servicer of mortgage loans and is required to maintain minimum levels of shareholders' equity, as specified by various agencies, including the United States Department of Housing and Urban Development, GNMA, FHLMC and FNMA. At December 31, 2018, the Bank met these requirements. Other subsidiaries, including the Company's insurance and broker-dealer subsidiaries, are also subject to various minimum capital levels, as defined by applicable industry regulations. The minimum capital levels for these subsidiaries, and related restrictions, are not significant to our consolidated operations.

Table 28.1: Regulatory Capital Information

(in millions, except ratios)	Wells Fargo & Company				Wells Fargo Bank, N.A.			
	December 31, 2018		December 31, 2017		December 31, 2018		December 31, 2017	
	Advanced Approach	Standardized Approach	Advanced Approach	Standardized Approach	Advanced Approach	Standardized Approach	Advanced Approach	Standardized Approach
Regulatory capital:								
Common equity tier 1	\$ 146,363	146,363	154,765	154,765	142,685	142,685	143,292	143,292
Tier 1	167,866	167,866	178,209	178,209	142,685	142,685	143,292	143,292
Total	198,798	207,041	210,333	220,097	155,558	163,380	156,661	165,734
Assets:								
Risk-weighted assets	\$ 1,177,350	1,247,210	1,199,545	1,260,663	1,058,653	1,154,182	1,090,360	1,169,863
Adjusted average assets (1)	1,850,299	1,850,299	1,905,568	1,905,568	1,652,009	1,652,009	1,708,828	1,708,828
Regulatory capital ratios:								
Common equity tier 1 capital	12.43%	11.74 *	12.90	12.28 *	13.48	12.36 *	13.14	12.25 *
Tier 1 capital	14.26	13.46 *	14.86	14.14 *	13.48	12.36 *	13.14	12.25 *
Total capital	16.89	16.60 *	17.53	17.46 *	14.69	14.16 *	14.37	14.17 *
Tier 1 leverage (1)	9.07	9.07	9.35	9.35	8.64	8.64	8.39	8.39

*Denotes the lowest capital ratio as determined under the Advanced and Standardized Approaches.

(1) The leverage ratio consists of Tier 1 capital divided by quarterly average total assets, excluding goodwill and certain other items.

Table 28.2 presents the minimum required regulatory capital ratios under Transition Requirements to which the Company and the Bank were subject as of December 31, 2018, and December 31, 2017.

Table 28.2: Minimum Required Regulatory Capital Ratios – Transition Requirements (1)

	Wells Fargo & Company		Wells Fargo Bank, N.A.	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Regulatory capital ratios:				
Common equity tier 1 capital	7.875%	6.750	6.375	5.750
Tier 1 capital	9.375	8.250	7.875	7.250
Total capital	11.375	10.250	9.875	9.250
Tier 1 leverage	4.000	4.000	4.000	4.000

(1) At December 31, 2018, under transition requirements, the CET1, tier 1 and total capital minimum ratio requirements for Wells Fargo & Company include a capital conservation buffer of 1.875% and a global systemically important bank (G-SIB) surcharge of 1.500%. Only the 1.875% capital conservation buffer applies to the Bank at December 31, 2018.

Report of Independent Registered Public Accounting Firm

The Stockholders and Board of Directors
Wells Fargo & Company:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Wells Fargo & Company and Subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 27, 2019, expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 1931.

San Francisco, California
February 27, 2019

Quarterly Financial Data

Condensed Consolidated Statement of Income - Quarterly (Unaudited)

(in millions, except per share amounts)	2018				2017			
	Quarter ended				Quarter ended			
	Dec 31,	Sep 30,	Jun 30,	Mar 31,	Dec 31,	Sep 30,	Jun 30,	Mar 31,
Interest income	\$16,921	16,364	16,015	15,347	14,958	15,044	14,694	14,213
Interest expense	4,277	3,792	3,474	3,109	2,645	2,595	2,223	1,889
Net interest income	12,644	12,572	12,541	12,238	12,313	12,449	12,471	12,324
Provision for credit losses	521	580	452	191	651	717	555	605
Net interest income after provision for credit losses	12,123	11,992	12,089	12,047	11,662	11,732	11,916	11,719
Noninterest income								
Service charges on deposit accounts	1,176	1,204	1,163	1,173	1,246	1,276	1,276	1,313
Trust and investment fees	3,520	3,631	3,675	3,683	3,687	3,609	3,629	3,570
Card fees	981	1,017	1,001	908	996	1,000	1,019	945
Other fees	888	850	846	800	913	877	902	865
Mortgage banking	467	846	770	934	928	1,046	1,148	1,228
Insurance	109	104	102	114	223	269	280	277
Net gains (losses) from trading activities (1)	10	158	191	243	(1)	120	151	272
Net gains on debt securities	9	57	41	1	157	166	120	36
Net gains from equity securities (1)	21	416	295	783	572	363	274	570
Lease income	402	453	443	455	458	475	493	481
Other	753	633	485	602	558	199	472	374
Total noninterest income	8,336	9,369	9,012	9,696	9,737	9,400	9,764	9,931
Noninterest expense								
Salaries	4,545	4,461	4,465	4,363	4,403	4,356	4,343	4,261
Commission and incentive compensation	2,427	2,427	2,642	2,768	2,665	2,553	2,499	2,725
Employee benefits	706	1,377	1,245	1,598	1,293	1,279	1,308	1,686
Equipment	643	634	550	617	608	523	529	577
Net occupancy	735	718	722	713	715	716	706	712
Core deposit and other intangibles	264	264	265	265	288	288	287	289
FDIC and other deposit assessments	153	336	297	324	312	314	328	333
Other	3,866	3,546	3,796	4,394	6,516	4,322	3,541	3,209
Total noninterest expense	13,339	13,763	13,982	15,042	16,800	14,351	13,541	13,792
Income before income tax expense	7,120	7,598	7,119	6,701	4,599	6,781	8,139	7,858
Income tax expense (benefit)	966	1,512	1,810	1,374	(1,642)	2,181	2,245	2,133
Net income before noncontrolling interests	6,154	6,086	5,309	5,327	6,241	4,600	5,894	5,725
Less: Net income from noncontrolling interests	90	79	123	191	90	58	38	91
Wells Fargo net income	\$ 6,064	6,007	5,186	5,136	6,151	4,542	5,856	5,634
Less: Preferred stock dividends and other	353	554	394	403	411	411	406	401
Wells Fargo net income applicable to common stock	\$ 5,711	5,453	4,792	4,733	5,740	4,131	5,450	5,233
Per share information								
Earnings per common share	\$ 1.22	1.14	0.98	0.97	1.17	0.83	1.09	1.05
Diluted earnings per common share	1.21	1.13	0.98	0.96	1.16	0.83	1.08	1.03
Average common shares outstanding	4,665.8	4,784.0	4,865.8	4,885.7	4,912.5	4,948.6	4,989.9	5,008.6
Diluted average common shares outstanding	4,700.8	4,823.2	4,899.8	4,930.7	4,963.1	4,996.8	5,037.7	5,070.4

(1) Financial information for the prior periods of 2017 has been revised to reflect presentation changes made in connection with our adoption in first quarter 2018 of Accounting Standards Update (ASU) 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*. See Note 1 (Summary of Significant Accounting Policies) for more information.

Average Balances, Yields and Rates Paid (Taxable-Equivalent basis) - Quarterly (1)(2) - (Unaudited)

(in millions)	Quarter ended December 31,					
	2018			2017		
	Average balance	Yields/ rates	Interest income/ expense	Average balance	Yields/ rates	Interest income/ expense
Earning assets						
Interest-earning deposits with banks (3)	\$ 150,091	2.18%	\$ 825	189,114	1.27%	\$ 605
Federal funds sold and securities purchased under resale agreements (3)	76,108	2.22	426	75,826	1.20%	230
Debt securities (4):						
Trading debt securities (5)	90,110	3.52	794	81,580	3.17	647
Available-for-sale debt securities:						
Securities of U.S. Treasury and federal agencies	7,195	1.80	32	6,423	1.66	27
Securities of U.S. states and political subdivisions	47,618	4.05	483	52,390	3.91	513
Mortgage-backed securities:						
Federal agencies	155,322	2.91	1,128	152,910	2.62	1,000
Residential and commercial	6,666	4.87	81	9,371	4.85	114
Total mortgage-backed securities	161,988	2.99	1,209	162,281	2.75	1,114
Other debt securities (5)	46,072	4.46	518	48,679	3.62	443
Total available-for-sale debt securities (5)	262,873	3.41	2,242	269,773	3.10	2,097
Held-to-maturity debt securities:						
Securities of U.S. Treasury and federal agencies	44,747	2.19	247	44,716	2.19	246
Securities of U.S. states and political subdivisions	6,247	4.34	67	6,263	5.26	83
Federal agency and other mortgage-backed securities	95,748	2.46	589	89,622	2.25	503
Other debt securities	68	3.65	1	1,194	2.64	8
Total held-to-maturity debt securities	146,810	2.46	904	141,795	2.36	840
Total debt securities (5)	499,793	3.15	3,940	493,148	2.90	3,584
Mortgages loans held for sale (6)	17,044	4.46	190	20,517	3.82	196
Loans held for sale (5)(6)	1,992	6.69	33	1,490	3.19	12
Commercial loans:						
Commercial and industrial - U.S.	281,431	4.40	3,115	270,294	3.89	2,649
Commercial and industrial - Non-U.S.	62,035	3.73	584	59,233	2.96	442
Real estate mortgage	120,404	4.51	1,369	127,199	3.88	1,244
Real estate construction	23,090	5.32	310	24,408	4.38	270
Lease financing	19,519	4.48	219	19,226	0.62	31
Total commercial loans	506,479	4.39	5,597	500,360	3.68	4,636
Consumer loans:						
Real estate 1-4 family first mortgage	285,260	4.02	2,868	281,966	4.01	2,826
Real estate 1-4 family junior lien mortgage	34,844	5.60	491	40,379	4.96	505
Credit card	37,858	12.69	1,211	36,428	12.37	1,136
Automobile	45,536	5.16	592	54,323	5.13	702
Other revolving credit and installment	36,359	6.95	637	38,366	6.28	607
Total consumer loans	439,857	5.25	5,799	451,462	5.10	5,776
Total loans (6)	946,336	4.79	11,396	951,822	4.35	10,412
Equity securities (5)	37,412	2.79	261	38,001	2.60	246
Other (5)	4,074	1.78	18	7,103	0.88	16
Total earning assets (5)	\$ 1,732,850	3.93%	\$ 17,089	1,777,021	3.43%	\$ 15,301
Funding sources						
Deposits:						
Interest-bearing checking	\$ 53,983	1.21%	\$ 165	50,483	0.68%	\$ 86
Market rate and other savings	689,639	0.43	741	679,893	0.19	319
Savings certificates	21,955	0.87	48	20,920	0.31	17
Other time deposits	92,676	2.46	575	68,187	1.49	255
Deposits in foreign offices	56,098	1.66	236	124,597	0.81	254
Total interest-bearing deposits	914,351	0.77	1,765	944,080	0.39	931
Short-term borrowings	105,962	2.04	546	102,142	0.99	256
Long-term debt	226,591	3.17	1,802	231,598	2.32	1,344
Other liabilities	27,365	2.41	164	24,728	1.86	115
Total interest-bearing liabilities	1,274,269	1.34	4,277	1,302,548	0.81	2,646
Portion of noninterest-bearing funding sources (5)	458,581	—	—	474,473	—	—
Total funding sources (5)	\$ 1,732,850	0.99	4,277	1,777,021	0.59	2,646
Net interest margin and net interest income on a taxable-equivalent basis (7)		2.94%	\$ 12,812		2.84%	\$ 12,655
Noninterest-earning assets						
Cash and due from banks	\$ 19,288			19,152		
Goodwill	26,423			26,579		
Other (5)	100,486			112,566		
Total noninterest-earning assets (5)	\$ 146,197			158,297		
Noninterest-bearing funding sources						
Deposits	\$ 354,597			367,512		
Other liabilities	51,739			57,845		
Total equity	198,442			207,413		
Noninterest-bearing funding sources used to fund earning assets (5)	(458,581)			(474,473)		
Net noninterest-bearing funding sources (5)	\$ 146,197			158,297		
Total assets	\$ 1,879,047			1,935,318		

- (1) Our average prime rate was 5.28% and 4.30% for the quarters ended December 31, 2018 and 2017, respectively. The average three-month London Interbank Offered Rate (LIBOR) was 2.62% and 1.46% for the same quarters, respectively.
- (2) Yield/rates and amounts include the effects of hedge and risk management activities associated with the respective asset and liability categories.
- (3) Financial information for the prior period has been revised to reflect the impact of our adoption of Accounting Standards Update (ASU) 2016-18 – Statement of Cash Flows (Topic 230): *Restricted Cash* in which we changed the presentation of our cash and cash equivalents to include both cash and due from banks as well as interest-earning deposits with banks, which are inclusive of any restricted cash.
- (4) Yields and rates are based on interest income/expense amounts for the period, annualized based on the accrual basis for the respective accounts. The average balance amounts represent amortized cost for the periods presented.
- (5) Financial information for the prior period has been revised to reflect presentation changes made in connection with our adoption in first quarter 2018 of ASU 2016-01 – Financial Instruments – Overall (Subtopic 825-10): *Recognition and Measurement of Financial Assets and Financial Liabilities*.
- (6) Nonaccrual loans and related income are included in their respective loan categories.
- (7) Includes taxable-equivalent adjustments of \$168 million and \$342 million for the quarters ended December 31, 2018 and 2017, respectively, predominantly related to tax-exempt income on certain loans and securities. The federal statutory tax rate was 21% and 35% for the periods ended December 31, 2018 and 2017, respectively.

Glossary of Acronyms

ABS	Asset-backed security	HAMP	Home Affordability Modification Program
ACL	Allowance for credit losses	HUD	U.S. Department of Housing and Urban Development
ALCO	Asset/Liability Management Committee	LCR	Liquidity coverage ratio
ARM	Adjustable-rate mortgage	LHFS	Loans held for sale
ASC	Accounting Standards Codification	LIBOR	London Interbank Offered Rate
ASU	Accounting Standards Update	LIHTC	Low income housing tax credit
AUA	Assets under administration	LOCOM	Lower of cost or market value
AUM	Assets under management	LTV	Loan-to-value
AVM	Automated valuation model	MBS	Mortgage-backed security
BCBS	Basel Committee on Bank Supervision	MHA	Making Home Affordable programs
BHC	Bank holding company	MLHFS	Mortgage loans held for sale
CCAR	Comprehensive Capital Analysis and Review	MSR	Mortgage servicing right
CD	Certificate of deposit	MTN	Medium-term note
CDO	Collateralized debt obligation	NAV	Net asset value
CDS	Credit default swaps	NPA	Nonperforming asset
CECL	Current expected credit loss	OCC	Office of the Comptroller of the Currency
CET1	Common Equity Tier 1	OCI	Other comprehensive income
CFPB	Consumer Financial Protection Bureau	OTC	Over-the-counter
CLO	Collateralized loan obligation	OTTI	Other-than-temporary impairment
CLTV	Combined loan-to-value	PCI Loans	Purchased credit-impaired loans
CMBS	Commercial mortgage-backed securities	PTPP	Pre-tax pre-provision profit
CPI	Collateral protection insurance	RBC	Risk-based capital
CPP	Capital Purchase Program	RMBS	Residential mortgage-backed securities
CRE	Commercial real estate	ROA	Wells Fargo net income to average total assets
DPD	Days past due	ROE	Wells Fargo net income applicable to common stock to average Wells Fargo common stockholders' equity
ESOP	Employee Stock Ownership Plan	ROTCE	Return on average tangible common equity
FAS	Statement of Financial Accounting Standards	RWAs	Risk-weighted assets
FASB	Financial Accounting Standards Board	SEC	Securities and Exchange Commission
FDIC	Federal Deposit Insurance Corporation	S&P	Standard & Poor's Ratings Services
FFELP	Federal Family Education Loan Program	SLR	Supplementary leverage ratio
FHA	Federal Housing Administration	SOFR	Secured Overnight Financing Rate
FHLB	Federal Home Loan Bank	SPE	Special purpose entity
FHLMC	Federal Home Loan Mortgage Corporation	TARP	Troubled Asset Relief Program
FICO	Fair Isaac Corporation (credit rating)	TDR	Troubled debt restructuring
FNMA	Federal National Mortgage Association	TLAC	Total Loss Absorbing Capacity
FRB	Board of Governors of the Federal Reserve System	VA	Department of Veterans Affairs
GAAP	Generally accepted accounting principles	VaR	Value-at-Risk
GNMA	Government National Mortgage Association	VIE	Variable interest entity
GSE	Government-sponsored entity	WIM	Wealth and Investment Management
G-SIB	Globally systemic important bank		