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

FORM 10-K

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

For the fiscal year ended December 31, 2016

Commission file number 1-9924

Citigroup Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)

52-1568099
(I.R.S. Employer Identification No.)

388 Greenwich Street, New York, NY
(Address of principal executive offices)

10013
(Zip code)

(212) 559-1000
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act: See Exhibit 99.01

Securities registered pursuant to Section 12(g) of the Act: none

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

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

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

Large accelerated filer

Accelerated filer

Non-accelerated filer
(Do not check if a smaller
reporting company)

Smaller reporting company

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

The aggregate market value of Citigroup Inc. common stock held by non-affiliates of Citigroup Inc. on June 30, 2016 was approximately \$123.0 billion.

Number of shares of Citigroup Inc. common stock outstanding on January 31, 2017: 2,770,709,339

Documents Incorporated by Reference: Portions of the registrant's proxy statement for the annual meeting of stockholders scheduled to be held on April 25, 2017, are incorporated by reference in this Form 10-K in response to Items 10, 11, 12, 13 and 14 of Part III.

Available on the web at www.citigroup.com

FORM 10-K CROSS-REFERENCE INDEX

Item Number	Page
Part I	
1. Business	2–30, 120–122, 125, 152, 306–307
1A. Risk Factors	54–62
1B. Unresolved Staff Comments	Not Applicable
2. Properties	306–307
3. Legal Proceedings—See Note 27 to the Consolidated Financial Statements	283–291
4. Mine Safety Disclosures	Not Applicable

Part II

5. Market for Registrant’s Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities	134–135, 157–159, 308
6. Selected Financial Data	8–9
7. Management’s Discussion and Analysis of Financial Condition and Results of Operations	5–32, 64–119
7A. Quantitative and Qualitative Disclosures About Market Risk	64–119, 153–155, 179–219, 222–275
8. Financial Statements and Supplementary Data	129–305
9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	Not Applicable
9A. Controls and Procedures	123–124
9B. Other Information	Not Applicable

Part III

10. Directors, Executive Officers and Corporate Governance	310–311*
11. Executive Compensation	**
12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	***
13. Certain Relationships and Related Transactions and Director Independence	****
14. Principal Accountant Fees and Services	*****

Part IV

15. Exhibits and Financial Statement Schedules	313–317
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* For additional information regarding Citigroup’s Directors, see “Corporate Governance,” “Proposal 1: Election of Directors” and “Section 16(a) Beneficial Ownership Reporting Compliance” in the definitive Proxy Statement for Citigroup’s Annual Meeting of Stockholders scheduled to be held on April 25, 2017, to be filed with the SEC (the Proxy Statement), incorporated herein by reference.

** See “Compensation Discussion and Analysis,” “The Personnel and Compensation Committee Report,” and “2016 Summary Compensation Table and Compensation Information” in the Proxy Statement, incorporated herein by reference.

*** See “About the Annual Meeting,” “Stock Ownership,” and “Equity Compensation Plan Information” in the Proxy Statement, incorporated herein by reference.

**** See “Corporate Governance—Director Independence,” “—Certain Transactions and Relationships, Compensation Committee Interlocks and Insider Participation,” and “—Indebtedness” in the Proxy Statement, incorporated herein by reference.

***** See “Proposal 2: Ratification of Selection of Independent Registered Public Accounting Firm” in the Proxy Statement, incorporated herein by reference.

CITIGROUP'S 2016 ANNUAL REPORT ON FORM 10-K

OVERVIEW	2
MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	5
Executive Summary	5
Summary of Selected Financial Data	8
SEGMENT AND BUSINESS—INCOME (LOSS) AND REVENUES	10
SEGMENT BALANCE SHEET	12
CITICORP	13
Global Consumer Banking	14
North America GCB	16
Latin America GCB	19
Asia GCB	21
Institutional Clients Group	23
Corporate/Other	28
CITI HOLDINGS	29
OFF-BALANCE SHEET ARRANGEMENTS	31
CONTRACTUAL OBLIGATIONS	32
CAPITAL RESOURCES	33
RISK FACTORS	54
Managing Global Risk Table of Contents	63
MANAGING GLOBAL RISK	64
SIGNIFICANT ACCOUNTING POLICIES AND SIGNIFICANT ESTIMATES	120
DISCLOSURE CONTROLS AND PROCEDURES	123
MANAGEMENT'S ANNUAL REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING	124
FORWARD-LOOKING STATEMENTS	125
REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM—INTERNAL CONTROL OVER FINANCIAL REPORTING	126
REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM—CONSOLIDATED FINANCIAL STATEMENTS	127
FINANCIAL STATEMENTS AND NOTES TABLE OF CONTENTS	128
CONSOLIDATED FINANCIAL STATEMENTS	129
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS	138
FINANCIAL DATA SUPPLEMENT	305
SUPERVISION, REGULATION AND OTHER	306
CORPORATE INFORMATION	310
Citigroup Executive Officers	310
Citigroup Board of Directors	311

OVERVIEW

Citigroup's history dates back to the founding of the City Bank of New York in 1812.

Citigroup is a global diversified financial services holding company whose businesses provide consumers, corporations, governments and institutions with a broad, yet focused, range of financial products and services, including consumer banking and credit, corporate and investment banking, securities brokerage, trade and securities services and wealth management. Citi has approximately 200 million customer accounts and does business in more than 160 countries and jurisdictions.

At December 31, 2016, Citi had approximately 219,000 full-time employees, compared to approximately 231,000 full-time employees at December 31, 2015.

Citigroup currently operates, for management reporting purposes, via two primary business segments: Citicorp, consisting of Citi's *Global Consumer Banking* businesses and *Institutional Clients Group*; and Citi Holdings, consisting of businesses and portfolios of assets that Citigroup has determined are not central to its core Citicorp businesses. For a further description of the business segments and the products and services they provide, see "Citigroup Segments" below, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and Note 3 to the Consolidated Financial Statements.

Throughout this report, "Citigroup," "Citi" and "the Company" refer to Citigroup Inc. and its consolidated subsidiaries.

Additional information about Citigroup is available on Citi's website at www.citigroup.com. Citigroup's recent annual reports on Form 10-K, quarterly reports on Form 10-Q, proxy statements, as well as other filings with the U.S. Securities and Exchange Commission (SEC), are available free of charge through Citi's website by clicking on the "Investors" page and selecting "All SEC Filings." The SEC's website also contains current reports on Form 8-K and other information regarding Citi at www.sec.gov.

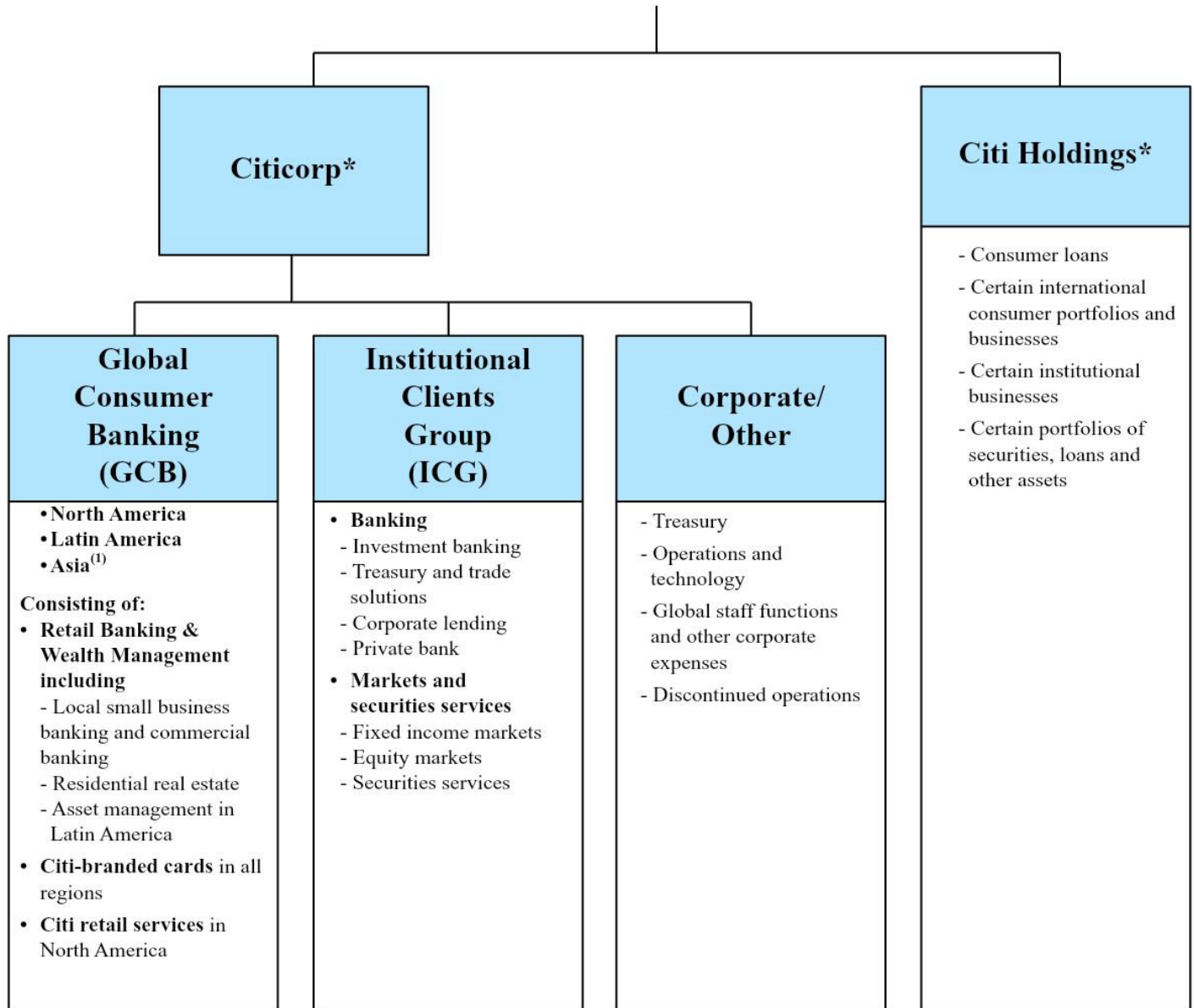
Certain reclassifications, including a realignment of certain businesses, have been made to the prior periods' financial statements to conform to the current period's presentation. For information on certain recent such reclassifications, see Note 3 to the Consolidated Financial Statements.

Please see "Risk Factors" below for a discussion of the most significant risks and uncertainties that could impact Citigroup's businesses, financial condition and results of operations.

As described above, Citigroup is managed pursuant to the following segments:

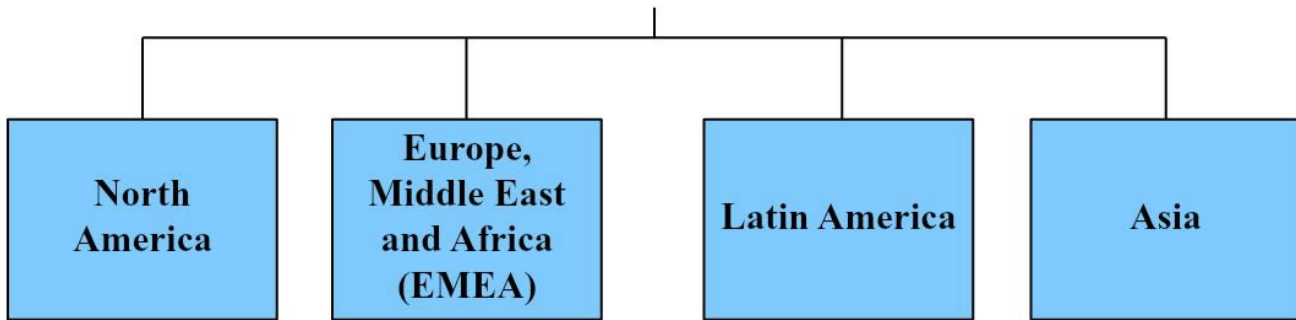
(Chart continues on next page.)

CITIGROUP SEGMENTS



The following are the four regions in which Citigroup operates. The regional results are fully reflected in the segment results above.

CITIGROUP REGIONS⁽²⁾



* As announced in April 2016, beginning in the first quarter of 2017, the remaining businesses and portfolios of assets in Citi Holdings will be reported as part of *Corporate/Other* and Citi Holdings will cease to be a separately reported business segment. For additional information, see "Citicorp" and "Citi Holdings" below. Citi intends to release a revised Quarterly Financial Data Supplement reflecting this realignment prior to the release of its first quarter of 2017 earnings.

- (1) *Asia GCB* includes the results of operations of *GCB* activities in certain *EMEA* countries for all periods presented.
- (2) *North America* includes the U.S., Canada and Puerto Rico, *Latin America* includes Mexico and *Asia* includes Japan.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

EXECUTIVE SUMMARY

As described further throughout this Executive Summary, Citi's full year 2016 results of operations reflected solid overall performance and underlying momentum across the franchise, including in several businesses where Citi has been making investments, such as its *North America* Citi-branded cards business. Citi also continued to demonstrate strong expense discipline, resulting in a Citicorp operating efficiency ratio of 58% in 2016.

In *Global Consumer Banking (GCB)*, results for the *North America* Citi-branded cards business reflected the acquisition of the Costco portfolio (late in the second quarter of 2016), but also modest growth in average loans and purchase sales in the remainder of the portfolio. International *GCB* results reflected revenue growth and positive operating leverage in Mexico, and Citi announced its \$1 billion investment in Mexico to be completed by 2020 where it believes it has the opportunity to build upon its strong brand position and scale to lead to improved returns. In *Institutional Clients Group (ICG)*, Citi generated year-over-year revenue growth, despite the challenging market conditions in the first quarter of 2016 and the volatility in the energy sector earlier in the year.

In Citicorp, loans increased 4% and deposits increased 3%. Excluding the impact of foreign currency translation into U.S. dollars for reporting purposes (FX translation), Citicorp loans increased 6% and deposits increased 5%. (Citi's results of operations excluding the impact of FX translation are non-GAAP financial measures. Citi believes the presentation of its results of operations excluding the impact of FX translation provides a meaningful depiction for investors of the underlying fundamentals of its businesses.) Credit quality remained broadly favorable in every region.

2016 was an important year for Citi in several additional respects. First, Citi Holdings will no longer be reported separately (it will be reported as part of *Corporate/Other* beginning in the first quarter of 2017). At its peak, Citi Holdings had over \$800 billion in assets and in certain quarters generated significant losses. As of December 31, 2016, Citi Holdings' assets of \$54 billion constituted only approximately 3% of Citigroup's GAAP assets, and with \$87 million of net income in the fourth quarter of 2016, Citi Holdings was profitable for ten consecutive quarters. Accordingly, the results of operations and financial condition of Citigroup are now driven by the core Citicorp franchise.

Second, Citi increased the amount of capital it returned to shareholders during 2016 while at the same time increasing its key regulatory capital metrics (see "Capital Resources" below). During 2016, Citi returned nearly \$11.0 billion of capital to common shareholders in the form of dividends and the repurchase of 196 million common shares, including the additional \$1.75 billion increase to its common stock repurchase program announced in November 2016. And third, while Citi has more work to do, Citi achieved a significant milestone during 2016 when it received feedback from the

Federal Reserve Board and FDIC that neither agency had found deficiencies in Citi's 2015 resolution plan.

Going into 2017, while economic sentiment has improved, there continues to be much uncertainty, primarily as a result of a new U.S. presidential administration and policies and the anticipated beginning of the exit of the U.K. from the European Union. For a more detailed discussion of the risks and uncertainties that could impact Citi's businesses, results of operations and financial condition during 2017, see each respective business's results of operations, "Risk Factors" and "Managing Global Risk" below. Despite these uncertainties, Citi intends to continue to build on the progress made during 2016 with a focus on further optimizing its performance to benefit shareholders.

2016 Summary Results

Citigroup

Citigroup reported net income of \$14.9 billion, or \$4.72 per share, compared to \$17.2 billion, or \$5.40 per share, in the prior year. Results in 2015 included \$254 million (\$162 million after-tax) of CVA/DVA.

Excluding the impact of CVA/DVA in 2015, Citigroup reported net income of \$14.9 billion for 2016, or \$4.72 per share, compared to \$17.1 billion, or \$5.35 per share, in the prior year. (Citi's results of operations excluding the impact of CVA/DVA are non-GAAP financial measures. Citi excludes the impact of CVA/DVA from results for 2015 for consistency with the current year's presentation.) The 13% decrease in net income from the prior year was primarily driven by lower revenues, largely due to the decline in Citi Holdings, partially offset by lower expenses and lower credit costs.

Citi's revenues were \$69.9 billion in 2016, a decrease of 8% from the prior year, driven by a 2% decline in Citicorp and a 57% decline in Citi Holdings. Excluding CVA/DVA in 2015 and the impact of FX translation (which increased the reported decline in revenues versus the prior year by approximately \$1.7 billion), Citigroup revenues decreased 6% from the prior year, driven by a 56% decrease in Citi Holdings, partially offset by a 1% increase in Citicorp revenues.

As previously announced, in January 2017, Citi signed agreements to effectively exit its U.S. mortgage servicing operations by the end of 2018 and intensify its focus on originations. These transactions are expected to negatively impact Citi's pretax earnings by approximately \$400 million, including a loss on sale and certain related transaction costs, in the first quarter of 2017. For additional information on these transactions, see Note 29 to the Consolidated Financial Statements.

Expenses

Citigroup expenses decreased 5% versus the prior year as significantly lower expenses in Citi Holdings, efficiency savings and a benefit from the impact of FX translation were partially offset by ongoing investments in Citicorp (including those referenced above). FX translation increased the reported

decline in expenses versus the prior year period by approximately \$1.2 billion.

Citicorp expenses increased 1%, reflecting the ongoing investments in the franchise, partially offset by efficiency savings and the benefit from the impact of FX translation.

Citi Holdings' expenses were \$3.2 billion, down 43% from the prior year, primarily driven by sales and run-off of Citi Holdings assets and lower legal and repositioning costs.

Credit Costs

Citi's total provisions for credit losses and for benefits and claims of \$7.0 billion decreased 12% from the prior year. The decrease was driven by a decrease in net credit losses and a lower provision for benefits and claims due to lower insurance-related business activity within Citi Holdings, partially offset by a net loan loss reserve build, largely driven by *North America* cards within Citicorp, compared to a net loan loss reserve release in the prior year.

Net credit losses of \$6.6 billion declined 10% versus the prior year. Consumer net credit losses declined 14% to \$6.1 billion, mostly reflecting continued improvement in the *North America* mortgage portfolio and ongoing divestiture activity within Citi Holdings, partially offset by higher net credit losses in *North America* cards in Citicorp due to volume growth. Corporate net credit losses increased \$267 million to \$511 million, mostly related to the energy portfolio in the first half of 2016, with a vast majority of the corporate net credit losses offset by releases of previously established loan loss reserves (for additional information, see "*Institutional Clients Group*" and "Credit Risk—Corporate Credit" below).

The net build of allowance for loan losses and unfunded lending commitments was \$217 million in 2016, compared to a \$120 million release in 2015. Citicorp's net reserve build was \$680 million, compared to a net loan loss reserve build of \$358 million in 2015. The larger net reserve build in 2016 was primarily related to the *North America* cards franchise, driven primarily by the impact of the Costco portfolio acquisition, volume growth and seasoning and the absence of reserve releases that occurred in 2015 as credit normalized (see "*Global Consumer Banking—North America GCB*" below), partially offset by a net reserve release in *ICG*. Overall, Citi expects its credit costs will likely be higher in 2017 as compared to 2016, driven by loan growth and seasoning.

For additional information on Citi's consumer and corporate credit costs and allowance for loan losses, see "Credit Risk" below.

Capital

Citigroup's Tier 1 Capital and Common Equity Tier 1 Capital ratios, on a fully implemented basis, were 14.2% and 12.6% as of December 31, 2016, respectively, compared to 13.5% and 12.1% as of December 31, 2015 (all based on the Basel III Advanced Approaches for determining risk-weighted assets). Citigroup's Supplementary Leverage ratio as of December 31, 2016, on a fully implemented basis, was 7.2%, compared to 7.1% as of December 31, 2015. For additional information on Citi's capital ratios and related components, including the

impact of Citi's DTAs on its capital ratios, see "Capital Resources" below.

Citicorp

Citicorp net income decreased 12% from the prior year to \$14.3 billion. CVA/DVA, recorded in *ICG*, was \$269 million (\$172 million after-tax) in 2015 (for a summary of CVA/DVA by business within *ICG*, see "*Institutional Clients Group*" below). Excluding CVA/DVA in 2015, Citicorp's net income decreased 11% from the prior year, primarily driven by lower revenues, higher expenses and higher credit costs.

Citicorp revenues decreased 2% from the prior year to \$66.0 billion, reflecting a 2% decline in *GCB* revenues and lower revenues in *Corporate/Other* as *ICG* revenues were largely unchanged. As referenced above, excluding CVA/DVA in 2015 and the impact of FX translation, Citicorp's revenues increased 1% versus the prior year, as growth in the *GCB* and *ICG* franchises were partially offset by lower revenues in *Corporate/Other*.

GCB revenues of \$31.8 billion decreased 2% versus the prior year. Excluding the impact of FX translation, *GCB* revenues increased 1%, as increases in *North America GCB* and *Latin America GCB* were partially offset by a decrease in *Asia GCB*. *North America GCB* revenues increased 1% to \$20.0 billion, as higher revenues in Citi-branded cards were partially offset by lower retail banking revenues. Citi-branded cards revenues of \$8.2 billion were up 5% versus the prior year, mostly reflecting the addition of the Costco portfolio. Citi retail services revenues of \$6.4 billion were largely unchanged versus the prior year, as the impact of previously disclosed renewals and extension of several partnerships as well as the absence of revenues from portfolio exits was offset by modest growth in average loans. Retail banking revenues decreased 3% from the prior year to \$5.3 billion. Excluding the previously disclosed \$110 million gain on the sale of branches in Texas in the prior year, retail banking revenues decreased 1% reflecting lower mortgage revenues, partially offset by higher average loans and checking deposits.

North America GCB average deposits of \$183 billion increased 1% year-over-year and average retail loans of \$54 billion grew 9%. Average Citi retail services loans of \$44 billion increased 1% versus the prior year while retail services purchase sales of \$80 billion were unchanged versus the prior year. Average Citi-branded card loans of \$73 billion increased 14%, while Citi-branded card purchase sales of \$251 billion increased 37% versus the prior year, each including the impact of the Costco portfolio acquisition. For additional information on the results of operations of *North America GCB* for 2016, see "*Global Consumer Banking—North America GCB*" below.

International *GCB* revenues (consisting of *Latin America GCB* and *Asia GCB* (which includes the results of operations of *GCB* activities in certain *EMEA* countries)) decreased 8% versus the prior year to \$11.8 billion, driven by a decline in *Latin America GCB* (14%) and *Asia GCB* (2%). Excluding the impact of FX translation, international *GCB* revenues were unchanged versus the prior year. *Latin America GCB* revenues increased 1% versus the prior year, as increases in average loan and deposit balances were partially offset by the

absence of the previously disclosed \$160 million gain (excluding the impact of FX translation, \$180 million as reported) related to the sale of Citi's merchant acquiring business in Mexico in the third quarter of 2015.

Asia GCB revenues declined 1% versus the prior year, reflecting lower wealth management revenues driven by weak investor sentiment in early 2016, partially offset by growth in cards revenues. For additional information on the results of operations of *Latin America GCB* and *Asia GCB* for 2016, including the impact of FX translation, see "*Global Consumer Banking*" below. Year-over-year, international *GCB* average deposits of \$117 billion increased 6%, average retail loans of \$86 billion decreased 1%, investment assets under management were largely unchanged, average card loans of \$23 billion increased 1% and card purchase sales of \$90 billion increased 3%, all excluding the impact of FX translation.

ICG revenues were \$33.9 billion in 2016, largely unchanged from the prior year as a 4% increase in *Markets and securities services* was offset by a 5% decrease in *Banking* revenues (including the impact of \$594 of million mark-to-market losses on hedges related to accrual loans within corporate lending, compared to gains of \$324 million in the prior year). Excluding CVA/DVA in 2015 and the impact of mark-to-market gains (losses) on loan hedges, *ICG* revenues increased 3% from the prior year to \$34.4 billion, driven by 6% growth in *Markets and securities services* and 1% growth in *Banking* revenues.

Banking revenues of \$17.1 billion (excluding CVA/DVA in 2015 and the impact of mark-to-market gains (losses) on hedges), were up 1% compared to the prior year, as growth in treasury and trade solutions and private bank were partially offset by lower investment banking revenues. Investment banking revenues of \$4.3 billion decreased 6% versus the prior year. Advisory revenues decreased 9% to \$1.0 billion, primarily reflecting lower activity during the first half of 2016. Debt underwriting revenues increased 5% to \$2.7 billion, as the continued low interest rate environment resulted in strong industry-wide activity in 2016, while equity underwriting revenues decreased 31% to \$628 million, largely reflecting an industry-wide slowdown in activity during the year.

Private bank revenues increased 3% (3% excluding CVA/DVA in 2015) to \$3.0 billion from the prior year, driven by loan growth and improved deposit spreads, partially offset by lower capital markets activity. Corporate lending revenues declined 46% to \$1.2 billion, including \$594 million of mark-to-market losses on hedges related to accrual loans compared to a \$324 million gain in the prior year. Excluding the mark-to-market impact of loan hedges, corporate lending revenues decreased 3% versus the prior year, primarily driven by a lease financing adjustment in the second quarter of 2016, lower spreads and higher hedging costs. Treasury and trade solutions revenues of \$8.1 billion increased 4% versus the prior year. Excluding the impact of FX translation, treasury and trade solutions revenues increased 8%, reflecting continued growth in transaction volumes and fee growth.

Markets and securities services revenues of \$17.3 billion, excluding CVA/DVA in 2015, increased 6% from the prior year. Fixed income markets revenues of \$13.0 billion

increased 13% (15% excluding CVA/DVA in 2015) from the prior year, driven by growth in both rates and currencies and spread products. Equity markets revenues of \$2.9 billion decreased 10% (9% excluding CVA/DVA in 2015) from the prior year, reflecting an industry-wide slowdown in client activity. Securities services revenues of \$2.2 billion increased 1% versus the prior year. Excluding the impact of FX translation, securities services revenues increased 5% as increased client activity, higher deposit volumes and improved spreads more than offset the absence of revenues from divested businesses. For additional information on the results of operations of *ICG* for 2016, see "*Institutional Clients Group*" below.

Corporate/Other revenues decreased to \$410 million from \$908 million in the prior year, primarily reflecting the absence of gains from real estate and other asset sales and the equity contribution related to Citi's stake in China Guangfa Bank, which was divested in the third quarter of 2016. For additional information on the results of operations of *Corporate/Other* for 2016, see "*Corporate/Other*" below.

Citicorp end-of-period loans increased 4% to \$591 billion from the prior year, driven by a 5% increase in consumer loans and a 3% increase in corporate loans. Excluding the impact of FX translation, Citicorp loans grew 6%, with 8% growth in consumer loans and 4% growth in corporate loans.

Citi Holdings

Citi Holdings' net income was \$600 million in 2016, compared to \$974 million in the prior year. CVA/DVA was negative \$15 million (negative \$10 million after-tax) in 2015. Excluding the impact of CVA/DVA in the prior year, Citi Holdings' net income was \$600 million, compared to \$984 million in the prior year, primarily reflecting lower revenues, partially offset lower expenses and lower credit costs. Citi does not expect the same level of net income from Citi Holdings to recur in 2017.

Citi Holdings' revenues were \$3.9 billion, down 57% from the prior year. Excluding CVA/DVA in 2015, Citi Holdings' revenues also decreased 57% to \$3.9 billion from the prior year, mainly reflecting continued reductions in Citi Holdings assets and lower net gains on asset sales. For additional information on the results of operations of Citi Holdings for 2016, see "Citi Holdings" below.

As noted above, at the end of 2016, Citi Holdings' assets were \$54 billion, 33% below the prior year, and represented approximately 3% of Citi's total GAAP assets. Citi Holdings' risk-weighted assets were \$104 billion as of December 31, 2016, a decrease of 25% from the prior year, and represented 9% of Citi's risk-weighted assets under Basel III (based on the Advanced Approaches for determining risk-weighted assets).

RESULTS OF OPERATIONS

SUMMARY OF SELECTED FINANCIAL DATA—PAGE 1

Citigroup Inc. and Consolidated Subsidiaries

<i>In millions of dollars, except per-share amounts and ratios</i>	2016	2015	2014	2013	2012
Net interest revenue	\$ 45,104	\$ 46,630	\$ 47,993	\$ 46,793	\$ 46,686
Non-interest revenue	24,771	29,724	29,226	29,931	22,844
Revenues, net of interest expense	\$ 69,875	\$ 76,354	\$ 77,219	\$ 76,724	\$ 69,530
Operating expenses	41,416	43,615	55,051	48,408	50,036
Provisions for credit losses and for benefits and claims	6,982	7,913	7,467	8,514	11,329
Income from continuing operations before income taxes	\$ 21,477	\$ 24,826	\$ 14,701	\$ 19,802	\$ 8,165
Income taxes	6,444	7,440	7,197	6,186	397
Income from continuing operations	\$ 15,033	\$ 17,386	\$ 7,504	\$ 13,616	\$ 7,768
Income (loss) from discontinued operations, net of taxes⁽¹⁾	(58)	(54)	(2)	270	(58)
Net income before attribution of noncontrolling interests	\$ 14,975	\$ 17,332	\$ 7,502	\$ 13,886	\$ 7,710
Net income attributable to noncontrolling interests	63	90	192	227	219
Citigroup's net income	\$ 14,912	\$ 17,242	\$ 7,310	\$ 13,659	\$ 7,491
Less:					
Preferred dividends—Basic	\$ 1,077	\$ 769	\$ 511	\$ 194	\$ 26
Dividends and undistributed earnings allocated to employee restricted and deferred shares that contain nonforfeitable rights to dividends, applicable to basic EPS	195	224	111	263	164
Income allocated to unrestricted common shareholders for basic EPS	\$ 13,640	\$ 16,249	\$ 6,688	\$ 13,202	\$ 7,301
Add: Other adjustments to income	—	—	1	1	10
Income allocated to unrestricted common shareholders for diluted EPS	\$ 13,640	\$ 16,249	\$ 6,689	\$ 13,203	\$ 7,311
Earnings per share					
Basic					
Income from continuing operations	\$ 4.74	\$ 5.43	\$ 2.21	\$ 4.26	\$ 2.51
Net income	4.72	5.41	2.21	4.35	2.49
Diluted					
Income from continuing operations	\$ 4.74	\$ 5.42	\$ 2.20	\$ 4.25	\$ 2.44
Net income	4.72	5.40	2.20	4.34	2.42
Dividends declared per common share	0.42	0.16	0.04	0.04	0.04

Statement continues on the next page, including notes to the table.

SUMMARY OF SELECTED FINANCIAL DATA—PAGE 2

Citigroup Inc. and Consolidated Subsidiaries

<i>In millions of dollars, except per-share amounts, ratios and direct staff</i>	2016	2015	2014	2013	2012
At December 31:					
Total assets	\$ 1,792,077	\$ 1,731,210	\$ 1,842,181	\$ 1,880,035	\$ 1,864,328
Total deposits	929,406	907,887	899,332	968,273	930,560
Long-term debt	206,178	201,275	223,080	221,116	239,463
Citigroup common stockholders' equity	205,867	205,139	199,717	197,254	186,155
Total Citigroup stockholders' equity	225,120	221,857	210,185	203,992	188,717
Direct staff (<i>in thousands</i>)	219	231	241	251	259
Performance metrics					
Return on average assets	0.82%	0.95%	0.39%	0.73%	0.39%
Return on average common stockholders' equity ⁽²⁾	6.6	8.1	3.4	7.0	4.1
Return on average total stockholders' equity ⁽²⁾	6.5	7.9	3.5	6.9	4.1
Efficiency ratio (Total operating expenses/Total revenues)	59	57	71	63	72
Basel III ratios—full implementation					
Common Equity Tier 1 Capital ⁽³⁾	12.57%	12.07%	10.57%	10.57%	8.72%
Tier 1 Capital ⁽³⁾	14.24	13.49	11.45	11.23	9.03
Total Capital ⁽³⁾	16.24	15.30	12.80	12.64	10.81
Supplementary Leverage ratio ⁽⁴⁾	7.22	7.08	5.94	5.42	N/A
Citigroup common stockholders' equity to assets	11.49%	11.85%	10.84%	10.49%	9.99%
Total Citigroup stockholders' equity to assets	12.56	12.82	11.41	10.85	10.12
Dividend payout ratio ⁽⁵⁾	8.9	3.0	1.8	0.9	1.7
Book value per common share	\$ 74.26	\$ 69.46	\$ 66.05	\$ 65.12	\$ 61.46
Tangible book value (TBV) per share ⁽⁶⁾	\$ 64.57	\$ 60.61	\$ 56.71	\$ 55.19	\$ 51.08
Ratio of earnings to fixed charges and preferred stock dividends	2.54x	2.89x	2.00x	2.18x	1.39x

(1) See Note 2 to the Consolidated Financial Statements for additional information on Citi's discontinued operations.

(2) The return on average common stockholders' equity is calculated using net income less preferred stock dividends divided by average common stockholders' equity. The return on average total Citigroup stockholders' equity is calculated using net income divided by average Citigroup stockholders' equity.

(3) Citi's regulatory capital ratios reflect full implementation of the U.S. Basel III rules. Risk-weighted assets are based on the Basel III Advanced Approaches for determining total risk-weighted assets.

(4) Citi's Supplementary Leverage ratio reflects full implementation of the U.S. Basel III rules.

(5) Dividends declared per common share as a percentage of net income per diluted share.

(6) For information on TBV, see "Capital Resources—Tangible Common Equity, Tangible Book Value Per Share, Book Value Per Share and Returns on Equity" below.

N/A Not Applicable

SEGMENT AND BUSINESS—INCOME (LOSS) AND REVENUES

CITIGROUP INCOME

<i>In millions of dollars</i>	2016	2015	2014	% Change 2016 vs. 2015	% Change 2015 vs. 2014
Income (loss) from continuing operations					
CITICORP					
Global Consumer Banking					
<i>North America</i>	\$ 3,356	\$ 4,311	\$ 4,488	(22)%	(4)%
<i>Latin America</i>	669	868	993	(23)	(13)
<i>Asia⁽¹⁾</i>	1,083	1,197	\$ 1,221	(10)	(2)
Total	\$ 5,108	\$ 6,376	\$ 6,702	(20)%	(5)%
Institutional Clients Group					
<i>North America</i>	\$ 3,678	\$ 3,517	\$ 4,155	5 %	(15)%
<i>EMEA</i>	2,476	2,340	2,060	6	14
<i>Latin America</i>	1,481	1,393	1,401	6	(1)
<i>Asia</i>	2,293	2,279	2,029	1	12
Total	\$ 9,928	\$ 9,529	\$ 9,645	4 %	(1)%
Corporate/Other	\$ (609)	\$ 496	\$ (5,373)	NM	NM
Total Citicorp	\$ 14,427	\$ 16,401	\$ 10,974	(12)%	49 %
Citi Holdings	\$ 606	\$ 985	\$ (3,470)	(38)%	NM
Income from continuing operations	\$ 15,033	\$ 17,386	\$ 7,504	(14)%	NM
Discontinued operations	\$ (58)	\$ (54)	\$ (2)	(7)%	NM
Net income attributable to noncontrolling interests	63	90	192	(30)%	(53)%
Citigroup's net income	\$ 14,912	\$ 17,242	\$ 7,310	(14)%	NM

(1) *Asia GCB* includes the results of operations of *GCB* activities in certain *EMEA* countries for all periods presented.

NM Not meaningful

CITIGROUP REVENUES

<i>In millions of dollars</i>	2016	2015	2014	% Change 2016 vs. 2015	% Change 2015 vs. 2014
CITICORP					
Global Consumer Banking					
<i>North America</i>	\$ 19,956	\$ 19,718	\$ 19,948	1 %	(1)%
<i>Latin America</i>	4,969	5,770	6,557	(14)	(12)
<i>Asia⁽¹⁾</i>	6,838	7,007	7,791	(2)	(10)
Total	\$ 31,763	\$ 32,495	\$ 34,296	(2)%	(5)%
Institutional Clients Group					
<i>North America</i>	\$ 12,817	\$ 12,980	\$ 13,002	(1)%	— %
<i>EMEA</i>	10,029	9,958	9,511	1	5
<i>Latin America</i>	4,026	4,051	4,218	(1)	(4)
<i>Asia</i>	6,978	7,002	6,581	—	6
Total	\$ 33,850	\$ 33,991	\$ 33,312	— %	2 %
Corporate/Other	\$ 410	\$ 908	\$ 303	(55)%	NM
Total Citicorp	\$ 66,023	\$ 67,394	\$ 67,911	(2)%	(1)%
Citi Holdings	\$ 3,852	\$ 8,960	\$ 9,308	(57)%	(4)%
Total Citigroup net revenues	\$ 69,875	\$ 76,354	\$ 77,219	(8)%	(1)%

(1) *Asia GCB* includes the results of operations of *GCB* activities in certain *EMEA* countries for all periods presented.

NM Not meaningful

SEGMENT BALANCE SHEET⁽¹⁾

<i>In millions of dollars</i>	Global Consumer Banking	Institutional Clients Group	Corporate/ Other and consolidating eliminations ⁽²⁾	Subtotal Citicorp	Citi Holdings	Citigroup Parent company- issued long-term debt and stockholders' equity ⁽³⁾	Total Citigroup consolidated
Assets							
Cash and deposits with banks	\$ 9,779	\$ 63,697	\$ 86,559	\$ 160,035	\$ 459	\$ —	\$ 160,494
Federal funds sold and securities borrowed or purchased under agreements to resell	219	236,078	—	236,297	516	—	236,813
Trading account assets	6,511	234,322	727	241,560	2,365	—	243,925
Investments	9,499	114,044	225,239	348,782	4,522	—	353,304
Loans, net of unearned income and allowance for loan losses	284,089	296,215	—	580,304	32,005	—	612,309
Other assets	41,922	87,940	42,988	172,850	12,382	—	185,232
Liquidity assets ⁽⁴⁾	61,046	243,483	(306,049)	(1,520)	1,520	—	—
Total assets	\$ 413,065	\$ 1,275,779	\$ 49,464	\$ 1,738,308	\$ 53,769	\$ —	\$ 1,792,077
Liabilities and equity							
Total deposits	\$ 301,336	\$ 610,368	\$ 15,495	\$ 927,199	\$ 2,207	\$ —	\$ 929,406
Federal funds purchased and securities loaned or sold under agreements to repurchase	4,120	137,658	—	141,778	43	—	141,821
Trading account liabilities	16	138,601	46	138,663	382	—	139,045
Short-term borrowings	458	18,242	12,001	30,701	—	—	30,701
Long-term debt ⁽³⁾	1,194	31,626	22,176	54,996	3,849	147,333	206,178
Other liabilities	18,827	77,961	16,272	113,060	5,723	—	118,783
Net inter-segment funding (lending) ⁽³⁾	87,114	261,323	(17,549)	330,888	41,565	(372,453)	—
Total liabilities	\$ 413,065	\$ 1,275,779	\$ 48,441	\$ 1,737,285	\$ 53,769	\$ (225,120)	\$ 1,565,934
Total equity⁽⁵⁾	—	—	1,023	1,023	—	225,120	226,143
Total liabilities and equity	\$ 413,065	\$ 1,275,779	\$ 49,464	\$ 1,738,308	\$ 53,769	\$ —	\$ 1,792,077

- (1) The supplemental information presented in the table above reflects Citigroup's consolidated GAAP balance sheet by reporting segment as of December 31, 2016. The respective segment information depicts the assets and liabilities managed by each segment as of such date.
- (2) Consolidating eliminations for total Citigroup and Citigroup parent company assets and liabilities are recorded within *Corporate/Other*.
- (3) The total stockholders' equity and the majority of long-term debt of Citigroup reside in the Citigroup parent company Consolidated Balance Sheet. Citigroup allocates stockholders' equity and long-term debt to its businesses through inter-segment allocations as shown above.
- (4) Represents the attribution of Citigroup's liquidity assets (primarily consisting of cash and available-for-sale securities) to the various businesses based on Liquidity Coverage Ratio (LCR) assumptions.
- (5) Citicorp equity represents noncontrolling interests.

CITICORP

Citicorp is Citigroup's global bank for consumers and businesses and represents Citi's core franchises. Citicorp is focused on providing best-in-class products and services to customers and leveraging Citigroup's unparalleled global network, including many of the world's emerging economies. Citicorp is physically present in 97 countries and jurisdictions, many for over 100 years, and offers services in over 160 countries and jurisdictions. Citi believes this global network provides a strong foundation for servicing the broad financial services needs of its large multinational clients and for meeting the needs of retail, private banking, commercial, public sector and institutional clients around the world.

Citicorp consists of the following operating businesses: *Global Consumer Banking* (which consists of consumer banking businesses in *North America*, *Latin America* (consisting of Citi's consumer banking businesses in Mexico) and *Asia*) and *Institutional Clients Group* (which includes *Banking* and *Markets and securities services*). Citicorp also includes *Corporate/Other*. At December 31, 2016, Citicorp had approximately \$1.7 trillion of assets and \$927 billion of deposits, representing approximately 97% of Citi's total assets and nearly 100% of Citi's total deposits.

As announced in April 2016, beginning in the first quarter of 2017, the remaining businesses and portfolios of assets in Citi Holdings will be reported as part of *Corporate/Other* and Citi Holdings will cease to be a separately reported business segment. These businesses and assets, consisting of approximately \$54 billion of assets, \$33 billion of loans and \$2 billion of deposits, contributed approximately \$3.9 billion of revenues, \$3.2 billion of expenses and net income of \$600 million in 2016. For additional information, see "Citigroup Segments" above and "Citi Holdings" below.

<i>In millions of dollars except as otherwise noted</i>	2016	2015	2014	% Change 2016 vs. 2015	% Change 2015 vs. 2014
Net interest revenue	\$ 43,066	\$ 42,173	\$ 42,436	2 %	(1)%
Non-interest revenue	22,957	25,221	25,475	(9)	(1)
Total revenues, net of interest expense	\$ 66,023	\$ 67,394	\$ 67,911	(2)%	(1)%
Provisions for credit losses and for benefits and claims					
Net credit losses	\$ 6,128	\$ 5,966	\$ 6,787	3 %	(12)%
Credit reserve build (release)	643	261	(1,225)	NM	NM
Provision for loan losses	\$ 6,771	\$ 6,227	\$ 5,562	9 %	12 %
Provision for benefits and claims	105	107	145	(2)	(26)
Provision for unfunded lending commitments	37	97	(151)	(62)	NM
Total provisions for credit losses and for benefits and claims	\$ 6,913	\$ 6,431	\$ 5,556	7 %	16 %
Total operating expenses	\$ 38,245	\$ 38,044	\$ 44,192	1 %	(14)%
Income from continuing operations before taxes	\$ 20,865	\$ 22,919	\$ 18,163	(9)%	26 %
Income taxes	6,438	6,518	7,189	(1)	(9)
Income from continuing operations	\$ 14,427	\$ 16,401	\$ 10,974	(12)%	49 %
Income (loss) from discontinued operations, net of taxes	(58)	(54)	(2)	(7)	NM
Noncontrolling interests	57	79	186	(28)	(58)
Net income	\$ 14,312	\$ 16,268	\$ 10,786	(12)%	51 %
Balance Sheet data (in billions of dollars)					
Total end-of-period (EOP) assets	\$ 1,738	\$ 1,650	\$ 1,704	5 %	(3)%
Average assets	1,741	1,705	1,743	2	(2)
Return on average assets	0.82%	0.95%	0.62%		
Efficiency ratio	58	56	65		
Total EOP loans	\$ 591	\$ 569	\$ 559	4	2
Total EOP deposits	927	898	878	3	2

NM Not meaningful

GLOBAL CONSUMER BANKING

Global Consumer Banking (GCB) provides traditional banking services to retail customers through retail banking, including commercial banking, and Citi-branded cards and Citi retail services (for additional information on these businesses, see “Citigroup Segments” above). *GCB* is focused on its priority markets in the U.S., Mexico and *Asia* with 2,649 branches in 19 countries as of December 31, 2016. At December 31, 2016, *GCB* had approximately \$413 billion of assets and \$301 billion of deposits.

GCB's overall strategy is to leverage Citi's global footprint and seek to be the preeminent bank for the emerging affluent and affluent consumers in large urban centers. In credit cards and in certain retail markets, Citi serves customers in a somewhat broader set of segments and geographies.

<i>In millions of dollars except as otherwise noted</i>	2016	2015	2014	% Change 2016 vs. 2015	% Change 2015 vs. 2014
Net interest revenue	\$ 26,259	\$ 25,984	\$ 26,835	1 %	(3)%
Non-interest revenue	5,504	6,511	7,461	(15)	(13)
Total revenues, net of interest expense	\$ 31,763	\$ 32,495	\$ 34,296	(2)%	(5)%
Total operating expenses	\$ 17,516	\$ 17,220	\$ 18,681	2 %	(8)%
Net credit losses	\$ 5,612	\$ 5,752	\$ 6,512	(2)%	(12)%
Credit reserve build (release)	707	(393)	(1,123)	NM	65
Provision (release) for unfunded lending commitments	3	3	(25)	—	NM
Provision for benefits and claims	105	107	145	(2)	(26)
Provisions for credit losses and for benefits and claims	\$ 6,427	\$ 5,469	\$ 5,509	18 %	(1)%
Income from continuing operations before taxes	\$ 7,820	\$ 9,806	\$ 10,106	(20)%	(3)%
Income taxes	2,712	3,430	3,404	(21)	1
Income from continuing operations	\$ 5,108	\$ 6,376	\$ 6,702	(20)%	(5)%
Noncontrolling interests	7	10	24	(30)	(58)
Net income	\$ 5,101	\$ 6,366	\$ 6,678	(20)%	(5)%
Balance Sheet data (in billions of dollars)					
Average assets	\$ 397	\$ 379	\$ 393	5 %	(4)%
Return on average assets	1.28%	1.68%	1.70%		
Efficiency ratio	55	53	54		
Total EOP assets	\$ 413	\$ 381	\$ 393	8	(3)
Average deposits	300	297	300	1	(1)
Net credit losses as a percentage of average loans	2.00%	2.11%	2.32%		
Revenue by business					
Retail banking	\$ 13,039	\$ 13,865	\$ 14,340	(6)%	(3)%
Cards ⁽¹⁾	18,724	18,630	19,956	1	(7)
Total	\$ 31,763	\$ 32,495	\$ 34,296	(2)%	(5)%
Income from continuing operations by business					
Retail banking	\$ 1,637	\$ 2,015	\$ 1,741	(19)%	16 %
Cards ⁽¹⁾	3,471	4,361	4,961	(20)	(12)
Total	\$ 5,108	\$ 6,376	\$ 6,702	(20)%	(5)%

Table continues on next page.

Foreign currency (FX) translation impact								
Total revenue—as reported	\$	31,763	\$	32,495	\$	34,296	(2)%	(5)%
Impact of FX translation ⁽²⁾		—		(1,003)		(2,532)		
Total revenues—ex-FX ⁽³⁾	\$	31,763	\$	31,492	\$	31,764	1 %	(1)%
Total operating expenses—as reported	\$	17,516	\$	17,220	\$	18,681	2 %	(8)%
Impact of FX translation ⁽²⁾		—		(465)		(1,441)		
Total operating expenses—ex-FX ⁽³⁾	\$	17,516	\$	16,755	\$	17,240	5 %	(3)%
Total provisions for LLR & PBC—as reported	\$	6,427	\$	5,469	\$	5,509	18 %	(1)%
Impact of FX translation ⁽²⁾		—		(213)		(613)		
Total provisions for LLR & PBC—ex-FX ⁽³⁾	\$	6,427	\$	5,256	\$	4,896	22 %	7 %
Net income—as reported	\$	5,101	\$	6,366	\$	6,678	(20)%	(5)%
Impact of FX translation ⁽²⁾		—		(243)		(333)		
Net income—ex-FX ⁽³⁾	\$	5,101	\$	6,123	\$	6,345	(17)%	(3)%

(1) Includes both Citi-branded cards and Citi retail services.

(2) Reflects the impact of FX translation into U.S. dollars at the 2016 average exchange rates for all periods presented.

(3) Presentation of this metric excluding FX translation is a non-GAAP financial measure.

NM Not meaningful

NORTH AMERICA GCB

North America GCB provides traditional retail banking, including commercial banking, and its Citi-branded cards and Citi retail services card products to retail customers and small to mid-size businesses, as applicable, in the U.S. *North America GCB's* U.S. cards product portfolio includes its proprietary portfolio (including the Citi Double Cash, Thank You and Value cards) and co-branded cards (including, among others, American Airlines and Costco) within Citi-branded cards as well as its co-brand and private label relationships (including, among others, Sears, The Home Depot, Macy's and Best Buy) within Citi retail services.

As of December 31, 2016, *North America GCB's* 723 retail bank branches are concentrated in the six key metropolitan areas of New York, Chicago, Miami, Washington, D.C., Los Angeles and San Francisco. Also as of December 31, 2016, *North America GCB* had approximately 10.5 million retail banking customer accounts, \$55.3 billion of retail banking loans and \$185.0 billion of deposits. In addition, *North America GCB* had approximately 120.6 million Citi-branded and Citi retail services credit card accounts with \$133.3 billion in outstanding card loan balances.

<i>In millions of dollars, except as otherwise noted</i>	2016	2015	2014	% Change 2016 vs. 2015	% Change 2015 vs. 2014
Net interest revenue	\$ 18,327	\$ 17,609	\$ 17,329	4 %	2 %
Non-interest revenue	1,629	2,109	2,619	(23)	(19)
Total revenues, net of interest expense	\$ 19,956	\$ 19,718	\$ 19,948	1 %	(1)%
Total operating expenses	\$ 10,080	\$ 9,381	\$ 9,898	7 %	(5)%
Net credit losses	\$ 3,921	\$ 3,751	\$ 4,202	5 %	(11)%
Credit reserve build (release)	652	(337)	(1,241)	NM	73
Provision for unfunded lending commitments	6	7	(9)	(14)	NM
Provisions for benefits and claims	33	38	41	(13)	(7)
Provisions for credit losses and for benefits and claims	\$ 4,612	\$ 3,459	\$ 2,993	33 %	16 %
Income from continuing operations before taxes	\$ 5,264	\$ 6,878	\$ 7,057	(23)%	(3)%
Income taxes	1,908	2,567	2,569	(26)	—
Income from continuing operations	\$ 3,356	\$ 4,311	\$ 4,488	(22)%	(4)%
Noncontrolling interests	(2)	3	1	NM	NM
Net income	\$ 3,358	\$ 4,308	\$ 4,487	(22)%	(4)%
Balance Sheet data (in billions of dollars)					
Average assets	\$ 229	\$ 209	\$ 212	10 %	(1)%
Return on average assets	1.47%	2.06%	2.12%		
Efficiency ratio	51	48	50		
Average deposits	\$ 183.2	\$ 180.7	\$ 179.5	1	1
Net credit losses as a percentage of average loans	2.29%	2.39%	2.69%		
Revenue by business					
Retail banking	\$ 5,295	\$ 5,478	\$ 5,196	(3)%	5 %
Citi-branded cards	8,235	7,809	8,290	5	(6)
Citi retail services	6,426	6,431	6,462	—	—
Total	\$ 19,956	\$ 19,718	\$ 19,948	1 %	(1)%
Income from continuing operations by business					
Retail banking	\$ 567	\$ 715	\$ 431	(21)%	66 %
Citi-branded cards	1,497	2,075	2,391	(28)	(13)
Citi retail services	1,292	1,521	1,666	(15)	(9)
Total	\$ 3,356	\$ 4,311	\$ 4,488	(22)%	(4)%

NM Not meaningful

2016 vs. 2015

Net income decreased by 22% due to significantly higher cost of credit and higher expenses, partially offset by higher revenues.

Revenues increased 1%, reflecting higher revenues in Citi-branded cards, partially offset by lower revenues in retail banking.

Retail banking revenues decreased 3%. Excluding the previously disclosed \$110 million gain on sale of branches in Texas in the first quarter of 2015, revenues decreased 1%, primarily driven by lower mortgage revenues. The decline in mortgage revenues was due to lower gain on sale revenues due to lower mortgage originations, lower servicing revenues and lower spreads driven by higher cost of funds. *North America GCB* expects higher interest rates could negatively impact mortgage revenues in 2017. The decline in mortgage revenues was partially offset by continued volume growth, including growth in average loans (9%) and average checking deposits (9%).

Cards revenues increased 3%. In Citi-branded cards, revenues increased 5%, primarily reflecting the acquisition of the Costco portfolio (completed June 17, 2016) as well as volume growth, partially offset by higher investment-related acquisition and rewards costs and the impact of higher promotional balances. Average loans grew 14% (3% excluding Costco) and purchase sales grew 37% (9% excluding Costco), driven by continued investments in the portfolio. While *North America GCB* believes it has largely absorbed the impact of higher acquisition and rewards costs as of year-end 2016, it expects the negative impact of higher promotional balances driven by new card accounts in the business could continue to impact Citi-branded cards revenues in the first half of 2017, with this impact abating in the second half of 2017.

Citi retail services revenues were largely unchanged as the impact of the previously disclosed renewal and extension of several partnerships within the portfolio as well as the absence of revenues from portfolio exits were offset by modest growth in average loans. Average loans increased 1%, while purchase sales were largely unchanged. *North America GCB* expects Citi retail services revenues to continue to reflect the impacts of the more competitive terms of the partnership renewals and the portfolio sales during 2017, partially offset by volume growth.

Expenses increased 7%, primarily due to the Costco acquisition, continued investment spending (including marketing spending), volume growth, higher repositioning charges and regulatory and compliance costs. This increase was partially offset by ongoing efficiency savings, including continued reductions in retail banking branches (7%) in 2016, and lower legal and related costs.

Provisions increased 33%, driven by a net loan loss reserve build (\$658 million), compared to a loan loss reserve release in the prior year (\$330 million), and higher net credit losses (5%). The net loan loss reserve build mostly reflected reserve builds in the cards portfolios and was primarily driven by the impact of the acquisition of the Costco portfolio, as well as volume growth and seasoning of the portfolios and the absence of nearly \$400 million of reserve releases in 2015 as

credit normalized. The reserve build was also due to the estimated impact of proposed regulatory guidelines in July 2016 on third-party debt collections.

The increase in net credit losses was driven by increases in the cards businesses and retail banking. In retail banking, net credit losses grew 38% to \$207 million, primarily due to an increase related to Citi's energy and energy-related exposures within the commercial banking portfolio, which was largely offset by releases of previously established loan loss reserves (for information on Citi's energy and energy-related exposures within commercial banking in *North America GCB*, see "Credit Risk—Commercial Credit" below).

In Citi-branded cards, net credit losses increased 1% to \$1.9 billion, driven by volume growth (14% increase in average loans), including the impact of Costco beginning in the fourth quarter of 2016, seasoning and the impact of the regulatory changes on collections. In Citi retail services, net credit losses increased 6% to \$1.8 billion, primarily due to portfolio growth and seasoning and the impact of the regulatory changes on collections. *North America GCB* expects net credit losses in 2017 in cards to reflect the full year impact of the Costco portfolio acquisition, portfolio growth and seasoning and the impact of regulatory changes on collections.

For additional information on *North America GCB's* retail banking, including commercial banking, and its Citi-branded cards and Citi retail services portfolios, see "Credit Risk—Consumer Credit" below.

2015 vs. 2014

Net income decreased by 4% due to lower loan loss reserve releases and lower revenues, partially offset by lower expenses and lower net credit losses.

Revenues decreased 1%, reflecting lower revenues in Citi-branded cards, partially offset by higher revenues in retail banking. Retail banking revenues increased 5%. The increase was primarily driven by 7% growth in average loans, 9% growth in average checking deposits, improved deposit spreads and slightly higher mortgage origination revenues, partially offset by lower net gains on branch sales (approximately \$40 million) and mortgage portfolio sales (approximately \$80 million) as well as a lower mortgage repurchase reserve release (approximately \$50 million) compared to 2014. Cards revenues decreased 3% due to a 2% decline in average loans, partially offset by a 4% increase in purchase sales. In Citi-branded cards, revenues decreased 6%, primarily reflecting an increase in acquisition and rewards costs, particularly during the second half of 2015, as *North America GCB* deployed its investment spending to grow its new account acquisitions in its core products. The decrease in Citi-branded cards revenues was also due to the continued impact of lower average loans (down 4%), driven primarily by continued high customer payment rates during the year, partially offset by a 6% increase in purchase sales.

Citi retail services revenues were largely unchanged as the continued impact of lower fuel prices and higher contractual partner payments was offset by the impact of higher spreads. Purchase sales were unchanged as the

continued impact of lower fuel prices was offset by volume growth.

Expenses decreased 5%, primarily due to ongoing cost reduction initiatives, including as a result of *North America GCB's* branch rationalization strategy, and lower repositioning charges, partially offset by increased investment spending (including marketing, among other areas) in Citi-branded cards.

Provisions increased 16% largely due to lower net loan loss reserve releases (74%), partially offset by lower net credit losses (11%). Net credit losses declined in Citi-branded cards (down 14% to \$1.9 billion) and in Citi retail services (down 8% to \$1.7 billion). The lower loan loss reserve release reflected overall credit stabilization in the cards portfolios during 2015.

LATIN AMERICA GCB

Latin America GCB provides traditional retail banking, including commercial banking, and its Citi-branded card products to retail customers and small to mid-size businesses in Mexico through Citibanamex (previously known as Banco Nacional de Mexico, or Banamex), one of Mexico's largest banks.

At December 31, 2016, Latin America GCB had 1,494 retail branches in Mexico, with approximately 27.4 million retail banking customer accounts, \$18.3 billion in retail banking loans and \$26.4 billion in deposits. In addition, the business had approximately 5.8 million Citi-branded card accounts with \$4.8 billion in outstanding loan balances.

<i>In millions of dollars, except as otherwise noted</i>	2016	2015	2014	% Change 2016 vs. 2015	% Change 2015 vs. 2014
Net interest revenue	\$ 3,469	\$ 3,885	\$ 4,537	(11)%	(14)%
Non-interest revenue	1,500	1,885	2,020	(20)	(7)
Total revenues, net of interest expense	\$ 4,969	\$ 5,770	\$ 6,557	(14)%	(12)%
Total operating expenses	\$ 2,850	\$ 3,262	\$ 3,583	(13)%	(9)%
Net credit losses	\$ 1,040	\$ 1,280	\$ 1,515	(19)%	(16)%
Credit reserve build (release)	83	33	128	NM	(74)
Provision (release) for unfunded lending commitments	1	(2)	—	NM	—
Provision for benefits and claims	72	69	104	4	(34)
Provisions for credit losses and for benefits and claims (LLR & PBC)	\$ 1,196	\$ 1,380	\$ 1,747	(13)%	(21)%
Income from continuing operations before taxes	\$ 923	\$ 1,128	\$ 1,227	(18)%	(8)%
Income taxes	254	260	234	(2)	11
Income from continuing operations	\$ 669	\$ 868	\$ 993	(23)%	(13)%
Noncontrolling interests	5	3	6	67	(50)
Net income	\$ 664	\$ 865	\$ 987	(23)%	(12)%
Balance Sheet data (in billions of dollars)					
Average assets	\$ 49	\$ 54	\$ 63	(9)%	(14)%
Return on average assets	1.36%	1.60%	1.57%		
Efficiency ratio	57	57	55		
Average deposits	\$ 27.3	\$ 28.1	\$ 30.9	(3)	(9)
Net credit losses as a percentage of average loans	4.26%	4.81%	4.97%		
Revenue by business					
Retail banking	\$ 3,494	\$ 3,981	\$ 4,376	(12)%	(9)%
Citi-branded cards	1,475	1,789	2,181	(18)	(18)
Total	\$ 4,969	\$ 5,770	\$ 6,557	(14)%	(12)%
Income from continuing operations by business					
Retail banking	\$ 390	\$ 562	\$ 647	(31)%	(13)%
Citi-branded cards	279	306	346	(9)	(12)
Total	\$ 669	\$ 868	\$ 993	(23)%	(13)%
FX translation impact					
Total revenues—as reported	\$ 4,969	\$ 5,770	\$ 6,557	(14)%	(12)%
Impact of FX translation ⁽¹⁾	—	(874)	(1,825)		
Total revenues—ex-FX ⁽²⁾	\$ 4,969	\$ 4,896	\$ 4,732	1 %	3 %
Total operating expenses—as reported	\$ 2,850	\$ 3,262	\$ 3,583	(13)%	(9)%
Impact of FX translation ⁽¹⁾	—	(360)	(902)		
Total operating expenses—ex-FX ⁽²⁾	\$ 2,850	\$ 2,902	\$ 2,681	(2)%	8 %
Provisions for LLR & PBC—as reported	\$ 1,196	\$ 1,380	\$ 1,747	(13)%	(21)%
Impact of FX translation ⁽¹⁾	—	(201)	(497)		
Provisions for LLR & PBC—ex-FX ⁽²⁾	\$ 1,196	\$ 1,179	\$ 1,250	1 %	(6)%
Net income—as reported	\$ 664	\$ 865	\$ 987	(23)%	(12)%
Impact of FX translation ⁽¹⁾	—	(243)	(320)		
Net income—ex-FX ⁽²⁾	\$ 664	\$ 622	\$ 667	7 %	(7)%

(1) Reflects the impact of FX translation into U.S. dollars at the 2016 average exchange rates for all periods presented.

(2) Presentation of this metric excluding FX translation is a non-GAAP financial measure.

NM Not meaningful

The discussion of the results of operations for Latin America GCB below excludes the impact of FX translation for all periods presented. Presentations of the results of operations, excluding the impact of FX translation, are non-GAAP financial measures. For a reconciliation of certain of these metrics to the reported results, see the table above.

2016 vs. 2015

Net income increased 7%, driven by higher revenues and lower expenses, partially offset by higher credit costs.

Revenues increased 1%, driven by overall volume growth, largely offset by the absence of a previously disclosed \$160 million gain on sale (excluding the impact of FX translation, \$180 million as reported) related to the sale of the merchant acquiring business in Mexico in the third quarter of 2015. Excluding this gain, revenues increased 5%, primarily due to higher revenues in retail banking, partially offset by lower revenues in cards.

Retail banking revenues increased 4%. Excluding the gain on sale related to the merchant acquiring business, revenues increased 9%, driven by volume growth, including an increase in average loans (8%) due to higher personal loans, and higher average deposits (12%). Cards revenues decreased 4%, driven by the continued impact of higher payment rates, partially offset by increased purchase sales (8%).

Expenses decreased 2% as lower legal and related expenses, the impact of business divestitures, ongoing efficiency savings and the impact of certain episodic items in 2015 were partially offset by higher repositioning charges and ongoing investment spending. Citi continues to execute on its investment plans for Citibanamex (totaling more than \$1 billion over the next several years), including initiatives to modernize the branch network, enhance digital capabilities and upgrade core operating platforms.

Provisions increased 1%, driven by a higher net loan loss reserve build, partially offset by lower net credit losses. The net loan loss reserve build increased \$56 million, largely due to volume growth within the personal loan and mortgage portfolios. Net credit losses decreased 5%, largely reflecting continued lower net credit losses in the cards portfolio due to a focus on higher credit quality customers, partially offset by higher net credit losses in the personal loan portfolio. Despite this decrease, *Latin America GCB* expects net credit losses within its loan portfolios could increase consistent with continued portfolio growth and seasoning. For additional information on *Latin America GCB*'s retail banking, including commercial banking, and its Citi-branded cards portfolios, see "Credit Risk—Consumer Credit" below.

In 2016, Mexico experienced slower economic growth and the value of the peso declined, particularly later in the year, which resulted in higher inflation and negatively impacted consumer confidence. These factors could negatively impact *Latin America GCB*'s results in the near term. For additional information on potential macroeconomic and geopolitical challenges and other risks facing *Latin America GCB*, see "Risk Factors—Strategic Risks" below.

2015 vs. 2014

Net income decreased 7% as higher expenses were partially offset by higher revenues and lower credit costs.

Revenues increased 3%, primarily due to the gain on sale related to the Mexico merchant acquiring business. Excluding this gain, revenues were largely unchanged as higher retail banking revenues were offset by lower cards revenues. Revenues were also impacted by continued slow economic growth in Mexico during 2015. Retail banking revenues increased 2%, excluding the gain on sale related to the merchant acquiring business. This increase in retail banking revenues reflected volume growth. Cards revenues decreased 2%, primarily due to higher payment rates, as well as muted volumes and ongoing shifts in consumer behavior, including due to the previously disclosed regulatory reforms in Mexico enacted in 2013.

Expenses increased 8%, primarily due to higher regulatory and compliance costs, higher technology spending and mandatory salary increases, partially offset by lower repositioning charges, lower legal and related costs and ongoing efficiency savings.

Provisions declined 6%, driven by a higher net loan loss reserve release. Net credit losses were largely unchanged as higher net credit losses in the commercial banking and small business banking portfolios were offset by the absence of a \$71 million charge-off in the fourth quarter of 2014 related to Citi's homebuilder exposure in Mexico. The net loan loss reserve build declined 70%, primarily due to lower builds related to cards, partially offset by the absence of releases related to the homebuilder exposure in 2014.

ASIA GCB

Asia GCB provides traditional retail banking, including commercial banking, and its Citi-branded card products to retail customers and small to mid-size businesses, as applicable. As of December 31, 2016, Citi's most significant revenues in the region were from Singapore, Hong Kong, Korea, India, Australia, Taiwan, Indonesia, Thailand, the Philippines and Malaysia. Included within *Asia GCB*, traditional retail banking and Citi-branded card products are also provided to retail customers in certain *EMEA* countries, primarily in Poland, Russia and the United Arab Emirates.

At December 31, 2016, on a combined basis, the businesses had 432 retail branches, approximately 16.6 million retail banking customer accounts, \$63.0 billion in retail banking loans and \$89.9 billion in deposits. In addition, the businesses had approximately 16.3 million Citi-branded card accounts with \$17.5 billion in outstanding loan balances.

<i>In millions of dollars, except as otherwise noted⁽¹⁾</i>	2016	2015	2014	% Change 2016 vs. 2015	% Change 2015 vs. 2014
Net interest revenue	\$ 4,463	\$ 4,490	\$ 4,969	(1)%	(10)%
Non-interest revenue	2,375	2,517	2,822	(6)	(11)
Total revenues, net of interest expense	\$ 6,838	\$ 7,007	\$ 7,791	(2)%	(10)%
Total operating expenses	\$ 4,586	\$ 4,577	\$ 5,200	— %	(12)%
Net credit losses	\$ 651	\$ 721	\$ 795	(10)%	(9)%
Credit reserve build (release)	(28)	(89)	(10)	69	NM
Provision (release) for unfunded lending commitments	(4)	(2)	(16)	(100)	88
Provisions for credit losses	\$ 619	\$ 630	\$ 769	(2)%	(18)%
Income from continuing operations before taxes	\$ 1,633	\$ 1,800	\$ 1,822	(9)%	(1)%
Income taxes	550	603	601	(9)	—
Income from continuing operations	\$ 1,083	\$ 1,197	\$ 1,221	(10)%	(2)%
Noncontrolling interests	4	4	17	—	(76)
Net income	\$ 1,079	\$ 1,193	\$ 1,204	(10)%	(1)%
Balance Sheet data (in billions of dollars)					
Average assets	\$ 119	\$ 117	\$ 119	2 %	(2)%
Return on average assets	0.91%	1.02%	1.01%		
Efficiency ratio	67	65	67		
Average deposits	\$ 89.5	\$ 87.7	\$ 89.5	2	(2)
Net credit losses as a percentage of average loans	0.77%	0.81%	0.85%		
Revenue by business					
Retail banking	\$ 4,250	\$ 4,406	\$ 4,768	(4)%	(8)%
Citi-branded cards	2,588	2,601	3,023	—	(14)
Total	\$ 6,838	\$ 7,007	\$ 7,791	(2)%	(10)%
Income from continuing operations by business					
Retail banking	\$ 680	\$ 738	\$ 663	(8)%	11 %
Citi-branded cards	403	459	558	(12)	(18)
Total	\$ 1,083	\$ 1,197	\$ 1,221	(10)%	(2)%
FX translation impact					
Total revenues—as reported	\$ 6,838	\$ 7,007	\$ 7,791	(2)%	(10)%
Impact of FX translation ⁽²⁾	—	(129)	(707)		
Total revenues—ex-FX ⁽³⁾	\$ 6,838	\$ 6,878	\$ 7,084	(1)%	(3)%
Total operating expenses—as reported	\$ 4,586	\$ 4,577	\$ 5,200	— %	(12)%
Impact of FX translation ⁽²⁾	—	(105)	(539)		
Total operating expenses—ex-FX ⁽³⁾	\$ 4,586	\$ 4,472	\$ 4,661	3 %	(4)%
Provisions for credit losses—as reported	\$ 619	\$ 630	\$ 769	(2)%	(18)%
Impact of FX translation ⁽²⁾	—	(12)	(116)		
Provisions for credit losses—ex-FX ⁽³⁾	\$ 619	\$ 618	\$ 653	— %	(5)%
Net income—as reported	\$ 1,079	\$ 1,193	\$ 1,204	(10)%	(1)%
Impact of FX translation ⁽²⁾	—	—	(13)		
Net income—ex-FX ⁽³⁾	\$ 1,079	\$ 1,193	\$ 1,191	(10)%	— %

- (1) *Asia GCB* includes the results of operations of *GCB* activities in certain *EMEA* countries for all periods presented.
 - (2) Reflects the impact of FX translation into U.S. dollars at the 2016 average exchange rates for all periods presented.
 - (3) Presentation of this metric excluding FX translation is a non-GAAP financial measure.
- NM Not meaningful

The discussion of the results of operations for Asia GCB below excludes the impact of FX translation for all periods presented. Presentations of the results of operations, excluding the impact of FX translation, are non-GAAP financial measures. For a reconciliation of certain of these metrics to the reported results, see the table above.

2016 vs. 2015

Net income decreased 10%, reflecting lower revenues and higher expenses.

Revenues decreased 1%, reflecting lower retail banking revenues, partially offset by higher cards revenues. Retail banking revenues decreased 2%, mainly due to a 5% decrease in wealth management revenues due to lower client activity in the first half of 2016, particularly in China, Hong Kong and Korea. The decline in retail banking revenues was also due to modestly lower investment assets under management (1%) driven by lower equity market values and a decline in average loans (decrease of 4%). The decline in revenues was partially offset by growth in deposit volumes (4% increase in average deposits) and higher insurance revenues. The lower average loans were due to the continued optimization of the retail loan portfolio away from lower-yielding mortgage loans, as well as de-risking in the commercial portfolio with a focus on growing higher return personal loans.

Cards revenues increased 2%, driven by continued improvement in yields, modestly abating regulatory headwinds and modest volume growth due to continued stabilizing payment rates. Volume growth was driven by a 1% increase in average loans and a 2% increase in purchase sales.

Expenses increased 3%, primarily due to higher repositioning costs in the first half of 2016, higher regulatory and compliance costs and increased investment spending, partially offset by efficiency savings.

Provisions were largely unchanged as lower net loan loss reserve releases were offset by lower net credit losses, primarily in the commercial portfolio due to the de-risking.

For additional information on *Asia GCB*'s retail banking, including commercial banking, and its Citi-branded cards portfolios, see "Credit Risk—Consumer Credit" below.

2015 vs. 2014

Net income was largely unchanged as lower revenues were offset by lower expenses and lower cost of credit.

Revenues decreased 3%, primarily due to an industry-wide slowdown in investment sales, particularly in the second half of 2015, as well as spread compression and higher payment rates and the ongoing impact of regulatory changes in cards, partially offset by volume growth. Retail banking revenues decreased 2%, mainly due to a decline in investment sales revenue, reflecting weaker customer confidence due to slowing economic growth and volatility in the capital markets, as well as spread compression. This decline in revenues was partially offset by higher volumes, driven by lending (2% increase in average loans), deposit products (5% increase in average deposits) and higher insurance fee revenues.

Cards revenues decreased 5%, primarily due to spread compression, including continued high payment rates, and the ongoing impact of regulatory changes, partially offset by modest volume growth (a 3% increase in average loans and a 5% increase in purchase sales). Cards revenues were also impacted by the weaker customer confidence.

Expenses decreased 4%, primarily due to the absence of repositioning charges in Korea in 2014 and efficiency savings, partially offset by higher regulatory and compliance costs, investment spending, volume-related growth and compensation expense.

Provisions decreased 5%, primarily due to higher loan loss reserve releases, largely offset by an increase in net credit losses related to the consumer business in Russia due to deterioration in the economic environment.

INSTITUTIONAL CLIENTS GROUP

Institutional Clients Group (ICG) provides corporate, institutional, public sector and high-net-worth clients around the world with a full range of wholesale banking products and services, including fixed income and equity sales and trading, foreign exchange, prime brokerage, derivative services, equity and fixed income research, corporate lending, investment banking and advisory services, private banking, cash management, trade finance and securities services. *ICG* transacts with clients in both cash instruments and derivatives, including fixed income, foreign currency, equity and commodity products.

ICG revenue is generated primarily from fees and spreads associated with these activities. *ICG* earns fee income for assisting clients in clearing transactions, providing brokerage and investment banking services and other such activities. Revenue generated from these activities is recorded in *Commissions and fees* and *Investment banking*. Revenue is also generated from transaction processing and assets under custody and administration. Revenue generated from these activities is primarily recorded in *Administration and other fiduciary fees*. In addition, as a market maker, *ICG* facilitates transactions, including holding product inventory to meet client demand, and earns the differential between the price at which it buys and sells the products. These price differentials and the unrealized gains and losses on the inventory are recorded in *Principal transactions* (for additional information on *Principal transactions* revenue, see Note 6 to the Consolidated Financial Statements). *Other* primarily includes mark-to-market gains and losses on certain credit derivatives, gains and losses on available-for-sale (AFS) securities and other non-recurring gains and losses. Interest income earned on assets held less interest paid to customers on deposits and long-term and short-term debt is recorded as *Net interest revenue*.

The amount and types of *Markets* revenues are impacted by a variety of interrelated factors, including market liquidity; changes in market variables such as interest rates, foreign exchange rates, equity prices, commodity prices, and credit spreads, as well as their implied volatilities; investor confidence; and other macroeconomic conditions. Assuming all other market conditions do not change, increases in client activity levels or bid/offer spreads generally result in increases in revenues. However, changes in market conditions can significantly impact client activity levels, bid/offer spreads, and the fair value of product inventory. For example, a decrease in market liquidity may increase bid/offer spreads, decrease client activity levels, and widen credit spreads on product inventory positions.

ICG's management of the *Markets* businesses involves daily monitoring and evaluating of the above factors at the trading desk as well as the country level. *ICG* does not separately track the impact on total *Markets* revenues of the volume of transactions, bid/offer spreads, fair value changes of product inventory positions and economic hedges because, as noted above, these components are interrelated and are not deemed useful or necessary individually to manage the *Markets* businesses at an aggregate level.

In the *Markets* businesses, client revenues are those revenues directly attributable to client transactions at the time of inception, including commissions, interest, or fees earned. Client revenues do not include the results of client facilitation activities (for example, holding product inventory in anticipation of client demand) or the results of certain economic hedging activities.

ICG's international presence is supported by trading floors in approximately 80 countries and a proprietary network in 97 countries and jurisdictions. At December 31, 2016, *ICG* had approximately \$1.3 trillion of assets and \$610 billion of deposits, while two of its businesses, securities services and issuer services, managed approximately \$15.2 trillion of assets under custody compared to \$15.1 trillion at the end of 2015.

<i>In millions of dollars, except as otherwise noted</i>	2016	2015	2014	% Change 2016 vs. 2015	% Change 2015 vs. 2014
Commissions and fees	\$ 3,854	\$ 3,871	\$ 4,004	— %	(3)%
Administration and other fiduciary fees	2,437	2,443	2,538	—	(4)
Investment banking	3,655	4,110	4,269	(11)	(4)
Principal transactions	7,330	5,818	5,889	26	(1)
Other ⁽¹⁾	(154)	1,408	787	NM	79
Total non-interest revenue	\$ 17,122	\$ 17,650	\$ 17,487	(3)%	1 %
Net interest revenue (including dividends)	16,728	16,341	15,825	2	3
Total revenues, net of interest expense	\$ 33,850	\$ 33,991	\$ 33,312	— %	2 %
Total operating expenses	\$ 18,939	\$ 19,074	\$ 19,491	(1)%	(2)%
Net credit losses	\$ 516	\$ 214	\$ 275	NM	(22)%
Credit reserve build (release)	(64)	654	(102)	NM	NM
Provision (release) for unfunded lending commitments	34	94	(126)	(64)	NM
Provisions for credit losses	\$ 486	\$ 962	\$ 47	(49)%	NM
Income from continuing operations before taxes	\$ 14,425	\$ 13,955	\$ 13,774	3 %	1 %
Income taxes	4,497	4,426	4,129	2	7
Income from continuing operations	\$ 9,928	\$ 9,529	\$ 9,645	4 %	(1)%
Noncontrolling interests	58	51	121	14	(58)

Net income	\$	9,870	\$	9,478	\$	9,524	4 %	— %
Average assets <i>(in billions of dollars)</i>	\$	1,297	\$	1,271	\$	1,292	2 %	(2)%
Return on average assets		0.76%		0.75%		0.74%		
Efficiency ratio		56		56		59		
CVA/DVA after-tax	\$	—	\$	172	\$	(211)	(100)%	NM
Net income ex-CVA/DVA ⁽²⁾	\$	9,870	\$	9,306	\$	9,735	6	(4)
Revenues by region								
<i>North America</i>	\$	12,817	\$	12,980	\$	13,002	(1)%	— %
<i>EMEA</i>		10,029		9,958		9,511	1	5
<i>Latin America</i>		4,026		4,051		4,218	(1)	(4)
<i>Asia</i>		6,978		7,002		6,581	—	6
Total	\$	33,850	\$	33,991	\$	33,312	— %	2 %
Income from continuing operations by region								
<i>North America</i>	\$	3,678	\$	3,517	\$	4,155	5 %	(15)%
<i>EMEA</i>		2,476		2,340		2,060	6	14
<i>Latin America</i>		1,481		1,393		1,401	6	(1)
<i>Asia</i>		2,293		2,279		2,029	1	12
Total	\$	9,928	\$	9,529	\$	9,645	4 %	(1)%
Average loans by region <i>(in billions of dollars)</i>								
<i>North America</i>	\$	133	\$	123	\$	111	8 %	11 %
<i>EMEA</i>		66		62		61	6	2
<i>Latin America</i>		43		41		41	5	—
<i>Asia</i>		60		62		68	(3)	(9)
Total	\$	302	\$	288	\$	281	5 %	2 %
EOP deposits by business <i>(in billions of dollars)</i>								
Treasury and trade solutions	\$	411	\$	392	\$	378	5 %	4 %
All other <i>ICG</i> businesses		199		196		178	2	10
Total	\$	610	\$	588	\$	556	4 %	6 %

(1) 2016 includes a previously disclosed charge of approximately \$180 million, primarily reflecting the write down of Citi's net investment in Venezuela as a result of changes in the exchange rate.

(2) Excludes CVA/DVA in 2015 and 2014, consistent with the current year's presentation. For additional information, see Notes 1 and 24 to the Consolidated Financial Statements.

NM Not meaningful

ICG Revenue Details—Excluding CVA/DVA and Gain (Loss) on Loan Hedges

<i>In millions of dollars</i>	2016	2015	2014	% Change 2016 vs. 2015	% Change 2015 vs. 2014
Investment banking revenue details					
Advisory	\$ 1,000	\$ 1,093	\$ 938	(9)%	17 %
Equity underwriting	628	906	1,250	(31)	(28)
Debt underwriting	2,684	2,568	2,540	5	1
Total investment banking	\$ 4,312	\$ 4,567	\$ 4,728	(6)%	(3)%
Treasury and trade solutions	8,098	7,770	7,770	4	—
Corporate lending—excluding gain (loss) on loan hedges ⁽¹⁾	1,756	1,817	1,879	(3)	(3)
Private bank	2,961	2,862	2,664	3	7
Total banking revenues (ex-CVA/DVA and gain (loss) on loan hedges)⁽²⁾	\$ 17,127	\$ 17,016	\$ 17,041	1 %	— %
Corporate lending—gain (loss) on loan hedges ⁽¹⁾	\$ (594)	\$ 324	\$ 116	NM	NM
Total banking revenues (ex-CVA/DVA and including gain (loss) on loan hedges)⁽²⁾	\$ 16,533	\$ 17,340	\$ 17,157	(5)%	1 %
Fixed income markets	\$ 13,029	\$ 11,318	\$ 12,171	15 %	(7)%
Equity markets	2,851	3,121	2,722	(9)	15
Securities services	2,162	2,143	2,050	1	5
Other ⁽³⁾	(725)	(200)	(445)	NM	55
Total Markets and securities services (ex-CVA/DVA)⁽²⁾	\$ 17,317	\$ 16,382	\$ 16,498	6 %	(1)%
Total ICG (ex-CVA/DVA)	\$ 33,850	\$ 33,722	\$ 33,655	— %	— %
CVA/DVA (excluded as applicable in lines above)	—	269	(343)	NM	NM
Fixed income markets	—	220	(359)	NM	NM
Equity markets	—	47	24	NM	96
Private bank	—	2	(8)	NM	NM
Total revenues, net of interest expense	\$ 33,850	\$ 33,991	\$ 33,312	— %	2 %
Commissions and fees	\$ 474	\$ 467	\$ 455	1 %	3 %
Principal transactions ⁽⁴⁾	6,533	5,369	6,169	22	(13)
Other	590	332	413	78	(20)
Total non-interest revenue	\$ 7,597	\$ 6,168	\$ 7,037	23 %	(12)%
Net interest revenue	5,432	5,150	5,134	5	—
Total fixed income markets (ex-CVA/DVA)⁽²⁾	\$ 13,029	\$ 11,318	\$ 12,171	15 %	(7)%
Rates and currencies	\$ 9,384	\$ 7,664	\$ 7,303	22 %	5 %
Spread products / other fixed income	3,645	3,654	4,868	—	(25)
Total fixed income markets (ex-CVA/DVA)⁽²⁾	\$ 13,029	\$ 11,318	\$ 12,171	15 %	(7)%
Commissions and fees	\$ 1,300	\$ 1,338	\$ 1,456	(3)%	(8)%
Principal transactions ⁽⁴⁾	134	270	(12)	(50)	NM
Other	139	55	39	NM	41
Total non-interest revenue	\$ 1,573	\$ 1,663	\$ 1,483	(5)%	12 %
Net interest revenue	1,278	1,458	1,239	(12)	18
Total equity markets (ex-CVA/DVA)⁽²⁾	\$ 2,851	\$ 3,121	\$ 2,722	(9)%	15 %

(1) Hedges on accrual loans reflect the mark-to-market on credit derivatives used to economically hedge the corporate loan accrual portfolio. The fixed premium costs of these hedges are netted against the corporate lending revenues to reflect the cost of credit protection.

(2) Excludes CVA/DVA in 2015 and 2014, consistent with the current year's presentation. For additional information, see Notes 1 and 24 to the Consolidated Financial Statements.

(3) 2016 includes the previously disclosed charge of approximately \$180 million, primarily reflecting the write-down of Citi's net investment in Venezuela as a result of changes in the exchange rate.

(4) Excludes principal transactions revenues of ICG businesses other than *Markets*, primarily treasury and trade solutions and the private bank.

NM Not meaningful

The discussion of the results of operations for ICG below excludes the impact of CVA/DVA for 2015 and 2014. Presentations of the results of operations, excluding the impact of CVA/DVA and the impact of gains (losses) on hedges of accrual loans, are non-GAAP financial measures. For a reconciliation of these metrics to the reported results, see the table above.

2016 vs. 2015

Net income increased 6%, primarily driven by lower expenses and lower cost of credit.

- Revenues were largely unchanged, reflecting higher revenues in *Markets and securities services* (increase of 6%), driven by fixed income markets, offset by lower revenues in *Banking* (decrease of 5% including the gains/losses) on hedges of accrual loans). Excluding the impact of the gains (losses) on loan hedges, *Banking* revenues increased 1%, driven by treasury and trade solutions and the private bank.

Within Banking:

- *Investment banking* revenues decreased 6%, largely reflecting the overall industry-wide slowdown in activity levels in equity underwriting and advisory during the first half of 2016. Advisory revenues decreased 9%, driven by *North America*, reflecting strong performance in 2015 and the lower overall M&A market. Equity underwriting revenues decreased 31%, driven by *North America* and *EMEA*, primarily reflecting the lower market activity. Debt underwriting revenues increased 5%, driven by *North America*, primarily due to higher market activity reflecting a favorable interest rate environment.
- *Treasury and trade solutions* revenues increased 4%. Excluding the impact of FX translation, revenues increased 8%, reflecting growth across most regions. The increase was primarily due to continued growth in transaction volumes with new and existing clients, continued growth in deposit balances and improved spreads in certain regions. The trade business experienced modest growth due to a continued focus on high quality loan growth and spread improvements. End-of-period deposit balances increased 5% (6% excluding the impact of FX translation), while average trade loans decreased 2% (1% excluding the impact of FX translation).
- *Corporate lending* revenues decreased 46%. Excluding the impact of gains (losses) on hedges of accrual loans, revenues decreased 3%. Excluding the impact of gains (losses) on hedges of accrual loans and FX translation, revenues decreased 1%, mostly reflecting a lease financing adjustment in the second quarter of 2016, spread compression and higher hedging costs, partially offset by higher average loans.
- *Private bank* revenues increased 3%, driven by *North America*, reflecting growth in loan volumes and improved banking spreads, partially offset by lower capital markets activity and lower managed investments revenues.

Within Markets and securities services:

- *Fixed income markets* revenues increased 15%, with higher revenues in all regions. The increase was largely driven by both higher principal transactions revenues (up 22%) and other revenues (up 78%). The increase in principal transactions revenues was primarily due to higher rates and currencies revenues, reflecting increased client revenues and higher volatility. Principal transactions revenues also increased due to higher spread products revenues. Other revenues increased mainly due to foreign currency losses in 2015.

Rates and currencies revenues grew 22%, driven by strength in all regions, primarily due to a more favorable trading environment and higher client revenues, particularly with corporate clients. The increase in client revenues was primarily driven by volatility following the vote in the U.K. to withdraw from the EU and the U.S. presidential election, as well as changing expectations regarding the interest rate environment. Spread products revenues increased 5% offset by lower other fixed income revenues. The increase in spread products revenues reflects higher client revenues in credit products, securitized products and municipal securities, particularly in the second half of 2016 as client risk appetite recovered. This increase in spread products revenues was partially offset by the impact of significantly lower liquidity in the market in the first quarter of 2016, particularly in securitized products, as well as market uncertainty in municipal securities in the fourth quarter of 2016 due to potential changes in U.S. tax laws following the U.S. presidential election.

- *Equity markets* revenues declined 9%. Equity derivatives and prime finance revenues declined 13%, reflecting both a challenging trading environment across all regions driven by lower volatility compared to 2015, and a comparison to a more favorable trading environment in 2015 in *Asia*. The decline in equity markets revenue was also due to lower equity cash commissions driven by a continued shift to electronic trading and passive investing by clients across the industry.
- *Securities services* revenues increased 1%. Excluding the impact of FX translation, revenues increased 5%, driven by *EMEA*, primarily reflecting increased client activity, a modest gain on sale of a private equity fund services business in the first quarter of 2016, higher deposit volumes and improved spreads. The increase in revenues was partially offset by the absence of revenues from divestitures. Excluding the impact of FX translation and divestitures, revenues increased 6%.

Expenses decreased 1% as a benefit from FX translation and efficiency savings were partially offset by higher compensation expense and higher repositioning charges.

Provisions decreased 49%, driven by a net loan loss reserve release of \$30 million (compared to a net build of \$748 million in the prior year). The significant decline in loan loss reserve builds related to energy and energy-related exposures, and was driven by stabilization of commodities as oil prices continued to recover from lows in early 2016. The decline in cost of credit was partially offset by higher net credit losses of \$516 million (compared to \$214 million in the prior year) mostly related to the energy and energy-related exposures, with a vast majority offset by the release of previously established loan loss reserves. For additional information on Citi's corporate energy and energy-related exposures, see "Credit Risk—Corporate Credit" below.

2015 vs. 2014

Net income declined 4% as higher credit costs were partially offset by lower expenses.

- *Revenues* were largely unchanged as lower revenues in *Markets and securities services* (decrease of 1%) were offset by a modest increase in revenues in *Banking* (increase of 1%, but unchanged excluding the gains (losses) on hedges of accrual loans).

Within Banking:

- *Investment banking* revenues decreased 3%, largely reflecting an industry-wide decline in underwriting activity. Advisory revenues increased 17%, reflecting increased target client activity and strength in the overall M&A market. Equity underwriting revenues decreased 28% driven by the lower market activity and a decline in wallet share resulting from continued share fragmentation. Debt underwriting revenues increased 1%, driven by increased wallet share in investment grade debt and strong performance in investment grade loans in the second half of 2015, partially offset by the lower market activity and decreased wallet share in high-yield and leveraged loans.
- *Treasury and trade solutions* revenues were largely unchanged. Excluding the impact of FX translation, revenues increased 6%, as continued growth in deposit balances across regions and improved spreads, particularly in *North America*, were partially offset by continued declines in trade balances and spreads. End-of-period deposit balances increased 4% (7% excluding the impact of FX translation), largely driven by *Asia* and *Latin America*. Average trade loans decreased 12% (9% excluding the impact of FX translation).
- *Corporate lending* revenues increased 7%. Excluding the impact of gains (losses) on hedges of accrual loans, revenues decreased 3%. Excluding the impact of FX translation and gains (losses) on hedges of accrual loans, revenues also increased 3% as continued growth in average loan balances, lower hedge premium costs and an improvement in mark-to-market adjustments were partially offset by lower spreads, particularly in *EMEA*.

- *Private bank* revenues increased 7%, reflecting strength in *North America*, *Asia* and *EMEA*, primarily due to growth in loan volumes and deposit balances, improved spreads in banking and higher managed investments revenues, partially offset by continued spread compression in lending.

Within Markets and securities services:

- *Fixed income markets* revenues decreased 7%, driven by *North America*. The decline was primarily due to a 13% decline in principal transactions revenues, primarily lower spread products revenues, partially offset by higher rates and currencies revenues. Rates and currencies revenues increased 5%, reflecting significant market volatility due to central bank actions, which contributed to higher client revenues, partly offset by modest losses on the Swiss franc revaluation. Spread products and other fixed income revenues declined 25%, mostly driven by *North America* and *EMEA*, reflecting a challenging trading environment and lower client activity, especially in structured products.
- *Equity markets* revenues increased 15%. Equity derivatives and prime finance revenues increased 16% reflecting increased volatility and higher client revenues. Sharply increased trading opportunities as a result of market turbulence in China drove higher *Asia* equity derivatives and prime finance revenues versus 2014. The increase in equity markets revenues was partially offset by a decline in commissions driven by equity cash, due to lower client activity in all regions except *Asia*.
- *Securities services* revenues increased 5%. Excluding the impact of FX translation, revenues increased 16%, reflecting increased client activity and higher client balances.

Expenses decreased 2% as efficiency savings, a benefit from FX translation and lower repositioning charges were partially offset by increased regulatory and compliance costs and compensation expense.

Provisions increased \$915 million to \$962 million, primarily reflecting a net loan loss reserve build (\$748 million), compared to a net loan loss reserve release (\$228 million) in 2014. The net loan loss reserve build included approximately \$530 million for energy and energy-related exposures, including \$250 million in the fourth quarter of 2015, due to the significant decline in commodity prices during the second half of 2015. The remainder of the build during 2015 was primarily due to volume growth and overall macroeconomic conditions.

The higher net loan loss reserve build during 2015 was partially offset by lower net credit losses. Net credit losses decreased 22%, primarily due to the absence of net credit losses of approximately \$165 million related to the Petróleos Mexicanos (Pemex) supplier program, which were incurred during 2014 (for additional information, see Citi's Form 8-K filed with the SEC on February 28, 2014), partially offset by increased net credit losses related to a limited number of energy and energy-related exposures, including approximately \$75 million in the fourth quarter of 2015.

CORPORATE/OTHER

Corporate/Other includes certain unallocated costs of global staff functions (including finance, risk, human resources, legal and compliance), other corporate expenses and unallocated global operations and technology expenses, Corporate Treasury and discontinued operations. At December 31, 2016, *Corporate/Other* had \$49 billion of assets, or 3% of Citigroup's total assets. As announced in April 2016, beginning in the first quarter of 2017, the remaining businesses and portfolio of assets in Citi Holdings will be reported as part of *Corporate/Other*. For additional information, see "Citigroup Segments," "Executive Summary—2016 Summary Results—Citi Holdings" and "Citicorp" above and "Citi Holdings" below.

<i>In millions of dollars</i>	2016	2015	2014	% Change 2016 vs. 2015	% Change 2015 vs. 2014
Net interest revenue	\$ 79	\$ (152)	\$ (224)	NM	32 %
Non-interest revenue	331	1,060	527	(69)	NM
Total revenues, net of interest expense	\$ 410	\$ 908	\$ 303	(55)%	NM
Total operating expenses	\$ 1,790	\$ 1,750	\$ 6,020	2 %	(71)%
Provisions for loan losses and for benefits and claims	—	—	—	—	—
Loss from continuing operations before taxes	\$ (1,380)	\$ (842)	\$ (5,717)	(64)%	85 %
Income taxes (benefits)	(771)	(1,338)	(344)	42 %	NM
Income (loss) from continuing operations	\$ (609)	\$ 496	\$ (5,373)	NM	NM
Income (loss) from discontinued operations, net of taxes	(58)	(54)	(2)	(7)%	NM
Net income (loss) before attribution of noncontrolling interests	\$ (667)	\$ 442	\$ (5,375)	NM	NM
Noncontrolling interests	(8)	18	41	NM	(56)
Net income (loss)	\$ (659)	\$ 424	\$ (5,416)	NM	NM

NM Not meaningful

2016 vs. 2015

The *net loss* was \$659 million, compared to net income of \$424 million in 2015, primarily reflecting lower revenues and a higher effective tax rate in 2016 due to the absence of certain tax benefits in 2015. The net loss was also due to the absence of the favorable tax impact reflecting the resolution of state and local audits in the second quarter of 2015.

Revenues decreased 55%, primarily due to the absence of gains on real estate and other asset sales in 2015, lower gains on debt buybacks and the absence of the equity contribution related to China Guangfa Bank (which was sold in the third quarter of 2016), partially offset by higher investment income.

Expenses increased 2%, largely driven by higher corporate-wide advertising and marketing expenses primarily related to Citi's sponsorship of the U.S. Olympic team and higher consulting costs, partially offset by lower legal and related expenses, lower repositioning costs and a benefit from FX translation.

2015 vs. 2014

Net income was \$424 million, compared to a net loss of \$5.4 billion in 2014, largely reflecting significantly lower expenses, the increased tax benefits and the favorable tax impact reflecting the resolution of the state and local audits, as well as higher revenues.

Revenues increased \$605 million to \$908 million, primarily due to the gains on debt buybacks and the real estate sales in 2015, as well as higher revenues from sales of AFS securities, partially offset by hedging activities.

Expenses decreased \$4.3 billion to \$1.8 billion, largely driven by lower legal and related expenses (\$797 million compared to \$4.4 billion in 2014), a benefit from FX translation and lower repositioning charges.

CITI HOLDINGS

Citi Holdings contains the remaining businesses and portfolios of assets that Citigroup has determined are not central to its core Citicorp businesses. As announced in April 2016, Citi will no longer report the results of Citi Holdings separately beginning in the first quarter of 2017 and Citi Holdings will cease to be a separately reported business segment. For additional information, see “Citigroup Segments” and “Citicorp” above.

As of December 31, 2016, Citi Holdings assets were approximately \$54 billion, a decrease of 33% year-over-year and 11% from September 30, 2016. The decline in assets of \$7 billion from September 30, 2016 primarily consisted of divestitures and run-off. As of December 31, 2016, Citi had signed agreements to reduce Citi Holdings GAAP assets by an additional \$9 billion, subject to regulatory approvals and other closing conditions.

Also as of December 31, 2016, consumer assets in Citi Holdings were approximately \$49 billion, or approximately 91% of Citi Holdings assets. Of the consumer assets, approximately \$28 billion, or 57%, consisted of *North America* mortgages (residential first mortgages and home equity loans). As of December 31, 2016, Citi Holdings represented approximately 3% of Citi’s GAAP assets and 9% of its risk-weighted assets under Basel III (based on the Advanced Approaches).

<i>In millions of dollars, except as otherwise noted</i>	2016	2015	2014	% Change 2016 vs. 2015	% Change 2015 vs. 2014
Net interest revenue	\$ 2,038	\$ 4,457	\$ 5,557	(54)%	(20)%
Non-interest revenue	1,814	4,503	3,751	(60)	20
Total revenues, net of interest expense	\$ 3,852	\$ 8,960	\$ 9,308	(57)%	(4)%
Provisions for credit losses and for benefits and claims					
Net credit losses	\$ 433	\$ 1,336	\$ 2,186	(68)%	(39)%
Credit reserve release	(455)	(455)	(920)	—	51
Provision for loan losses	\$ (22)	\$ 881	\$ 1,266	NM	(30)%
Provision for benefits and claims	99	624	656	(84)	(5)
Release for unfunded lending commitments	(8)	(23)	(11)	65	NM
Total provisions for credit losses and for benefits and claims	\$ 69	\$ 1,482	\$ 1,911	(95)%	(22)%
Total operating expenses	\$ 3,171	\$ 5,571	\$ 10,859	(43)%	(49)%
Income (loss) from continuing operations before taxes	\$ 612	\$ 1,907	\$ (3,462)	(68)%	NM
Income taxes (benefits)	6	922	8	(99)%	NM
Income (loss) from continuing operations	\$ 606	\$ 985	\$ (3,470)	(38)%	NM
Noncontrolling interests	\$ 6	\$ 11	\$ 6	(45)%	83 %
Net income (loss)	\$ 600	\$ 974	\$ (3,476)	(38)%	NM
Total revenues, net of interest expense (excluding CVA/DVA)⁽¹⁾					
Total revenues—as reported	\$ 3,852	\$ 8,960	\$ 9,308	(57)%	(4)%
CVA/DVA	—	(15)	(47)	100	68 %
Total revenues—excluding CVA/DVA⁽¹⁾	\$ 3,852	\$ 8,975	\$ 9,355	(57)%	(4)%
Balance Sheet data (in billions of dollars)					
Average assets	\$ 68	\$ 119	\$ 154	(43)%	(23)%
Return on average assets	0.88%	0.82%	(2.27)%		
Efficiency ratio	82	62	117		
Total EOP assets	\$ 54	\$ 81	\$ 138	(33)	(41)
Total EOP loans	33	49	85	(32)	(42)
Total EOP deposits	2	10	21	(79)	(52)

(1) Excludes CVA/DVA in 2015 and 2014, consistent with the current year’s presentation. For additional information, see Notes 1 and 24 to the Consolidated Financial Statements.

NM Not meaningful

The discussion of the results of operations for Citi Holdings below excludes the impact of CVA/DVA for 2015 and 2014. Presentations of the results of operations, excluding the impact of CVA/DVA, are non-GAAP financial measures. Citi believes the presentation of Citi Holdings' results excluding the impact of CVA/DVA is a more meaningful depiction of the underlying fundamentals of the business. For a reconciliation of these metrics to the reported results, see the table above.

2016 vs. 2015

Net income was \$600 million, compared to net income of \$984 million in 2015, primarily due to lower revenues, partially offset by lower expenses and lower credit costs.

Revenues decreased 57%, primarily driven by the overall wind-down of the portfolio and lower net gains on sales, particularly the sales of OneMain Financial and the retail banking and credit cards businesses in Japan in the fourth quarter of 2015.

Expenses declined 43%, primarily due to sales and run-off of assets, lower legal and related costs and lower repositioning costs.

Provisions decreased 95% due to lower net credit losses and a lower provision for benefits and claims (decrease of 84%) due to lower insurance-related business activity. Net credit losses declined 68%, primarily due to the impact of divestitures and continued credit improvements in *North America* mortgages. The net reserve release declined 3%.

2015 vs. 2014

Net income was \$984 million, an improvement from a net loss of \$3.4 billion in 2014, largely due to the impact of a charge of \$3.8 billion (\$3.7 billion after-tax) in 2014 to settle RMBS and CDO-related claims. Excluding the mortgage settlement, net income increased \$705 million, primarily due to lower expenses and lower net credit losses, partially offset by a lower net loan loss reserve release and lower revenues.

Revenues decreased 4%, primarily driven by the overall wind-down of the portfolio, the impact of redemptions of high cost debt and the impact of recording OneMain Financial net credit losses as a reduction of revenue beginning in the second quarter of 2015, mostly offset by higher gains on asset sales, including the sales of OneMain Financial and the retail banking and credit cards businesses in Japan.

Expenses declined 49%. Excluding the impact of the mortgage settlement, expenses declined 22%, primarily due to sales and run-off of Citi Holdings assets and lower legal and related costs (\$431 million compared to \$1.0 billion in 2014).

Provisions decreased 22%. Excluding the impact of the mortgage settlement, provisions decreased 20%, driven by lower net credit losses, partially offset by a lower net loss reserve release. Net credit losses declined 39%, primarily due to the impact of the recording of OneMain Financial net credit losses as a reduction in revenue, continued improvements in *North America* mortgages and overall lower asset levels. The net reserve release decreased 49%. Excluding the impact of the mortgage settlement, the net reserve release decreased 52% to \$478 million, primarily due to lower releases related to the *North America* mortgage portfolio.

Payment Protection Insurance (PPI)

The selling of PPI by financial institutions in the U.K. has been the subject of intense review and focus by U.K. regulators and the U.K. Supreme Court. For additional information on PPI, see "Citi Holdings" in Citi's Annual Report on Form 10-K for the year ended December 31, 2013 filed with the SEC on March 3, 2014.

PPI is designed to cover a customer's loan repayments if certain events occur, such as long-term illness or unemployment. The U.K. Financial Conduct Authority (FCA) found certain problems across the industry with how these products were sold, including customers not realizing that the cost of PPI premiums was being added to their loan or PPI being unsuitable for the customer. Redress generally involves the repayment of premiums and the refund of all applicable contractual interest together with compensatory interest of 8%. In addition, during the fourth quarter of 2015, the U.K. Supreme Court issued a ruling in a case (Plevin) involving PPI pursuant to which the court ruled, independent of the sale of the PPI contract, the PPI contract at issue in the case was "unfair" due to the high sales commissions earned and the lack of disclosure to the customer thereof.

During the third quarter of 2016, the FCA issued a new consultation paper that proposed (i) a deadline for PPI complaints of June 2019 (a 2018 deadline was proposed previously) for both non-Plevin and Plevin complaints; (ii) an FCA-led customer communications campaign in advance of the deadline, with bank funding of the campaign; and (iii) a failure to disclose a sales commission of 50% or more would be deemed unfair when assessing a new PPI complaint and require a customer refund of the difference between the commission paid and 50%, plus interest. Final rules have not yet been published by the FCA.

During 2016, Citi increased its PPI reserves by approximately \$134 million (\$63 million of which was recorded in Citi Holdings and \$71 million of which was recorded in discontinued operations). The increase for full year 2016 compared to an increase of \$153 million during 2015 and was primarily due to the new proposed deadline for PPI complaints as well as the ongoing level of PPI claims.

Citi's year-end 2016 PPI reserve was \$228 million (compared to \$262 million as of December 31, 2015). Additional reserving actions, if any, in 2017 will largely depend on the timing and requirements of the FCA's final rules and the level of customer response to any communications campaign.

OFF-BALANCE SHEET ARRANGEMENTS

Citigroup enters into various types of off-balance sheet arrangements in the ordinary course of business. Citi's involvement in these arrangements can take many different forms, including without limitation:

- purchasing or retaining residual and other interests in unconsolidated special purpose entities, such as mortgage-backed and other asset-backed securitization entities;
- holding senior and subordinated debt, interests in limited and general partnerships and equity interests in other unconsolidated special purpose entities;
- providing guarantees, indemnifications, loan commitments, letters of credit and representations and warranties; and
- entering into operating leases for property and equipment.

Citi enters into these arrangements for a variety of business purposes. For example, securitization arrangements offer investors access to specific cash flows and risks created through the securitization process. Securitization arrangements also assist Citi and its customers in monetizing their financial assets and securing financing at more favorable rates than Citi or the customers could otherwise obtain.

The table below shows where a discussion of Citi's various off-balance sheet arrangements may be found in this Form 10-K. In addition, see Notes 1, 21 and 26 to the Consolidated Financial Statements.

Types of Off-Balance Sheet Arrangements Disclosures in this Form 10-K

Variable interests and other obligations, including contingent obligations, arising from variable interests in nonconsolidated VIEs	See Note 21 to the Consolidated Financial Statements.
Letters of credit, and lending and other commitments	See Note 26 to the Consolidated Financial Statements.
Guarantees	See Note 26 to the Consolidated Financial Statements.
Leases	See Note 26 to the Consolidated Financial Statements.

CONTRACTUAL OBLIGATIONS

The following table includes information on Citigroup's contractual obligations, as specified and aggregated pursuant to SEC requirements.

<i>In millions of dollars</i>	Contractual obligations by year						
	2017	2018	2019	2020	2021	Thereafter	Total
Long-term debt obligations—principal ⁽¹⁾	\$ 36,125	\$ 46,089	\$ 22,013	\$ 10,175	\$ 19,131	\$ 72,645	\$ 206,178
Long-term debt obligations—interest payments ⁽²⁾	6,565	5,131	3,942	3,381	2,869	29,818	51,706
Operating and capital lease obligations	1,151	1,006	854	679	531	2,655	6,876
Purchase obligations ⁽³⁾	486	423	415	403	340	745	2,812
Other liabilities ⁽⁴⁾	32,397	654	155	101	92	2,135	35,534
Total	\$ 76,724	\$ 53,303	\$ 27,379	\$ 14,739	\$ 22,963	\$ 107,998	\$ 303,106

- (1) For additional information about long-term debt obligations, see “Liquidity Risk—Long-Term Debt” below and Note 17 to the Consolidated Financial Statements.
- (2) Contractual obligations related to interest payments on long-term debt for 2017–2021 are calculated by applying the December 31, 2016 weighted-average interest rate (3.49%) on average outstanding long-term debt to the average remaining contractual obligations on long-term debt for each of those years. The “Thereafter” interest payments on long-term debt for the remaining years to maturity (2022–2098) are calculated by applying current interest rates on the remaining contractual obligations on long-term debt for each of those years.
- (3) Purchase obligations consist of obligations to purchase goods or services that are enforceable and legally binding on Citi. For presentation purposes, purchase obligations are included in the table above through the termination date of the respective agreements, even if the contract is renewable. Many of the purchase agreements for goods or services include clauses that would allow Citi to cancel the agreement with specified notice; however, that impact is not included in the table above (unless Citi has already notified the counterparty of its intention to terminate the agreement).
- (4) *Other liabilities* reflected on Citigroup's Consolidated Balance Sheet includes accounts payable, accrued expenses, uncertain tax positions and other liabilities that have been incurred and will ultimately be paid in cash; legal reserve accruals are not included in the table above. Also includes discretionary contributions in 2017 for Citi's employee-defined benefit obligations for the pension, postretirement and post employment plans and defined contribution plans.

CAPITAL RESOURCES

Overview

Capital is used principally to support assets in Citi's businesses and to absorb credit, market, and operational losses. Citi primarily generates capital through earnings from its operating businesses. Citi may augment its capital through issuances of common stock, noncumulative perpetual preferred stock and equity issued through awards under employee benefit plans, among other issuances. Further, Citi's capital levels may also be affected by changes in accounting and regulatory standards as well as U.S. corporate tax laws, and the impact of future events on Citi's business results, such as changes in interest and foreign exchange rates, as well as business and asset dispositions.

During 2016, Citi returned a total of approximately \$10.7 billion of capital to common shareholders in the form of share repurchases (approximately 196 million common shares) and dividends.

Capital Management

Citi's capital management framework is designed to ensure that Citigroup and its principal subsidiaries maintain sufficient capital consistent with each entity's respective risk profile, management targets, and all applicable regulatory standards and guidelines. Citi assesses its capital adequacy against a series of internal quantitative capital goals, designed to evaluate the Company's capital levels in expected and stressed economic environments. Underlying these internal quantitative capital goals are strategic capital considerations, centered on preserving and building financial strength. The Citigroup Capital Committee, with oversight from the Risk Management Committee of Citigroup's Board of Directors, has responsibility for Citi's aggregate capital structure, including the capital assessment and planning process, which is integrated into Citi's capital plan. Balance sheet management, including oversight of capital adequacy, for Citigroup's subsidiaries is governed by each entity's Asset and Liability Committee, where applicable. For additional information regarding Citi's capital planning and stress testing exercises, see "Capital Planning and Stress Testing" below.

Current Regulatory Capital Standards

Citi is subject to regulatory capital standards issued by the Federal Reserve Board which constitute the U.S. Basel III rules. These rules establish an integrated capital adequacy framework, encompassing both risk-based capital ratios and leverage ratios.

Risk-Based Capital Ratios

The U.S. Basel III rules set forth the composition of regulatory capital (including the application of regulatory capital adjustments and deductions), as well as two comprehensive methodologies (a Standardized Approach and Advanced Approaches) for measuring total risk-weighted assets. Total risk-weighted assets under the Advanced Approaches, which are primarily models based, include credit, market, and operational risk-weighted assets. Conversely, the Standardized Approach excludes operational risk-weighted assets and generally applies prescribed supervisory risk weights to broad categories of credit risk exposures. As a result, credit risk-weighted assets calculated under the Advanced Approaches are more risk sensitive than those calculated under the Standardized Approach. Market risk-weighted assets are derived on a generally consistent basis under both approaches.

The U.S. Basel III rules establish stated minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios for substantially all U.S. banking organizations, including Citi and Citibank, N.A. (Citibank). Moreover, these rules provide for both a fixed Capital Conservation Buffer and, for Advanced Approaches banking organizations, such as Citi and Citibank, also a discretionary Countercyclical Capital Buffer. These capital buffers would be available to absorb losses in advance of any potential impairment of regulatory capital below the stated minimum risk-based capital ratio requirements. In September 2016, the Federal Reserve Board released a policy statement which established the framework for setting the amount of the U.S. Countercyclical Capital Buffer. Separately, in October 2016, the Federal Reserve Board voted to affirm the Countercyclical Capital Buffer amount at the current level of 0%.

Further, the U.S. Basel III rules implement the "capital floor provision" of the so-called "Collins Amendment" of the Dodd-Frank Act, which requires Advanced Approaches banking organizations to calculate each of the three risk-based capital ratios (Common Equity Tier 1 Capital, Tier 1 Capital, and Total Capital) under both the U.S. Basel III Standardized Approach starting on January 1, 2015 and the Advanced Approaches and publicly report (as well as measure compliance against) the lower of each of the resulting risk-based capital ratios.

GSIB Surcharge

In August 2015, the Federal Reserve Board issued a rule which imposes a risk-based capital surcharge upon U.S. bank holding companies that are identified as global systemically important bank holding companies (GSIBs), including Citi. The GSIB surcharge augments the Capital Conservation Buffer and, if invoked, any Countercyclical Capital Buffer, and would result in restrictions on earnings distributions (e.g., dividends, equity repurchases, and discretionary executive bonuses) should the expanded buffer be breached to absorb losses during periods of financial or economic stress, with the degree of such restrictions based upon the extent to which the expanded buffer is breached.

Under the Federal Reserve Board's rule, identification of a GSIB is based primarily on quantitative measurement indicators underlying five equally weighted broad categories of systemic importance: (i) size, (ii) interconnectedness, (iii) cross-jurisdictional activity, (iv) substitutability, and (v) complexity. With the exception of size, each of the other categories are comprised of multiple indicators also of equal weight, and amounting to 12 indicators in total.

A U.S. bank holding company that is designated a GSIB under the established methodology is required, on an annual basis, to calculate a surcharge using two methods and will be subject to the higher of the resulting two surcharges. The first method ("method 1") is based on the same five broad categories of systemic importance used to identify a GSIB. Under the second method ("method 2"), the substitutability category is replaced with a quantitative measure intended to assess the extent of a GSIB's reliance on short-term wholesale funding. Moreover, method 1 incorporates relative measures of systemic importance across certain global banking organizations and a year-end spot foreign exchange rate, whereas method 2 uses fixed measures of systemic importance and application of an average foreign exchange rate over a three-year period. Effective for 2017 and thereafter, the GSIB surcharges calculated under both method 1 and method 2 are based on measures of systemic importance from the year immediately preceding that in which the GSIB surcharge calculations are being performed (e.g., the method 1 and method 2 GSIB surcharges to be calculated by December 31, 2017 will be based on 2016 systemic indicator data). Generally, the surcharge derived under method 2 will result in a higher surcharge than derived under method 1.

Should a GSIB's systemic importance change year-over-year such that it becomes subject to a higher surcharge, the higher surcharge would not become effective for a full year (e.g., a higher surcharge calculated by December 31, 2017 would not become effective until January 1, 2019). However, if a GSIB's systemic importance changes such that the GSIB would be subject to a lower surcharge, the GSIB would be subject to the lower surcharge beginning with the next calendar year (e.g., a lower surcharge calculated by December 31, 2017 would become effective January 1, 2018).

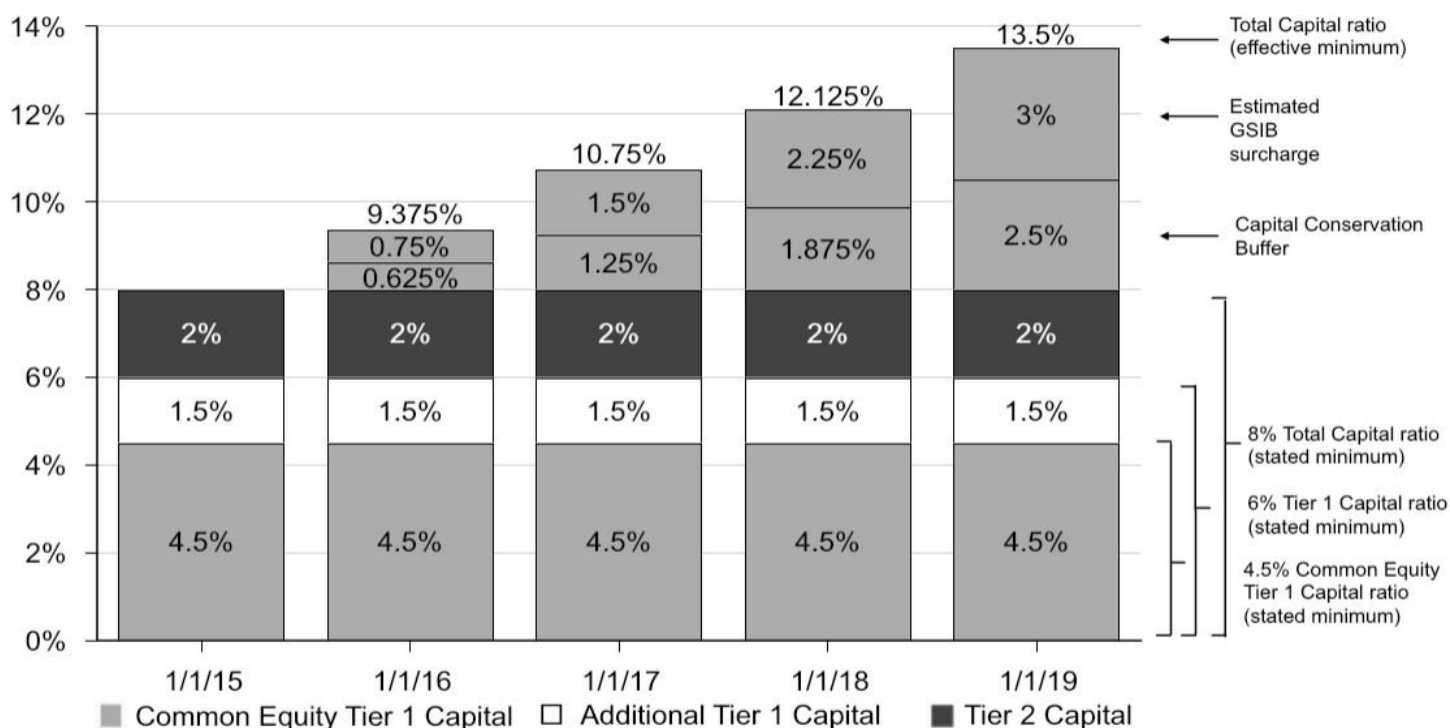
GSIB surcharges under the rule, which are required to be composed entirely of Common Equity Tier 1 Capital, initially range from 1.0% to 4.5% of total risk-weighted assets. Citi's initial GSIB surcharge effective January 1, 2016 was 3.5%, as derived under method 2. However, ongoing efforts in addressing quantitative measures of systemic importance have resulted in a reduction of Citi's method 2 GSIB surcharge to 3%, effective January 1, 2017. Citi's method 1 GSIB surcharge for 2016 was lower at 2%, and remains unchanged for 2017. Citi expects that its method 2 GSIB surcharge will continue to remain higher than its GSIB surcharge derived under method 1, and as such Citi's GSIB surcharge effective for 2018 and 2019 would not exceed 3%.

Transition Provisions

The U.S. Basel III rules contain several differing, largely multi-year transition provisions (i.e., "phase-ins" and "phase-outs"), including with respect to substantially all regulatory capital adjustments and deductions, and non-qualifying Tier 1 and Tier 2 Capital instruments (such as non-grandfathered trust preferred securities and certain subordinated debt issuances). Moreover, the GSIB surcharge, Capital Conservation Buffer, and any Countercyclical Capital Buffer (currently 0%), commenced phase-in on January 1, 2016, becoming fully effective on January 1, 2019. With the exception of the non-grandfathered trust preferred securities which do not fully phase-out until January 1, 2022 and the capital buffers and GSIB surcharge which do not fully phase-in until January 1, 2019, all other transition provisions will be entirely reflected in Citi's regulatory capital ratios by January 1, 2018. Citi considers all of these transition provisions as being fully implemented on January 1, 2019 (full implementation), with the inclusion of the capital buffers and GSIB surcharge.

The following chart sets forth the transitional progression from January 1, 2015 to full implementation by January 1, 2019 of the regulatory capital components (i.e., inclusive of the mandatory 2.5% Capital Conservation Buffer and the Countercyclical Capital Buffer at its current level of 0%, as well as an estimated 3% GSIB surcharge) comprising the effective minimum risk-based capital ratios.

Basel III Transition Arrangements: Minimum Risk-Based Capital Ratios



The following chart presents the transition arrangements (phase-in and phase-out) from January 1, 2015 through January 1, 2018 under the U.S. Basel III rules for significant regulatory capital adjustments and deductions relative to Citi.

Basel III Transition Arrangements: Significant Regulatory Capital Adjustments and Deductions

	January 1			
	2015	2016	2017	2018
Phase-in of Significant Regulatory Capital Adjustments and Deductions				
Common Equity Tier 1 Capital ⁽¹⁾	40%	60%	80%	100%
Common Equity Tier 1 Capital ⁽²⁾	40%	60%	80%	100%
Additional Tier 1 Capital ⁽²⁾⁽³⁾	60%	40%	20%	0%
	100%	100%	100%	100%
Phase-out of Significant AOCI Regulatory Capital Adjustments				
Common Equity Tier 1 Capital ⁽⁴⁾	60%	40%	20%	0%

(1) Includes the phase-in of Common Equity Tier 1 Capital deductions for all intangible assets other than goodwill and mortgage servicing rights (MSRs); and excess over 10%/15% limitations for deferred tax assets (DTAs) arising from temporary differences, significant common stock investments in unconsolidated financial institutions and MSRs. Goodwill (including goodwill "embedded" in the valuation of significant common stock investments in unconsolidated financial institutions) is fully deducted in arriving at Common Equity Tier 1 Capital. The amount of other intangible assets, aside from MSRs, not deducted in arriving at Common Equity Tier 1 Capital are risk-weighted at 100%, as are the excess over the 10%/15% limitations for DTAs arising from temporary differences, significant common stock investments in unconsolidated financial institutions and MSRs prior to full implementation of the U.S. Basel III rules. Upon full implementation, the amount of temporary difference DTAs, significant common stock investments in unconsolidated financial institutions and MSRs not deducted in arriving at Common Equity Tier 1 Capital are risk-weighted at 250%.

(2) Includes the phase-in of Common Equity Tier 1 Capital deductions related to DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards and defined benefit pension plan net assets; and the phase-in of the Common Equity Tier 1 Capital adjustment for cumulative unrealized net gains (losses) related to changes in fair value of financial liabilities attributable to Citi's own creditworthiness.

(3) To the extent Additional Tier 1 Capital is not sufficient to absorb regulatory capital adjustments and deductions, such excess is to be applied against Common Equity Tier 1 Capital.

(4) Includes the phase-out from Common Equity Tier 1 Capital of adjustments related to unrealized gains (losses) on available-for-sale (AFS) debt securities; unrealized gains on AFS equity securities; unrealized gains (losses) on held-to-maturity (HTM) securities included in *Accumulated other comprehensive income (loss)* (AOCI); and defined benefit plans liability adjustment.

Tier 1 Leverage Ratio

Under the U.S. Basel III rules, Citi, as with principally all U.S. banking organizations, is also required to maintain a minimum Tier 1 Leverage ratio of 4%. The Tier 1 Leverage ratio, a non-risk-based measure of capital adequacy, is defined as Tier 1 Capital as a percentage of quarterly adjusted average total assets less amounts deducted from Tier 1 Capital.

Supplementary Leverage Ratio

Advanced Approaches banking organizations are additionally required to calculate a Supplementary Leverage ratio, which significantly differs from the Tier 1 Leverage ratio by also including certain off-balance sheet exposures within the denominator of the ratio (Total Leverage Exposure). The Supplementary Leverage ratio represents end of period Tier 1 Capital to Total Leverage Exposure, with the latter defined as the sum of the daily average of on-balance sheet assets for the quarter and the average of certain off-balance sheet exposures calculated as of the last day of each month in the quarter, less applicable Tier 1 Capital deductions. Advanced Approaches banking organizations will be required to maintain a stated minimum Supplementary Leverage ratio of 3% commencing on January 1, 2018, but were required to publicly disclose the ratio commencing with the first quarter of 2015.

Further, U.S. GSIBs, and their subsidiary insured depository institutions, including Citi and Citibank, are subject to enhanced Supplementary Leverage ratio standards. The enhanced Supplementary Leverage ratio standards establish a 2% leverage buffer for U.S. GSIBs in addition to the stated 3% minimum Supplementary Leverage ratio requirement in the U.S. Basel III rules. If a U.S. GSIB fails to exceed the 2% leverage buffer, it will be subject to increasingly onerous restrictions (depending upon the extent of the shortfall) regarding capital distributions and discretionary executive bonus payments. Accordingly, U.S. GSIBs are effectively subject to a 5% minimum Supplementary Leverage ratio requirement. Citi is required to be compliant with this higher effective minimum ratio requirement on January 1, 2018.

Prompt Corrective Action Framework

The U.S. Basel III rules revised the Prompt Corrective Action (PCA) regulations applicable to insured depository institutions in certain respects.

In general, the PCA regulations direct the U.S. banking agencies to enforce increasingly strict limitations on the activities of insured depository institutions that fail to meet certain regulatory capital thresholds. The PCA framework contains five categories of capital adequacy as measured by risk-based capital and leverage ratios: (i) “well capitalized”; (ii) “adequately capitalized”; (iii) “undercapitalized”; (iv) “significantly undercapitalized”; and (v) “critically undercapitalized.”

Accordingly, beginning January 1, 2015, an insured depository institution, such as Citibank, must maintain minimum Common Equity Tier 1 Capital, Tier 1 Capital, Total Capital, and Tier 1 Leverage ratios of 6.5%, 8%, 10%

and 5%, respectively, to be considered “well capitalized.” Additionally, insured depository institution subsidiaries of U.S. GSIBs, such as Citibank, must maintain a minimum Supplementary Leverage ratio of 6%, effective January 1, 2018, to be considered “well capitalized.”

Capital Planning and Stress Testing

Citi is subject to an annual assessment by the Federal Reserve Board as to whether Citi has effective capital planning processes as well as sufficient regulatory capital to absorb losses during stressful economic and financial conditions, while also meeting obligations to creditors and counterparties and continuing to serve as a credit intermediary. This annual assessment includes two related programs:

- The Comprehensive Capital Analysis and Review (CCAR) evaluates Citi’s capital adequacy, capital adequacy process, and its planned capital distributions, such as dividend payments and common stock repurchases. As part of CCAR, the Federal Reserve Board assesses whether Citi has sufficient capital to continue operations throughout times of economic and financial market stress and whether Citi has robust, forward-looking capital planning processes that account for its unique risks. The Federal Reserve Board may object to Citi’s annual capital plan based on either quantitative or qualitative grounds. If the Federal Reserve Board objects to Citi’s annual capital plan, Citi may not undertake any capital distribution unless the Federal Reserve Board indicates in writing that it does not object to the distribution.
- Dodd-Frank Act Stress Testing (DFAST) is a forward-looking quantitative evaluation of the impact of stressful economic and financial market conditions on Citi’s regulatory capital. This program serves to inform the Federal Reserve Board, the financial companies, and the general public, how Citi’s regulatory capital ratios might change using a hypothetical set of adverse economic conditions as designed by the Federal Reserve Board. In addition to the annual supervisory stress test conducted by the Federal Reserve Board, Citi is required to conduct annual company-run stress tests under the same adverse economic conditions designed by the Federal Reserve Board, as well as conduct a mid-cycle stress test under company-developed scenarios.

Both CCAR and DFAST include an estimate of projected revenues, losses, reserves, pro forma regulatory capital ratios, and any other additional capital measures deemed relevant by Citi. Projections are required over a nine-quarter planning horizon under three supervisory scenarios (baseline, adverse and severely adverse conditions). All risk-based capital ratios reflect application of the Standardized Approach framework and the transition arrangements under the U.S. Basel III rules. Moreover, the Federal Reserve Board has deferred the use of the Advanced Approaches framework indefinitely, and has modified the

2017 CCAR instructions, in part, to incorporate the Supplementary Leverage ratio. Accordingly, Advanced Approaches banking organizations will therefore be required to demonstrate an ability to maintain a Supplementary Leverage ratio in excess of the stated minimum requirement for the quarters of the 2017 CCAR planning horizon which are subsequent to the effective date of the ratio (i.e., the first quarter of 2018 through the first quarter of 2019).

In February 2017, the Federal Reserve Board issued a final rule adopting certain revisions to its capital planning and stress testing rules which become effective with the 2017 CCAR cycle. The revisions include a reduction in the amount of capital a banking organization subject to the quantitative requirements of CCAR may request to distribute in excess of the amount otherwise previously approved under its capital plan. The so-called “de-minimis exception” threshold will be lowered from the current 1.0% to 0.25% of Tier 1 Capital, and will be available to these banking organizations, subject to compliance with certain conditions, including 15 days prior notification as to planned execution of the exception and no objection by the Federal Reserve Board within that timeframe. Citi announced an increase to its common stock repurchase program of up to \$1.75 billion in November 2016, in accordance with the current de-minimis exception. For additional information regarding CCAR, see “Risk Factors—Strategic Risks” below.

Citigroup’s Capital Resources Under Current Regulatory Standards

During 2015 and thereafter, Citi is required to maintain stated minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios of 4.5%, 6% and 8%, respectively. Citi’s effective minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios during 2016, inclusive of the 25% phase-in of both the 2.5% Capital Conservation Buffer and the 3.5% GSIB surcharge (all of which is to be composed of Common Equity Tier 1 Capital), are 6%, 7.5%, and 9.5%, respectively. Citi’s effective and stated minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios during 2015 were equivalent at 4.5%, 6%, and 8%, respectively.

Furthermore, to be “well capitalized” under current federal bank regulatory agency definitions, a bank holding company must have a Tier 1 Capital ratio of at least 6%, a Total Capital ratio of at least 10%, and not be subject to a Federal Reserve Board directive to maintain higher capital levels.

The following tables set forth the capital tiers, total risk-weighted assets, risk-based capital ratios, quarterly adjusted average total assets, Total Leverage Exposure and leverage ratios under current regulatory standards (reflecting Basel III Transition Arrangements) for Citi as of December 31, 2016 and December 31, 2015.

Citigroup Capital Components and Ratios Under Current Regulatory Standards (Basel III Transition Arrangements)

<i>In millions of dollars, except ratios</i>	December 31, 2016		December 31, 2015	
	Advanced Approaches	Standardized Approach	Advanced Approaches	Standardized Approach
Common Equity Tier 1 Capital	\$ 167,378	\$ 167,378	\$ 173,862	\$ 173,862
Tier 1 Capital	178,387	178,387	176,420	176,420
Total Capital (Tier 1 Capital + Tier 2 Capital) ⁽¹⁾	202,146	214,938	198,746	211,115
Total Risk-Weighted Assets	1,166,764	1,126,314	1,190,853	1,138,711
Common Equity Tier 1 Capital ratio ⁽²⁾	14.35%	14.86%	14.60%	15.27%
Tier 1 Capital ratio ⁽²⁾	15.29	15.84	14.81	15.49
Total Capital ratio ⁽²⁾	17.33	19.08	16.69	18.54

<i>In millions of dollars, except ratios</i>	December 31, 2016	December 31, 2015
Quarterly Adjusted Average Total Assets ⁽³⁾	\$ 1,768,415	\$ 1,732,933
Total Leverage Exposure ⁽⁴⁾	2,351,883	2,326,072
Tier 1 Leverage ratio	10.09%	10.18%
Supplementary Leverage ratio	7.58	7.58

- (1) Under the Advanced Approaches framework eligible credit reserves that exceed expected credit losses are eligible for inclusion in Tier 2 Capital to the extent the excess reserves do not exceed 0.6% of credit risk-weighted assets, which differs from the Standardized Approach in which the allowance for credit losses is eligible for inclusion in Tier 2 Capital up to 1.25% of credit risk-weighted assets, with any excess allowance for credit losses being deducted in arriving at credit risk-weighted assets.
- (2) As of December 31, 2016 and December 31, 2015, Citi’s reportable Common Equity Tier 1 Capital, Tier 1 Capital, and Total Capital ratios were the lower derived under the Basel III Advanced Approaches framework.
- (3) Tier 1 Leverage ratio denominator.
- (4) Supplementary Leverage ratio denominator.

As indicated in the table above, Citigroup’s capital ratios at December 31, 2016 were in excess of the stated minimum requirements under the U.S. Basel III rules. In

addition, Citi was also “well capitalized” under current federal bank regulatory agency definitions as of December 31, 2016.

**Components of Citigroup Capital Under Current Regulatory Standards
(Basel III Advanced Approaches with Transition Arrangements)**

<i>In millions of dollars</i>	December 31, 2016	December 31, 2015
Common Equity Tier 1 Capital		
Citigroup common stockholders' equity ⁽¹⁾	\$ 206,051	\$ 205,286
Add: Qualifying noncontrolling interests	259	369
Regulatory Capital Adjustments and Deductions:		
Less: Net unrealized gains (losses) on securities available-for-sale (AFS), net of tax ⁽²⁾⁽³⁾	(320)	(544)
Less: Defined benefit plans liability adjustment, net of tax ⁽³⁾	(2,066)	(3,070)
Less: Accumulated net unrealized losses on cash flow hedges, net of tax ⁽⁴⁾	(560)	(617)
Less: Cumulative unrealized net gain (loss) related to changes in fair value of financial liabilities attributable to own creditworthiness, net of tax ⁽³⁾⁽⁵⁾	(37)	176
Less: Intangible assets:		
Goodwill, net of related deferred tax liabilities (DTLs) ⁽⁶⁾	20,858	21,980
Identifiable intangible assets other than mortgage servicing rights (MSRs), net of related DTLs ⁽³⁾⁽⁷⁾	2,926	1,434
Less: Defined benefit pension plan net assets ⁽³⁾	514	318
Less: Deferred tax assets (DTAs) arising from net operating loss, foreign tax credit and general business credit carry-forwards ⁽³⁾⁽⁸⁾	12,802	9,464
Less: Excess over 10%/15% limitations for other DTAs, certain common stock investments, and MSRs ⁽³⁾⁽⁸⁾⁽⁹⁾	4,815	2,652
Total Common Equity Tier 1 Capital	\$ 167,378	\$ 173,862
Additional Tier 1 Capital		
Qualifying perpetual preferred stock ⁽¹⁾	\$ 19,069	\$ 16,571
Qualifying trust preferred securities ⁽¹⁰⁾	1,371	1,707
Qualifying noncontrolling interests	17	12
Regulatory Capital Adjustment and Deductions:		
Less: Cumulative unrealized net gain (loss) related to changes in fair value of financial liabilities attributable to own creditworthiness, net of tax ⁽³⁾⁽⁵⁾	(24)	265
Less: Defined benefit pension plan net assets ⁽³⁾	343	476
Less: DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards ⁽³⁾⁽⁸⁾	8,535	14,195
Less: Permitted ownership interests in covered funds ⁽¹¹⁾	533	567
Less: Minimum regulatory capital requirements of insurance underwriting subsidiaries ⁽¹²⁾	61	229
Total Additional Tier 1 Capital	\$ 11,009	\$ 2,558
Total Tier 1 Capital (Common Equity Tier 1 Capital + Additional Tier 1 Capital)	\$ 178,387	\$ 176,420
Tier 2 Capital		
Qualifying subordinated debt ⁽¹³⁾	\$ 22,818	\$ 21,370
Qualifying trust preferred securities ⁽¹⁰⁾	317	—
Qualifying noncontrolling interests	22	17
Excess of eligible credit reserves over expected credit losses ⁽¹⁴⁾	660	1,163
Regulatory Capital Adjustment and Deduction:		
Add: Unrealized gains on AFS equity exposures includable in Tier 2 Capital	3	5
Less: Minimum regulatory capital requirements of insurance underwriting subsidiaries ⁽¹²⁾	61	229
Total Tier 2 Capital	\$ 23,759	\$ 22,326
Total Capital (Tier 1 Capital + Tier 2 Capital)	\$ 202,146	\$ 198,746

**Citigroup Risk-Weighted Assets Under Current Regulatory Standards
(Basel III Advanced Approaches with Transition Arrangements)**

<i>In millions of dollars</i>	December 31, 2016	December 31, 2015
Credit Risk ⁽¹⁵⁾	\$ 773,483	\$ 791,036
Market Risk	64,006	74,817
Operational Risk	329,275	325,000
Total Risk-Weighted Assets	\$ 1,166,764	\$ 1,190,853

- (1) Issuance costs of \$184 million and \$147 million related to preferred stock outstanding at December 31, 2016 and December 31, 2015, respectively, are excluded from common stockholders' equity and netted against preferred stock in accordance with Federal Reserve Board regulatory reporting requirements, which differ from those under U.S. GAAP.
- (2) In addition, includes the net amount of unamortized loss on HTM securities. This amount relates to securities that were previously transferred from AFS to HTM, and non-credit related factors such as changes in interest rates and liquidity spreads for HTM securities with other-than-temporary impairment.
- (3) The transition arrangements for significant regulatory capital adjustments and deductions impacting Common Equity Tier 1 Capital and/or Additional Tier 1 Capital are set forth above in the chart entitled "Basel III Transition Arrangements: Significant Regulatory Capital Adjustments and Deductions."
- (4) Common Equity Tier 1 Capital is adjusted for accumulated net unrealized gains (losses) on cash flow hedges included in AOCI that relate to the hedging of items not recognized at fair value on the balance sheet.
- (5) The cumulative impact of changes in Citigroup's own creditworthiness in valuing liabilities for which the fair value option has been elected and own-credit valuation adjustments on derivatives are excluded from Common Equity Tier 1 Capital, in accordance with the U.S. Basel III rules.
- (6) Includes goodwill "embedded" in the valuation of significant common stock investments in unconsolidated financial institutions.
- (7) Identifiable intangible assets other than MSRs increased by approximately \$2.2 billion as a result of the acquisition of the Costco cards portfolio, as well as the renewal and extension of the co-branded credit card program agreement with American Airlines. For additional information, see Note 16 to the Consolidated Financial Statements.
- (8) Of Citi's approximately \$46.7 billion of net DTAs at December 31, 2016, approximately \$22.0 billion were includable in regulatory capital pursuant to the U.S. Basel III rules, while approximately \$24.7 billion were excluded. Excluded from Citi's regulatory capital as of December 31, 2016 was approximately \$26.1 billion of net DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards as well as temporary differences, of which approximately \$17.6 billion were deducted from Common Equity Tier 1 Capital and approximately \$8.5 billion were deducted from Additional Tier 1 Capital, reduced by approximately \$1.4 billion of net DTLs primarily associated with goodwill and certain other intangible assets. Separately, under the U.S. Basel III rules, goodwill and these other intangible assets are deducted net of associated DTLs in arriving at Common Equity Tier 1 Capital. DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards are required to be deducted from both Common Equity Tier 1 Capital and Additional Tier 1 Capital under the transition arrangements of the U.S. Basel III rules; whereas DTAs arising from temporary differences are deducted in full from Common Equity Tier 1 Capital under these rules, if in excess of 10%/15% limitations (see note below).
- (9) Assets subject to 10%/15% limitations include MSRs, DTAs arising from temporary differences and significant common stock investments in unconsolidated financial institutions. At December 31, 2016 and December 31, 2015, this deduction related only to DTAs arising from temporary differences that exceeded the 10% limitation. Accordingly, approximately \$4.8 billion of DTAs arising from temporary differences were excluded from Citi's Common Equity Tier 1 Capital as of December 31, 2016. Changes to the U.S. corporate tax regime that impact the value of Citi's DTAs arising from temporary differences, which exceed the then current amount deducted from Citi's Common Equity Tier 1 Capital, would further reduce Citi's regulatory capital to the extent of such excess after tax (for additional discussion on potential U.S. corporate tax reform, see "Risk Factors—Strategic Risks" below).
- (10) Represents Citigroup Capital XIII trust preferred securities, which are permanently grandfathered as Tier 1 Capital under the U.S. Basel III rules, as well as non-grandfathered trust preferred securities which are eligible for inclusion in Tier 1 Capital during 2015 in an amount up to 25% of the aggregate outstanding principal amounts of such issuances as of January 1, 2014. The remaining 75% of non-grandfathered trust preferred securities are eligible for inclusion in Tier 2 Capital during 2015 in accordance with the transition arrangements for non-qualifying capital instruments under the U.S. Basel III rules. As of December 31, 2015, however, the entire amount of non-grandfathered trust preferred securities was included within Tier 1 Capital, as the amounts outstanding did not exceed the respective threshold for exclusion from Tier 1 Capital. Effective January 1, 2016, non-grandfathered trust preferred securities are not eligible for inclusion in Tier 1 Capital, but are eligible for inclusion in Tier 2 Capital subject to full phase-out by January 1, 2022. During 2016, non-grandfathered trust preferred securities are eligible for inclusion in Tier 2 Capital in an amount up to 60% of the aggregate outstanding principal amounts of such issuances as of January 1, 2014.
- (11) Effective July 2015, banking entities were required to be in compliance with the Volcker Rule of the Dodd-Frank Act that prohibits conducting certain proprietary investment activities and limits their ownership of, and relationships with, covered funds. Accordingly, Citi is required by the Volcker Rule to deduct from Tier 1 Capital all permitted ownership interests in covered funds that were acquired after December 31, 2013.
- (12) 50% of the minimum regulatory capital requirements of insurance underwriting subsidiaries must be deducted from each of Tier 1 Capital and Tier 2 Capital.
- (13) Under the transition arrangements of the U.S. Basel III rules, non-qualifying subordinated debt issuances which consist of those with a fixed-to-floating rate step-up feature where the call/step-up date has not passed are eligible for inclusion in Tier 2 Capital during 2015 up to 25% of the aggregate outstanding principal amounts of such issuances as of January 1, 2014. Effective January 1, 2016, non-qualifying subordinated debt issuances are not eligible for inclusion in Tier 2 Capital.
- (14) Advanced Approaches banking organizations are permitted to include in Tier 2 Capital eligible credit reserves that exceed expected credit losses to the extent that the excess reserves do not exceed 0.6% of credit risk-weighted assets.
- (15) Under the U.S. Basel III rules, credit risk-weighted assets during the transition period reflect the effects of transitional arrangements related to regulatory capital adjustments and deductions and, as a result, will differ from credit risk-weighted assets derived under full implementation of the rules.

**Citigroup Capital Rollforward Under Current Regulatory Standards
(Basel III Advanced Approaches with Transition Arrangements)**

<i>In millions of dollars</i>	Three months ended December 31, 2016	Twelve months ended December 31, 2016
Common Equity Tier 1 Capital		
Balance, beginning of period	\$ 172,046	\$ 173,862
Net income	3,573	14,912
Common and preferred stock dividends declared	(774)	(2,291)
Net increase in treasury stock	(4,232)	(8,624)
Net change in common stock and additional paid-in capital ⁽¹⁾	166	(210)
Net increase in foreign currency translation adjustment net of hedges, net of tax	(2,529)	(2,802)
Net increase in unrealized losses on securities AFS, net of tax	(1,452)	(116)
Net change in defined benefit plans liability adjustment, net of tax	260	(1,052)
Net change in adjustment related to changes in fair value of financial liabilities attributable to own creditworthiness, net of tax	(104)	(124)
Net decrease in goodwill, net of related DTLs	905	1,122
Net change in identifiable intangible assets other than MSR, net of related DTLs	180	(1,492)
Net change in defined benefit pension plan net assets	21	(196)
Net change in DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards	700	(3,338)
Net increase in excess over 10%/15% limitations for other DTAs, certain common stock investments and MSR	(1,366)	(2,163)
Other	(16)	(110)
Net decrease in Common Equity Tier 1 Capital	\$ (4,668)	\$ (6,484)
Common Equity Tier 1 Capital Balance, end of period	\$ 167,378	\$ 167,378
Additional Tier 1 Capital		
Balance, beginning of period	\$ 10,125	\$ 2,558
Net increase in qualifying perpetual preferred stock ⁽¹⁾	—	2,498
Net change in qualifying trust preferred securities	2	(336)
Net change in adjustment related to changes in fair value of financial liabilities attributable to own creditworthiness, net of tax	158	289
Net decrease in defined benefit pension plan net assets	13	133
Net decrease in DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards	466	5,660
Net decrease in permitted ownership interests in covered funds	226	34
Other	19	173
Net increase in Additional Tier 1 Capital	\$ 884	\$ 8,451
Tier 1 Capital Balance, end of period	\$ 178,387	\$ 178,387
Tier 2 Capital		
Balance, beginning of period	\$ 25,882	\$ 22,326
Net change in qualifying subordinated debt	(2,189)	1,448
Net change in qualifying trust preferred securities	(7)	317
Net change in excess of eligible credit reserves over expected credit losses	55	(503)
Other	18	171
Net change in Tier 2 Capital	\$ (2,123)	\$ 1,433
Tier 2 Capital Balance, end of period	\$ 23,759	\$ 23,759
Total Capital (Tier 1 Capital + Tier 2 Capital)	\$ 202,146	\$ 202,146

(1) During the twelve months ended December 31, 2016, Citi issued approximately \$2.5 billion of qualifying perpetual preferred stock with issuance costs of \$37 million. In accordance with Federal Reserve Board regulatory reporting requirements, which differ from those under U.S. GAAP, such issuance costs are excluded from common stockholders' equity and netted against preferred stock.

**Citigroup Risk-Weighted Assets Rollforward Under Current Regulatory Standards
(Basel III Advanced Approaches with Transition Arrangements)**

<i>In millions of dollars</i>	Three months ended December 31, 2016	Twelve months ended December 31, 2016
Total Risk-Weighted Assets, beginning of period	\$ 1,204,384	\$ 1,190,853
Changes in Credit Risk-Weighted Assets		
Net decrease in retail exposures ⁽¹⁾	(5,358)	(20,018)
Net decrease in wholesale exposures ⁽²⁾	(5,455)	(5,977)
Net change in repo-style transactions ⁽³⁾	433	(2,927)
Net decrease in securitization exposures ⁽⁴⁾	(3,684)	(3,279)
Net decrease in equity exposures ⁽⁵⁾	(84)	(1,771)
Net change in over-the-counter (OTC) derivatives ⁽⁶⁾	(2,740)	4,801
Net change in derivatives CVA ⁽⁷⁾	(6,485)	10,567
Net increase in other exposures ⁽⁸⁾	1,575	2,643
Net decrease in supervisory 6% multiplier ⁽⁹⁾	(919)	(1,592)
Net decrease in Credit Risk-Weighted Assets	\$ (22,717)	\$ (17,553)
Changes in Market Risk-Weighted Assets		
Net decrease in risk levels ⁽¹⁰⁾	(6,947)	(6,533)
Net decrease due to model and methodology updates ⁽¹¹⁾	(117)	(4,278)
Net decrease in Market Risk-Weighted Assets	\$ (7,064)	\$ (10,811)
Net change in Operational Risk-Weighted Assets⁽¹²⁾	\$ (7,839)	\$ 4,275
Total Risk-Weighted Assets, end of period	\$ 1,166,764	\$ 1,166,764

- (1) Retail exposures decreased during the three and twelve months ended December 31, 2016 primarily due to residential mortgage loan sales and repayments, divestitures of certain Citi Holdings portfolios and the impact of FX translation. The decrease in retail exposures during the three months ended December 31, 2016 was partially offset by increases in qualifying revolving (cards) exposures attributable to seasonal holiday spending, whereas the decrease in retail exposures during the twelve months ended December 31, 2016 was partially offset by the acquisition of the Costco cards portfolio.
- (2) Wholesale exposures decreased during the three and twelve months ended December 31, 2016 primarily due to decreases in commercial loans, decreases in securities AFS and securities HTM, and the impact of FX translation. The decrease in wholesale exposures during the three months ended December 31, 2016 was partially offset by increases in loan commitments.
- (3) Repo-style transactions decreased during the twelve months ended December 31, 2016 primarily due to exposure decreases and model enhancements.
- (4) Securitization exposures decreased during the three and twelve months ended December 31, 2016 primarily due to sales and maturities of exposures.
- (5) Equity exposures decreased during the twelve months ended December 31, 2016 primarily due to the sale of Citi's investment in China Guangfa Bank.
- (6) OTC derivatives decreased during the three months ended December 31, 2016 primarily due to changes in fair value. OTC derivatives increased during the twelve months ended December 31, 2016 primarily driven by increased trade volume and model enhancements.
- (7) Derivatives CVA decreased during the three months ended December 31, 2016 primarily driven by exposure reduction and credit spread changes. Derivatives CVA increased during the twelve months ended December 31, 2016 primarily driven by increased volatility, trade volume and model enhancements.
- (8) Other exposures include cleared transactions, unsettled transactions, assets other than those reportable in specific exposure categories and non-material portfolios.
- (9) Supervisory 6% multiplier does not apply to derivatives CVA.
- (10) Risk levels decreased during the three months ended December 31, 2016 primarily due to reductions in risk and exposures subject to Stressed Value at Risk and a reduction in positions subject to standard specific risk charges, partially offset by an increase in exposures subject to comprehensive risk. Risk levels decreased during the twelve months ended December 31, 2016 primarily due to reductions in risk and exposures subject to Stressed Value at Risk and a reduction in positions subject to securitization charges, partially offset by an increase in positions subject to standard specific risk charges.
- (11) Risk-weighted assets declined during the three and twelve months ended December 31, 2016 due to changes in model inputs regarding volatility and the correlation between market risk factors.
- (12) Operational risk-weighted assets decreased during the three months ended December 31, 2016 primarily driven by routine quarterly updates to model parameters. Operational risk-weighted assets increased during the twelve months ended December 31, 2016 primarily due to the implementation of certain enhancements to Citi's Advanced Measurement Approaches model in the third quarter of 2016, partially offset by routine quarterly updates to model parameters.

Capital Resources of Citigroup's Subsidiary U.S. Depository Institutions Under Current Regulatory Standards

Citigroup's subsidiary U.S. depository institutions are also subject to regulatory capital standards issued by their respective primary federal bank regulatory agencies, which are similar to the standards of the Federal Reserve Board.

During 2016, Citi's primary subsidiary U.S. depository institution, Citibank, N.A. (Citibank), was subject to effective minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios, inclusive of the 25% phase-in of the 2.5% Capital Conservation Buffer, of 5.125%, 6.625% and 8.625%, respectively. Citibank's effective and

stated minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios during 2015 were equivalent at 4.5%, 6%, and 8%, respectively.

The following table sets forth the capital tiers, total risk-weighted assets, risk-based capital ratios, quarterly adjusted average total assets, Total Leverage Exposure and leverage ratios under current regulatory standards (reflecting Basel III Transition Arrangements) for Citibank, Citi's primary subsidiary U.S. depository institution, as of December 31, 2016 and December 31, 2015.

Citibank Capital Components and Ratios Under Current Regulatory Standards (Basel III Transition Arrangements)

<i>In millions of dollars, except ratios</i>	December 31, 2016		December 31, 2015	
	Advanced Approaches	Standardized Approach	Advanced Approaches	Standardized Approach
Common Equity Tier 1 Capital	\$ 126,277	\$ 126,277	\$ 127,323	\$ 127,323
Tier 1 Capital	126,282	126,282	127,323	127,323
Total Capital (Tier 1 Capital + Tier 2 Capital) ⁽¹⁾	138,638	150,108	138,762	149,749
Total Risk-Weighted Assets	973,739	1,000,833	902,969	1,003,214
Common Equity Tier 1 Capital ratio ⁽²⁾	12.97%	12.62%	14.10%	12.69%
Tier 1 Capital ratio ⁽²⁾	12.97	12.62	14.10	12.69
Total Capital ratio ⁽²⁾	14.24	15.00	15.37	14.93

<i>In millions of dollars, except ratios</i>	December 31, 2016	December 31, 2015
Quarterly Adjusted Average Total Assets ⁽³⁾	\$ 1,332,978	\$ 1,298,560
Total Leverage Exposure ⁽⁴⁾	1,859,211	1,838,941
Tier 1 Leverage ratio	9.47%	9.80%
Supplementary Leverage ratio	6.79	6.92

(1) Under the Advanced Approaches framework eligible credit reserves that exceed expected credit losses are eligible for inclusion in Tier 2 Capital to the extent the excess reserves do not exceed 0.6% of credit risk-weighted assets, which differs from the Standardized Approach in which the allowance for credit losses is eligible for inclusion in Tier 2 Capital up to 1.25% of credit risk-weighted assets, with any excess allowance for credit losses being deducted in arriving at credit risk-weighted assets.

(2) As of December 31, 2016, Citibank's reportable Common Equity Tier 1 Capital and Tier 1 Capital ratios were the lower derived under the Basel III Standardized Approach, whereas Citibank's reportable Total Capital ratio as of December 31, 2016 was the lower derived under the Basel III Advanced Approaches framework. As of December 31, 2015, Citibank's reportable Common Equity Tier 1 Capital, Tier 1 Capital, and Total Capital ratios were the lower derived under the Basel III Standardized Approach.

(3) Tier 1 Leverage ratio denominator.

(4) Supplementary Leverage ratio denominator.

As indicated in the table above, Citibank's capital ratios at December 31, 2016 were in excess of the stated minimum requirements under the U.S. Basel III rules. In addition, Citibank was also "well capitalized" as of December 31, 2016 under the revised PCA regulations which became effective January 1, 2015.

Further, Citibank is required to conduct the annual Dodd-Frank Act Stress Test. The annual stress test consists of a forward-looking quantitative evaluation of the impact of stressful economic and financial market conditions under several scenarios on Citibank's regulatory capital. This program serves to inform the Office of the Comptroller of

the Currency how Citibank's regulatory capital ratios might change during a hypothetical set of adverse economic conditions and to ultimately evaluate the reliability of Citibank's capital planning process.

Impact of Changes on Citigroup and Citibank Capital Ratios Under Current Regulatory Capital Standards

The following tables present the estimated sensitivity of Citigroup's and Citibank's capital ratios to changes of \$100 million in Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital (numerator), and changes of \$1 billion in Advanced Approaches and Standardized Approach risk-weighted assets, quarterly adjusted average total assets, as well as Total Leverage Exposure (denominator), under current regulatory capital standards (reflecting Basel III Transition Arrangements), as of December 31, 2016. This

information is provided for the purpose of analyzing the impact that a change in Citigroup's or Citibank's financial position or results of operations could have on these ratios. These sensitivities only consider a single change to either a component of capital, risk-weighted assets, quarterly adjusted average total assets, or Total Leverage Exposure. Accordingly, an event that affects more than one factor may have a larger basis point impact than is reflected in these tables.

Impact of Changes on Citigroup and Citibank Risk-Based Capital Ratios (Basel III Transition Arrangements)

	Common Equity Tier 1 Capital ratio		Tier 1 Capital ratio		Total Capital ratio	
	Impact of \$100 million change in Common Equity Tier 1 Capital	Impact of \$1 billion change in risk-weighted assets	Impact of \$100 million change in Tier 1 Capital	Impact of \$1 billion change in risk-weighted assets	Impact of \$100 million change in Total Capital	Impact of \$1 billion change in risk-weighted assets
<i>In basis points</i>						
Citigroup						
Advanced Approaches	0.9	1.2	0.9	1.3	0.9	1.5
Standardized Approach	0.9	1.3	0.9	1.4	0.9	1.7
Citibank						
Advanced Approaches	1.0	1.3	1.0	1.3	1.0	1.5
Standardized Approach	1.0	1.3	1.0	1.3	1.0	1.5

Impact of Changes on Citigroup and Citibank Leverage Ratios (Basel III Transition Arrangements)

	Tier 1 Leverage ratio		Supplementary Leverage ratio	
	Impact of \$100 million change in Tier 1 Capital	Impact of \$1 billion change in quarterly adjusted average total assets	Impact of \$100 million change in Tier 1 Capital	Impact of \$1 billion change in Total Leverage Exposure
<i>In basis points</i>				
Citigroup	0.6	0.6	0.4	0.3
Citibank	0.8	0.7	0.5	0.4

Citigroup Broker-Dealer Subsidiaries

At December 31, 2016, Citigroup Global Markets Inc., a U.S. broker-dealer registered with the SEC that is an indirect wholly owned subsidiary of Citigroup, had net capital, computed in accordance with the SEC's net capital rule, of approximately \$9.3 billion, which exceeded the minimum requirement by approximately \$7.4 billion.

Moreover, Citigroup Global Markets Limited, a broker-dealer registered with the United Kingdom's Prudential Regulation Authority (PRA) that is also an indirect wholly owned subsidiary of Citigroup, had total capital of \$16.8 billion at December 31, 2016, which exceeded the PRA's minimum regulatory capital requirements.

In addition, certain of Citi's other broker-dealer subsidiaries are subject to regulation in the countries in which they do business, including requirements to maintain specified levels of net capital or its equivalent. Citigroup's other broker-dealer subsidiaries were in compliance with their capital requirements at December 31, 2016.

Basel III (Full Implementation)

Citigroup's Capital Resources Under Basel III (Full Implementation)

Citi currently estimates that its effective minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratio requirements under the U.S. Basel III rules, on a fully implemented basis, inclusive of the 2.5% Capital Conservation Buffer and the Countercyclical Capital Buffer at its current level of 0%, as well as assuming a 3% GSIB surcharge, may be 10%, 11.5% and 13.5%, respectively.

Further, under the U.S. Basel III rules, Citi must also comply with a 4% minimum Tier 1 Leverage ratio requirement and an effective 5% minimum Supplementary Leverage ratio requirement.

The following tables set forth the capital tiers, total risk-weighted assets, risk-based capital ratios, quarterly adjusted average total assets, Total Leverage Exposure and leverage ratios, assuming full implementation under the U.S. Basel III rules, for Citi as of December 31, 2016 and December 31, 2015.

Citigroup Capital Components and Ratios Under Basel III (Full Implementation)

<i>In millions of dollars, except ratios</i>	December 31, 2016		December 31, 2015	
	Advanced Approaches	Standardized Approach	Advanced Approaches	Standardized Approach
Common Equity Tier 1 Capital	\$ 149,516	\$ 149,516	\$ 146,865	\$ 146,865
Tier 1 Capital	169,390	169,390	164,036	164,036
Total Capital (Tier 1 Capital + Tier 2 Capital) ⁽¹⁾	193,160	205,975	186,097	198,655
Total Risk-Weighted Assets	1,189,680	1,147,956	1,216,277	1,162,884
Common Equity Tier 1 Capital ratio ⁽²⁾⁽³⁾	12.57%	13.02%	12.07%	12.63%
Tier 1 Capital ratio ⁽²⁾⁽³⁾	14.24	14.76	13.49	14.11
Total Capital ratio ⁽²⁾⁽³⁾	16.24	17.94	15.30	17.08

<i>In millions of dollars, except ratios</i>	December 31, 2016	December 31, 2015
Quarterly Adjusted Average Total Assets ⁽⁴⁾	\$ 1,761,923	\$ 1,724,710
Total Leverage Exposure ⁽⁵⁾	2,345,391	2,317,849
Tier 1 Leverage ratio ⁽³⁾	9.61%	9.51%
Supplementary Leverage ratio ⁽³⁾	7.22	7.08

- (1) Under the Advanced Approaches framework eligible credit reserves that exceed expected credit losses are eligible for inclusion in Tier 2 Capital to the extent the excess reserves do not exceed 0.6% of credit risk-weighted assets, which differs from the Standardized Approach in which the allowance for credit losses is eligible for inclusion in Tier 2 Capital up to 1.25% of credit risk-weighted assets, with any excess allowance for credit losses being deducted in arriving at credit risk-weighted assets.
- (2) As of December 31, 2016 and December 31, 2015, Citi's Common Equity Tier 1 Capital, Tier 1 Capital, and Total Capital ratios were the lower derived under the Basel III Advanced Approaches framework.
- (3) Citi's Basel III capital ratios and related components, on a fully implemented basis, are non-GAAP financial measures. Citi believes these ratios and the related components provide useful information to investors and others by measuring Citi's progress against future regulatory capital standards.
- (4) Tier 1 Leverage ratio denominator.
- (5) Supplementary Leverage ratio denominator.

Common Equity Tier 1 Capital Ratio

Citi's Common Equity Tier 1 Capital ratio was 12.6% at December 31, 2016, compared to 12.6% at September 30, 2016 and 12.1% at December 31, 2015 (all based on application of the Advanced Approaches for determining total risk-weighted assets). The ratio remained unchanged quarter-over-quarter, as quarterly net income of \$3.6 billion and a decline in total risk-weighted assets were offset by the return of approximately \$4.7 billion of capital to common

shareholders and movements in AOCI. The increase in Citi's Common Equity Tier 1 Capital ratio from year-end 2015 reflected continued growth in Common Equity Tier 1 Capital resulting from net income of \$14.9 billion and the favorable effects attributable to DTA utilization of approximately \$1.2 billion, offset in part by the return of approximately \$10.7 billion of capital to common shareholders.

Components of Citigroup Capital Under Basel III (Advanced Approaches with Full Implementation)

<i>In millions of dollars</i>	December 31, 2016	December 31, 2015
Common Equity Tier 1 Capital		
Citigroup common stockholders' equity ⁽¹⁾	\$ 206,051	\$ 205,286
Add: Qualifying noncontrolling interests	129	145
Regulatory Capital Adjustments and Deductions:		
Less: Accumulated net unrealized losses on cash flow hedges, net of tax ⁽²⁾	(560)	(617)
Less: Cumulative unrealized net gain (loss) related to changes in fair value of financial liabilities attributable to own creditworthiness, net of tax ⁽³⁾	(61)	441
Less: Intangible assets:		
Goodwill, net of related DTLs ⁽⁴⁾	20,858	21,980
Identifiable intangible assets other than MSRs, net of related DTLs ⁽⁵⁾	4,876	3,586
Less: Defined benefit pension plan net assets	857	794
Less: DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards ⁽⁶⁾	21,337	23,659
Less: Excess over 10%/15% limitations for other DTAs, certain common stock investments, and MSRs ⁽⁶⁾⁽⁷⁾	9,357	8,723
Total Common Equity Tier 1 Capital	\$ 149,516	\$ 146,865
Additional Tier 1 Capital		
Qualifying perpetual preferred stock ⁽¹⁾	\$ 19,069	\$ 16,571
Qualifying trust preferred securities ⁽⁸⁾	1,371	1,365
Qualifying noncontrolling interests	28	31
Regulatory Capital Deductions:		
Less: Permitted ownership interests in covered funds ⁽⁹⁾	533	567
Less: Minimum regulatory capital requirements of insurance underwriting subsidiaries ⁽¹⁰⁾	61	229
Total Additional Tier 1 Capital	\$ 19,874	\$ 17,171
Total Tier 1 Capital (Common Equity Tier 1 Capital + Additional Tier 1 Capital)	\$ 169,390	\$ 164,036
Tier 2 Capital		
Qualifying subordinated debt	\$ 22,818	\$ 20,744
Qualifying trust preferred securities ⁽¹¹⁾	317	342
Qualifying noncontrolling interests	36	41
Excess of eligible credit reserves over expected credit losses ⁽¹²⁾	660	1,163
Regulatory Capital Deduction:		
Less: Minimum regulatory capital requirements of insurance underwriting subsidiaries ⁽¹⁰⁾	61	229
Total Tier 2 Capital	\$ 23,770	\$ 22,061
Total Capital (Tier 1 Capital + Tier 2 Capital)⁽¹³⁾	\$ 193,160	\$ 186,097

(1) Issuance costs of \$184 million and \$147 million related to preferred stock outstanding at December 31, 2016 and December 31, 2015, respectively, are excluded from common stockholders' equity and netted against preferred stock in accordance with Federal Reserve Board regulatory reporting requirements, which differ from those under U.S. GAAP.

(2) Common Equity Tier 1 Capital is adjusted for accumulated net unrealized gains (losses) on cash flow hedges included in AOCI that relate to the hedging of items not recognized at fair value on the balance sheet.

(3) The cumulative impact of changes in Citigroup's own creditworthiness in valuing liabilities for which the fair value option has been elected and own-credit valuation adjustments on derivatives are excluded from Common Equity Tier 1 Capital, in accordance with the U.S. Basel III rules.

- (4) Includes goodwill “embedded” in the valuation of significant common stock investments in unconsolidated financial institutions.
- (5) Identifiable intangible assets other than MSRs increased by approximately \$2.2 billion as a result of the acquisition of the Costco cards portfolio, as well as the renewal and extension of the co-branded credit card program agreement with American Airlines. For additional information, see Note 16 to the Consolidated Financial Statements.
- (6) Of Citi’s approximately \$46.7 billion of net DTAs at December 31, 2016, approximately \$17.4 billion were includable in Common Equity Tier 1 Capital pursuant to the U.S. Basel III rules, while approximately \$29.3 billion were excluded. Excluded from Citi’s Common Equity Tier 1 Capital as of December 31, 2016 was a total of approximately \$30.7 billion of net DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards as well as temporary differences, reduced by approximately \$1.4 billion of net DTLs primarily associated with goodwill and certain other intangible assets. Separately, under the U.S. Basel III rules, goodwill and these other intangible assets are deducted net of associated DTLs in arriving at Common Equity Tier 1 Capital. DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards are required to be fully deducted from Common Equity Tier 1 Capital under full implementation of the U.S. Basel III rules; whereas DTAs arising from temporary differences are deducted from Common Equity Tier 1 Capital if in excess of 10%/15% limitations (see note below).
- (7) Assets subject to 10%/15% limitations include MSRs, DTAs arising from temporary differences and significant common stock investments in unconsolidated financial institutions. At December 31, 2016, and December 31, 2015, this deduction related only to DTAs arising from temporary differences that exceeded the 10% limitation. Accordingly, approximately \$9.4 billion of DTAs arising from temporary differences were excluded from Citi’s Common Equity Tier 1 Capital as of December 31, 2016. Changes to the U.S. corporate tax regime that impact the value of Citi’s DTAs arising from temporary differences, which exceed the then current amount deducted from Citi’s Common Equity Tier 1 Capital, would further reduce Citi’s regulatory capital to the extent of such excess after tax (for additional discussion on potential U.S. corporate tax reform, see “Risk Factors—Strategic Risks” below).
- (8) Represents Citigroup Capital XIII trust preferred securities, which are permanently grandfathered as Tier 1 Capital under the U.S. Basel III rules.
- (9) Effective July 2015, banking entities were required to be in compliance with the Volcker Rule of the Dodd-Frank Act that prohibits conducting certain proprietary investment activities and limits their ownership of, and relationships with, covered funds. Accordingly, Citi is required by the Volcker Rule to deduct from Tier 1 Capital all permitted ownership interests in covered funds that were acquired after December 31, 2013.
- (10) 50% of the minimum regulatory capital requirements of insurance underwriting subsidiaries must be deducted from each of Tier 1 Capital and Tier 2 Capital.
- (11) Represents the amount of non-grandfathered trust preferred securities eligible for inclusion in Tier 2 Capital under the U.S. Basel III rules, which will be fully phased-out of Tier 2 Capital by January 1, 2022.
- (12) Advanced Approaches banking organizations are permitted to include in Tier 2 Capital eligible credit reserves that exceed expected credit losses to the extent that the excess reserves do not exceed 0.6% of credit risk-weighted assets.
- (13) Total Capital as calculated under Advanced Approaches, which differs from the Standardized Approach in the treatment of the amount of eligible credit reserves includable in Tier 2 Capital.

Citigroup Capital Rollforward Under Basel III (Advanced Approaches with Full Implementation)

<i>In millions of dollars</i>	Three months ended December 31, 2016	Twelve months ended December 31, 2016
Common Equity Tier 1 Capital		
Balance, beginning of period	\$ 155,132	\$ 146,865
Net income	3,573	14,912
Common and preferred stock dividends declared	(774)	(2,291)
Net increase in treasury stock	(4,232)	(8,624)
Net change in common stock and additional paid-in capital ⁽¹⁾	166	(210)
Net increase in foreign currency translation adjustment net of hedges, net of tax	(2,529)	(2,802)
Net change in unrealized losses on securities AFS, net of tax	(2,421)	108
Net change in defined benefit plans liability adjustment, net of tax	432	(48)
Net change in adjustment related to changes in fair value of financial liabilities attributable to own creditworthiness, net of tax	54	165
Net decrease in goodwill, net of related DTLs	905	1,122
Net change in identifiable intangible assets other than MSRs, net of related DTLs	301	(1,290)
Net change in defined benefit pension plan net assets	34	(63)
Net decrease in DTAs arising from net operating loss, foreign tax credit and general business	1,166	2,322
Net increase in excess over 10%/15% limitations for other DTAs, certain common stock investments and MSRs	(2,280)	(634)
Other	(11)	(16)
Net change in Common Equity Tier 1 Capital	\$ (5,616)	\$ 2,651
Common Equity Tier 1 Capital Balance, end of period	\$ 149,516	\$ 149,516
Additional Tier 1 Capital		
Balance, beginning of period	\$ 19,493	\$ 17,171
Net increase in qualifying perpetual preferred stock ⁽¹⁾	—	2,498
Net increase in qualifying trust preferred securities	3	6
Net increase in permitted ownership interests in covered funds	256	34
Other	122	165
Net increase in Additional Tier 1 Capital	\$ 381	\$ 2,703
Tier 1 Capital Balance, end of period	\$ 169,390	\$ 169,390
Tier 2 Capital		
Balance, beginning of period	\$ 24,893	\$ 22,061
Net change in qualifying subordinated debt	(883)	2,074
Net decrease in excess of eligible credit reserves over expected credit losses	(351)	(503)
Other	111	138
Net change in Tier 2 Capital	\$ (1,123)	\$ 1,709
Tier 2 Capital Balance, end of period	\$ 23,770	\$ 23,770
Total Capital (Tier 1 Capital + Tier 2 Capital)	\$ 193,160	\$ 193,160

- (1) During the twelve months ended December 31, 2016, Citi issued approximately \$2.5 billion of qualifying perpetual preferred stock with issuance costs of \$37 million. In accordance with Federal Reserve Board regulatory reporting requirements, which differ from those under U.S. GAAP, such issuance costs are excluded from common stockholders' equity and netted against preferred stock.

Citigroup Risk-Weighted Assets Under Basel III (Full Implementation) at December 31, 2016

<i>In millions of dollars</i>	Advanced Approaches			Standardized Approach		
	Citicorp	Citi Holdings	Total	Citicorp	Citi Holdings	Total
Credit Risk	\$ 742,330	\$ 54,069	\$ 796,399	\$ 1,030,127	\$ 53,301	\$ 1,083,428
Market Risk	62,889	1,117	64,006	63,275	1,253	64,528
Operational Risk	280,196	49,079	329,275	—	—	—
Total Risk-Weighted Assets	\$ 1,085,415	\$ 104,265	\$ 1,189,680	\$ 1,093,402	\$ 54,554	\$ 1,147,956

Citigroup Risk-Weighted Assets Under Basel III (Full Implementation) at December 31, 2015

<i>In millions of dollars</i>	Advanced Approaches			Standardized Approach		
	Citicorp	Citi Holdings	Total	Citicorp	Citi Holdings	Total
Credit Risk	\$ 731,515	\$ 84,945	\$ 816,460	\$ 1,008,951	\$ 78,748	\$ 1,087,699
Market Risk	70,701	4,116	74,817	71,015	4,170	75,185
Operational Risk	275,921	49,079	325,000	—	—	—
Total Risk-Weighted Assets	\$ 1,078,137	\$ 138,140	\$ 1,216,277	\$ 1,079,966	\$ 82,918	\$ 1,162,884

Total risk-weighted assets under both the Basel III Advanced Approaches and the Standardized Approach declined from year-end 2015 due to decreases in credit and market risk-weighted assets. The decline in total risk-weighted assets under the Basel III Advanced Approaches was partially offset by an increase in operational risk-weighted assets primarily due to the implementation of certain enhancements to Citi's Advanced Measurement Approaches model during the third quarter of 2016.

The decline in credit risk-weighted assets was mainly attributable to residential mortgage loan sales and repayments and divestitures of certain Citi Holdings portfolios, partially offset by the acquisition of the Costco cards portfolio and increases in OTC derivative exposures due to increased volatility and trade volume. Model enhancements impacting OTC derivatives and derivatives CVA further offset the decline in credit risk-weighted assets under the Basel III Advanced Approaches.

The decline in market risk-weighted assets was primarily due to decreases in positions subject to Stressed Value at Risk and securitization charges.

Citigroup Risk-Weighted Assets Rollforward (Basel III Advanced Approaches with Full Implementation)

<i>In millions of dollars</i>	Three months ended December 31, 2016	Twelve months ended December 31, 2016
Total Risk-Weighted Assets, beginning of period	\$ 1,228,283	\$ 1,216,277
Changes in Credit Risk-Weighted Assets		
Net decrease in retail exposures ⁽¹⁾	(5,358)	(20,018)
Net decrease in wholesale exposures ⁽²⁾	(5,455)	(5,977)
Net change in repo-style transactions ⁽³⁾	433	(2,927)
Net decrease in securitization exposures ⁽⁴⁾	(3,684)	(3,279)
Net decrease in equity exposures ⁽⁵⁾	(158)	(6,033)
Net change in OTC derivatives ⁽⁶⁾	(2,740)	4,801
Net change in derivatives CVA ⁽⁷⁾	(6,485)	10,567
Net increase in other exposures ⁽⁸⁾	722	4,539
Net decrease in supervisory 6% multiplier ⁽⁹⁾	(975)	(1,734)
Net decrease in Credit Risk-Weighted Assets	\$ (23,700)	\$ (20,061)
Changes in Market Risk-Weighted Assets		
Net decrease in risk levels ⁽¹⁰⁾	\$ (6,947)	\$ (6,533)
Net decrease due to model and methodology updates ⁽¹¹⁾	(117)	(4,278)
Net decrease in Market Risk-Weighted Assets	\$ (7,064)	\$ (10,811)
Net change in Operational Risk-Weighted Assets⁽¹²⁾	\$ (7,839)	\$ 4,275
Total Risk-Weighted Assets, end of period	\$ 1,189,680	\$ 1,189,680

- (1) Retail exposures decreased during the three and twelve months ended December 31, 2016 primarily due to residential mortgage loan sales and repayments, divestitures of certain Citi Holdings portfolios and the impact of FX translation. The decrease in retail exposures during the three months ended December 31, 2016 was partially offset by increases in qualifying revolving (cards) exposures attributable to seasonal holiday spending, whereas the decrease in retail exposures during the twelve months ended December 31, 2016 was partially offset by the acquisition of the Costco cards portfolio.
- (2) Wholesale exposures decreased during the three and twelve months ended December 31, 2016 primarily due to decreases in commercial loans, decreases in securities AFS and securities HTM, and the impact of FX translation. The decrease in wholesale exposures during the three months ended December 31, 2016 was partially offset by increases in loan commitments.
- (3) Repo-style transactions decreased during the twelve months ended December 31, 2016 primarily due to exposure decreases and model enhancements.
- (4) Securitization exposures decreased during the three and twelve months ended December 31, 2016 primarily due to sales and maturities of exposures.
- (5) Equity exposures decreased during the twelve months ended December 31, 2016 primarily due to the sale of Citi's investment in China Guangfa Bank.
- (6) OTC derivatives decreased during the three months ended December 31, 2016 primarily due to changes in fair value. OTC derivatives increased during the twelve months ended December 31, 2016 primarily driven by increased trade volume and model enhancements.
- (7) Derivatives CVA decreased during the three months ended December 31, 2016 primarily driven by exposure reduction and credit spread changes. Derivatives CVA increased during the twelve months ended December 31, 2016 primarily driven by increased volatility, trade volume and model enhancements.
- (8) Other exposures include cleared transactions, unsettled transactions, assets other than those reportable in specific exposure categories and non-material portfolios.
- (9) Supervisory 6% multiplier does not apply to derivatives CVA.
- (10) Risk levels decreased during the three months ended December 31, 2016 primarily due to reductions in risk and exposures subject to Stressed Value at Risk and a reduction in positions subject to standard specific risk charges, partially offset by an increase in exposures subject to comprehensive risk. Risk levels decreased during the twelve months ended December 31, 2016 primarily due to reductions in risk and exposures subject to Stressed Value at Risk and a reduction in positions subject to securitization charges, partially offset by an increase in positions subject to standard specific risk charges.
- (11) Risk-weighted assets declined during the three and twelve months ended December 31, 2016 due to changes in model inputs regarding volatility and the correlation between market risk factors.
- (12) Operational risk-weighted assets decreased during the three months ended December 31, 2016 primarily driven by routine quarterly updates to model parameters. Operational risk-weighted assets increased during the twelve months ended December 31, 2016 primarily due to the implementation of certain enhancements to Citi's Advanced Measurement Approaches model in the third quarter of 2016, partially offset by routine quarterly updates to model parameters.

Supplementary Leverage Ratio

Citigroup's Supplementary Leverage ratio was 7.2% for the fourth quarter of 2016, compared to 7.4% for the third quarter of 2016 and 7.1% for the fourth quarter of 2015. The decline in the ratio quarter-over-quarter was principally driven by a decrease in Tier 1 Capital largely attributable to the return of approximately \$4.7 billion of capital to common shareholders and movements in AOCI, offset in part by quarterly net income of \$3.6 billion and a decrease in Total Leverage Exposure. The growth in the ratio from the fourth quarter of 2015 was largely attributable to additional

Tier 1 Capital resulting from annual net income of \$14.9 billion and approximately \$2.5 billion (net of issuance costs) of noncumulative perpetual preferred stock issuances, offset in part by the return of approximately \$10.7 billion of capital to common shareholders and movements in AOCI.

The following table sets forth Citi's Supplementary Leverage ratio and related components, assuming full implementation under the U.S. Basel III rules, for the three months ended December 31, 2016 and December 31, 2015.

Citigroup Basel III Supplementary Leverage Ratio and Related Components (Full Implementation)

<i>In millions of dollars, except ratios</i>	December 31, 2016	December 31, 2015
Tier 1 Capital	\$ 169,390	\$ 164,036
Total Leverage Exposure (TLE)		
On-balance sheet assets ⁽¹⁾	\$ 1,819,802	\$ 1,784,248
Certain off-balance sheet exposures:⁽²⁾		
Potential future exposure (PFE) on derivative contracts	211,009	206,128
Effective notional of sold credit derivatives, net ⁽³⁾	64,366	76,923
Counterparty credit risk for repo-style transactions ⁽⁴⁾	22,002	25,939
Unconditionally cancelable commitments	66,663	58,699
Other off-balance sheet exposures	219,428	225,450
Total of certain off-balance sheet exposures	\$ 583,468	\$ 593,139
Less: Tier 1 Capital deductions	57,879	59,538
Total Leverage Exposure	\$ 2,345,391	\$ 2,317,849
Supplementary Leverage ratio	7.22%	7.08%

(1) Represents the daily average of on-balance sheet assets for the quarter.

(2) Represents the average of certain off-balance sheet exposures calculated as of the last day of each month in the quarter.

(3) Under the U.S. Basel III rules, banking organizations are required to include in TLE the effective notional amount of sold credit derivatives, with netting of exposures permitted if certain conditions are met.

(4) Repo-style transactions include repurchase or reverse repurchase transactions and securities borrowing or securities lending transactions.

Citibank's Supplementary Leverage ratio, assuming full implementation under the U.S. Basel III rules, was 6.6% for the fourth quarter of 2016, compared to 6.8% for the third quarter of 2016 and 6.7% for the fourth quarter of 2015. The ratio decreased quarter-over-quarter, as the benefits associated with quarterly net income of \$3.4 billion and a net decrease in Total Leverage Exposure were more than offset by movements in AOCI, as well as cash dividends paid by Citibank to its parent, Citicorp, and which were subsequently remitted to Citigroup. The ratio declined slightly from the fourth quarter of 2015, as the positive effect attributable to net income of \$12.8 billion was more than offset by an overall increase in Total Leverage Exposure, as well as cash dividends paid by Citibank to its parent, Citicorp, and which were subsequently remitted to Citigroup.

Regulatory Capital Standards Developments

The Basel Committee on Banking Supervision (Basel Committee) set forth a robust 2016 rulemaking agenda, comprised not only of rules designed to provide further clarification, modification or enhancement to the Basel III capital framework, but also, and more importantly, rules which would substantially revise the methodologies, including the imposition of certain constraints on the use of models, to be employed in the derivation of credit, market and operational risk-weighted assets.

Reducing Variation in Credit Risk-Weighted Assets

The Basel Committee has issued a series of consultative documents related to the derivation of credit risk-weighted assets, all of which are generally aimed at reducing complexity and promoting comparability between banking organizations. Two of the most significant proposals include a December 2015 consultative document that would revise the Standardized Approach, and another consultative document issued in March 2016 that would place constraints on the use of internal ratings-based (IRB) approaches.

The Basel Committee's December 2015 consultative document would, in part, revise the Standardized Approach in measuring credit risk-weighted assets with respect to certain on-balance sheet assets, such as in relation to the risk-weighted methodologies employed with respect to bank, corporate, and real estate (both residential and commercial) exposures; the treatment of off-balance sheet commitments; and aspects of the credit risk mitigation framework. Moreover, the proposal would permit the use of external credit ratings combined with due diligence requirements in the calculation of credit risk-weighted assets for exposures to banks and corporates, while also providing alternative approaches for jurisdictions that do not allow the use of external credit ratings for risk-based capital purposes, such as the U.S.

The Basel Committee's March 2016 consultative document proposes revisions to the IRB approaches, in part, by prohibiting the use of such approaches for certain so-called "low default" exposures, including those to banks and other financial institutions, as well as large corporations. Moreover, the proposal also prohibits the use of the IRB approaches for equity exposures in the banking book. Additionally, for other exposures where the IRB approaches would still be permissible, the proposal establishes floors by exposure type regarding the estimation of certain model parameters used in the derivation of credit risk-weighted assets, and also provides greater specification as to permissible parameter estimation practices under the IRB approaches. Finally, the proposal indicates that the Basel Committee is considering whether to impose an aggregate capital floor which would be calibrated in the range of 60 - 90% of total risk-weighted assets as calculated under the Basel Committee's Standardized Approach.

Revised Minimum Capital Requirements for Market Risk

In January 2016, the Basel Committee issued a final rule which sets forth a revised market risk capital framework, resulting from the so-called "fundamental review of the trading book" and four quantitative impact studies over several years.

The final rule establishes a revised boundary between the trading book and banking book which, in part, provides more prescriptive guidance as to qualifying trading book positions as well as imposes heightened restrictions and, in certain instances, additional capital charges, on the transfer of positions between the trading book and banking book. Moreover, the final rule also revises both the internal models approach and the standardized approach in certain respects.

If the U.S. banking agencies were to adopt the Basel Committee's final rule unchanged, Citi believes its market risk-weighted assets could increase significantly. However, as set forth in the tables above, Citi's market risk-weighted assets constituted approximately 5% of its total risk-weighted assets. Accordingly, Citi currently believes that the overall impact to its total risk-weighted assets, and thus its risk-based capital ratios, would not be material.

Standardized Measurement Approach for Operational Risk

In March 2016, the Basel Committee issued a consultative document which proposes revisions to the operational risk capital framework applicable to the Advanced Approaches for calculating risk-weighted assets. The consultative document introduces the Standardized Measurement Approach (SMA).

Operational risk capital is derived under the SMA through the combination of two components, a so-called "Business Indicator Component" and a "Loss Component". The Business Indicator component, primarily reflective of various income statement elements (i.e., a modified gross income indicator), is calculated as the sum of the three year average of its components. The Loss Component reflects the operational loss exposure of a banking organization that can be inferred from internal loss experience, and is based on a 10 year average.

If the U.S. banking agencies were to adopt the Basel Committee's proposal unchanged, Citi's operational risk-weighted assets could increase significantly.

Revisions to the Basel III Leverage Ratio Framework

In April 2016, the Basel Committee issued a consultative document which proposes certain revisions as to the design and calibration of the Basel III leverage ratio (similar to the U.S. Basel III Supplementary Leverage ratio). Among the proposed revisions are those with respect to the exposure measure (i.e., the denominator of the ratio) in relation to the treatment of derivative exposures, provisions, and off-balance sheet exposures.

Revisions to the Definition of Regulatory Capital

In October 2016, the Basel Committee issued a consultative document and a discussion paper related to the regulatory treatment of accounting provisions under the Basel III regulatory capital framework. Both the International Accounting Standards Board and more recently the U.S. Financial Accounting Standards Board issued new accounting pronouncements related to impairment of financial assets that require the use of expected credit loss models rather than incurred loss models. Measuring impairment using expected credit loss models may result in higher accounting provisions and consequently increased volatility in regulatory capital.

Separately, in October 2016, the Basel Committee issued a final rule which amends the Basel III definition of regulatory capital to include a Tier 2 Capital deduction for investments by an internationally active bank (both GSIBs and non-GSIBs) in Total Loss-Absorbing Capacity (TLAC) and certain other debt instruments issued by GSIBs that do not otherwise qualify as regulatory capital (i.e., TLAC holdings). Under the final rule, a Tier 2 Capital deduction is required under certain circumstances for investments in TLAC holdings which exceed certain thresholds, based on Common Equity Tier 1 Capital, as adjusted. Moreover, the final rule clarifies that any Common Equity Tier 1 Capital that is being used to meet the TLAC requirement cannot also be used to meet the regulatory capital buffers, including the GSIB surcharge.

In December 2016, the Federal Reserve Board released a final rule which, among other matters, imposes a minimum TLAC requirement on U.S. GSIBs. The U.S. Basel III treatment of TLAC holdings, however, was deferred. In this regard, the Federal Reserve Board indicated that it intends to address the regulatory capital treatment for investments in, or exposure to, unsecured debt instruments issued by U.S. GSIBs jointly with the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation at a later time, so as to ensure that these requirements are consistently applied to all banking organizations subject to the regulatory capital requirements of the U.S. banking agencies. For additional information regarding the Federal Reserve Board's final rule, see "Risk Factors—Strategic Risks" and "Managing Global Risk—Liquidity Risk—Long-Term Debt—Total Loss-Absorbing Capacity (TLAC)" below.

Interest Rate Risk in the Banking Book

In April 2016, the Basel Committee issued a final rule which sets forth revised principles regarding the supervisory review process over a bank's management of interest rate risk in the banking book (IRRBB), as well as the methods expected to be used by banks for the measurement, monitoring and control of IRRBB. Moreover, the final rule establishes qualitative and quantitative public disclosure requirements for IRRBB. The final rule is applicable to large, internationally active banking organizations, and is expected to be implemented by 2018.

2017 Implications and Beyond

Despite the proliferation of proposed new rules by the Basel Committee during 2016, substantial uncertainty remains with respect to the eventual nature, extent and timing of future changes to the Basel III capital framework, both internationally as well as from a U.S. rulemaking perspective.

In January 2017, the Group of Central Bank Governors and Heads of Supervision (GHOS), the oversight body of the Basel Committee, postponed a meeting which was originally scheduled to review the Basel Committee's package of proposals. Concurrently, the Basel Committee publicly announced that it needed more time to calibrate and finalize its revised Basel III capital framework, and that it "expected to complete this work in the near future." Accordingly, these developments have introduced additional uncertainty, including whether international harmonization regarding a revised Basel III capital framework will ultimately be realized.

Further, the potential exists for other changes with respect to rulemaking activities in the U.S., given the new presidential administration and Congress.

Tangible Common Equity, Tangible Book Value Per Share, Book Value Per Share and Returns on Equity

Tangible common equity (TCE), as defined by Citi, represents common equity less goodwill and other intangible assets (other than MSRs). Other companies may calculate TCE in a different manner. TCE, tangible book value per share and returns on average TCE are non-GAAP financial measures. Citi believes these capital metrics provide useful information, as they are used by investors and industry analysts.

<i>In millions of dollars or shares, except per share amounts</i>	December 31, 2016	December 31, 2015
Total Citigroup stockholders' equity	\$ 225,120	\$ 221,857
Less: Preferred stock	19,253	16,718
Common stockholders' equity	\$ 205,867	\$ 205,139
Less:		
Goodwill	21,659	22,349
Intangible assets (other than MSRs) ⁽¹⁾	5,114	3,721
Goodwill and intangible assets (other than MSRs) related to assets held-for-sale	72	68
Tangible common equity (TCE)	\$ 179,022	\$ 179,001
Common shares outstanding (CSO)	2,772.4	2,953.3
Book value per share (common equity/CSO)	\$ 74.26	\$ 69.46
Tangible book value per share (TCE/CSO)	64.57	60.61

<i>In millions of dollars</i>	Year ended December 31, 2016	Year ended December 31, 2015
Net income less preferred dividends	\$ 13,835	\$ 16,473
Average common stockholders' equity	\$ 209,629	\$ 204,188
Average TCE	\$ 182,135	\$ 176,505
Less: Average net DTAs excluded from Common Equity Tier 1 Capital ⁽²⁾	29,013	31,986
Average TCE, excluding net DTAs excluded from Common Equity Tier 1 Capital	\$ 153,122	\$ 144,519
Return on average common stockholders' equity	6.6%	8.1%
Return on average TCE	7.6%	9.3%
Return on average TCE, excluding net DTAs excluded from Common Equity Tier 1 Capital	9.0%	11.4%

(1) Identifiable intangible assets (other than MSRs) increased by approximately \$2.2 billion as a result of the acquisition of the Costco cards portfolio, as well as the renewal and extension of the co-branded credit card program agreement with American Airlines. For additional information, see Note 16 to the Consolidated Financial Statements.

(2) Represents average net DTAs excluded in arriving at Common Equity Tier 1 Capital under full implementation of the U.S. Basel III rules. The average is based upon quarter-end amounts over the most recent five quarters through December 31, 2016 and 2015, respectively.

RISK FACTORS

The following discussion sets forth what management currently believes could be the most significant risks and uncertainties that could impact Citi's businesses, results of operations and financial condition. Other risks and uncertainties, including those not currently known to Citi or its management, could also negatively impact Citi's businesses, results of operations and financial condition. Thus, the following should not be considered a complete discussion of all of the risks and uncertainties Citi may face.

STRATEGIC RISKS

Citi's Inability to Address the Shortcomings Identified by the Federal Reserve Board and FDIC as a Result of the Agencies' Review of Citi's 2015 Resolution Plan Submission and the 2017 Resolution Plan Guidance Could Subject Citi to More Stringent Capital, Leverage or Liquidity Requirements, or Restrictions on Its Growth, Activities or Operations, and Could Eventually Require Citi to Divest Assets or Operations.

Title I of the Dodd-Frank Act requires Citi annually to prepare and submit a plan to the Federal Reserve Board and the FDIC for the orderly resolution of Citigroup (the bank holding company) and its significant legal entities, under the U.S. Bankruptcy Code in the event of future material financial distress or failure (Resolution Plan). Citi's next Resolution Plan submission is due by July 1, 2017.

In April 2016, the Federal Reserve Board and the FDIC notified Citi of certain "shortcomings" (as opposed to "deficiencies") they had jointly identified in Citi's 2015 Resolution Plan which Citi is required to address in its 2017 Resolution Plan submission. The shortcomings related to (i) governance mechanisms, including the lack of detail regarding Citi's entry into resolution, specific actions to be taken at each stage surrounding Citi's entry into resolution and a more robust analysis of potential challenges to Citi's provision of capital and liquidity support to its subsidiaries prior to entry into resolution as well as mitigants to those challenges; (ii) certain of Citi's assumptions regarding its ability to successfully wind down its derivatives portfolios under its Resolution Plan; and (iii) Citi's approach to estimating the minimum operating liquidity for its key operating subsidiaries and the minimum amount of liquidity needed for daily operations of such subsidiaries during resolution.

In addition, also in April 2016, the Federal Reserve Board and FDIC issued guidance for 2017 Resolution Plan submissions (2017 Guidance). The 2017 Guidance sets forth regulatory expectations for 2017 Resolution Plans across numerous areas, including (i) capital; (ii) liquidity; (iii) governance mechanisms; (iv) operational matters such as management information systems and payment and clearing activities; (v) legal entity rationalization and separability; and (vi) derivatives and trading activities. Citi must also address the 2017 Guidance in its 2017 Resolution Plan submission. For additional information on certain actions Citi currently expects to take in connection with its 2017 Resolution Plan submission, see "Liquidity Risk—Resolution Plan" below.

Under Title I, if the Federal Reserve Board and the FDIC jointly determine that Citi's Resolution Plan is not "credible" (which, although not defined, is generally believed to mean the regulators do not believe the plan is feasible or would otherwise allow the regulators to resolve Citi in a way that protects systemically important functions without severe systemic disruption), or would not facilitate an orderly resolution of Citi under the U.S. Bankruptcy Code, and Citi fails to resubmit a resolution plan that remedies any identified deficiencies, Citi could be subjected to more stringent capital, leverage or liquidity requirements, or restrictions on its growth, activities or operations. If within two years from the imposition of any requirements or restrictions Citi has still not remediated any identified deficiencies, then Citi could eventually be required to divest certain assets or operations. Any such restrictions or actions would negatively impact Citi's reputation, market and investor perception, operations and strategy.

Citi's Ability to Return Capital to Shareholders Substantially Depends on the CCAR Process and the Results of Regulatory Stress Tests.

In addition to Board of Director approval, any decision by Citi to return capital to shareholders, whether through its common stock dividend or through a share repurchase program, substantially depends on regulatory approval, including through the CCAR process required by the Federal Reserve Board and the supervisory stress tests required under the Dodd-Frank Act.

Citi's ability to accurately predict, interpret or explain to stakeholders the outcome of the CCAR process, and thus address any such market or investor perceptions, is difficult as the Federal Reserve Board's assessment of Citi's capital adequacy is conducted using the Board's proprietary stress test models, as well as a number of qualitative factors, including a detailed assessment of Citi's "capital adequacy process," as defined by the Board. The Federal Reserve Board has stated that it expects leading capital adequacy practices will continue to evolve and will likely be determined by the Board each year as a result of its cross-firm review of capital plan submissions. Similarly, the Federal Reserve Board has indicated that, as part of its stated goal to continually evolve its annual stress testing requirements, several parameters of the annual stress testing process may be altered from time to time, including the severity of the stress test scenario, the Federal Reserve Board modeling of Citi's balance sheet and the addition of components deemed important by the Federal Reserve Board (e.g., additional macroprudential considerations such as funding and liquidity shocks).

Moreover, during the latter part of 2016, senior officials at the Federal Reserve Board indicated that the Board was considering integration of the annual stress testing requirements with ongoing regulatory capital requirements. While there has been no formal proposal from the Federal Reserve Board to date, changes to the stress testing regime being discussed, among others, include introduction of a firm-specific "stress capital buffer" (SCB) which would be equal to the maximum decline in a firm's Common Equity Tier 1 Capital ratio under a severely adverse scenario over a nine-

quarter CCAR measurement period, subject to a minimum requirement of 2.5%. Accordingly, a firm's SCB would change annually based on its stress test results in the prior year. Officials discussed the idea that the SCB would replace the capital conservation buffer in both the firm's ongoing regulatory capital requirements and as part of the floor for capital distributions in the CCAR process. Federal Reserve Board senior officials also noted that introduction of the SCB would have the effect of incorporating a firm's then-effective GSIB surcharge into its post-stress test minimum capital requirements, which the Board has previously indicated it is considering.

Although various uncertainties exist regarding the extent of, and the ultimate impact to Citi from, these changes to the Federal Reserve Board's stress testing and CCAR regimes, these changes would likely further increase the level of capital Citi must hold as part of the stress tests, thus potentially impacting the extent to which Citi is able to return capital to shareholders.

Citi, its Management and Businesses Must Continually Review, Analyze and Successfully Adapt to Ongoing Regulatory Uncertainties and Changes in the U.S. and Globally.

Despite the adoption of final regulations in numerous areas impacting Citi and its businesses over the past several years, Citi, its management and businesses continually face ongoing regulatory uncertainties and changes, both in the U.S. and globally. While the areas of ongoing regulatory uncertainties and changes facing Citi are too numerous to list completely, various examples include, but are not limited to: (i) uncertainties and potential changes arising from a new U.S. Presidential administration and Congress, including the potential modification or repeal of regulatory requirements enacted and implemented by Citi in recent years; (ii) potential changes to various aspects of the regulatory capital framework applicable to Citi (see the CCAR risk factor and "Capital Resources—Regulatory Capital Standards Developments" above); and (iii) the terms of and other uncertainties resulting from the U.K.'s vote to withdraw from the European Union (EU) (see the U.K. referendum risk factor below).

Ongoing regulatory uncertainties and changes make Citi's and its management's long-term business, balance sheet and budget planning difficult or subject to change. For example, the new U.S. Presidential administration has discussed various changes to certain regulatory requirements, which would require ongoing assessment by management as to the impact to Citi, its businesses and business planning. Business planning is required to be based on possible or proposed rules or outcomes, which can change dramatically upon finalization, or upon implementation or interpretive guidance from numerous regulatory bodies worldwide, and such guidance can change.

Moreover, U.S. and international regulatory initiatives have not always been undertaken or implemented on a coordinated basis, and areas of divergence have developed and continue to develop with respect to the scope, interpretation, timing, structure or approach, leading to inconsistent or even conflicting regulations, including within a single jurisdiction.

For example, during the latter part of 2016, the European Commission proposed to introduce a new requirement for major banking groups headquartered outside the EU (which would include Citi) to establish an intermediate EU holding company where the foreign bank has two or more institutions (broadly meaning banks, broker-dealers and similar financial firms) established in the EU. While the proposal mirrors an existing U.S. requirement for non-U.S. banking organizations to form U.S. intermediate holding companies, if adopted, it could lead to additional complexity with respect to Citi's resolution planning, capital and liquidity allocation and efficiency in various jurisdictions. Regulatory changes have also significantly increased Citi's compliance risks and costs (see "Operational Risks" below).

Uncertainties Arising as a Result of the Vote in the U.K. to Withdraw from the EU Could Negatively Impact Citi's Businesses, Results of Operations or Financial Condition.

As a result of a referendum held in June 2016, the U.K. elected to withdraw from the EU. The result of the referendum has raised numerous uncertainties, including as to when the U.K. may begin the official process of withdrawal (despite indications this may occur by the end of March 2017) and the commencement of negotiations with the EU regarding the withdrawal as well as the terms of the withdrawal.

Additional areas of uncertainty that could impact Citi include, among others: (i) whether Citi will need to make changes to its legal entity and booking model strategy and/or structure in both the U.K. and the EU based on the outcome of negotiations relating to the regulation of financial services; (ii) the potential impact of the withdrawal to the U.K. economy as well as more broadly throughout Europe; (iii) the potential impact to Citi's exposures to counterparties as a result of any macroeconomic slowdown; (iv) the impact of any withdrawal or the terms of the withdrawal on U.S. monetary policy, such as changes to interest rates; and (v) the potential impact to foreign exchange rates, particularly the Euro and the pound sterling, and the resulting impacts to Citi's results of operations or financial condition. These or other uncertainties arising from any U.K. decision to withdraw from the EU could negatively impact Citi's businesses, results of operations or financial condition.

The Value of Citi's DTAs Could Be Significantly Reduced if Corporate Tax Rates in the U.S. or Certain State, Local or Foreign Jurisdictions Decline or as a Result of Other Changes in the U.S. Corporate Tax System.

Over the past several years, there have been discussions regarding decreasing the U.S. federal corporate tax rate, and such discussions have taken on a new focus and prominence given the new U.S. presidential administration and Congress. Similar discussions have taken place in certain local, state and foreign jurisdictions.

While Citi may benefit on a prospective net income basis from any decrease in corporate tax rates, proposals being discussed currently—such as lowering the corporate tax rate or moving from a worldwide tax system to a territorial tax system—could result in a material decrease in the value of Citi's DTAs, which would also result in a material reduction to

Citi's net income during the period in which the change is enacted. Citi's regulatory capital could also be reduced if the decrease in the value of Citi's DTAs exceeds certain levels (for additional information on the potential impact to Citi's regulatory capital arising from U.S. corporate tax reform, see the notes to the tables regarding the components of Citi's regulatory capital under both current (transitional) and Basel III full implementation in "Capital Resources" above). Given the number of uncertainties relating to the ultimate form any corporate tax reform may take, it is not possible to quantify the potential negative impact to Citi's income or regulatory capital that could result from corporate tax reform.

Citi's Ability to Utilize Its DTAs, and Thus Reduce the Negative Impact of the DTAs on Citi's Regulatory Capital, Will Be Driven by Its Ability to Generate U.S. Taxable Income.

At December 31, 2016, Citi's net DTAs were approximately \$46.7 billion, of which approximately \$29.3 billion was excluded from Citi's Common Equity Tier 1 Capital, on a fully implemented basis, under the U.S. Basel III rules (for additional information, see "Capital Resources—Components of Citigroup Capital Under Basel III (Advanced Approaches with Full Implementation)" above). In addition, of the net DTAs as of year-end 2016, approximately \$14.2 billion related to foreign tax credit carry-forwards (FTCs). The carry-forward utilization period for FTCs is 10 years and represents the most time-sensitive component of Citi's DTAs. Of the FTCs at year-end 2016, approximately \$2.7 billion expire in 2018 and the remaining \$11.5 billion expire over the period of 2019-2025. Citi must utilize any FTCs generated in the then-current year tax return prior to utilizing any carry-forward FTCs.

The accounting treatment for realization of DTAs, including FTCs, is complex and requires significant judgment and estimates regarding future taxable earnings in the jurisdictions in which the DTAs arise and available tax planning strategies. Citi's ability to utilize its DTAs, including the FTC components, and thus use the capital supporting the DTAs for more productive purposes, will be dependent upon Citi's ability to generate U.S. taxable income in the relevant tax carry-forward periods. Failure to realize any portion of the DTAs would also have a corresponding negative impact on Citi's net income.

In addition, with regard to FTCs, utilization will be influenced by actions to optimize U.S. taxable earnings for the purpose of consuming the FTC carry-forward component of the DTAs prior to expiration. These FTC actions, however, may serve to increase the DTAs for other less time sensitive components. Moreover, tax return limitations on FTCs and general business credits that cause Citi to incur current tax expense, notwithstanding its tax carry-forward position, could impact the rate of overall DTA utilization. DTA utilization will also continue to be driven by movements in Citi's AOCI, which can be impacted by changes in interest rates and foreign exchange rates.

For additional information on Citi's DTAs, including the FTCs, see "Significant Accounting Policies and Significant

Estimates—Income Taxes" below and Note 9 to the Consolidated Financial Statements.

Citi's Interpretation or Application of the Extensive Tax Laws to Which It Is Subject Could Differ from Those of the Relevant Governmental Authorities, Which Could Result in the Payment of Additional Taxes, Penalties or Interest.

Citi is subject to the various tax laws of the U.S. and its states and municipalities, as well as the numerous foreign jurisdictions in which it operates. These tax laws are inherently complex and Citi must make judgments and interpretations about the application of these laws to its entities, operations and businesses. Citi's interpretations and application of the tax laws, including with respect to withholding tax obligations and stamp and other transactional taxes, could differ from that of the relevant governmental taxing authority, which could result in the payment of additional taxes, penalties or interest, which could be material.

Citi's Ongoing Investments in Its Businesses May Not Be as Successful as it Projects or Expects.

Citi continues to make targeted investments in its businesses, including in its global cards and wealth management businesses in *Global Consumer Banking* as well as in certain businesses in *Institutional Clients Group*. Citi also continues to invest in its technology systems to enhance its digital capabilities. In addition, during the latter part of 2016, Citi announced a more than \$1 billion investment in Citibanamex expected to be completed by 2020. Citi's investment strategy will likely continue to evolve and change as its business strategy and priorities change.

There is no guarantee that investments Citi has made, or may make, in its businesses or operations will be as productive or effective as Citi expects or at all. Further, Citi's ability to achieve its expected returns on its investments in part depends on factors which it cannot control, such as macroeconomic conditions, customer and client reactions, and ongoing regulatory changes, among others.

Citi Has Co-Branding and Private Label Credit Card Relationships with Various Retailers and Merchants and the Failure to Maintain These Relationships Could Have a Negative Impact on Citi's Results of Operations or Financial Condition.

Through its Citi-branded cards and Citi retail services credit card businesses, Citi has co-branding and private label relationships with various retailers and merchants globally in the ordinary course of business whereby Citi issues credit cards to customers of the retailers or merchants. Citi's co-branding and private label agreements provide for shared economics between the parties and generally have a fixed term. The five largest relationships constituted an aggregate of approximately 11% of Citi's revenues for 2016.

Competition among card issuers, including Citi, for these relationships is significant and it has become increasingly difficult in recent years to maintain such relationships on the same terms or at all. These relationships could also be negatively impacted due to, among other things, operational difficulties of the retailer or merchant, termination due to a

breach by Citi, the retailer or merchant of its responsibilities, or external factors, including bankruptcies, liquidations, restructurings, consolidations and other similar events. While various mitigating factors could be available to Citi if any of these events were to occur—such as by replacing the retailer or merchant or offering other card products—such events could negatively impact Citi’s results of operations or financial condition, including as a result of loss of revenues, impairment of purchased credit card relationships and contract related intangibles or other losses (for information on Citi’s credit card related intangibles generally, see Note 16 to the Consolidated Financial Statements).

Macroeconomic and Geopolitical Challenges Globally Could Have a Negative Impact on Citi’s Businesses and Results of Operations.

Citi has experienced, and could experience in the future, negative impacts to its businesses and results of operations as a result of macroeconomic and geopolitical challenges, uncertainties and volatility.

For example, energy and other commodity prices significantly deteriorated during the second half of 2015 and into 2016, which impacted various financial markets, countries and industries. The economic and fiscal situations of several European countries remain fragile, and concerns and uncertainties remain in Europe over the potential exit of additional countries from the EU. In addition, governmental fiscal and monetary actions, or expected actions, have impacted the volatilities of global financial markets, foreign exchange rates and capital flows among countries. Moreover, the new U.S. Presidential administration has indicated it may pursue protectionist trade and other policies, which could result in additional macroeconomic and/or geopolitical challenges, uncertainties and volatilities.

These and other global macroeconomic and geopolitical challenges, uncertainties and volatilities have negatively impacted, and could continue to negatively impact, Citi’s businesses, results of operations and financial condition, including its credit costs, revenues in its *Markets and securities services* and other businesses, and AOCI (which would in turn negatively impact Citi’s book and tangible book value).

Citi’s Presence in the Emerging Markets Subjects It to Various Risks as well as Increased Compliance and Regulatory Risks and Costs.

During 2016, emerging markets revenues accounted for approximately 36% of Citi’s total revenues (Citi generally defines emerging markets as countries in *Latin America*, Asia (other than Japan, Australia and New Zealand), Central and Eastern Europe, the Middle East and Africa).

Citi’s presence in the emerging markets subjects it to a number of risks, including sovereign volatility, political events, foreign exchange controls, limitations on foreign investment, sociopolitical instability (including from hyperinflation), fraud, nationalization or loss of licenses, business restrictions, sanctions or asset freezes, potential criminal charges, closure of branches or subsidiaries and confiscation of assets. For example, Citi operates in several countries that

have, or have had in the recent past, strict foreign exchange controls, such as Argentina and Venezuela, that limit its ability to convert local currency into U.S. dollars and/or transfer funds outside the country. In prior years, Citi has also discovered fraud in certain emerging markets in which it operates. Political turmoil and other instability have occurred in certain countries, such as in Russia, Ukraine and the Middle East, which have required management time and attention in prior years (e.g., monitoring the impact of sanctions on the Russian economy as well as Citi’s businesses and results of operations).

Citi’s emerging markets presence also increases its compliance and regulatory risks and costs. For example, Citi’s operations in emerging markets, including facilitating cross-border transactions on behalf of its clients, subject it to higher compliance risks under U.S. regulations primarily focused on various aspects of global corporate activities, such as anti-money-laundering regulations and the Foreign Corrupt Practices Act. These risks can be more acute in less developed markets and thus require substantial investment in compliance infrastructure or could result in a reduction in certain of Citi’s business activities. Any failure by Citi to comply with applicable U.S. regulations, as well as the regulations in the countries and markets in which it operates as a result of its global footprint, could result in fines, penalties, injunctions or other similar restrictions, any of which could negatively impact Citi’s results of operations and its reputation.

The Federal Reserve Board’s Recently Issued Final Total Loss-Absorbing Capacity Requirements Raise Uncertainties Regarding the Consequences of Noncompliance and the Potential Impact on Citi’s Estimates of its Eligible Debt.

Title II of the Dodd-Frank Act grants the FDIC the authority, under certain circumstances, to resolve systemically important financial institutions, including Citi. The FDIC has released a notice describing its preferred “single point of entry strategy” for such resolution, pursuant to which, generally, a bank holding company, such as Citigroup, would be placed into resolution, Citi’s operating subsidiaries would be recapitalized and remain outside of any resolution proceedings, and the shareholders and unsecured creditors of Citigroup—including unsecured long-term debt holders—would bear any losses resulting from Citi’s resolution.

Consistent with this strategy, on December 15, 2016, the Federal Reserve Board issued final rules requiring GSIBs, including Citi, to (i) issue and maintain minimum levels of external “total loss-absorbing capacity” (TLAC) and long-term debt (LTD), and (ii) adhere to various “clean holding company” requirements at the bank holding company level. For a summary of the final TLAC requirements, see “Liquidity Risk—Total Loss-Absorbing Capacity (TLAC)” below.

While the final TLAC rules addressed several areas of uncertainty arising from the proposed rules, uncertainties regarding certain key aspects of the recently-issued rules remain and will likely require additional clarification or interpretive guidance. First, the consequences of a breach of the external LTD requirement are not clear. Given that there is no “cure” period in the final rules, Citi could be required to issue additional external LTD above the minimum

requirements to ensure compliance. Similarly, the consequences of a breach of the clean holding company requirements are uncertain, and there is no cure period. Accordingly, Citi will need to determine if it should reduce its third party, non-contingent liabilities at the bank holding company level to well below the 5% cap required under the clean holding company requirements in order to avoid inadvertently breaching the 5% cap, particularly since certain of the liabilities at issue are outside of Citi's control.

In addition, the final rules introduced a new "anti-evasion" provision that authorizes the Federal Reserve Board to exclude from a bank holding company's outstanding external LTD any debt having certain features that would, in the Board's view, "significantly impair" the debt's ability to absorb losses. In effect, this provision could allow the Federal Reserve Board, after notice and opportunity for Citi to respond, to exclude certain LTD, such as certain customer-related debt, from Citi's reported external LTD. This could result in noncompliance with the required external LTD minimums, leading to the uncertainty described above, and negatively impact Citi's reputation in the market.

CREDIT RISKS

Concentrations of Risk Can Increase the Potential for Citi to Incur Significant Losses.

Concentrations of risk, particularly credit and market risk, can increase Citi's risk of significant losses. As of December 31, 2016, Citi's most significant concentration of credit risk was with the U.S. government and its agencies, which primarily results from trading assets and investments issued by the U.S. government and its agencies (for additional information, see Note 23 to the Consolidated Financial Statements). Citi also routinely executes a high volume of securities, trading, derivative and foreign exchange transactions with counterparties in the financial services industry, including banks, insurance companies, investment banks, governments, central banks and other financial institutions.

To the extent regulatory or market developments lead to increased centralization of trading activity through particular clearing houses, central agents, exchanges or other financial market utilities, Citi could also experience an increase in concentration of risk to these industries. These concentrations of risk as well as the risk of failure of a large counterparty, central counterparty clearing house or financial market utility could limit the effectiveness of Citi's hedging strategies and cause Citi to incur significant losses.

LIQUIDITY RISKS

The Maintenance of Adequate Liquidity and Funding Depends on Numerous Factors, Including Those Outside of Citi's Control, Such as Market Disruptions and Increases in Citi's Credit Spreads.

As a global financial institution, adequate liquidity and sources of funding are essential to Citi's businesses. Citi's liquidity and sources of funding can be significantly and negatively impacted by factors it cannot control, such as general disruptions in the financial markets, governmental

fiscal and monetary policies, regulatory changes or negative investor perceptions of Citi's creditworthiness.

In addition, Citi's costs to obtain and access deposits, secured funding and long-term unsecured funding are directly related to its credit spreads. Changes in credit spreads constantly occur and are market driven, including both external market factors and factors specific to Citi, and can be highly volatile. Citi's credit spreads may also be influenced by movements in the costs to purchasers of credit default swaps referenced to Citi's long-term debt, which are also impacted by these external and Citi-specific factors.

Moreover, Citi's ability to obtain funding may be impaired if other market participants are seeking to access the markets at the same time, or if market appetite is reduced, as is likely to occur in a liquidity or other market crisis. A sudden drop in market liquidity could also cause a temporary or more lengthy dislocation of underwriting and capital markets activity. In addition, clearing organizations, regulators, clients and financial institutions with which Citi interacts may exercise the right to require additional collateral based on these market perceptions or market conditions, which could further impair Citi's access to and cost of funding.

As a holding company, Citi relies on interest, dividends, distributions and other payments from its subsidiaries to fund dividends as well as to satisfy its debt and other obligations. Several of Citi's U.S. and non-U.S. subsidiaries are or may be subject to capital adequacy or other regulatory or contractual restrictions on their ability to provide such payments, including any local regulatory stress test requirements. Limitations on the payments that Citi receives from its subsidiaries could also impact its liquidity.

The Credit Rating Agencies Continuously Review the Credit Ratings of Citi and Certain of Its Subsidiaries, and Ratings Downgrades Could Have a Negative Impact on Citi's Funding and Liquidity Due to Reduced Funding Capacity and Increased Funding Costs, Including Derivatives Triggers That Could Require Cash Obligations or Collateral Requirements.

The credit rating agencies, such as Fitch, Moody's and S&P, continuously evaluate Citi and certain of its subsidiaries, and their ratings of Citi and its more significant subsidiaries' long-term/senior debt and short-term/commercial paper, as applicable, are based on a number of factors, including standalone financial strength, as well as factors not entirely within the control of Citi and its subsidiaries, such as the agencies' proprietary rating agency methodologies and assumptions and conditions affecting the financial services industry and markets generally.

Citi and its subsidiaries may not be able to maintain their current respective ratings. Ratings downgrades could negatively impact Citi's ability to access the capital markets and other sources of funds as well as the costs of those funds, and its ability to maintain certain deposits. A ratings downgrade could also have a negative impact on Citi's funding and liquidity due to reduced funding capacity, as well as the impact of derivative triggers, which could require Citi to meet cash obligations and collateral requirements. In addition, a ratings downgrade could also have a negative impact on

other funding sources, such as secured financing and other margined transactions for which there may be no explicit triggers, as well as on contractual provisions and other credit requirements of Citi's counterparties and clients, which may contain minimum ratings thresholds in order for Citi to hold third-party funds.

Moreover, credit ratings downgrades can have impacts, which may not be currently known to Citi or which are not possible to quantify. For example, some entities may have ratings limitations as to their permissible counterparties, of which Citi may or may not be aware. In addition, certain of Citi's corporate customers and trading counterparties, among other clients, could re-evaluate their business relationships with Citi and limit the trading of certain contracts or market instruments with Citi in response to ratings downgrades. Changes in customer and counterparty behavior could impact not only Citi's funding and liquidity but also the results of operations of certain Citi businesses. For additional information on the potential impact of a reduction in Citi's or Citibank's credit ratings, see "Managing Global Risk—Liquidity Risk" below.

OPERATIONAL RISKS

A Disruption of Citi's Operational Systems Could Negatively Impact Citi's Reputation, Customers, Clients, Businesses or Results of Operations and Financial Condition.

A significant portion of Citi's operations relies heavily on the secure processing, storage and transmission of confidential and other information as well as the monitoring of a large number of complex transactions on a minute-by-minute basis. For example, through its *Global Consumer Banking* and credit card and securities services businesses in *Institutional Clients Group*, Citi obtains and stores an extensive amount of personal and client-specific information for its retail, corporate and governmental customers and clients and must accurately record and reflect their extensive account transactions.

With the evolving proliferation of new technologies and the increasing use of the Internet, mobile devices and cloud technologies to conduct financial transactions, large, global financial institutions such as Citi have been, and will continue to be, subject to an increasing risk of operational disruption or cyber or information security incidents from these activities (for additional information on cybersecurity risk, see the discussion below). These incidents are unpredictable and can arise from numerous sources, not all of which are in Citi's control, including among others human error, fraud or malice on the part of employees, accidental technological failure, electrical or telecommunication outages, failures of computer servers or other similar damage to Citi's property or assets. These issues can also arise as a result of failures by third parties with which Citi does business such as failures by Internet, mobile technology, cloud service providers or other vendors to adequately safeguard their systems and prevent system disruptions or cyber attacks.

Such events could cause interruptions or malfunctions in the operations of Citi (such as the temporary loss of availability of Citi's online banking system or mobile banking platform), as well as the operations of its clients, customers or

other third parties. Given Citi's global footprint and the high volume of transactions processed by Citi, certain errors or actions may be repeated or compounded before they are discovered and rectified, which would further increase these costs and consequences. Any such events could also result in financial losses as well as misappropriation, corruption or loss of confidential and other information or assets, which could negatively impact Citi's reputation, customers, clients, businesses or results of operations and financial condition, perhaps significantly.

Citi's Computer Systems and Networks Have Been, and Will Continue to Be, Subject to an Increasing Risk of Continually Evolving Cybersecurity Risks Which Could Result in the Theft, Loss, Misuse or Disclosure of Confidential Client or Customer Information, Damage to Citi's Reputation, Additional Costs to Citi, Regulatory Penalties, Legal Exposure and Financial Losses.

Citi's computer systems, software and networks are subject to ongoing cyber incidents such as unauthorized access, loss or destruction of data (including confidential client information), account takeovers, unavailability of service, computer viruses or other malicious code, cyber attacks and other similar events.

These threats can arise from external parties, including criminal organizations, extremist parties and certain foreign state actors that engage in cyber activities. Third parties with which Citi does business, as well as retailers and other third parties with which Citi's customers do business, may also be sources of cybersecurity risks, particularly where activities of customers are beyond Citi's security and control systems. For example, Citi outsources certain functions, such as processing customer credit card transactions, uploading content on customer-facing websites, and developing software for new products and services. These relationships allow for the storage and processing of customer information by third-party hosting of or access to Citi websites, which could result in compromise or the potential to introduce vulnerable or malicious code, resulting in security breaches impacting Citi customers. Furthermore, because financial institutions are becoming increasingly interconnected with central agents, exchanges and clearing houses, including as a result of the derivatives reforms over the last few years, Citi has increased exposure to cyber attacks through third parties.

As further evidence of the increasing and potentially significant impact of cyber incidents, in recent years, several U.S. retailers and financial institutions and other multinational companies reported cyber incidents that compromised customer data, resulted in theft of funds or theft or destruction of corporate information or other assets. In addition, in prior years, the U.S. government as well as several multinational companies reported cyber incidents affecting their computer systems that resulted in the data of millions of customers and employees being compromised.

While Citi has not been materially impacted by these reported or other cyber incidents, Citi has been subject to other intentional cyber incidents from external sources over the last several years, including (i) denial of service attacks, which attempted to interrupt service to clients and customers; (ii)

data breaches, which obtained unauthorized access to customer account data; and (iii) malicious software attacks on client systems, which attempted to allow unauthorized entrance to Citi's systems under the guise of a client and the extraction of client data. While Citi's monitoring and protection services were able to detect and respond to the incidents targeting its systems before they became significant, they still resulted in limited losses in some instances as well as increases in expenditures to monitor against the threat of similar future cyber incidents. There can be no assurance that such cyber incidents will not occur again, and they could occur more frequently and on a more significant scale.

Further, although Citi devotes significant resources to implement, maintain, monitor and regularly upgrade its systems and networks with measures such as intrusion detection and prevention and firewalls to safeguard critical business applications, there is no guarantee that these measures or any other measures can provide absolute security. In addition, because the methods used to cause cyber attacks change frequently or, in some cases, are not recognized until launched, Citi may be unable to implement effective preventive measures or proactively address these methods until they are discovered. In addition, while Citi engages in certain actions to reduce the exposure resulting from outsourcing, such as performing onsite security control assessments and limiting third-party access to the least privileged level necessary to perform job functions, these actions cannot prevent all external cyber attacks, information breaches or similar losses.

Cyber incidents can result in the disclosure of personal, confidential or proprietary customer or client information, damage to Citi's reputation with its clients and the market, customer dissatisfaction, additional costs (including credit costs) to Citi (such as repairing systems, replacing customer payment cards or adding new personnel or protection technologies), regulatory penalties, exposure to litigation and other financial losses, including loss of funds, to both Citi and its clients and customers (for additional information on the potential impact from cyber incidents, see the operational systems risk factor above).

While Citi maintains insurance coverage that may, subject to policy terms and conditions including significant self-insured deductibles, cover certain aspects of cyber risks, such insurance coverage may be insufficient to cover all losses.

Incorrect Assumptions or Estimates in Citi's Financial Statements Could Cause Significant Unexpected Losses in the Future, and Changes to Financial Accounting and Reporting Standards or Interpretations Could Have a Material Impact on How Citi Records and Reports Its Financial Condition and Results of Operations.

Citi is required to use certain assumptions and estimates in preparing its financial statements under U.S. GAAP, including reserves related to litigation and regulatory exposures, valuation of DTAs, the estimate of the allowance for credit losses and the fair values of certain assets and liabilities, among other items. If Citi's assumptions or estimates underlying its financial statements are incorrect or differ from

actual future events, Citi could experience unexpected losses, some of which could be significant.

The Financial Accounting Standards Board (FASB) has issued several financial accounting and reporting standards that will govern key aspects of Citi's financial statements or interpretations thereof when those standards become effective, including those areas where Citi is required to make assumptions or estimates. For example, the FASB's new accounting standard on credit losses, which will become effective for Citi on January 1, 2020, will require earlier recognition of credit losses on financial assets. The new accounting model requires that lifetime "expected credit losses" on financial assets not recorded at fair value through net income, such as loans and held-to-maturity securities, be recorded at inception of the financial asset, replacing the multiple existing impairment models under U.S. GAAP which generally require that a loss be "incurred" before it is recognized (for additional information on this and other accounting standards, see Note 1 to the Consolidated Financial Statements).

Changes to financial accounting or reporting standards or interpretations, whether promulgated or required by the FASB or other regulators, could present operational challenges and could require Citi to change certain of the assumptions or estimates it previously used in preparing its financial statements, which could negatively impact how it records and reports its financial condition and results of operations generally and/or with respect to particular businesses. For additional information on the key areas for which assumptions and estimates are used in preparing Citi's financial statements, see "Significant Accounting Policies and Significant Estimates" below and Note 27 to the Consolidated Financial Statements.

Ongoing Implementation and Interpretation of Regulatory Changes and Requirements in the U.S. and Globally Have Increased Citi's Compliance Risks and Costs.

As referenced above, over the past several years, Citi has been required to implement a significant number of regulatory changes across all of its businesses and functions, and these changes continue. In some cases, Citi's implementation of a regulatory requirement is occurring simultaneously with changing or conflicting regulatory guidance, legal challenges or legislative action to modify or repeal final rules. Moreover, in many cases, these are entirely new regulatory requirements or regimes, resulting in much uncertainty regarding regulatory expectations as to what is definitely required in order to be in compliance with the requirements. Accompanying this compliance uncertainty is heightened regulatory scrutiny and expectations in the U.S. and globally for the financial services industry with respect to governance and risk management practices, including its compliance and regulatory risks (for a discussion of heightened regulatory expectations on "conduct risk" at, and the overall "culture" of, financial institutions such as Citi, see the legal and regulatory proceedings risk factor below). All of these factors have resulted in increased compliance risks and costs for Citi.

Examples of regulatory changes that have resulted in increased compliance risks and costs include (i) the Volcker

Rule, which requires Citi to maintain an extensive global compliance regime, including significant documentation to support the prohibition against proprietary trading, and (ii) a proliferation of laws relating to the limitation of cross-border data movement, including data localization and protection and privacy laws, which can conflict with or increase compliance complexity with respect to anti-money laundering laws.

Extensive compliance requirements can result in increased reputational and legal risks, as failure to comply with regulations and requirements, or failure to comply as expected, can result in enforcement and/or regulatory proceedings (for additional discussion, see the legal and regulatory proceedings risk factor below). In addition, increased and ongoing compliance requirements and uncertainties have resulted in higher costs for Citi. For example, Citi employed approximately 29,000 risk, regulatory and compliance staff as of year-end 2016, out of a total employee population of 219,000, compared to approximately 14,000 as of year-end 2008 with a total employee population of 323,000. These higher regulatory and compliance costs can impede Citi's ongoing, business-as-usual cost reduction efforts, and can also require management to reallocate resources, including potentially away from ongoing business investment initiatives, as discussed above.

Citi Is Subject to Extensive Legal and Regulatory Proceedings, Investigations and Inquiries That Could Result in Significant Penalties and Other Negative Impacts on Citi, Its Businesses and Results of Operations.

At any given time, Citi is defending a significant number of legal and regulatory proceedings and is subject to numerous governmental and regulatory examinations, investigations and other inquiries. Over the last several years, the frequency with which such proceedings, investigations and inquiries are initiated have increased substantially, and the global judicial, regulatory and political environment has generally been unfavorable for large financial institutions. The complexity of the federal and state regulatory and enforcement regimes in the U.S., coupled with the global scope of Citi's operations, also means that a single event or issue may give rise to a large number of overlapping investigations and regulatory proceedings, either by multiple federal and state agencies in the U.S. or by multiple regulators and other governmental entities in different jurisdictions.

Moreover, U.S. and non-U.S. regulators have been increasingly focused on "conduct risk," a term that is used to describe the risks associated with behavior by employees and agents, including third-party vendors utilized by Citi, that could harm clients, customers, investors or the markets, such as improperly creating, selling, marketing or managing products and services or improper incentive compensation programs with respect thereto, failures to safeguard a party's personal information, or failures to identify and manage conflicts of interest. In addition to increasing Citi's compliance risks, this focus on conduct risk could lead to more regulatory or other enforcement proceedings and civil litigation, including for practices which historically were acceptable but are now receiving greater scrutiny. Further, while Citi takes numerous steps to prevent and detect conduct

by employees and agents that could potentially harm clients, customers, investors or the markets, such behavior may not always be deterred or prevented. Banking regulators have also focused on the overall culture of financial services firms, including Citi. In addition to regulatory restrictions or structural changes that could result from perceived deficiencies in Citi's culture, such focus could also lead to additional regulatory proceedings.

Further, the severity of the remedies sought in legal and regulatory proceedings to which Citi is subject has increased substantially in recent years. U.S. and certain international governmental entities have increasingly brought criminal actions against, or have sought criminal convictions from, financial institutions, and criminal prosecutors in the U.S. have increasingly sought and obtained criminal guilty pleas or deferred prosecution agreements against corporate entities and other criminal sanctions from those institutions. In May 2015 an affiliate of Citi pleaded guilty to an antitrust violation and paid a substantial fine to resolve a DOJ investigation into Citi's foreign exchange business practices. These types of actions by U.S. and international governmental entities may, in the future, have significant collateral consequences for a financial institution, including loss of customers and business, and the inability to offer certain products or services and/or operate certain businesses. Citi may be required to accept or be subject to similar types of criminal remedies, consent orders, sanctions, substantial fines and penalties or other requirements in the future, including for matters or practices not yet known to Citi, any of which could materially and negatively affect Citi's businesses, business practices, financial condition or results of operations, require material changes in Citi's operations or cause Citi reputational harm.

Further, many large claims—both private civil and regulatory—asserted against Citi are highly complex, slow to develop and may involve novel or untested legal theories. The outcome of such proceedings is difficult to predict or estimate until late in the proceedings. Although Citi establishes accruals for its legal and regulatory matters according to accounting requirements, Citi's estimates of, and changes to, these accruals, involve significant judgment and may be subject to significant uncertainty and the amount of loss ultimately incurred in relation to those matters may be substantially higher than the amounts accrued. In addition, certain settlements are subject to court approval and may not be approved.

For additional information relating to Citi's legal and regulatory proceedings and matters, including Citi's policies on establishing legal accruals, see Note 27 to the Consolidated Financial Statements.

If Citi's Risk Models Are Ineffective or Require Modification or Enhancement, Citi Could Incur Significant Losses or Its Regulatory Capital and Capital Ratios Could Be Negatively Impacted.

Citi utilizes models extensively as part of its risk management and mitigation strategies, including in analyzing and monitoring the various risks Citi assumes in conducting its activities. For example, Citi uses models as part of its various stress testing initiatives across the firm. Management of these

risks is made even more challenging within a global financial institution such as Citi, particularly given the complex, diverse and rapidly changing financial markets and conditions in which Citi operates.

These models and strategies are inherently limited because they involve techniques, including the use of historical data in many circumstances, and judgments that cannot anticipate every economic and financial outcome in the markets in which Citi operates, nor can they anticipate the specifics and timing of such outcomes. Citi could incur significant losses if its risk management models or strategies are ineffective in properly anticipating or managing these risks.

Moreover, Citi's Basel III regulatory capital models, including its credit, market and operational risk models, currently remain subject to ongoing regulatory review and approval, which may result in refinements, modifications or enhancements (required or otherwise) to these models. Modifications or requirements resulting from these ongoing reviews, as well as any future changes or guidance provided by the U.S. banking agencies regarding the regulatory capital framework applicable to Citi, have resulted in, and could continue to result in, significant changes to Citi's risk-weighted assets. These changes can negatively impact Citi's capital ratios and its ability to achieve its regulatory capital requirements as it projects or as required.

Citi's Performance and the Performance of Its Individual Businesses Could Be Negatively Impacted if Citi Is Not Able to Hire and Retain Highly Qualified Employees for Any Reason.

Citi's performance and the performance of its individual businesses is largely dependent on the talents and efforts of highly skilled employees. Specifically, Citi's continued ability to compete in its businesses, to manage its businesses effectively and to continue to execute its overall global strategy depends on its ability to attract new employees and to retain and motivate its existing employees. If Citi is unable to continue to attract and retain the most highly qualified employees for any reason, Citi's performance, including its competitive position, the successful execution of its overall strategy and its results of operations could be negatively impacted.

Citi's ability to attract and retain employees depends on numerous factors, some of which are outside of its control. For example, given the heightened regulatory and political environment in which Citi operates relative to competitors for talent both within and outside of the financial services area, it may be more difficult for Citi to hire or retain highly qualified employees in the future. Other factors that impact Citi's ability to attract and retain employees include its culture, compensation, the management and leadership of the company as well as its individual businesses, Citi's presence in the particular market or region at issue and the professional opportunities it offers. Generally, the banking industry is subject to more stringent regulation of executive and employee compensation than other industries, including deferral and clawback requirements for incentive compensation and other limitations. Citi often competes in the

market for talent with entities that are not subject to such significant regulatory restrictions on the structure of incentive compensation.

Managing Global Risk Table of Contents

MANAGING GLOBAL RISK	<u>64</u>
Overview	<u>64</u>
CREDIT RISK⁽¹⁾	<u>68</u>
Overview	<u>68</u>
Consumer Credit	<u>69</u>
Corporate Credit	<u>78</u>
Additional Consumer and Corporate Credit Details	<u>81</u>
Loans Outstanding	<u>81</u>
Details of Credit Loss Experience	<u>82</u>
Allowance for Loan Losses	<u>84</u>
Non-Accrual Loans and Assets and Renegotiated Loans	<u>85</u>
Forgone Interest Revenue on Loans	<u>88</u>
LIQUIDITY RISK	<u>89</u>
Overview	<u>89</u>
High-Quality Liquid Assets (HQLA)	<u>89</u>
Loans	<u>90</u>
Deposits	<u>91</u>
Long-Term Debt	<u>91</u>
Secured Funding Transactions and Short-Term Borrowings	<u>94</u>
Liquidity Monitoring and Measurement	<u>96</u>
Credit Ratings	<u>97</u>
MARKET RISK⁽¹⁾	<u>99</u>
Overview	<u>99</u>
Market Risk of Non-Trading Portfolios	<u>99</u>
Net Interest Revenue at Risk	<u>99</u>
Interest Rate Risk of Investment Portfolios—Impact on AOCI	<u>99</u>
Changes in Foreign Exchange Rates—Impacts on AOCI and Capital	<u>101</u>
Interest Revenue/Expense and Net Interest Margin	<u>102</u>
Additional Interest Rate Details	<u>103</u>
Market Risk of Trading Portfolios	<u>107</u>
Factor Sensitivities	<u>108</u>
Value at Risk (VAR)	<u>108</u>
Stress Testing	<u>112</u>
OPERATIONAL RISK	<u>113</u>
Overview	<u>113</u>
Compliance Risk	<u>113</u>
Conduct Risk	<u>114</u>
Legal Risk	<u>115</u>
Reputational Risk	<u>115</u>
STRATEGIC RISK	<u>115</u>
Country Risk	<u>116</u>

(1) For additional information regarding certain credit risk, market risk and other quantitative and qualitative information, refer to Citi's Pillar 3 Basel III Advanced Approaches Disclosures, as required by the rules of the Federal Reserve Board, on Citi's Investor Relations website.

MANAGING GLOBAL RISK

Overview

For Citi, effective risk management is of primary importance to its overall operations. Accordingly, Citi's risk management process has been designed to monitor, evaluate and manage the principal risks it assumes in conducting its activities. Specifically, the activities that Citi engages in, and the risks those activities generate, must be consistent with Citi's mission and value proposition, the key principles that guide it, and Citi's risk appetite.

Risk management must be built on a foundation of ethical culture. Under Citi's mission and value proposition, which was developed by Citi's senior leadership and distributed throughout the firm, Citi strives to serve its clients as a trusted partner by responsibly providing financial services that enable growth and economic progress while earning and maintaining the public's trust by constantly adhering to the highest ethical standards. As such, Citi asks all employees to ensure that their decisions pass three tests: they are in our clients' interests, create economic value and are always systemically responsible. Additionally, Citi evaluates employees' performance against behavioral expectations set out in Citi's leadership standards, which were designed in part to effectuate Citi's mission and value proposition. Other culture-related efforts in connection with conduct risk, ethics and leadership, escalation, and treating customers fairly help Citi to execute its mission and value proposition.

Citi's firm-wide Risk Governance Framework consists of the policies, procedures, and processes through which Citi identifies, measures, manages, monitors, reports, and controls risks across the firm. It also emphasizes Citi's risk culture and lays out standards, procedures and programs that are designed and undertaken to enhance the firm's risk culture, embed this culture deeply within the organization, and give employees tools to make sound and ethical risk decisions and to escalate issues appropriately. The Risk Governance Framework has been developed in alignment with the expectations of the Office of the Comptroller of the Currency (OCC) Heightened Standards. It is also aligned with the relevant components of the Basel Committee on Banking Supervision's corporate governance principles for banks and relevant components of the Federal Reserve's Enhanced Prudential Standards for Bank Holding Companies and Foreign Banking Organizations.

Four key principles—common purpose, responsible finance, ingenuity and leadership—guide Citi as it performs its mission. Citi's risk appetite, which is approved by the Citigroup Board of Directors, specifies the aggregate levels and types of risk the Board and management are willing to assume to achieve Citi's strategic objectives and business plan, consistent with applicable capital, liquidity and other regulatory requirements.

Citi selectively takes risks in support of its underlying business strategy, while striving to ensure it operates within its mission and value proposition and risk appetite.

Citi's risks are generally categorized and summarized as follows:

- *Credit risk* is the risk of loss resulting from the failure of a borrower, counterparty, third party or issuer to honor its financial or contractual obligations.
- *Liquidity risk* is the risk that the firm will not be able to efficiently meet both expected and unexpected current and future cash flow and collateral needs without adversely affecting either daily operations or financial conditions of the firm. The risk may be exacerbated by the inability of the firm to access funding sources or monetize assets and the composition of liability funding and liquidity assets.
- *Market risk* is the risk of loss arising from changes in the value of Citi's assets and liabilities resulting from changes in market variables, such as interest rates, exchange rates or credit spreads. Losses can be exacerbated by the presence of basis or correlations risks.
- *Operational risk* is the risk of loss resulting from inadequate or failed internal processes, systems, or human factors, or from external events. It includes risk of failing to comply with applicable laws and regulations, but excludes strategic risk (see below). It also includes the reputation and franchise risk associated with business practices or market conduct in which Citi is involved. Operational risk is inherent in Citi's global business activities, as well as the internal processes that support those business activities, and can result in losses arising from events related to fraud, theft and unauthorized activity; employment practices and workplace environment; clients, products and business practices; physical assets and infrastructure; and execution, delivery and process management. Operational risk includes compliance, conduct, reputational and legal risks:
 - *Compliance risk* is the risk arising from violations of, or non-conformance with, local, national, or cross-border laws, rules, or regulations, Citi's internal policies and procedures, or other relevant standards of conduct.
 - *Conduct risk* is the risk that Citi's employees or agents may (intentionally or through negligence) harm customers, clients, or the integrity of the markets, and thereby the integrity of Citi.
 - *Reputational risk* is the risk to current or anticipated earnings, capital, or franchise or enterprise value arising from negative public opinion.
 - *Legal risk* includes the risk from uncertainty due to legal or regulatory actions, proceedings, or investigations, or uncertainty in the applicability or interpretation of contracts, laws or regulations.
- *Strategic risk* is the risk to current or anticipated earnings, capital, or franchise or enterprise value arising from flawed business decisions, an inability to adapt to changes in the operating environment, or other external factors that may impair the ability to carry out a business strategy. Strategic risk also includes:
 - *Country risk* which is the risk that an event in a country (precipitated by developments within or

external to a country) will impair the value of Citi's franchise or will adversely affect the ability of obligors within that country to honor their obligations. Country risk events may include sovereign defaults, banking crises, currency crises, currency convertibility and/or transferability restrictions, or political events.

Citi manages its risks through each of its three lines of defense: (i) business management, (ii) independent control functions and (iii) Internal Audit. The three lines of defense collaborate with each other in structured forums and processes to bring various perspectives together and to steer the organization toward outcomes that are in clients' interests, create economic value and are systemically responsible.

First Line of Defense: Business Management

Each of Citi's businesses owns its risks and is responsible for assessing and managing its risks. Each business is also responsible for having controls in place to mitigate key risks, assessing internal controls and promoting a culture of compliance and control. In doing so, a business is required to maintain appropriate staffing and implement appropriate procedures to fulfill its risk governance responsibilities.

The CEOs of each region and business report to the Citigroup CEO. The Head of Operations and Technology and the Head of Productivity, who are considered part of the first line of defense, also report to the Citigroup CEO.

Businesses at Citi organize and chair many committees and councils that cover risk considerations with participation from independent control functions, including committees or councils that are designed to consider matters related to capital, assets and liabilities, business practices, business risks and controls, mergers and acquisitions, the Community Reinvestment Act and fair lending and incentives.

Second Line of Defense: Independent Control Functions

Citi's independent control functions, including Risk, Compliance, Human Resources, Legal, Finance and Finance & Risk Infrastructure, set standards by which Citi and its businesses are expected to manage and oversee risks, including compliance with applicable laws, regulatory requirements, policies and other relevant standards of conduct. Additionally, among other responsibilities, the independent control functions provide advice and training to Citi's businesses and establish tools, methodologies, processes and oversight for controls used by the businesses to foster a culture of compliance and control.

Risk

The Risk organization is designed to act as an independent partner of the business to manage market, credit and operational risk in a manner consistent with Citi's risk appetite. Risk establishes policies and guidelines for risk assessments and risk management and contributes to controls and tools to manage, measure and mitigate risks taken by the firm.

The Chief Risk Officer reports to the Citigroup CEO and the Risk Management Committee of the Citigroup Board of

Directors. The Chief Risk Officer has regular and unrestricted access to the Risk Management Committee of the Board and also to the Citigroup Board of Directors to address risks and issues identified through Risk's activities.

Compliance

The Compliance organization is designed to protect Citi not only by managing adherence to applicable laws, regulations, and other standards of conduct, but also by promoting business behavior that is consistent with Citi's mission and value proposition, the principle of responsible finance and Citi's compliance risk appetite. For further information on Citi's compliance risk appetite, see "Compliance, Conduct and Legal Risk" below.

The Chief Compliance Officer reports to the Citigroup CEO and has regular and unrestricted access to the Audit Committee, Ethics and Culture Committee and other ad hoc committees of the Citigroup Board of Directors to report on, among other items, possible breaches of Citi's compliance risk appetite.

Human Resources

The Human Resources organization provides personnel support and governance in connection with, among other things: recognizing and rewarding employees who demonstrate Citi's values and excel in their roles and responsibilities; setting ethical- and performance-related expectations and developing and promoting employees who meet those expectations; and searching for, assessing, and hiring staff who exemplify Citi's leadership standards, which outline Citi's expectations of its employees' behavior.

The Head of Human Resources reports to the Citigroup CEO and interacts regularly with the Personnel and Compensation Committee of the Citigroup Board of Directors.

Legal

The Legal organization is involved in a number of activities designed to promote the appropriate management of Citi's exposure to legal risk, which includes the risk of loss, whether financial or reputational, due to legal or regulatory actions, proceedings, or investigations, or uncertainty in the applicability or interpretation of contracts, laws or regulations. Activities designed to promote appropriate management of legal risk include, among others: promoting and supporting Citigroup's governance processes; advising business management, other independent control functions, the Citigroup Board of Directors and committees of the Board regarding analysis of laws and regulations, regulatory matters, disclosure matters, and potential risks and exposures on key litigation and transactional matters, among other things; advising other independent control functions in their efforts to ensure compliance with applicable laws and regulations as well as internal standards of conduct; serving on key management committees; reporting and escalating key legal issues to senior management or other independent control functions; participating in internal investigations and overseeing regulatory investigations; and advising businesses on a day-to-day basis on legal, regulatory and contractual matters.

The General Counsel reports to the Citigroup CEO and is responsible to the full Citigroup Board. In addition to having regular and unrestricted access to the full Citigroup Board of Directors, the General Counsel or his/her delegates regularly attend meetings of the Risk Management Committee, Audit Committee, Personnel and Compensation Committee, Ethics and Culture Committee, Operations and Technology Committee, and Nomination, Governance and Public Affairs Committee as well as other ad hoc committees of the Citigroup Board of Directors.

Finance

The Finance organization is primarily composed of the following disciplines: treasury, controllers, tax and financial planning and analysis. These disciplines partner with the businesses, providing key data and consultation to facilitate sound decisions in support of the businesses' objectives. Through these activities, Finance serves as an independent control function advising business management, escalating identified risks and establishing policies or processes to manage risk.

Through the treasury discipline, Finance has overall responsibility for managing Citi's balance sheet and accordingly partners with the businesses to manage Citi's liquidity and interest rate risk (price risk for non-trading portfolios). Treasury works with the businesses to establish balance sheet targets and limits, as well as sets policies on funding costs charged for business assets based on their liquidity and duration.

Principally through the controllers discipline, Finance is responsible for establishing a strong control environment over Citi's financial reporting processes consistent with the 2013 Committee of Sponsoring Organizations of the Treadway Commission, or COSO, Internal Control—Integrated Framework.

Finance is led by Citi's Chief Financial Officer (CFO), who reports directly to the Citigroup CEO. The CFO chairs or co-chairs several management committees that serve as key governance and oversight forums for business activities. In addition, the CFO has regular and unrestricted access to the full Citigroup Board of Directors as well as to the Audit Committee of the Board of Directors.

Finance & Risk Infrastructure

Finance & Risk Infrastructure (FRI) is a Citi global function that was formed in April 2016 from groups within the Finance and Risk global functions. FRI was established to globally implement common data and data standards, common processes and integrated technology platforms as well as integrate infrastructure activities across both Finance and Risk. FRI works to drive straight through data processing and produce more effective and efficient processes and governance aimed at supporting both the Finance and Risk organizations.

The co-heads of the FRI global function report jointly to Citi's CFO and Chief Risk Officer.

Third Line of Defense: Internal Audit

Citi's Internal Audit function independently reviews activities of the first two lines of defense based on a risk-based audit plan and methodology approved by the Audit Committee of the Citigroup Board of Directors. Internal Audit also provides independent assurance to the Citigroup Board of Directors, the Audit Committee of the Board, senior management and regulators regarding the effectiveness of Citi's governance and controls designed to mitigate Citi's exposure to risks and to enhance Citi's culture of compliance and control.

The Chief Auditor reports functionally to the Chairman of the Citigroup Audit Committee and administratively to the CEO of Citigroup. Internal Audit's responsibilities are carried out independently under the oversight of the Audit Committee. Internal Audit's employees accordingly report to the Chief Auditor and do not have reporting lines to front-line units or senior management. Internal Audit's staff members are not permitted to provide internal-audit services for a business line or function in which they had business line or function responsibilities within the previous 12 months.

Three Lines of Defense



Citigroup Board of Directors and Committees of the Board

Citigroup's Board of Directors oversees Citi's risk-taking activities. To do so, directors review risk assessments and reports prepared by Risk, Compliance, Human Resources, Legal, Finance and Internal Audit and exercise independent judgment to question, challenge and, when necessary, oppose recommendations and decisions made by senior management that could cause Citi's risk profile to exceed its risk appetite or jeopardize the safety and soundness of the firm.

The standing committees of the Citigroup Board of Directors are the Executive Committee, Risk Management Committee, Audit Committee, Personnel and Compensation Committee, Ethics and Culture Committee, Operations and Technology Committee and Nomination, Governance and Public Affairs Committee. In addition to the standing committees, the Board creates ad hoc committees from time to time in response to regulatory, legal or other requirements.

CREDIT RISK

Overview

Credit risk is the potential for financial loss resulting from the deterioration in creditworthiness or the failure of a borrower, counterparty or others to honor its financial or contractual obligations. Credit risk arises in many of Citigroup's business activities, including:

- consumer, commercial and corporate lending;
- capital markets derivative transactions;
- structured finance; and
- securities financing transactions (repurchase and reverse repurchase agreements, securities loaned and borrowed).

Credit risk also arises from settlement and clearing activities, when Citi transfers an asset in advance of receiving its counter-value or advances funds to settle a transaction on behalf of a client. Concentration risk, within credit risk, is the risk associated with having credit exposure concentrated within a specific client, industry, region or other category.

Credit risk is one of the most significant risks Citi faces as an institution. As a result, Citi has a well-established framework in place for managing credit risk across all businesses. This includes a defined risk appetite, credit limits and credit policies, both at the business level as well as at the company-wide level. Citi's credit risk management also includes processes and policies with respect to problem recognition, including "watch lists," portfolio reviews, stress tests, updated risk ratings and classification triggers.

With respect to Citi's settlement and clearing activities, intra-day client usage of lines is monitored against limits, as well as against usage patterns. To the extent a problem develops, Citi typically moves the client to a secured (collateralized) operating model. Generally, Citi's intra-day settlement and clearing lines are uncommitted and cancelable at any time.

To manage concentration of risk within credit risk, Citi has in place a correlation framework consisting of industry limits, an idiosyncratic framework consisting of single name concentrations for each business and across Citigroup and a specialized framework consisting of product limits.

Credit exposures are generally reported in notional terms for accrual loans, reflecting the value at which the loans as well as loan and other off-balance sheet commitments are carried on the Consolidated Balance Sheet. Credit exposure arising from capital markets activities is generally expressed as the current mark-to-market, net of margin, reflecting the net value owed to Citi by a given counterparty.

The credit risk associated with these credit exposures is a function of the idiosyncratic creditworthiness of the obligor, as well as the terms and conditions of the specific obligation. Citi assesses the credit risk associated with its credit exposures on a regular basis through its loan loss reserve process (see "Significant Accounting Policies and Significant Estimates—Allowance for Credit Losses" below and Notes 1 and 15 to the Consolidated Financial Statements), as well as through regular stress testing at the company, business, geography and product levels. These stress-testing processes typically estimate

potential incremental credit costs that would occur as a result of either downgrades in the credit quality or defaults of the obligors or counterparties.

There is an independent Chief Risk Officer for each of Citi's consumer, commercial and corporate lending businesses within *ICG* and *GCB* (Business CROs). Each of these Business CROs reports directly to Citi's Chief Risk Officer. The Business CROs are the focal point for most day-to-day risk decisions, such as setting risk limits and approving transactions within the businesses. In addition there are Regional and Legal Entity Chief Risk Officers. There is an independent Chief Risk Officer for *Asia*, *EMEA* and *Latin America*, including Mexico (Regional CROs). Each of these Regional CROs reports directly to Citi's Chief Risk Officer. The Regional CROs are accountable for overseeing the management of all risks in their geographic areas, across businesses, and are the primary risk contacts for the Regional Chief Executive Officers and local regulators. Legal Entity Chief Risk Officers are responsible for identifying and managing risks in Citibank as well as other specific legal entities, with Citibank's Chief Risk Officer reporting directly to Citi's Chief Risk Officer.

For additional information on Citi's credit risk management, see Note 14 to the Consolidated Financial Statements.

Consumer Credit

Citi provides traditional retail banking, including commercial banking, and credit card products in 19 countries through *North America GCB*, *Latin America GCB* and *Asia GCB* in Citicorp. The retail banking products include consumer mortgages, home equity, personal, commercial loans and lines of credit, and similar related products with a focus on lending to prime customers. Citi uses its risk appetite framework to define its lending parameters. In addition, Citi uses proprietary scoring models for new customer approvals. As stated in “Citicorp—*Global Consumer Banking*” above, *GCB*’s overall strategy is to leverage Citi’s global footprint and seek to be the preeminent bank for the affluent and emerging affluent consumers in large urban centers. In credit cards and in certain retail markets, Citi serves customers in a somewhat broader set of segments and geographies. *GCB*’s commercial banking business focuses on small to mid-sized businesses.

Consumer Credit Portfolio

The following tables show Citi’s quarterly end-of-period consumer loans:⁽¹⁾

<i>In billions of dollars</i>	4Q’15	1Q’16	2Q’16	3Q’16	4Q’16
Retail banking:					
Mortgages	\$ 80.2	\$ 82.2	\$ 81.6	\$ 81.4	\$ 79.4
Commercial banking	31.8	32.1	32.6	33.5	32.3
Personal and other	28.7	28.0	27.6	27.0	24.9
Total retail banking	\$ 140.7	\$ 142.3	\$ 141.8	\$ 141.9	\$ 136.6
Cards:					
Citi-branded cards ⁽²⁾	\$ 90.2	\$ 87.8	\$ 100.1	\$ 103.9	\$ 108.3
Citi retail services	46.1	42.5	43.3	43.9	47.3
Total cards	\$ 136.3	\$ 130.3	\$ 143.4	\$ 147.8	\$ 155.6
Total Citicorp	\$ 277.0	\$ 272.6	\$ 285.2	\$ 289.7	\$ 292.2
Citicorp regional distribution:					
<i>North America</i>	60%	59%	61%	62%	64%
<i>Latin America</i>	9	9	9	8	8
<i>Asia</i> ⁽³⁾	31	32	30	30	28
Total Citicorp	100%	100%	100%	100%	100%
Citi Holdings	\$ 48.8	\$ 45.3	\$ 41.2	\$ 39.0	\$ 33.2
Total consumer loans	\$ 325.8	\$ 317.9	\$ 326.4	\$ 328.7	\$ 325.4

(1) End-of-period loans include interest and fees on credit cards.

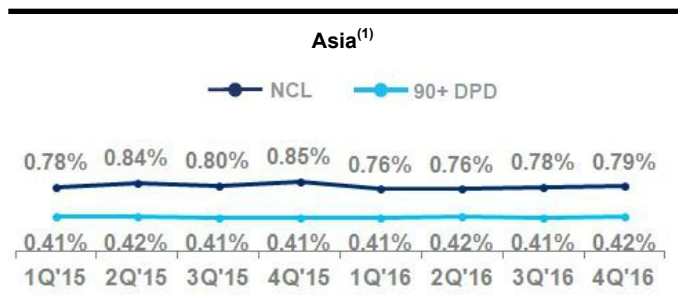
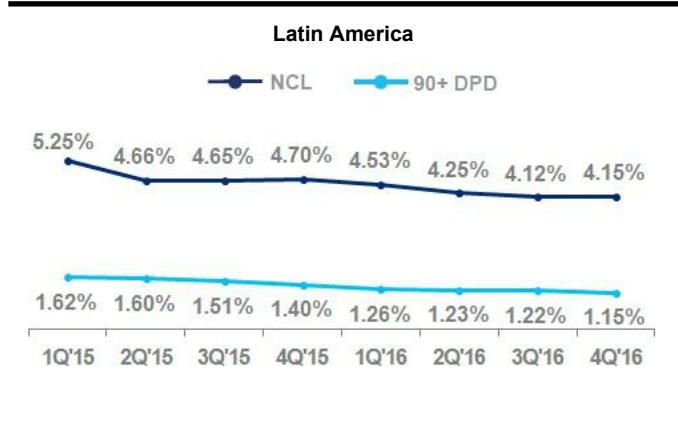
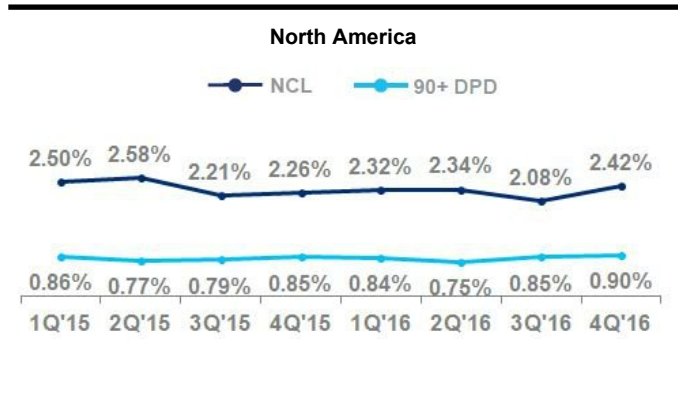
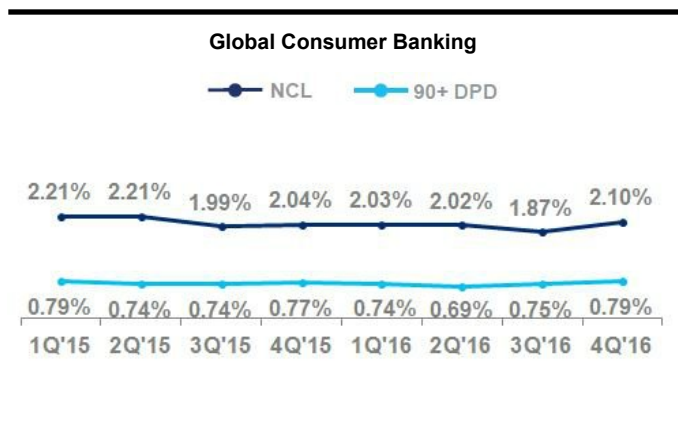
(2) In the second quarter of 2016, Citi completed the acquisition of the \$10.6 billion Costco U.S. co-brand credit card portfolio.

(3) *Asia* includes loans and leases in certain *EMEA* countries for all periods presented.

For information on changes to Citi’s end-of-period consumer loans, see “Liquidity Risk—Loans” below.

Overall Consumer Credit Trends

The following charts show the quarterly trends in delinquencies and net credit losses across both retail banking, including commercial banking, and cards for total GCB and by region.



(1) Asia includes GCB activities in certain EMEA countries for all periods presented.

North America GCB provides mortgages, home equity loans, personal loans and commercial banking products through Citi's retail banking network, and card products through Citi-branded cards and Citi retail services businesses. The retail bank is concentrated in six major metropolitan cities in the United States (for additional information on the U.S. retail bank, see "Citicorp—North America GCB" above).

As of December 31, 2016, approximately 71% of North America GCB consumer loans consisted of Citi-branded and Citi retail services cards and thus the credit performance of these portfolios drive North America GCB's overall credit performance (for additional information on North America GCB's cards portfolios, including delinquencies and net credit losses, see "Credit Card Trends" below).

Latin America GCB operates in Mexico through Citibanamex, one of Mexico's largest banks, and provides credit cards, consumer mortgages, personal loans and commercial banking products. Latin America GCB serves a more mass market segment in Mexico and focuses on developing multi-product relationships with customers.

As set forth in the chart above, 90+ days past due delinquencies and net credit loss rates improved in Latin America GCB year-over-year as of the fourth quarter of 2016, while the delinquency rate improved and the net credit loss rate was largely unchanged quarter-over-quarter. The improvements were primarily driven by higher payment rates in Mexico resulting from improved credit quality in the portfolio.

Asia GCB operates in 17 countries in Asia and EMEA and provides credit cards, consumer mortgages, personal loans and commercial banking products.

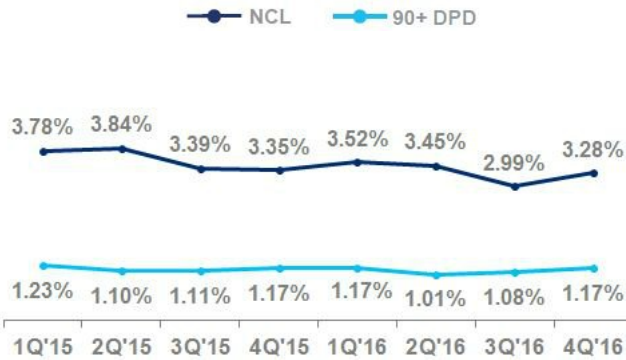
As shown in the chart above, 90+ days past due and net credit loss rates were largely stable in Asia GCB year-over-year and quarter-over-quarter as of the fourth quarter of 2016. This stability reflects the strong credit profiles in Asia GCB's target customer segments. In addition, regulatory changes in many markets in Asia over the past few years have resulted in stable or improved portfolio credit quality, despite weaker macroeconomic conditions in several countries.

For additional information on cost of credit, loan delinquency and other information for Citi's consumer loan portfolios, see each respective business's results of operations above and Note 14 to the Consolidated Financial Statements.

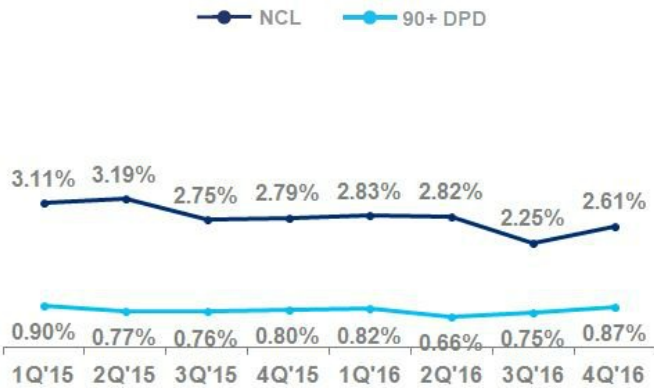
Credit Card Trends

The following charts show the quarterly trends in delinquencies and net credit losses for total *GCB* cards, Citi's *North America* Citi-branded cards and Citi retail services portfolios in Citicorp as well as for Citi's *Latin America* and *Asia* Citi-branded cards portfolios.

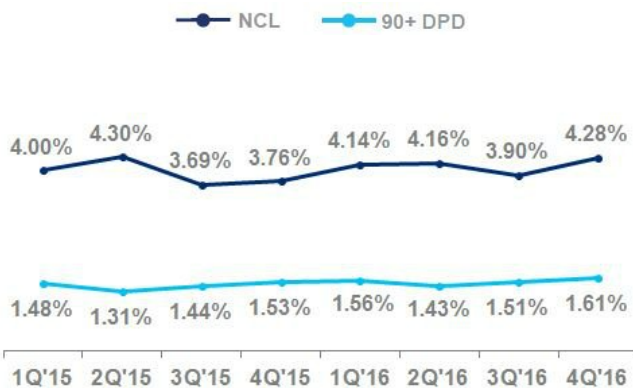
Total Cards



North America Citi-Branded Cards



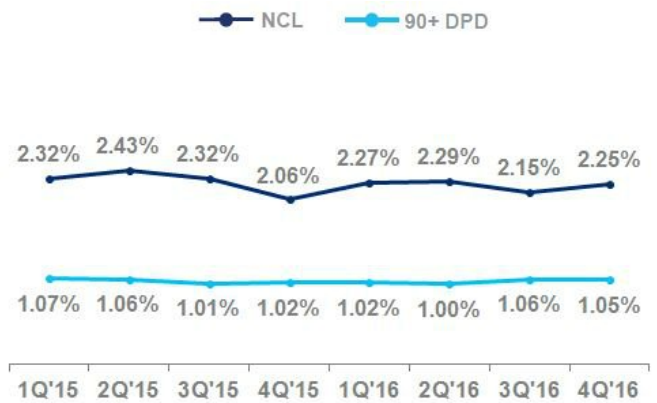
North America Citi Retail Services



Latin America Citi-Branded Cards



Asia Citi-Branded Cards⁽¹⁾



(1) *Asia* includes loans and leases in certain *EMEA* countries for all periods presented.

North America GCB's Citi-branded cards portfolio issues proprietary and co-branded cards. As shown in the chart above, 90+ days past due delinquency rates in Citi-branded cards increased year-over-year and quarter-over-quarter as of the fourth quarter of 2016, primarily driven by seasoning and the impact of regulatory changes on collections. Net credit loss rates decreased modestly year-over-year, but increased sequentially as of the fourth quarter of 2016 reflecting the above delinquency rate trends and lower asset sale volumes. Net credit losses also increased as the business began to incur losses in the Costco portfolio.

Citi retail services partners directly with more than 20 retailers and dealers to offer private-label and co-brand consumer and commercial cards. Citi retail services' target market is focused on select industry segments such as specialty retail, consumer electronics, and fuel. Citi retail services continually evaluates opportunities to add partners within target industries that have strong loyalty, lending or payment programs and growth potential.

Citi retail services' delinquency and net credit loss rates increased year-over-year and quarter-over-quarter as of the fourth quarter of 2016, primarily due to seasoning as well as the impact of regulatory changes on collections.

Latin America GCB issues proprietary and co-branded cards. As set forth in the chart above, 90+ days past due delinquency and net credit loss rates have continued to improve or remained stable, primarily driven by the higher payment rates in Mexico resulting from improved credit quality in the portfolio.

Asia GCB issues proprietary and co-branded cards. As set forth in the chart above, 90+ days past due delinquency and net credit loss rates have remained broadly stable, driven by mature and well-diversified cards portfolios.

For additional information on cost of credit, delinquency and other information for Citi's cards portfolios, see each respective business's results of operations above and Note 14 to the Consolidated Financial Statements.

North America Cards FICO Distribution

The following tables show the current FICO score distributions for Citi's *North America* Citi-branded cards and Citi retail services portfolios. FICO scores are updated monthly for substantially all of the portfolio and on a quarterly basis for the remaining portfolio.

Citi-Branded

December 31,		
FICO distribution	2016	2015
> 720	64%	60%
660 - 720	26	29
620 - 660	6	7
< 620	4	4
Total	100%	100%

Citi Retail Services

December 31,		
FICO distribution	2016	2015
> 720	42%	42%
660 - 720	35	35
620 - 660	13	13
< 620	10	10
Total	100%	100%

The improvement in Citi-branded cards' FICO distribution was primarily driven by the impact of the strong underlying credit quality of the Costco portfolio, while Citi retail services' FICO distribution has remained stable.

For additional information on FICO scores, see Note 14 to the Consolidated Financial Statements.

North America Consumer Mortgage Portfolio

Citi's North America consumer mortgage portfolio consists of both residential first mortgages and home equity loans. The following table shows the outstanding quarterly end-of-period loans for Citi's North America residential first mortgage and home equity loan portfolios:

In billions of dollars	4Q'15	1Q'16	2Q'16	3Q'16	4Q'16
Citicorp:					
Residential firsts	\$ 38.3	\$ 39.2	\$ 40.1	\$ 40.1	\$ 40.2
Home equity	3.6	3.7	3.8	3.9	4.0
Total Citicorp	\$ 41.9	\$ 42.9	\$ 43.9	\$ 44.0	\$ 44.2
Citi Holdings:					
Residential firsts	\$ 18.7	\$ 17.6	\$ 15.8	\$ 14.8	\$ 13.4
Home equity	19.1	18.3	17.3	16.1	15.0
Total Citi Holdings	\$ 37.8	\$ 35.9	\$ 33.1	\$ 30.9	\$ 28.4
Total Citigroup—North America	\$ 79.7	\$ 78.8	\$ 77.0	\$ 74.9	\$ 72.6

For additional information on delinquency and net credit loss trends in Citi's consumer mortgage portfolio, see "Additional Consumer Credit Details" below.

Home Equity Loans—Revolving HELOCs

As set forth in the table above, Citi had \$19.0 billion of home equity loans as of December 31, 2016, of which \$5.0 billion are fixed-rate home equity loans and \$14.0 billion are extended under home equity lines of credit (Revolving HELOCs). Fixed-rate home equity loans are fully amortizing. Revolving HELOCs allow for amounts to be drawn for a period of time with the payment of interest only and then, at the end of the draw period, the then-outstanding amount is converted to an amortizing loan, or "reset" (the interest-only payment feature during the revolving period is standard for this product across the industry). Upon reset, these borrowers will be required to pay both interest, usually at a variable rate, and principal that amortizes typically over 20 years, rather than the standard 30-year amortization.

Of the Revolving HELOCs at December 31, 2016, \$6.2 billion had reset (compared to \$4.2 billion at December 31, 2015) and \$7.8 billion were still within their revolving period and had not reset (compared to \$12.3 billion at December 31, 2015). The following chart indicates the FICO and combined loan-to-value (CLTV) characteristics of Citi's Revolving HELOCs portfolio and the year in which they reset:

North America Home Equity Lines of Credit Amortization – Citigroup Total ENR by Reset Year

In billions of dollars as of December 31, 2016



Note: Totals may not sum due to rounding.

Approximately 44% of Citi's total Revolving HELOCs portfolio had reset as of December 31, 2016 (compared to 25% as of December 31, 2015). Of the remaining Revolving HELOCs portfolio, approximately 42% will reset during 2017. Citi's customers with Revolving HELOCs that reset could experience "payment shock" due to the higher required payments on the loans. Citi currently estimates that the monthly loan payment for its Revolving HELOCs that reset during 2017 could increase on average by approximately \$362, or 151%. Increases in interest rates could further increase these payments given the variable nature of the interest rates on these loans post-reset. Of the Revolving HELOCs that will reset during 2017, approximately \$111 million, or 3%, of the loans have a CLTV greater than 100% as of December 31, 2016. Borrowers' high loan-to-value positions, as well as the cost and availability of refinancing options, could limit borrowers' ability to refinance their Revolving HELOCs as these loans reset.

Approximately 6.7% of the Revolving HELOCs that have reset as of December 31, 2016 were 30+ days past due, compared to 3.9% of the total outstanding home equity loan portfolio (amortizing and non-amortizing). This compared to 6.7% and 3.2%, respectively, as of December 31, 2015. As newly amortizing loans continue to season, the delinquency rate of Citi's total home equity loan portfolio could continue to increase. In addition, resets to date have generally occurred during a period of historically low interest rates, which Citi believes has likely reduced the overall "payment shock" to the borrower.

Citi monitors this reset risk closely and will continue to consider any potential impact in determining its allowance for loan loss reserves. In addition, management continues to review and take additional actions to offset potential reset risk, such as a borrower outreach program to provide reset risk education and proactively working with high-risk borrowers through a specialized single point of contact unit.

GCB Commercial Banking Exposure to the Energy and Energy-Related Sector

In addition to the total corporate credit exposure to the energy and energy-related sector described under “Corporate Credit” below, Citi’s commercial banking business, reported within *GCB* retail banking, had total credit exposure to the energy and energy-related sector of approximately \$1.9 billion as of December 31, 2016, with approximately \$1.3 billion of direct outstanding funded loans, or 4%, of the total outstanding commercial banking loans. This compared to \$2.0 billion and \$2.4 billion of total credit exposure as of September 30, 2016 and December 31, 2015, respectively.

As of December 31, 2016, approximately 90% of commercial banking’s total credit exposure to the energy and energy-related sector was in the U.S., compared to 89% and 85% as of September 30, 2016 and December 31, 2015, respectively. Approximately 53% of commercial banking’s total energy and energy-related exposure was rated investment grade at December 31, 2016, compared to approximately 39% and 52% as of September 30, 2016 and December 31, 2015, respectively. During the fourth quarter of 2016, Citi released additional energy and energy-related loan loss reserves of approximately \$51 million, and incurred net credit losses of approximately \$49 million on this commercial banking portfolio. As of December 31, 2016, Citi held loan loss reserves against its funded energy and energy-related commercial banking loans equal to approximately 5.5% of these loans (compared to approximately 8.7% and 4.0% as of September 30, 2016 and December 31, 2015, respectively).

Additional Consumer Credit Details

Consumer Loan Delinquency Amounts and Ratios

	EOP loans ⁽¹⁾	90+ days past due ⁽²⁾			30–89 days past due ⁽²⁾		
	December 31,	December 31,			December 31,		
<i>In millions of dollars, except EOP loan amounts in billions</i>	2016	2016	2015	2014	2016	2015	2014
Citicorp⁽³⁾⁽⁴⁾							
Total	\$ 292.2	\$ 2,296	\$ 2,119	\$ 2,444	\$ 2,542	\$ 2,418	\$ 2,586
Ratio		0.79%	0.77%	0.87%	0.87%	0.88%	0.92%
Retail banking							
Total	\$ 136.6	\$ 474	\$ 523	\$ 736	\$ 726	\$ 739	\$ 794
Ratio		0.35%	0.37%	0.52%	0.53%	0.53%	0.56%
<i>North America</i>	55.3	181	165	225	214	221	212
Ratio		0.33%	0.32%	0.49%	0.39%	0.43%	0.46%
<i>Latin America</i>	18.3	136	185	325	185	184	235
Ratio		0.74%	0.92%	1.53%	1.01%	0.92%	1.10%
<i>Asia⁽⁵⁾</i>	63.0	157	173	186	327	334	347
Ratio		0.25%	0.25%	0.25%	0.52%	0.49%	0.47%
Cards							
Total	\$ 155.6	\$ 1,822	\$ 1,596	\$ 1,708	\$ 1,816	\$ 1,679	\$ 1,792
Ratio		1.17%	1.17%	1.23%	1.17%	1.23%	1.29%
<i>North America—Citi-branded</i>	86.0	748	538	593	688	523	568
Ratio		0.87%	0.80%	0.88%	0.80%	0.78%	0.84%
<i>North America—Citi retail services</i>	47.3	761	705	678	777	773	748
Ratio		1.61%	1.53%	1.46%	1.64%	1.68%	1.61%
<i>Latin America</i>	4.8	130	173	242	125	157	220
Ratio		2.71%	3.20%	3.61%	2.60%	2.91%	3.28%
<i>Asia⁽⁵⁾</i>	17.5	183	180	195	226	226	256
Ratio		1.05%	1.02%	1.05%	1.29%	1.28%	1.38%
Citi Holdings⁽⁶⁾⁽⁷⁾							
Total	\$ 33.2	\$ 834	\$ 927	\$ 2,188	\$ 735	\$ 1,036	\$ 1,928
Ratio		2.62%	1.99%	2.69%	2.31%	2.23%	2.37%
<i>International</i>	2.4	94	157	225	49	179	265
Ratio		3.92%	1.91%	1.56%	2.04%	2.18%	1.84%
<i>North America</i>	30.8	740	770	1,963	686	857	1,663
Ratio		2.52%	2.01%	2.94%	2.33%	2.24%	2.49%
Total Citigroup	\$ 325.4	\$ 3,130	\$ 3,046	\$ 4,632	\$ 3,277	\$ 3,454	\$ 4,514
Ratio		0.97%	0.94%	1.28%	1.01%	1.07%	1.25%

(1) End-of-period (EOP) loans include interest and fees on credit cards.

(2) The ratios of 90+ days past due and 30–89 days past due are calculated based on EOP loans, net of unearned income.

(3) The 90+ days past due balances for *North America—Citi-branded* and *North America—Citi retail services* are generally still accruing interest. Citigroup's policy is generally to accrue interest on credit card loans until 180 days past due, unless notification of bankruptcy filing has been received earlier.

(4) The 90+ days and 30–89 days past due and related ratios for Citicorp *North America* exclude U.S. mortgage loans that are guaranteed by U.S. government-sponsored entities since the potential loss predominantly resides within the U.S. government-sponsored entities. The amounts excluded for loans 90+ days past due and (EOP loans) were \$327 million (\$0.7 billion), \$491 million (\$1.1 billion) and \$562 million (\$1.1 billion) at December 31, 2016, 2015 and 2014, respectively. The amounts excluded for loans 30–89 days past due (EOP loans have the same adjustment as above) were \$70 million, \$87 million and \$122 million at December 31, 2016, 2015 and 2014, respectively.

(5) *Asia* includes delinquencies and loans in certain *EMEA* countries for all periods presented.

(6) The 90+ days and 30–89 days past due and related ratios for Citi Holdings *North America* exclude U.S. mortgage loans that are guaranteed by U.S. government-sponsored entities since the potential loss predominantly resides within the U.S. government-sponsored entities. The amounts excluded for loans 90+ days past due (and EOP loans) were \$0.9 billion (\$1.4 billion), \$1.5 billion (\$2.2 billion) and \$2.2 billion (\$4.0 billion) at December 31, 2016, 2015 and 2014, respectively.

The amounts excluded for loans 30–89 days past due (EOP loans have the same adjustment as above) for each period were \$0.2 billion, \$0.2 billion and \$0.5 billion at December 31, 2016, 2015 and 2014, respectively.

- (7) The December 31, 2016, 2015 and 2014 loans 90+ days past due and 30–89 days past due and related ratios for *North America* exclude \$7 million, \$11 million and \$14 million, respectively, of loans that are carried at fair value.

Consumer Loan Net Credit Losses and Ratios

In millions of dollars, except average loan amounts in billions	Average loans ⁽¹⁾	Net credit losses ⁽²⁾⁽³⁾⁽⁴⁾		
	2016	2016	2015	2014
Citicorp				
Total	\$ 280.0	\$ 5,612	\$ 5,752	\$ 6,512
Ratio		2.00%	2.11%	2.32%
Retail banking				
Total	\$ 140.5	\$ 1,009	\$ 1,058	\$ 1,156
Ratio		0.72%	0.75%	0.80%
<i>North America</i>	54.3	207	150	139
Ratio		0.38%	0.30%	0.30%
<i>Latin America</i>	19.3	541	589	699
Ratio		2.80%	2.85%	3.01%
<i>Asia</i> ⁽⁵⁾	66.9	261	319	318
Ratio		0.39%	0.45%	0.43%
Cards				
Total	\$ 139.5	\$ 4,603	\$ 4,694	\$ 5,356
Ratio		3.30%	3.59%	3.94%
<i>North America—Citi-branded</i>	73.2	1,909	1,892	2,197
Ratio		2.61%	2.96%	3.31%
<i>North America—Retail services</i>	43.8	1,805	1,709	1,866
Ratio		4.12%	3.94%	4.32%
<i>Latin America</i>	5.1	499	691	816
Ratio		9.78%	11.71%	11.18%
<i>Asia</i> ⁽⁴⁾	17.4	390	402	477
Ratio		2.24%	2.28%	2.51%
Citi Holdings⁽³⁾⁽⁴⁾				
Total	\$ 41.2	\$ 438	\$ 1,306	\$ 2,163
Ratio		1.06%	1.96%	2.24%
<i>International</i>	5.2	269	443	605
Ratio		5.17%	4.43%	3.31%
<i>North America</i>	36.0	169	863	1,558
Ratio		0.47%	1.52%	1.97%
Total Citigroup	\$ 321.2	\$ 6,050	\$ 7,058	\$ 8,675
Ratio		1.88%	2.08%	2.30%

(1) Average loans include interest and fees on credit cards.

(2) The ratios of net credit losses are calculated based on average loans, net of unearned income.

(3) As a result of Citigroup's entry into agreements in October 2016 to sell its Brazil and Argentina consumer banking businesses, these businesses were classified as held-for-sale (HFS) at the end of the fourth quarter 2016. Loans HFS are excluded from this table as they are recorded in *Other assets*. In addition, as a result of HFS accounting treatment, approximately \$42 million of net credit losses (NCLs) was recorded as a reduction in revenue (*Other revenue*) during 2016. Accordingly, these NCLs are not included in this table.

(4) As a result of the entry into an agreement to sell OneMain Financial (OneMain), OneMain was classified as HFS beginning March 31, 2015. Loans HFS are excluded from this table as they are recorded in *Other assets*. In addition, as a result of HFS accounting treatment, approximately \$350 million of NCLs were recorded as a reduction in revenue (*Other revenue*) during 2015. Accordingly, these NCLs are not included in this table. The OneMain sale was completed on November 15, 2015.

(5) *Asia* includes average loans and NCLs in certain *EMEA* countries for all periods presented.

Loan Maturities and Fixed/Variable Pricing
U.S. Consumer Mortgages

<i>In millions of dollars at year end 2016</i>	Due within 1 year	Greater than 1 year but within 5 years	Greater than 5 years	Total
U.S. consumer mortgage loan portfolio				
Residential first mortgages	\$ 100	\$ 682	\$ 54,091	\$ 54,873
Home equity loans	28	963	17,093	18,084
Total	\$ 128	\$ 1,645	\$ 71,184	\$ 72,957
Fixed/variable pricing of U.S. consumer mortgage loans with maturities due after one year				
Loans at fixed interest rates	\$	1,319	\$ 40,879	
Loans at floating or adjustable interest rates		327	30,305	
Total	\$	1,646	\$ 71,184	

Corporate Credit

Consistent with its overall strategy, Citi's corporate clients are typically large, multi-national corporations which value Citi's global network. Citi aims to establish relationships with these clients that encompass multiple products, consistent with client needs, including cash management and trade services, foreign exchange, lending, capital markets and M&A advisory.

Corporate Credit Portfolio

The following table sets forth Citi's corporate credit portfolio within *ICG* (excluding private bank), before consideration of collateral or hedges, by remaining tenor for the periods indicated:

<i>In billions of dollars</i>	At December 31, 2016				At September 30, 2016				At December 31, 2015			
	Due within 1 year	Greater than 1 year but within 5 years	Greater than 5 years	Total exposure	Due within 1 year	Greater than 1 year but within 5 years	Greater than 5 years	Total exposure	Due within 1 year	Greater than 1 year but within 5 years	Greater than 5 years	Total exposure
Direct outstandings (on-balance sheet) ⁽¹⁾	\$ 109	\$ 94	\$ 22	\$ 225	\$ 109	\$ 102	\$ 24	\$ 235	\$ 98	\$ 97	\$ 25	\$ 220
Unfunded lending commitments (off-balance sheet) ⁽²⁾	103	218	23	344	102	209	27	338	99	231	26	356
Total exposure	\$ 212	\$ 312	\$ 45	\$ 569	\$ 211	\$ 311	\$ 51	\$ 573	\$ 197	\$ 328	\$ 51	\$ 576

(1) Includes drawn loans, overdrafts, bankers' acceptances and leases.

(2) Includes unused commitments to lend, letters of credit and financial guarantees.

Portfolio Mix—Geography, Counterparty and Industry

Citi's corporate credit portfolio is diverse across geography and counterparty. The following table shows the percentage by region based on Citi's internal management geography:

	December 31, 2016	September 30, 2016	December 31, 2015
North America	55%	54%	56%
EMEA	26	26	25
Asia	12	12	12
Latin America	7	8	7
Total	100%	100%	100%

The maintenance of accurate and consistent risk ratings across the corporate credit portfolio facilitates the comparison of credit exposure across all lines of business, geographic regions and products. Counterparty risk ratings reflect an estimated probability of default for a counterparty and are derived primarily through the use of validated statistical models, scorecard models and external agency ratings (under defined circumstances), in combination with consideration of factors specific to the obligor or market, such as management experience, competitive position, regulatory environment and commodity prices. Facility risk ratings are assigned that reflect the probability of default of the obligor and factors that affect the loss-given-default of the facility, such as support or collateral. Internal obligor ratings that generally correspond to BBB and above are considered investment grade, while those below are considered non-investment grade.

Citigroup also has incorporated climate risk assessment and reporting criteria for certain obligors, as necessary. Factors evaluated include consideration of climate risk to an obligor's business and physical assets and, when relevant, consideration of cost-effective options to reduce greenhouse gas emissions.

The following table presents the corporate credit portfolio by facility risk rating as a percentage of the total corporate credit portfolio:

	Total exposure		
	December 31, 2016	September 30, 2016	December 31, 2015
AAA/AA/A	48%	49%	48%
BBB	34	34	35
BB/B	16	15	15
CCC or below	2	2	2
Total	100%	100%	100%

Note: Total exposure includes direct outstandings and unfunded lending commitments.

Citi's corporate credit portfolio is also diversified by industry. The following table shows the allocation of Citi's total corporate credit portfolio by industry:

	Total exposure		
	December 31, 2016	September 30, 2016	December 31, 2015
Transportation and industrial	22%	21%	20%
Consumer retail and health	16	16	16
Technology, media and telecom	12	11	12
Power, chemicals, commodities and metals and mining	11	11	11
Energy ⁽¹⁾	9	8	9
Real estate	7	7	6
Banks/broker-dealers/finance companies	6	6	7
Hedge funds	5	5	5
Insurance and special purpose entities	5	5	5
Public sector	5	5	5
Other industries	2	5	4
Total	100%	100%	100%

Note: Total exposure includes direct outstandings and unfunded lending commitments.

(1) In addition to this exposure, Citi has energy-related exposure within the "Public sector" (e.g., energy-related state-owned entities) and "Transportation and industrial" sector (e.g., off-shore drilling entities) included in the table above. As of December 31, 2016, Citi's total exposure to these energy-related entities remained largely consistent with the prior quarter, at approximately \$7 billion, of which approximately \$4 billion consisted of direct outstanding funded loans.

Exposure to the Energy and Energy-Related Sector

As of December 31, 2016, Citi's total corporate credit exposure to the energy and energy-related sector (see footnote 1 to the table above) was \$55.2 billion, with \$19.8 billion consisting of direct outstanding funded loans, or 3% of Citi's total outstanding loans. This compared to \$55.0 billion and \$58.0 billion of total exposure and \$20.6 billion and \$21.0 billion of funded loans as of September 30, 2016 and December 31, 2015, respectively. In addition, as of December 31, 2016, approximately 72% of ICG's total corporate credit energy and energy-related exposure was in the United States, United Kingdom and Canada (unchanged from September 30, 2016 and December 31, 2015). Also, as of December 31, 2016, approximately 76% of Citi's total energy and energy-related exposures were rated investment grade (compared to approximately 74% and 80% as of September 30, 2016 and December 31, 2015, respectively).

During the fourth quarter of 2016, Citi released \$62 million of energy and energy-related loan loss reserves and recognized \$32 million of net credit losses in the energy and energy-related loan portfolio. As of December 31, 2016, Citi held loan loss reserves against its funded energy and energy-

related loans equal to approximately 3.8% of these loans (down slightly from 4.0% as of September 30, 2016 and unchanged from 3.8% as of December 31, 2015), with a funded reserve ratio of approximately 10.4% on the non-investment grade portion of the portfolio (down slightly from 10.6% as of September 30, 2016 and up from 10.3% as of December 31, 2015).

For information on Citi's energy and energy-related exposures within GCB's commercial banking business within retail banking, see "Consumer Credit—GCB Commercial Banking Exposure to the Energy and Energy-Related Sector" above.

Exposure to Banks, Broker-Dealers and Finance Companies

As of December 31, 2016, Citi's total corporate credit exposure to banks, broker-dealers and finance companies was approximately \$36.5 billion, of which \$25.1 billion represented direct outstanding funded loans, or 4% of Citi's total outstanding loans. This compared to \$35.5 billion and \$38.5 billion of total exposure and \$24.9 billion and \$27.5 billion of funded loans as of September 30, 2016 and December 31, 2015, respectively. Also as of December 31, 2016, September 30, 2016 and December 31, 2015, approximately 77%, 78% and 83%, respectively, of Citi's banks, broker-dealers and finance companies total corporate credit exposure was rated investment grade.

Included in the amounts above, as of December 31, 2016, September 30, 2016 and December 31, 2015, Citi's total corporate credit exposure to banks was approximately \$24.3 billion, \$23.8 billion and \$26.1 billion, respectively, with approximately \$19.0 billion, \$18.5 billion and \$20.7 billion, respectively, consisting of direct outstanding funded loans. As of December 31, 2016, the direct outstanding loans to banks represented approximately 3% of Citi's total outstanding loans. Of the approximately \$24.3 billion as of December 31, 2016, approximately 30% related to *Asia*, 26% related to *EMEA*, 20% related to *North America* and 24% related to *Latin America*. Approximately two-thirds of Citi's total corporate credit exposure to banks had a tenor of less than 12 months as of December 31, 2016.

In addition to the amounts above, Citi has additional exposure to banks, broker-dealers and finance companies in the form of derivatives and securities financing transactions, which are typically executed as repurchase and reverse repurchase agreements or securities loaned or borrowed arrangements. As of December 31, 2016, September 30, 2016 and December 31, 2015, Citi had net derivative credit exposure to banks, broker-dealers and finance companies of approximately \$9.6 billion, \$9.0 billion and \$5.0 billion, respectively, after the application of netting arrangements, legally enforceable margin agreements and other collateral arrangements. The collateral considered as part of the net derivative credit exposure was represented primarily by high quality, liquid assets. As of December 31, 2016, September 30, 2016 and December 31, 2015, Citi had net credit exposure to banks, broker-dealers and finance companies in the form of securities financing transactions of approximately \$4.8 billion, \$5.0 billion and \$7.0 billion, respectively, after the application of netting and collateral arrangements. The collateral

considered in the net exposure for the securities financing transactions exposure was primarily cash and highly liquid investment grade securities.

Credit Risk Mitigation

As part of its overall risk management activities, Citigroup uses credit derivatives and other risk mitigants to hedge portions of the credit risk in its corporate credit portfolio, in addition to outright asset sales. The results of the mark-to-market and any realized gains or losses on credit derivatives are reflected primarily in *Other revenue* on the Consolidated Statement of Income.

As of December 31, 2016, September 30, 2016 and December 31, 2015, \$29.5 billion, \$37.8 billion and \$34.5 billion, respectively, of the corporate credit portfolio was economically hedged. Citigroup's expected loss model used in the calculation of its loan loss reserve does not include the favorable impact of credit derivatives and other mitigants that are marked-to-market. In addition, the reported amounts of direct outstandings and unfunded lending commitments in the tables above do not reflect the impact of these hedging transactions. The credit protection was economically hedging underlying corporate credit portfolio exposures with the following risk rating distribution:

Rating of Hedged Exposure

	December 31, 2016	September 30, 2016	December 31, 2015
AAA/AA/A	16%	20%	21%
BBB	49	53	48
BB/B	31	24	27
CCC or below	4	3	4
Total	100%	100%	100%

The credit protection was economically hedging underlying corporate credit portfolio exposures with the following industry distribution:

Industry of Hedged Exposure

	December 31, 2016	September 30, 2016	December 31, 2015
Transportation and industrial	29%	28%	28%
Energy	20	16	13
Technology, media and telecom	13	14	16
Power, chemicals, commodities and metals and mining	12	12	12
Consumer retail and health	10	16	17
Public sector	5	4	4
Banks/broker-dealers	4	3	4
Insurance and special purpose entities	3	3	5
Other industries	4	4	1
Total	100%	100%	100%

Loan Maturities and Fixed/Variable Pricing of Corporate Loans

<i>In millions of dollars at December 31, 2016</i>	Due within 1 year	Over 1 year but within 5 years	Over 5 years	Total
Corporate loans				
In U.S. offices				
Commercial and industrial loans	\$ 21,851	\$ 15,799	\$ 11,936	\$ 49,586
Financial institutions	15,652	11,316	8,549	35,517
Mortgage and real estate	17,051	12,327	9,313	38,691
Installment, revolving credit and other	15,203	10,993	8,305	34,501
Lease financing	669	484	365	1,518
In offices outside the U.S.	93,993	35,808	10,093	139,894
Total corporate loans	\$ 164,419	\$ 86,727	\$ 48,561	\$ 299,707
Fixed/variable pricing of corporate loans with maturities due after one year⁽¹⁾				
Loans at fixed interest rates		\$ 11,017	\$ 13,065	
Loans at floating or adjustable interest rates		75,710	35,496	
Total		\$ 86,727	\$ 48,561	

(1) Based on contractual terms. Repricing characteristics may effectively be modified from time to time using derivative contracts. See Note 22 to the Consolidated Financial Statements.

Additional Consumer and Corporate Credit Details

Loans Outstanding

<i>In millions of dollars</i>	December 31,				
	2016	2015	2014	2013	2012
Consumer loans					
In U.S. offices					
Mortgage and real estate ⁽¹⁾	\$ 72,957	\$ 80,281	\$ 96,533	\$ 108,453	\$ 125,946
Installment, revolving credit and other	3,395	3,480	14,450	13,398	14,070
Cards	132,654	112,800	112,982	115,651	111,403
Commercial and industrial	7,159	6,407	5,895	6,592	5,344
	\$ 216,165	\$ 202,968	\$ 229,860	\$ 244,094	\$ 256,763
In offices outside the U.S.					
Mortgage and real estate ⁽¹⁾	\$ 42,803	\$ 47,062	\$ 54,462	\$ 55,511	\$ 54,709
Installment, revolving credit and other	24,887	29,480	31,128	33,182	33,958
Cards	23,783	27,342	32,032	36,740	40,653
Commercial and industrial	16,871	17,741	18,594	20,623	19,415
Lease financing	81	362	546	710	747
	\$ 108,425	\$ 121,987	\$ 136,762	\$ 146,766	\$ 149,482
Total consumer loans	\$ 324,590	\$ 324,955	\$ 366,622	\$ 390,860	\$ 406,245
Unearned income ⁽²⁾	776	830	(679)	(567)	(411)
Consumer loans, net of unearned income	\$ 325,366	\$ 325,785	\$ 365,943	\$ 390,293	\$ 405,834
Corporate loans					
In U.S. offices					
Commercial and industrial	\$ 49,586	\$ 46,011	\$ 39,542	\$ 36,993	\$ 30,586
Loans to financial institutions	35,517	36,425	36,324	25,130	18,179
Mortgage and real estate ⁽¹⁾	38,691	32,623	27,959	25,075	21,052
Installment, revolving credit and other	34,501	33,423	29,246	34,467	32,478
Lease financing	1,518	1,780	1,758	1,647	1,410
	\$ 159,813	\$ 150,262	\$ 134,829	\$ 123,312	\$ 103,705
In offices outside the U.S.					
Commercial and industrial	\$ 81,579	\$ 82,358	\$ 83,206	\$ 86,147	\$ 85,748
Loans to financial institutions	26,886	28,704	33,269	38,372	37,739
Mortgage and real estate ⁽¹⁾	5,363	5,106	6,031	6,274	6,485
Installment, revolving credit and other	19,965	20,853	19,259	18,714	14,959
Lease financing	251	303	419	586	639
Governments and official institutions	5,850	4,911	2,236	2,341	1,159
	\$ 139,894	\$ 142,235	\$ 144,420	\$ 152,434	\$ 146,729
Total corporate loans	\$ 299,707	\$ 292,497	\$ 279,249	\$ 275,746	\$ 250,434
Unearned income ⁽³⁾	(704)	(665)	(557)	(567)	(804)
Corporate loans, net of unearned income	\$ 299,003	\$ 291,832	\$ 278,692	\$ 275,179	\$ 249,630
Total loans—net of unearned income	\$ 624,369	\$ 617,617	\$ 644,635	\$ 665,472	\$ 655,464
Allowance for loan losses—on drawn exposures	(12,060)	(12,626)	(15,994)	(19,648)	(25,455)
Total loans—net of unearned income and allowance for credit losses	\$ 612,309	\$ 604,991	\$ 628,641	\$ 645,824	\$ 630,009
Allowance for loan losses as a percentage of total loans—net of unearned income⁽⁴⁾	1.94%	2.06%	2.50%	2.97%	3.92%
Allowance for consumer loan losses as a percentage of total consumer loans—net of unearned income⁽⁴⁾	2.88%	3.02%	3.70%	4.36%	5.58%
Allowance for corporate loan losses as a percentage of total corporate loans—net of unearned income⁽⁴⁾	0.91%	0.97%	0.90%	0.99%	1.17%

(1) Loans secured primarily by real estate.

(2) Unearned income on consumer loans primarily represents unamortized origination fees, costs, premiums and discounts. Prior to December 31, 2015, these items were more than offset by prepaid interest on loans outstanding issued by OneMain Financial. The sale of OneMain Financial was completed on November 15, 2015.

(3) Unearned income on corporate loans primarily represents interest received in advance but not yet earned on loans originated on a discount basis.

(4) All periods exclude loans that are carried at fair value.

Details of Credit Loss Experience

<i>In millions of dollars</i>	2016	2015	2014	2013	2012
Allowance for loan losses at beginning of period	\$ 12,626	\$ 15,994	\$ 19,648	\$ 25,455	\$ 30,115
Provision for loan losses					
Consumer	\$ 6,323	\$ 6,228	\$ 6,695	\$ 7,587	\$ 10,312
Corporate	426	880	133	17	146
	\$ 6,749	\$ 7,108	\$ 6,828	\$ 7,604	\$ 10,458
Gross credit losses					
Consumer					
In U.S. offices ⁽¹⁾⁽²⁾	\$ 4,970	\$ 5,500	\$ 6,780	\$ 8,402	\$ 12,226
In offices outside the U.S.	2,674	3,192	3,870	3,922	4,107
Corporate					
Commercial and industrial, and other					
In U.S. offices	274	112	66	125	154
In offices outside the U.S.	254	182	314	220	337
Loans to financial institutions					
In U.S. offices	5	—	2	2	33
In offices outside the U.S.	5	4	13	7	68
Mortgage and real estate					
In U.S. offices	34	8	8	62	59
In offices outside the U.S.	6	43	55	29	21
	\$ 8,222	\$ 9,041	\$ 11,108	\$ 12,769	\$ 17,005
Credit recoveries⁽³⁾					
Consumer					
In U.S. offices	\$ 980	\$ 975	\$ 1,122	\$ 1,073	\$ 1,302
In offices outside the U.S.	614	659	853	1,008	1,068
Corporate					
Commercial and industrial, and other					
In U.S. offices	23	22	64	62	243
In offices outside the U.S.	41	67	84	109	82
Loans to financial institutions					
In U.S. offices	1	7	1	1	—
In offices outside the U.S.	1	2	11	20	43
Mortgage and real estate					
In U.S. offices	1	7	—	31	17
In offices outside the U.S.	—	—	—	2	19
	\$ 1,661	\$ 1,739	\$ 2,135	\$ 2,306	\$ 2,774
Net credit losses					
In U.S. offices	\$ 4,278	\$ 4,609	\$ 5,669	\$ 7,424	\$ 10,910
In offices outside the U.S.	2,283	2,693	3,304	3,039	3,321
Total	\$ 6,561	\$ 7,302	\$ 8,973	\$ 10,463	\$ 14,231
Other—net ⁽⁴⁾⁽⁵⁾⁽⁶⁾⁽⁷⁾⁽⁸⁾⁽⁹⁾⁽¹⁰⁾	\$ (754)	\$ (3,174)	\$ (1,509)	\$ (2,948)	\$ (887)
Allowance for loan losses at end of period	\$ 12,060	\$ 12,626	\$ 15,994	\$ 19,648	\$ 25,455
Allowance for loan losses as a percentage of total loans ⁽¹¹⁾	1.94%	2.06%	2.50%	2.97%	3.92%
Allowance for unfunded lending commitments ⁽¹⁰⁾⁽¹²⁾	\$ 1,418	\$ 1,402	\$ 1,063	\$ 1,229	\$ 1,119
Total allowance for loan losses and unfunded lending commitments	\$ 13,478	\$ 14,028	\$ 17,057	\$ 20,877	\$ 26,574
Net consumer credit losses	\$ 6,050	\$ 7,058	\$ 8,675	\$ 10,243	\$ 13,963
As a percentage of average consumer loans	1.88%	2.08%	2.31%	2.63%	3.42%
Net corporate credit losses	\$ 511	\$ 244	\$ 298	\$ 220	\$ 268

As a percentage of average corporate loans	0.17%	0.08%	0.11%	0.09%	0.11%
Allowance for loan losses at end of period⁽¹³⁾					
Citicorp	\$ 10,721	\$ 10,331	\$ 10,809	\$ 12,410	\$ 13,775
Citi Holdings	1,339	2,295	5,185	7,238	11,680
Total Citigroup	\$ 12,060	\$ 12,626	\$ 15,994	\$ 19,648	\$ 25,455
Allowance by type					
Consumer	\$ 9,358	\$ 9,835	\$ 13,547	\$ 16,974	\$ 22,585
Corporate	2,702	2,791	2,447	2,674	2,870
Total Citigroup	\$ 12,060	\$ 12,626	\$ 15,994	\$ 19,648	\$ 25,455

- (1) 2012 includes approximately \$635 million of incremental charge-offs related to the Office of the Comptroller of the Currency (OCC) guidance issued in the third quarter of 2012, which required mortgage loans to borrowers that have gone through Chapter 7 U.S. Bankruptcy Code to be written down to collateral value. There was a corresponding approximate \$600 million release in the third quarter of 2012 *Allowance for loan losses* related to these charge-offs. 2012 also includes a benefit to charge-offs of approximately \$40 million related to finalizing the impact of the OCC guidance in the fourth quarter of 2012.
- (2) 2012 includes approximately \$370 million of incremental charge-offs related to previously deferred principal balances on modified loans in the first quarter of 2012. These charge-offs were related to anticipated forgiveness of principal in connection with the national mortgage settlement. There was a corresponding approximate \$350 million reserve release in the first quarter of 2012 related to these charge-offs.
- (3) Recoveries have been reduced by certain collection costs that are incurred only if collection efforts are successful.
- (4) Includes all adjustments to the allowance for credit losses, such as changes in the allowance from acquisitions, dispositions, securitizations, FX translation, purchase accounting adjustments, etc.
- (5) 2016 includes reductions of approximately \$574 million related to the sale or transfer to held-for-sale (HFS) of various loan portfolios, which includes approximately \$106 million related to the transfer of various real estate loan portfolios to HFS. Additionally, 2016 includes a reduction of approximately \$199 million related to FX translation.
- (6) 2015 includes reductions of approximately \$2.4 billion related to the sale or transfer to held-for-sale (HFS) of various loan portfolios, which includes approximately \$1.5 billion related to the transfer of various real estate loan portfolios to HFS. Additionally, 2015 includes a reduction of approximately \$474 million related to FX translation.
- (7) 2014 includes reductions of approximately \$1.1 billion related to the sale or transfer to HFS of various loan portfolios, which includes approximately \$411 million related to the transfer of various real estate loan portfolios to HFS, approximately \$204 million related to the transfer to HFS of a business in Greece, approximately \$177 million related to the transfer to HFS of a business in Spain, approximately \$29 million related to the transfer to HFS of a business in Honduras, and approximately \$108 million related to the transfer to HFS of various *EMEA* loan portfolios. Additionally, 2014 includes a reduction of approximately \$463 million related to FX translation.
- (8) 2013 includes reductions of approximately \$2.4 billion related to the sale or transfer to HFS of various loan portfolios, which includes approximately \$360 million related to the sale of Credicard and approximately \$255 million related to a transfer to HFS of a loan portfolio in Greece, approximately \$230 million related to a non-provision transfer of reserves associated with deferred interest to other assets which includes deferred interest and approximately \$220 million related to FX translation.
- (9) 2012 includes reductions of approximately \$875 million related to the sale or transfer to HFS of various U.S. loan portfolios.
- (10) 2015 includes a reclassification of \$271 million of *Allowance for loan losses* to allowance for unfunded lending commitments, included in the Other line item. This reclassification reflects the re-attribution of \$271 million in allowance for credit losses between the funded and unfunded portions of the corporate credit portfolios and does not reflect a change in the underlying credit performance of these portfolios.
- (11) December 31, 2016, December 31, 2015, December 31, 2014, December 31, 2013 and December 31, 2012 exclude \$3.5 billion, \$5.0 billion, \$5.9 billion, \$5.0 billion and \$5.3 billion, respectively, of loans which are carried at fair value.
- (12) Represents additional credit reserves recorded as *Other liabilities* on the Consolidated Balance Sheet.
- (13) Allowance for loan losses represents management's best estimate of probable losses inherent in the portfolio, as well as probable losses related to large individually evaluated impaired loans and troubled debt restructurings. See "Significant Accounting Policies and Significant Estimates" and Note 1 to the Consolidated Financial Statements below. Attribution of the allowance is made for analytical purposes only and the entire allowance is available to absorb probable credit losses inherent in the overall portfolio.

Allowance for Loan Losses

The following tables detail information on Citi's allowance for loan losses, loans and coverage ratios:

	December 31, 2016		
<i>In billions of dollars</i>	Allowance for loan losses	Loans, net of unearned income	Allowance as a percentage of loans ⁽¹⁾
<i>North America cards</i> ⁽²⁾	\$ 5.2	\$ 133.3	3.9%
<i>North America mortgages</i> ⁽³⁾	1.1	72.6	1.5
<i>North America other</i>	0.5	13.6	3.7
International cards	1.2	23.1	5.2
International other ⁽⁴⁾	1.4	82.8	1.7
Total consumer	\$ 9.4	\$ 325.4	2.9%
Total corporate	2.7	299.0	0.9
Total Citigroup	\$ 12.1	\$ 624.4	1.9%

- (1) Allowance as a percentage of loans excludes loans that are carried at fair value.
- (2) Includes both Citi-branded cards and Citi retail services. The \$5.2 billion of loan loss reserves represented approximately 15 months of coincident net credit loss coverage.
- (3) Of the \$1.1 billion, approximately \$1.0 billion was allocated to *North America* mortgages in Citi Holdings. Of the \$1.1 billion, approximately \$0.4 billion and \$0.7 billion are determined in accordance with ASC 450-20 and ASC 310-10-35 (troubled debt restructurings), respectively. Of the \$72.6 billion in loans, approximately \$67.7 billion and \$4.8 billion of the loans are evaluated in accordance with ASC 450-20 and ASC 310-10-35 (troubled debt restructurings), respectively. For additional information, see Note 15 to the Consolidated Financial Statements.
- (4) Includes mortgages and other retail loans.

	December 31, 2015		
<i>In billions of dollars</i>	Allowance for loan losses	Loans, net of unearned income	Allowance as a percentage of loans ⁽¹⁾
<i>North America cards</i> ⁽²⁾	\$ 4.5	\$ 113.4	4.0%
<i>North America mortgages</i> ⁽³⁾	1.7	79.6	2.1
<i>North America other</i>	0.5	13.0	3.8
International cards	1.6	26.7	6.0
International other ⁽⁴⁾	1.5	93.1	1.6
Total consumer	\$ 9.8	\$ 325.8	3.0%
Total corporate	2.8	291.8	1.0
Total Citigroup	\$ 12.6	\$ 617.6	2.1%

- (1) Allowance as a percentage of loans excludes loans that are carried at fair value.
- (2) Includes both Citi-branded cards and Citi retail services. The \$4.5 billion of loan loss reserves represented approximately 15 months of coincident net credit loss coverage.
- (3) Of the \$1.7 billion, approximately \$1.6 billion was allocated to *North America* mortgages in Citi Holdings. Of the \$1.7 billion, approximately \$0.6 billion and \$1.1 billion are determined in accordance with ASC 450-20 and ASC 310-10-35 (troubled debt restructurings), respectively. Of the \$79.6 billion in loans, approximately \$72.3 billion and \$7.1 billion of the loans are evaluated in accordance with ASC 450-20 and ASC 310-10-35 (troubled debt restructurings), respectively. For additional information, see Note 15 to the Consolidated Financial Statements.
- (4) Includes mortgages and other retail loans.

Non-Accrual Loans and Assets and Renegotiated Loans

There is a certain amount of overlap among non-accrual loans and assets and renegotiated loans. The following summary provides a general description of each category:

Non-Accrual Loans and Assets:

- Corporate and consumer (including commercial banking) non-accrual status is based on the determination that payment of interest or principal is doubtful.
- A corporate loan may be classified as non-accrual and still be performing under the terms of the loan structure. Payments received on corporate non-accrual loans are generally applied to loan principal and not reflected as interest income. Approximately 64%, 67% and 54% of Citi's corporate non-accrual loans were performing at December 31, 2016, September 30, 2016 and December 31, 2015, respectively.
- Consumer non-accrual status is generally based on aging, i.e., the borrower has fallen behind on payments.
- Mortgage loans in regulated bank entities discharged through Chapter 7 bankruptcy, other than FHA insured loans, are classified as non-accrual. Non-bank mortgage loans discharged through Chapter 7 bankruptcy are classified as non-accrual at 90 days or more past due. In addition, home equity loans in regulated bank entities are classified as non-accrual if the related residential first mortgage loan is 90 days or more past due.
- *North America* Citi-branded cards and Citi retail services are not included because, under industry standards, credit card loans accrue interest until such loans are charged off, which typically occurs at 180 days contractual delinquency.

Renegotiated Loans:

- Includes both corporate and consumer loans whose terms have been modified in a troubled debt restructuring (TDR).
- Includes both accrual and non-accrual TDRs.

Non-Accrual Loans

The table below summarizes Citigroup's non-accrual loans as of the periods indicated. Non-accrual loans may still be current on interest payments. In situations where Citi reasonably expects that only a portion of the principal owed

will ultimately be collected, all payments received are reflected as a reduction of principal and not as interest income. For all other non-accrual loans, cash interest receipts are generally recorded as revenue.

	December 31,				
<i>In millions of dollars</i>	2016	2015	2014	2013	2012
Citicorp	\$ 3,858	\$ 2,991	\$ 2,884	\$ 3,660	\$ 3,734
Citi Holdings	1,721	2,263	4,223	5,343	7,796
Total non-accrual loans	\$ 5,579	\$ 5,254	\$ 7,107	\$ 9,003	\$ 11,530
Corporate non-accrual loans⁽¹⁾⁽²⁾					
<i>North America</i>	\$ 984	\$ 818	\$ 321	\$ 735	\$ 735
<i>EMEA</i>	904	347	285	812	1,195
<i>Latin America</i>	379	303	417	132	125
<i>Asia</i>	154	128	179	279	339
Total corporate non-accrual loans	\$ 2,421	\$ 1,596	\$ 1,202	\$ 1,958	\$ 2,394
Citicorp	\$ 2,376	\$ 1,543	\$ 1,145	\$ 1,630	\$ 1,971
Citi Holdings	45	53	57	328	423
Total corporate non-accrual loans	\$ 2,421	\$ 1,596	\$ 1,202	\$ 1,958	\$ 2,394
Consumer non-accrual loans⁽¹⁾⁽³⁾					
<i>North America</i>	\$ 2,160	\$ 2,515	\$ 4,411	\$ 5,239	\$ 7,150
<i>Latin America</i>	711	874	1,188	1,420	1,288
<i>Asia⁽⁴⁾</i>	287	269	306	386	698
Total consumer non-accrual loans	\$ 3,158	\$ 3,658	\$ 5,905	\$ 7,045	\$ 9,136
Citicorp	\$ 1,482	\$ 1,448	\$ 1,739	\$ 2,030	\$ 1,763
Citi Holdings	1,676	2,210	4,166	5,015	7,373
Total consumer non-accrual loans	\$ 3,158	\$ 3,658	\$ 5,905	\$ 7,045	\$ 9,136

- (1) Excludes purchased distressed loans, as they are generally accreting interest. The carrying value of these loans was \$187 million at December 31, 2016, \$250 million at December 31, 2015, \$421 million at December 31, 2014, \$703 million at December 31, 2013 and \$537 million at December 31, 2012.
- (2) The increase in corporate non-accrual loans from December 31, 2015 to December 31, 2016 was primarily related to Citi's *North America* and *EMEA* energy and energy-related corporate credit exposure during 2016. For additional information, see "Corporate Credit Details" above.
- (3) 2015 decline includes the impact related to the transfer of approximately \$8 billion of mortgage loans to Loans, held-for-sale (HFS) (included within *Other assets*).
- (4) *Asia* includes balances in certain *EMEA* countries for all periods presented.

The changes in Citigroup's non-accrual loans were as follows:

<i>In millions of dollars</i>	Year ended December 31, 2016			Year ended December 31, 2015		
	Corporate	Consumer	Total	Corporate	Consumer	Total
Non-accrual loans at beginning of period	\$ 1,596	\$ 3,658	\$ 5,254	\$ 1,202	\$ 5,905	\$ 7,107
Additions	2,713	4,460	7,173	1,318	5,219	6,537
Sales and transfers to held-for-sale	(82)	(738)	(820)	(222)	(2,249)	(2,471)
Returned to performing	(150)	(606)	(756)	(64)	(1,080)	(1,144)
Paydowns/settlements	(1,198)	(1,648)	(2,846)	(459)	(1,255)	(1,714)
Charge-offs	(386)	(1,855)	(2,241)	(145)	(2,659)	(2,804)
Other	(72)	(113)	(185)	(34)	(223)	(257)
Ending balance	\$ 2,421	\$ 3,158	\$ 5,579	\$ 1,596	\$ 3,658	\$ 5,254

Non-Accrual Assets

The table below summarizes Citigroup's other real estate owned (OREO) assets as of the periods indicated. This represents the carrying value of all real estate property acquired by foreclosure or other legal proceedings when Citi has taken possession of the collateral:

	December 31,				
<i>In millions of dollars</i>	2016	2015	2014	2013	2012
OREO⁽¹⁾					
Citicorp	\$ 86	\$ 70	\$ 90	\$ 71	\$ 35
Citi Holdings	100	139	170	345	406
Total OREO	\$ 186	\$ 209	\$ 260	\$ 416	\$ 441
<i>North America</i>	\$ 161	\$ 166	\$ 196	\$ 304	\$ 299
<i>EMEA</i>	—	1	7	59	99
<i>Latin America</i>	18	38	47	47	41
<i>Asia</i>	7	4	10	6	2
Total OREO	\$ 186	\$ 209	\$ 260	\$ 416	\$ 441
Other repossessed assets	\$ —	\$ —	\$ —	\$ —	\$ 1
Non-accrual assets—Total Citigroup					
Corporate non-accrual loans	\$ 2,421	\$ 1,596	\$ 1,202	\$ 1,958	\$ 2,394
Consumer non-accrual loans ⁽²⁾	3,158	3,658	5,905	7,045	9,136
Non-accrual loans (NAL)	\$ 5,579	\$ 5,254	\$ 7,107	\$ 9,003	\$ 11,530
OREO	\$ 186	\$ 209	\$ 260	\$ 416	\$ 441
Non-accrual assets (NAA)	\$ 5,765	\$ 5,463	\$ 7,367	\$ 9,419	\$ 11,972
NAL as a percentage of total loans	0.89%	0.85%	1.10%	1.35%	1.76%
NAA as a percentage of total assets	0.32	0.32	0.40	0.50	0.64
Allowance for loan losses as a percentage of NAL ⁽³⁾	216	240	225	218	221

	December 31,				
	2016	2015	2014	2013	2012
Non-accrual assets—Total Citicorp					
Non-accrual loans (NAL)	\$ 3,858	\$ 2,991	\$ 2,884	\$ 3,660	\$ 3,734
OREO	86	70	90	71	35
Non-accrual assets (NAA)	\$ 3,944	\$ 3,061	\$ 2,974	\$ 3,731	\$ 3,769
NAA as a percentage of total assets	0.23%	0.19%	0.17%	0.22%	0.23%
Allowance for loan losses as a percentage of NAL ⁽³⁾	278	345	375	339	369
Non-accrual assets—Total Citi Holdings					
Non-accrual loans (NAL) ⁽²⁾	\$ 1,721	\$ 2,263	\$ 4,223	\$ 5,343	\$ 7,796
OREO	100	139	170	345	406
Non-accrual assets (NAA)	\$ 1,821	\$ 2,402	\$ 4,393	\$ 5,688	\$ 8,202
NAA as a percentage of total assets	3.37%	2.97%	3.18%	3.47%	3.89%
Allowance for loan losses as a percentage of NAL ⁽³⁾	78	101	123	135	150

(1) Reflects a decrease of \$130 million related to the adoption of ASU 2014-14 in the fourth quarter of 2014, which requires certain government guaranteed mortgage loans to be recognized as separate other receivables upon foreclosure. Prior periods have not been restated.

(2) 2015 decline includes the impact related to the transfer of approximately \$8 billion of mortgage loans to *Loans*, held-for-sale (HFS) (included within *Other assets*).

(3) The allowance for loan losses includes the allowance for Citi's credit card portfolios and purchased distressed loans, while the non-accrual loans exclude credit card balances (with the exception of certain international portfolios) and purchased distressed loans as these continue to accrue interest until charge-off.

Renegotiated Loans

The following table presents Citi's loans modified in TDRs.

<i>In millions of dollars</i>	Dec. 31, 2016	Dec. 31, 2015
Corporate renegotiated loans⁽¹⁾		
In U.S. offices		
Commercial and industrial ⁽²⁾	\$ 89	\$ 25
Mortgage and real estate ⁽³⁾	84	104
Loans to financial institutions	9	5
Other	228	273
	\$ 410	\$ 407
In offices outside the U.S.		
Commercial and industrial ⁽²⁾	\$ 319	\$ 111
Mortgage and real estate ⁽³⁾	3	33
Other	—	45
	\$ 322	\$ 189
Total corporate renegotiated loans	\$ 732	\$ 596
Consumer renegotiated loans⁽⁴⁾⁽⁵⁾⁽⁶⁾⁽⁷⁾		
In U.S. offices		
Mortgage and real estate ⁽⁸⁾	\$ 4,695	\$ 7,058
Cards	1,313	1,396
Installment and other	117	79
	\$ 6,125	\$ 8,533
In offices outside the U.S.		
Mortgage and real estate	\$ 447	\$ 517
Cards	435	555
Installment and other	443	471
	\$ 1,325	\$ 1,543
Total consumer renegotiated loans	\$ 7,450	\$ 10,076

- (1) Includes \$445 million and \$258 million of non-accrual loans included in the non-accrual loans table above at December 31, 2016 and December 31, 2015, respectively. The remaining loans are accruing interest.
- (2) In addition to modifications reflected as TDRs at December 31, 2016 and December 31, 2015, Citi also modified \$257 million and \$173 million, respectively, and \$217 million and \$17 million, respectively, of commercial loans risk rated "Substandard Non-Performing" or worse (asset category defined by banking regulators) in offices inside and outside the U.S. These modifications were not considered TDRs because the modifications did not involve a concession (a required element of a TDR for accounting purposes).
- (3) In addition to modifications reflected as TDRs at December 31, 2015, Citi also modified \$22 million of commercial real estate loans risk rated "Substandard Non-Performing" or worse (asset category defined by banking regulators) in offices inside the U.S. These modifications were not considered TDRs because the modifications did not involve a concession (a required element of a TDR for accounting purposes). There were no such non-TDR modifications in 2016.
- (4) Includes \$1,502 million and \$1,852 million of non-accrual loans included in the non-accrual loans table above at December 31, 2016 and 2015, respectively. The remaining loans are accruing interest.
- (5) Includes \$58 million and \$96 million of commercial real estate loans at December 31, 2016 and 2015, respectively.
- (6) Includes \$105 million and \$85 million of other commercial loans at December 31, 2016 and 2015, respectively.
- (7) Smaller-balance homogeneous loans were derived from Citi's risk management systems.
- (8) Reduction in 2016 includes \$1,818 million related to TDRs sold or transferred to held-for-sale.

Forgone Interest Revenue on Loans⁽¹⁾

<i>In millions of dollars</i>	In U.S. offices	In non- U.S. offices	2016 total
Interest revenue that would have been accrued at original contractual rates ⁽²⁾	\$ 798	\$ 514	\$ 1,312
Amount recognized as interest revenue ⁽²⁾	342	171	513
Forgone interest revenue	\$ 456	\$ 343	\$ 799

- (1) Relates to corporate non-accrual loans, renegotiated loans and consumer loans on which accrual of interest has been suspended.
- (2) Interest revenue in offices outside the U.S. may reflect prevailing local interest rates, including the effects of inflation and monetary correction in certain countries.

LIQUIDITY RISK

Overview

Adequate and diverse sources of funding and liquidity are essential to Citi's businesses. Funding and liquidity risks arise from several factors, many of which are mostly or entirely outside Citi's control, such as disruptions in the financial markets, changes in key funding sources, credit spreads, changes in Citi's credit ratings and political and economic conditions in certain countries. For additional information, see "Risk Factors" above.

Citi's funding and liquidity objectives are aimed at (i) funding its existing asset base; (ii) growing its core businesses in Citicorp; (iii) maintaining sufficient liquidity, structured appropriately, so that Citi can operate under a variety of adverse circumstances, including potential firm-specific and/or market liquidity events in varying durations and severity; and (iv) satisfying regulatory requirements. Citigroup's primary liquidity objectives are established by entity, and in aggregate, across two major categories:

- Citibank; and
- the non-bank and other, which includes the parent holding company (Citigroup), Citi's broker-dealer subsidiaries and other non-bank subsidiaries that are consolidated into Citigroup, as well as Citibanamex and Citibank (Switzerland) AG.

At an aggregate level, Citigroup's goal is to maintain sufficient funding in amount and tenor to fully fund customer assets and to provide an appropriate amount of cash and high-quality liquid assets (as discussed further below), even in times of stress. The liquidity risk management framework provides that certain entities be self-sufficient or net providers of liquidity, including in conditions established under their designated stress tests.

High-Quality Liquid Assets (HQLA)

<i>In billions of dollars</i>	Citibank			Non-bank and Other ⁽¹⁾			Total		
	Dec. 31, 2016	Sept. 30, 2016	Dec. 31, 2015	Dec. 31, 2016	Sept. 30, 2016	Dec. 31, 2015	Dec. 31, 2016	Sept. 30, 2016	Dec. 31, 2015
Available cash	\$ 68.3	\$ 71.1	\$ 52.4	\$ 19.8	\$ 19.2	\$ 16.9	\$ 88.1	\$ 90.2	\$ 69.3
U.S. sovereign	123.0	122.3	110.0	22.5	21.8	32.4	145.5	144.1	142.4
U.S. agency/agency MBS	61.7	62.6	63.9	0.6	0.2	1.0	62.3	62.8	64.9
Foreign government debt ⁽²⁾	87.9	89.2	84.8	15.6	15.5	14.9	103.5	104.7	99.7
Other investment grade	0.3	1.0	1.0	1.2	1.5	1.2	1.5	2.5	2.2
Total HQLA (EOP)	\$ 341.2	\$ 346.2	\$ 312.1	\$ 59.7	\$ 58.2	\$ 66.4	\$ 400.9	\$ 404.3	\$ 378.5
Total HQLA (AVG)	\$ 345.7	\$ 344.0	\$ 325.8	\$ 58.0	\$ 59.8	\$ 63.4	\$ 403.7	\$ 403.8	\$ 389.2

Note: Except as indicated, amounts set forth in the table above are as of period end and may increase or decrease intra-period in the ordinary course of business. For securities, the amounts represent the liquidity value that potentially could be realized, and thus exclude any securities that are encumbered, as well as the haircuts that would be required for securities financing transactions. The Federal Reserve Board adopted final rules requiring disclosure of HQLA, the Liquidity Coverage Ratio and related components on an average basis each quarter, as compared to end-of-period starting on April 1, 2017 (for additional information, see "Liquidity Coverage Ratio (LCR)" below). Citi has presented in this Form 10-K the average information on these metrics currently available, which includes average total HQLA, average LCR and average net outflows under the LCR; other component information is not currently available.

(1) Citibanamex and Citibank (Switzerland) AG account for approximately \$5 billion of the "Non-Bank and Other" HQLA balance as of December 31, 2016.

(2) Foreign government debt includes securities issued or guaranteed by foreign sovereigns, agencies and multilateral development banks. Foreign government debt securities are held largely to support local liquidity requirements and Citi's local franchises and principally include government bonds from Hong Kong, Taiwan, Korea, Singapore, India, Brazil and Mexico.

Citi's primary sources of funding include (i) deposits via Citi's bank subsidiaries, which are Citi's most stable and lowest cost source of long-term funding, (ii) long-term debt (primarily senior and subordinated debt) primarily issued at the parent and certain bank subsidiaries, and (iii) stockholders' equity. These sources may be supplemented by short-term borrowings, primarily in the form of secured funding transactions.

As referenced above, Citigroup works to ensure that the structural tenor of these funding sources is sufficiently long in relation to the tenor of its asset base. The goal of Citi's asset/liability management is to ensure that there is excess tenor in the liability structure relative to the liquidity profile of the assets. This reduces the risk that liabilities will become due before asset maturities or monetizations through sale, and in turn generates liquidity. This liquidity is held primarily in the form of high-quality liquid assets (HQLA), as set forth in the table below.

Citi's Treasurer has overall responsibility for management of Citi's HQLA. Citi's liquidity is managed via a centralized treasury model by Corporate Treasury, in conjunction with regional and in-country treasurers. Pursuant to this approach, Citi's HQLA is managed with emphasis on asset-liability management and entity-level liquidity adequacy throughout Citi.

Citi's Chief Risk Officer is responsible for the overall risk profile of Citi's HQLA. The Chief Risk Officer and Citi's CFO co-chair Citi's Asset Liability Management Committee (ALCO), which includes Citi's Treasurer and other senior executives. ALCO sets the strategy of the liquidity portfolio and monitors its performance. Significant changes to portfolio asset allocations need to be approved by ALCO.

As set forth in the table above, sequentially, Citi's total HQLA decreased on an end-of-period basis and remained largely unchanged on an average basis. The end-of-period decrease was driven primarily by a slight decline in deposits.

Citi's HQLA as set forth above does not include Citi's available borrowing capacity from the Federal Home Loan Banks (FHLB) of which Citi is a member, which was approximately \$21 billion as of December 31, 2016 (compared to \$24 billion as of September 30, 2016 and \$36 billion as of December 31, 2015) and maintained by eligible collateral pledged to such banks. The HQLA also does not include Citi's borrowing capacity at the U.S. Federal Reserve Bank discount window or other central banks, which would be in addition to the resources noted above.

In general, Citi's liquidity is fungible across legal entities within its bank group. Citi's bank subsidiaries, including Citibank, can lend to the Citi parent and broker-dealer entities in accordance with Section 23A of the Federal Reserve Act. As of December 31, 2016, the capacity available for lending to these entities under Section 23A was approximately \$15 billion, unchanged from September 30, 2016 and compared to \$17 billion as of December 31, 2015, subject to certain eligible non-cash collateral requirements.

Loans

As part of its funding and liquidity objectives, Citi seeks to fund its existing asset base appropriately as well as maintain sufficient liquidity to grow its core businesses in Citicorp, including its loan portfolio. Citi maintains a diversified portfolio of loans to its consumer and institutional clients. The table below sets forth the end-of-period loans, by business and/or segment, and the total average loans for each of the periods indicated:

<i>In billions of dollars</i>	Dec. 31, 2016	Sept. 30, 2016	Dec. 31, 2015
Global Consumer Banking			
<i>North America</i>	\$ 188.6	\$ 180.0	\$ 165.5
<i>Latin America</i>	23.1	23.9	25.5
<i>Asia⁽¹⁾</i>	80.5	85.8	86.0
Total	\$ 292.2	\$ 289.7	\$ 277.0
Institutional Clients Group			
Corporate lending	115.4	120.8	118.5
Treasury and trade solutions (TTS)	71.9	72.3	71.4
Private bank, <i>Markets and securities services</i> and other	111.6	116.5	101.7
Total	\$ 298.9	\$ 309.6	\$ 291.6
Total Citicorp	591.1	599.3	568.6
Total Citi Holdings	33.3	39.1	49.0
Total Citigroup loans (EOP)	\$ 624.4	\$ 638.4	\$ 617.6
Total Citigroup loans (AVG)	\$ 626.0	\$ 635.8	\$ 625.0

(1) Includes loans in certain *EMEA* countries for all periods presented.

End-of-period loans increased 1% year-over-year and declined 2% sequentially. Excluding the impact of FX translation, Citigroup's end-of-period loans increased 3% year-over-year, as growth in Citicorp more than offset continued declines in Citi Holdings. Sequentially, Citigroup's end-of-period loans decreased 1%, driven by declines in *ICG* and Citi Holdings, which more than offset the increase in *GCB*.

Excluding the impact of FX translation, Citicorp loans increased 6% year-over-year. *GCB* loans grew 8% year-over-year, driven by 14% growth in *North America*. Within *North America*, Citi-branded cards increased 28%, driven primarily by the acquisition of the Costco portfolio toward the end of the second quarter of 2016. International *GCB* loans declined 2%, as 7% growth in Mexico was more than offset by a 5% decline in *Asia*, reflecting Citi's continued optimization of its portfolio in this region to generate higher returns. *ICG* loans grew 4% year-over-year, driven by growth in lending to the high net worth target clients in its private banking segment. Corporate lending declined 1%, primarily driven by repayments near the end of the fourth quarter of 2016. This type of activity is not unusual as changes in balances are driven by the episodic nature of clients' needs. Treasury and trade solutions loans increased 1% as Citi continued to support its clients while utilizing its distribution capabilities to optimize the balance sheet and drive returns.

Excluding the impact of FX translation, Citi Holdings loans decreased 33% year-over-year, driven by over \$9 billion of reductions in *North America* mortgages, including transfers to held-for-sale.

Deposits

Deposits are Citi's primary and lowest cost funding source. The table below sets forth the end-of-period deposits, by business and/or segment, and the total average deposits for each of the periods indicated:

<i>In billions of dollars</i>	Dec. 31, 2016	Sept. 30, 2016	Dec. 31, 2015
Global Consumer Banking			
North America	\$ 185.0	\$ 185.6	\$ 181.6
Latin America	26.4	27.4	28.7
Asia ⁽¹⁾	89.9	93.6	87.6
Total	\$ 301.3	\$ 306.6	\$ 297.9
Institutional Clients Group			
Treasury and trade solutions (TTS)	410.6	415.0	392.0
Banking ex-TTS	122.3	118.9	119.1
Markets and securities services	77.5	83.3	76.6
Total	\$ 610.4	\$ 617.2	\$ 587.7
Corporate/Other	15.5	10.6	12.0
Total Citicorp	\$ 927.2	\$ 934.4	\$ 897.6
Total Citi Holdings	2.2	5.9	10.3
Total Citigroup deposits (EOP)	\$ 929.4	\$ 940.3	\$ 907.9
Total Citigroup deposits (AVG)	\$ 935.1	\$ 944.2	\$ 908.8

(1) Includes deposits in certain EMEA countries for all periods presented.

End-of-period deposits increased 2% year-over-year and declined 1% sequentially. Excluding the impact of FX translation, Citigroup's end-of-period deposits increased 4% year-over-year and 1% sequentially, with continued high-quality deposit flows across the franchise.

Excluding the impact of FX translation, Citicorp deposits grew 5% year-over-year. Within Citicorp, GCB deposits increased 3% year-over-year, primarily driven by growth in international GCB. ICG deposits increased 6% year-over-year, driven primarily by growth in treasury and trade solutions.

Long-Term Debt

Long-term debt (generally defined as debt with original maturities of one year or more) represents the most significant component of Citi's funding for the parent entities and is a supplementary source of funding for the bank entities.

Long-term debt is an important funding source due in part to its multi-year contractual maturity structure. The weighted-average maturities of unsecured long-term debt issued by Citigroup and its affiliates (including Citibank) with a remaining life greater than one year (excluding remaining trust preferred securities outstanding) was approximately 7.0 years as of December 31, 2016, unchanged sequentially and a slight increase from 6.9 years from the prior year.

Citi's long-term debt outstanding at the parent includes senior and subordinated debt and what Citi refers to as customer-related debt, consisting of structured notes, such as equity- and credit-linked notes, as well as non-structured notes. Citi's issuance of customer-related debt is generally driven by customer demand and supplements benchmark debt

issuance as a source of funding for Citi's parent entities. Citi's long-term debt at the bank also includes FHLB advances and securitizations.

Long-Term Debt Outstanding

The following table sets forth Citi's total long-term debt outstanding for the periods indicated:

<i>In billions of dollars</i>	Dec. 31, 2016	Sept. 30, 2016	Dec. 31, 2015
Parent and other⁽¹⁾			
Benchmark debt:			
Senior debt	\$ 99.9	\$ 97.1	\$ 90.3
Subordinated debt	26.8	28.8	26.9
Trust preferred	1.7	1.7	1.7
Customer-related debt			
Structured debt	22.8	23.6	21.8
Non-structured debt	3.0	3.5	3.0
Local country and other ⁽²⁾	2.5	2.7	2.4
Total parent and other	\$ 156.7	\$ 157.4	\$ 146.1
Bank			
FHLB borrowings	\$ 21.6	\$ 21.6	\$ 17.8
Securitizations ⁽³⁾	23.5	24.4	30.9
Local country and other ⁽²⁾	4.4	5.7	6.5
Total bank	\$ 49.5	\$ 51.7	\$ 55.2
Total long-term debt	\$ 206.2	\$ 209.1	\$ 201.3

Note: Amounts represent the current value of long-term debt on Citi's Consolidated Balance Sheet which, for certain debt instruments, includes consideration of fair value, hedging impacts and unamortized discounts and premiums.

- (1) "Parent and other" includes long-term debt issued to third parties by the parent holding company (Citigroup) and Citi's non-bank subsidiaries (including broker-dealer subsidiaries) that are consolidated into Citigroup. As of December 31, 2016 "parent and other" included \$9.4 billion of long-term debt issued by Citi's broker-dealer subsidiaries.
- (2) Local country debt includes debt issued by Citi's affiliates in support of their local operations.
- (3) Predominantly credit card securitizations, primarily backed by Citi-branded credit card receivables.

Citi's total long-term debt outstanding increased year-over-year, but declined sequentially. The increase year-over-year was primarily driven by an increase in senior debt at the parent, partially offset by declines in securitizations at the bank. Sequentially, Citi's long-term debt outstanding decreased modestly, driven primarily by a decline at the bank as parent debt remained relatively unchanged.

As part of its liability management, Citi has considered, and may continue to consider, opportunities to repurchase its long-term debt pursuant to open market purchases, tender offers or other means. Such repurchases help reduce Citi's overall funding costs and assist it in meeting regulatory changes and requirements. During 2016, Citi repurchased an aggregate of approximately \$5.9 billion of its outstanding long-term debt, including early redemptions of FHLB advances.

Long-Term Debt Issuances and Maturities

The table below details Citi's long-term debt issuances and maturities (including repurchases and redemptions) during the periods presented:

<i>In billions of dollars</i>	2016		2015		2014	
	Maturities	Issuances	Maturities	Issuances	Maturities	Issuances
Parent and other						
Benchmark debt:						
Senior debt	\$ 14.9	\$ 26.0	\$ 23.9	\$ 20.2	\$ 18.9	\$ 18.6
Subordinated debt	3.2	4.0	4.0	7.5	5.0	2.8
Trust preferred	—	—	—	—	2.1	—
Customer-related debt:						
Structured debt	9.5	10.2	7.7	9.1	7.5	9.5
Non-structured debt	0.7	0.3	2.2	0.4	2.4	1.4
Local country and other	2.1	2.2	0.4	1.9	2.4	3.7
Total parent and other	\$ 30.4	\$ 42.7	\$ 38.2	\$ 39.1	\$ 38.3	\$ 36.0
Bank						
FHLB borrowings	\$ 10.5	\$ 14.3	\$ 4.0	\$ 2.0	\$ 8.0	\$ 13.9
Securitizations	10.7	3.3	7.9	0.8	8.9	13.6
Local country and other	3.9	3.4	2.8	2.7	3.7	3.3
Total bank	\$ 25.1	\$ 21.0	\$ 14.7	\$ 5.5	\$ 20.6	\$ 30.8
Total	\$ 55.5	\$ 63.7	\$ 52.9	\$ 44.6	\$ 58.9	\$ 66.8

The table below shows Citi's aggregate long-term debt maturities (including repurchases and redemptions) in 2016, as well as its aggregate expected annual long-term debt maturities as of December 31, 2016:

<i>In billions of dollars</i>	Maturities							
	2016	2017	2018	2019	2020	2021	Thereafter	Total
Parent and other								
Benchmark debt:								
Senior debt	\$ 14.9	\$ 14.0	\$ 18.2	\$ 14.0	\$ 6.4	\$ 13.9	\$ 33.4	\$ 99.9
Subordinated debt	3.2	1.2	0.9	1.2	0.1	—	23.4	26.8
Trust preferred	—	—	—	—	—	—	1.7	1.7
Customer-related debt:								
Structured debt	9.5	5.1	2.1	1.6	3.0	1.2	9.8	22.8
Non-structured debt	0.7	0.5	0.6	0.2	0.2	0.1	1.4	3.0
Local country and other	2.1	0.3	0.2	0.1	0.1	—	1.8	2.5
Total parent and other	\$ 30.4	\$ 21.1	\$ 22.0	\$ 17.1	\$ 9.8	\$ 15.2	\$ 71.5	\$ 156.7
Bank								
FHLB borrowings	\$ 10.5	\$ 7.8	\$ 13.2	\$ 0.6	\$ —	\$ —	\$ —	\$ 21.6
Securitizations	10.7	5.3	9.5	3.9	0.1	3.8	0.9	23.5
Local country and other	3.9	1.9	1.4	0.4	0.3	0.1	0.2	4.4
Total bank	\$ 25.1	\$ 15.0	\$ 24.1	\$ 4.9	\$ 0.4	\$ 3.9	\$ 1.1	\$ 49.5
Total long-term debt	\$ 55.5	\$ 36.1	\$ 46.1	\$ 22.0	\$ 10.2	\$ 19.1	\$ 72.6	\$ 206.2

Resolution Plan

Under Title I of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act), Citigroup has developed a “single point of entry” resolution strategy and plan under the U.S. Bankruptcy Code (Resolution Plan). Under Citi’s Resolution Plan, only Citigroup, the parent holding company, would enter into bankruptcy, while Citigroup’s key operating subsidiaries, including Citibank, among others, would remain operational and outside of any resolution or insolvency proceedings. Citigroup believes its Resolution Plan has been designed to minimize the risk of systemic impact to the U.S. and global financial systems, while maximizing the value of the bankruptcy estate for the benefit of Citigroup’s creditors, including its unsecured long-term debt holders. In addition, in line with the Federal Reserve Board’s final TLAC rule, Citigroup believes it has developed the Resolution Plan so that Citigroup’s shareholders and unsecured creditors—including its unsecured long-term debt holders—bear any losses resulting from Citigroup’s bankruptcy.

In response to feedback received from the Federal Reserve Board and FDIC (the Agencies) on Citi’s 2015 Resolution Plan, Citi currently expects to take the following actions in connection with its 2017 Resolution Plan submission (to be submitted by July 1, 2017):

- (i) Citicorp, an existing wholly owned subsidiary of Citigroup and current parent company of Citibank, would be established as an intermediate holding company (an IHC) for certain of Citigroup’s key operating subsidiaries;
- (ii) subject to final approval of the Board of Directors of Citigroup, Citigroup would execute an inter-affiliate agreement with Citicorp, Citigroup’s key operating subsidiaries and certain other affiliated entities pursuant to which Citicorp would be required to provide liquidity and capital support to Citigroup’s key operating subsidiaries in the event Citigroup were to enter bankruptcy proceedings (Citi Support Agreement);
- (iii) pursuant to the Citi Support Agreement:
 - upon execution, Citigroup would make an initial contribution of assets, including certain HQLA and inter-affiliate loans (Contributable Assets), to Citicorp, and Citicorp would then become the business as usual funding vehicle for Citigroup’s key operating subsidiaries;
 - Citigroup would be obligated to continue to transfer Contributable Assets to Citicorp over time, subject to certain amounts retained by Citigroup to, among other things, meet Citigroup’s near-term cash needs;
 - in the event of a Citigroup bankruptcy, Citigroup would be required to contribute most of its remaining assets to Citicorp; and
- (iv) the obligations of both Citigroup and Citicorp under the Citi Support Agreement, as well as the Contributable Assets, would be secured pursuant to a security agreement.

Citigroup also expects that the Citi Support Agreement will provide two mechanisms, besides Citicorp’s issuing of dividends to Citigroup, pursuant to which Citicorp would be required to transfer cash to Citigroup during business as usual so that Citigroup can fund its debt service as well as other operating needs: (i) one or more funding notes issued by Citicorp to Citigroup; and (ii) a committed line of credit under which Citicorp may make loans to Citigroup.

Total Loss-Absorbing Capacity (TLAC)

In December 2016, the Federal Reserve Board released a final rule which imposes minimum external loss-absorbing capacity (TLAC) and long-term debt (LTD) requirements on U.S. global systemically important bank holding companies (GSIBs), including Citi. The intended purpose of the final rule is to facilitate the orderly resolution of U.S. GSIBs under the U.S. Bankruptcy Code and Title II of the Dodd-Frank Act. The effective date for all requirements under the final rule is January 1, 2019. While final, there are uncertainties regarding certain key aspects of the final rule. For additional information, see “Risk Factors—Strategic Risks” above. For an additional discussion of the method 1 and method 2 GSIB capital surcharge methodology, see “Capital Resources—Current Regulatory Capital Standards” above.

Under the Federal Reserve Board’s final rule, U.S. GSIBs will be required to maintain minimum levels of TLAC and eligible LTD, each set by reference to the GSIB’s consolidated risk-weighted assets (RWA) and total leverage exposure and as described further below.

In response to the final TLAC rule, Citigroup supplemented its senior debt indenture in December 2016 to, among other things, limit the circumstances under which future issuances of senior debt issued pursuant to the indenture can be accelerated, as required by the final rule and referenced below.

Minimum TLAC Requirements

The minimum TLAC requirement is the *greater* of (i) 18% of the GSIB’s RWA plus the then-applicable RWA-based TLAC buffer (see below) and (ii) 7.5% of the GSIB’s total leverage exposure plus a leveraged-based TLAC buffer of 2% (i.e., 9.5%). The RWA-based TLAC buffer equals the 2.5% capital conservation buffer, plus any applicable countercyclical capital buffer (currently 0%), plus the GSIB’s capital surcharge as determined under method 1 of the GSIB surcharge rule (2.0% for Citi as of January 1, 2017). Accordingly, Citi estimates its total current minimum TLAC requirement is 22.5% of RWA under the final rule. Pursuant to the final rule, TLAC may generally only consist of the GSIB’s (i) Common Equity Tier 1 Capital and Additional Tier 1 Capital issued directly by the bank holding company (excluding qualifying trust preferred securities) plus (ii) eligible LTD (as discussed below). Breach of either the RWA- or leveraged-based TLAC buffer would result in restrictions on distributions and discretionary bonus payments.

Minimum Eligible LTD Requirements

The minimum LTD requirement is the *greater* of (i) 6% of the GSIB’s RWA plus its capital surcharge as determined under

method 2 of the GSIB surcharge rule (3.0% for Citi as of January 1, 2017), for a total current requirement of 9% of RWA for Citi, and (ii) 4.5% of the GSIB's total leverage exposure.

Generally, under the final rule, eligible LTD is defined as the unpaid principal balance of unsecured, "plain vanilla" debt securities (i.e., would not include certain of Citi's customer-related debt) issued directly by the bank holding company, governed by U.S. law, with a remaining maturity greater than one year and which provides for acceleration only upon the occurrence of insolvency or non-payment of principal or interest for 30 days or more. Further, pursuant to what has been referred to as the "haircut" provision, otherwise eligible LTD with a remaining maturity between one and two years is subject to a 50% haircut for purposes of meeting the minimum LTD requirement (although such LTD would continue to count at full value for purposes of the minimum TLAC requirement; eligible LTD with a remaining maturity of less than one year would not count toward either the minimum TLAC or eligible LTD requirement). The final rule provides that debt issued prior to December 31, 2016 with acceleration provisions other than those summarized above or governed by non-U.S. law is permanently grandfathered and may count as eligible LTD, assuming it otherwise meets the requirements of eligible LTD.

Clean Holding Company Requirements

The final rule prohibits or limits certain financial arrangements at the bank holding company level, or what are referred to as "clean holding company" requirements. Pursuant to these requirements, Citi, as the bank holding company, is prohibited from having certain types of third-party liabilities, including short-term debt, certain derivatives and other qualified financial contracts, liabilities guaranteed by a subsidiary (i.e., upstream guarantees) and guarantees of subsidiary liabilities or similar arrangements, if the liability or guarantee includes a default right linked to the insolvency of the bank holding company (i.e., downstream guarantees with cross default provisions). In addition, the final rule limits third-party, non-contingent liabilities of the bank holding company (other than those related to TLAC or eligible LTD) to 5% of the U.S. GSIB's outstanding TLAC. Examples of the types of liabilities subject to this 5% limit include structured notes and various operating liabilities, such as rent and obligations to employees, as well as litigation and similar liabilities.

Secured Funding Transactions and Short-Term Borrowings

As referenced above, Citi supplements its primary sources of funding with short-term borrowings. Short-term borrowings generally include (i) secured funding transactions (securities loaned or sold under agreements to repurchase, or repos) and (ii) to a lesser extent, short-term borrowings consisting of commercial paper and borrowings from the FHLB and other market participants (see Note 17 to the Consolidated Financial Statements for further information on Citigroup's and its affiliates' outstanding short-term borrowings).

Outside of secured funding transactions, Citi's short-term borrowings increased both year-over-year (a 46% increase) and sequentially (a 4% increase), driven by an increase in FHLB borrowing, as Citi continued to optimize liquidity across its legal vehicles.

Secured Funding

Secured funding is primarily accessed through Citi's broker-dealer subsidiaries to fund efficiently both secured lending activity and a portion of securities inventory held in the context of market making and customer activities. Citi also executes a smaller portion of its secured funding transactions through its bank entities, which is typically collateralized by foreign government debt securities. Generally, daily changes in the level of Citi's secured funding are primarily due to fluctuations in secured lending activity in the matched book (as described below) and securities inventory.

Secured funding of \$142 billion as of December 31, 2016 declined 3% from the prior-year period and 7% sequentially. Excluding the impact of FX translation, secured funding increased 1% from the prior-year period and decreased 5% sequentially, both driven by normal business activity. Average balances for secured funding were approximately \$150 billion for the quarter ended December 31, 2016.

The portion of secured funding in the broker-dealer subsidiaries that funds secured lending is commonly referred to as "matched book" activity. The majority of this activity is secured by high quality, liquid securities such as U.S. Treasury securities, U.S. agency securities and foreign government debt securities. Other secured funding is secured by less liquid securities, including equity securities, corporate bonds and asset-backed securities. The tenor of Citi's matched book liabilities is generally equal to or longer than the tenor of the corresponding matched book assets.

The remainder of the secured funding activity in the broker-dealer subsidiaries serves to fund securities inventory held in the context of market making and customer activities. To maintain reliable funding under a wide range of market conditions, including under periods of stress, Citi manages these activities by taking into consideration the quality of the underlying collateral, and stipulating financing tenor. The weighted average maturity of Citi's secured funding of less liquid securities inventory was greater than 110 days as of December 31, 2016.

Citi manages the risks in its secured funding by conducting daily stress tests to account for changes in capacity, tenors, haircut, collateral profile and client actions. Additionally, Citi maintains counterparty diversification by

establishing concentration triggers and assessing counterparty reliability and stability under stress. Citi generally sources secured funding from more than 150 counterparties.

Overall Short-Term Borrowings

As required by SEC rules, the following table contains the year-end, average and maximum month-end amounts for the following respective short-term borrowings categories at the end of each of the three prior fiscal years:

<i>In billions of dollars</i>	Federal funds purchased and securities sold under agreements to repurchase			Short-term borrowings⁽¹⁾					
	2016	2015	2014	Commercial paper⁽²⁾			Other short-term borrowings⁽³⁾		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Amounts outstanding at year end	\$ 141.8	\$ 146.5	\$ 173.4	\$ 10.0	\$ 10.0	\$ 16.2	\$ 20.7	\$ 11.1	\$ 42.1
Average outstanding during the year ⁽⁴⁾⁽⁵⁾	158.1	174.5	190.8	10.0	10.7	16.8	14.8	22.2	44.4
Maximum month-end outstanding	171.7	186.2	200.1	10.2	15.3	17.9	20.9	41.9	47.1
Weighted-average interest rate									
During the year ⁽⁴⁾⁽⁵⁾⁽⁶⁾	1.21%	0.92%	0.99%	0.80%	0.36%	0.27%	2.32%	1.40%	1.18%
At year end ⁽⁷⁾	0.63	0.59	0.49	0.79	0.22	0.23	1.39	1.50	0.53

(1) Original maturities of less than one year.

(2) Substantially all commercial paper outstanding was issued by certain Citibank entities for the periods presented.

(3) Other short-term borrowings include borrowings from the FHLB and other market participants.

(4) Interest rates and amounts include the effects of risk management activities associated with the respective liability categories.

(5) Average volumes of securities loaned or sold under agreements to repurchase are reported net pursuant to ASC 210-20-45; average rates exclude the impact of ASC 210-20-45.

(6) Average rates reflect prevailing local interest rates, including inflationary effects and monetary correction in certain countries.

(7) Based on contractual rates at respective year ends; non-interest-bearing accounts are excluded from the weighted average interest rate calculated at year end.

Liquidity Monitoring and Measurement

Stress Testing

Liquidity stress testing is performed for each of Citi's major entities, operating subsidiaries and/or countries. Stress testing and scenario analyses are intended to quantify the potential impact of a liquidity event on the balance sheet and liquidity position, and to identify viable funding alternatives that can be utilized. These scenarios include assumptions about significant changes in key funding sources, market triggers (such as credit ratings), potential uses of funding and political and economic conditions in certain countries. These conditions include expected and stressed market conditions as well as Company-specific events.

Liquidity stress tests are conducted to ascertain potential mismatches between liquidity sources and uses over a variety of time horizons (overnight, one week, two weeks, one month, three months, one year) and over a variety of stressed conditions. Liquidity limits are set accordingly. To monitor the liquidity of an entity, these stress tests and potential mismatches are calculated with varying frequencies, with several tests performed daily.

Given the range of potential stresses, Citi maintains a series of contingency funding plans on a consolidated basis and for individual entities. These plans specify a wide range of readily available actions for a variety of adverse market conditions or idiosyncratic stresses.

Short-Term Liquidity Measurement: Liquidity Coverage Ratio (LCR)

In addition to internal measures that Citi has developed for a 30-day stress scenario, Citi also monitors its liquidity by reference to the LCR, as calculated pursuant to the U.S. LCR rules.

Generally, the LCR is designed to ensure that banks maintain an adequate level of HQLA to meet liquidity needs under an acute 30-day stress scenario. The LCR is calculated by dividing HQLA by estimated net outflows over a stressed 30-day period, with the net outflows determined by applying prescribed outflow factors to various categories of liabilities, such as deposits, unsecured and secured wholesale borrowings, unused lending commitments and derivatives-related exposures, partially offset by inflows from assets maturing within 30 days. Banks are required to calculate an add-on to address potential maturity mismatches between contractual cash outflows and inflows within the 30-day period in determining the total amount of net outflows. The minimum LCR requirement is 100%, effective January 2017.

In December 2016, the Federal Reserve Board adopted final rules which require additional disclosures relating to the LCR of large financial institutions, including Citi. Among other things, the final rules require Citi to disclose components of its average HQLA, LCR and inflows and outflows each quarter. In addition, the final rules require disclosure of Citi's calculation of the maturity mismatch add-on as well as other qualitative disclosures. The effective date for these disclosures is April 1, 2017.

The table below sets forth the components of Citi's LCR calculation and HQLA in excess of net outflows for the periods indicated:

<i>In billions of dollars</i>	Dec. 31, 2016	Sept. 30, 2016	Dec. 31, 2015
HQLA	\$403.7	\$ 403.8	\$ 389.2
Net outflows	332.5	335.3	344.4
LCR	121%	120%	113%
HQLA in excess of net outflows	\$71.3	\$ 68.5	\$ 44.8

Note: Amounts set forth in the table above are presented on an average basis.

As set forth in the table above, Citi's LCR increased both year-over-year and sequentially. The increase year-over-year was driven by both an increase in HQLA and a reduction in net outflows. Sequentially, the increase was driven by a slight reduction in net outflows, as HQLA remained largely unchanged.

Long-Term Liquidity Measurement: Net Stable Funding Ratio (NSFR)

In the second quarter of 2016, the Federal Reserve Board, the FDIC and the OCC issued a proposed rule to implement the Basel III NSFR requirement.

The U.S.-proposed NSFR is largely consistent with the Basel Committee's final NSFR rules. In general, the NSFR assesses the availability of a bank's stable funding against a required level. A bank's available stable funding would include portions of equity, deposits and long-term debt, while its required stable funding would be based on the liquidity characteristics of its assets, derivatives and commitments. Standardized weightings would be required to be applied to the various asset and liabilities classes. The ratio of available stable funding to required stable funding would be required to be greater than 100%. While Citi believes that it is compliant with the proposed U.S. NSFR rules as of December 31, 2016, it will need to evaluate any final version of the rules, which are expected to be released during 2017. The proposed rules would require full implementation of the U.S. NSFR beginning January 1, 2018.

Credit Ratings

Citigroup's funding and liquidity, funding capacity, ability to access capital markets and other sources of funds, the cost of these funds, and its ability to maintain certain deposits are partially dependent on its credit ratings.

The table below sets forth the ratings for Citigroup and Citibank as of December 31, 2016. While not included in the table below, the long-term and short-term ratings of Citigroup Global Markets Inc. (CGMI) were "A2/P-1" at Moody's, "A+/A-1" at Standard & Poor's and "A+/F1" at Fitch as of December 31, 2016. The long-term and short-term ratings of Citigroup Global Markets Holdings Inc. (CGMHI) were "BBB+/A-2" at Standard & Poor's and "A/F1" at Fitch as of December 31, 2016.

	Citigroup Inc.			Citibank, N.A.		
	Senior debt	Commercial paper	Outlook	Long-term	Short-term	Outlook
Fitch Ratings (Fitch)	A	F1	Stable	A+	F1	Stable
Moody's Investors Service (Moody's)	Baa1	P-2	Stable	A1	P-1	Stable
Standard & Poor's (S&P)	BBB+	A-2	Stable	A+	A-1	Stable

Recent Credit Rating Developments

On December 13, 2016, Fitch affirmed Citigroup Inc.'s Viability Rating (VR) and Long-Term Issuer Default Rating (IDR) at "a/A", respectively. At the same time, Fitch affirmed Citibank's VR and IDR at "a/A+", respectively. The outlooks for the Long-Term IDRs are Stable.

On December 16, 2016, S&P amended its Additional Loss-Absorbing Capacity (ALAC) criteria to include existing senior unsecured debt and concluded their credit watch on four of the U.S. GSIBs, including Citigroup, resulting in a one-notch upgrade on their core and highly strategic operating subsidiaries. Consequently, S&P upgraded Citibank's long-term rating from "A" to "A+" with its short-term rating remaining at "A-1". Citibank's ratings outlook was changed to "Stable" from "Credit Watch Positive". As of December 31, 2016, Citigroup Inc. is in excess of the 8.5% threshold deemed necessary to receive the maximum two notches of ALAC support.

Potential Impacts of Ratings Downgrades

Ratings downgrades by Moody's, Fitch or S&P could negatively impact Citigroup's and/or Citibank's funding and liquidity due to reduced funding capacity, including derivatives triggers, which could take the form of cash obligations and collateral requirements.

The following information is provided for the purpose of analyzing the potential funding and liquidity impact to Citigroup and Citibank of a hypothetical, simultaneous ratings downgrade across all three major rating agencies. This analysis is subject to certain estimates, estimation methodologies, judgments and uncertainties. Uncertainties include potential ratings limitations that certain entities may have with respect to permissible counterparties, as well as general subjective counterparty behavior. For example, certain corporate customers and markets counterparties could re-evaluate their business relationships with Citi and limit

transactions in certain contracts or market instruments with Citi. Changes in counterparty behavior could impact Citi's funding and liquidity, as well as the results of operations of certain of its businesses. The actual impact to Citigroup or Citibank is unpredictable and may differ materially from the potential funding and liquidity impacts described below. For additional information on the impact of credit rating changes on Citi and its applicable subsidiaries, see "Risk Factors—Liquidity Risks" above.

Citigroup Inc. and Citibank—Potential Derivative Triggers
As of December 31, 2016, Citi estimates that a hypothetical one-notch downgrade of the senior debt/long-term rating of Citigroup Inc. across all three major rating agencies could impact Citigroup's funding and liquidity due to derivative triggers by approximately \$0.4 billion, compared to \$0.5 billion as of September 30, 2016. Other funding sources, such as securities financing transactions and other margin requirements, for which there are no explicit triggers, could also be adversely affected.

As of December 31, 2016, Citi estimates that a hypothetical one-notch downgrade of the senior debt/long-term rating of Citibank across all three major rating agencies could impact Citibank's funding and liquidity by approximately \$1.2 billion, compared to \$1.3 billion as of September 30, 2016, due to derivative triggers.

In total, Citi estimates that a one-notch downgrade of Citigroup and Citibank, across all three major rating agencies, could result in aggregate cash obligations and collateral requirements of approximately \$1.6 billion, compared to \$1.8 billion as of September 30, 2016 (see also Note 22 to the Consolidated Financial Statements). As set forth under “High-Quality Liquid Assets” above, the liquidity resources of Citibank were approximately \$346 billion and the liquidity resources of Citi’s non-bank and other entities were approximately \$58 billion, for a total of approximately \$404 billion as of December 31, 2016. These liquidity resources are available in part as a contingency for the potential events described above.

In addition, a broad range of mitigating actions are currently included in Citigroup’s and Citibank’s contingency funding plans. For Citigroup, these mitigating factors include, but are not limited to, accessing surplus funding capacity from existing clients, tailoring levels of secured lending, and adjusting the size of select trading books and collateralized borrowings from certain Citibank subsidiaries. Mitigating actions available to Citibank include, but are not limited to, selling or financing highly liquid government securities, tailoring levels of secured lending, adjusting the size of select trading assets, reducing loan originations and renewals, raising additional deposits, or borrowing from the FHLB or central banks. Citi believes these mitigating actions could substantially reduce the funding and liquidity risk, if any, of the potential downgrades described above.

Citibank—Additional Potential Impacts

In addition to the above derivative triggers, Citi believes that a potential one-notch downgrade of Citibank’s senior debt/long-term rating by S&P could also have an adverse impact on the commercial paper/short-term rating of Citibank. As of December 31, 2016, Citibank had liquidity commitments of approximately \$10.0 billion to consolidated asset-backed commercial paper conduits, compared to \$10.1 billion as of September 30, 2016 (as referenced in Note 21 to the Consolidated Financial Statements).

In addition to the above-referenced liquidity resources of certain Citibank and Citibanamex entities, Citibank could reduce the funding and liquidity risk, if any, of the potential downgrades described above through mitigating actions, including repricing or reducing certain commitments to commercial paper conduits. In the event of the potential downgrades described above, Citi believes that certain corporate customers could re-evaluate their deposit relationships with Citibank. This re-evaluation could result in clients adjusting their discretionary deposit levels or changing their depository institution, which could potentially reduce certain deposit levels at Citibank. However, Citi could choose to adjust pricing, offer alternative deposit products to its existing customers or seek to attract deposits from new customers, in addition to the mitigating actions referenced above.

MARKET RISK

Overview

Market risk is the potential for losses arising from changes in the value of Citi's assets and liabilities resulting from changes in market variables such as interest rates, foreign exchange rates, equity prices, commodity prices and credit spreads, as well as their implied volatilities.

Each business is required to establish, with approval from Citi's market risk management, a market risk limit framework for identified risk factors that clearly defines approved risk profiles and is within the parameters of Citi's overall risk appetite. These limits are monitored by the Risk organization, Citi's country and business Asset and Liability Committees and the Citigroup Asset and Liability Committee. In all cases, the businesses are ultimately responsible for the market risks taken and for remaining within their defined limits.

Market risk emanates from both Citi's trading and non-trading portfolios. Trading portfolios comprise all assets and liabilities marked-to-market, with results reflected in earnings. Non-trading portfolios include all other assets and liabilities.

Market Risk of Non-Trading Portfolios

Market risk from non-trading portfolios stems from the potential impact of changes in interest rates and foreign exchange rates on Citi's net interest revenues, the changes in *Accumulated other comprehensive income (loss)* (AOCI) from its investment portfolios and capital invested in foreign currencies.

Net Interest Revenue at Risk

Net interest revenue, for interest rate exposure purposes, is the difference between the yield earned on the non-trading portfolio assets (including customer loans) and the rate paid on the liabilities (including customer deposits or company borrowings). Net interest revenue is affected by changes in the level of interest rates, as well as the amounts and mix of assets and liabilities, and the timing of contractual and assumed repricing of assets and liabilities to reflect market rates.

Citi's principal measure of risk to net interest revenue is interest rate exposure (IRE). IRE measures the change in expected net interest revenue in each currency resulting solely from unanticipated changes in forward interest rates.

Citi's estimated IRE incorporates various assumptions including prepayment rates on loans, customer behavior and the impact of pricing decisions. For example, in rising interest rate scenarios, portions of the deposit portfolio may be assumed to experience rate increases that are less than the change in market interest rates. In declining interest rate scenarios, it is assumed that mortgage portfolios experience higher prepayment rates. IRE assumes that businesses and/or Citi Treasury make no additional changes in balances or positioning in response to the unanticipated rate changes.

In order to manage changes in interest rates effectively, Citi may modify pricing on new customer loans and deposits, purchase fixed rate securities, issue debt that is either fixed or floating or enter into derivative transactions that have the opposite risk exposures. Citi regularly assesses the viability of

these and other strategies to reduce its interest rate risks and implements such strategies when it believes those actions are prudent.

Citi manages interest rate risk as a consolidated company-wide position. Citi's client-facing businesses create interest-rate sensitive positions, including loans and deposits, as part of their ongoing activities. Citi Treasury aggregates these risk positions and manages them centrally. Operating within established limits, Citi Treasury makes positioning decisions and uses tools, such as Citi's investment securities portfolio, company-issued debt, and interest rate derivatives, to target the desired risk profile. Changes in Citi's interest rate risk position reflect the accumulated changes in all non-trading assets and liabilities, with potentially large and offsetting impacts, as well as, Citi Treasury's positioning decisions.

Citigroup employs additional measurements, including stress testing the impact of non-linear interest rate movements on the value of the balance sheet; the analysis of portfolio duration and volatility, particularly as they relate to mortgage loans and mortgage-backed securities; and the potential impact of the change in the spread between different market indices.

Interest Rate Risk of Investment Portfolios—Impact on AOCI

Citi also measures the potential impacts of changes in interest rates on the value of its AOCI, which can in turn impact Citi's common equity and tangible common equity. This will impact Citi's Common Equity Tier 1 and other regulatory capital ratios. Citi's goal is to benefit from an increase in the market level of interest rates, while limiting the impact of changes in AOCI on its regulatory capital position.

AOCI at risk is managed as part of the company-wide interest rate risk position. AOCI at risk considers potential changes in AOCI (and the corresponding impact on the Common Equity Tier 1 Capital ratio) relative to Citi's capital generation capacity.

The following table sets forth the estimated impact to Citi's net interest revenue, AOCI and the Common Equity Tier 1 Capital ratio (on a fully implemented basis), each assuming an unanticipated parallel instantaneous 100 basis point increase in interest rates.

<i>In millions of dollars (unless otherwise noted)</i>	Dec. 31, 2016	Sept. 30, 2016	Dec. 31, 2015
Estimated annualized impact to net interest revenue			
U.S. dollar ⁽¹⁾	\$ 1,586	\$ 1,405	\$ 1,419
All other currencies	550	574	635
Total	\$ 2,136	\$ 1,979	\$ 2,054
As a percentage of average interest-earning assets	0.13%	0.12%	0.13%
Estimated initial impact to AOCI (after-tax) ⁽²⁾	\$ (4,617)	\$ (4,868)	\$ (4,837)
Estimated initial impact on Common Equity Tier 1 Capital ratio (bps) ⁽³⁾	(53)	(53)	(57)

- (1) Certain trading-oriented businesses within Citi have accrual-accounted positions that are excluded from the estimated impact to net interest revenue in the table since these exposures are managed economically in combination with mark-to-market positions. The U.S. dollar interest rate exposure associated with these businesses was \$(238) million for a 100 basis point instantaneous increase in interest rates as of December 31, 2016.
- (2) Includes the effect of changes in interest rates on AOCI related to investment securities, cash flow hedges and pension liability adjustments.
- (3) The estimated initial impact to the Common Equity Tier 1 Capital ratio considers the effect of Citi's deferred tax asset position and is based on only the estimated initial AOCI impact above.

The 2016 increase in the estimated impact to net interest revenue primarily reflected Citi Treasury actions, including interest rate derivative positioning. The 2016 decrease in the estimated impact to AOCI and the Common Equity Tier 1 Capital ratio primarily reflected changes in the composition of Citi Treasury's investment and interest rate derivatives portfolio.

In the event of an unanticipated parallel instantaneous 100 basis point increase in interest rates, Citi expects the negative impact to AOCI would be offset in shareholders' equity through the combination of expected incremental net interest revenue and the expected recovery of the impact on AOCI

through accretion of Citi's investment portfolio over a period of time. As of December 31, 2016, Citi expects that the negative \$4.6 billion impact to AOCI in such a scenario could potentially be offset over approximately 22 months.

The following table sets forth the estimated impact to Citi's net interest revenue, AOCI and the Common Equity Tier 1 Capital ratio (on a fully implemented basis) under four different changes in interest rate scenarios for the U.S. dollar and Citi's other currencies. While Citi also monitors the impact of a parallel decrease in interest rates, a 100 basis point decrease in short-term rates is not meaningful, as it would imply negative interest rates in many of Citi's markets.

<i>In millions of dollars (unless otherwise noted)</i>	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Overnight rate change (bps)	100	100	—	—
10-year rate change (bps)	100	—	100	(100)
Estimated annualized impact to net interest revenue				
U.S. dollar	\$ 1,586	\$ 1,550	\$ 106	\$ (124)
All other currencies	550	509	31	(31)
Total	\$ 2,136	\$ 2,059	\$ 137	\$ (155)
Estimated initial impact to AOCI (after-tax) ⁽¹⁾	\$ (4,617)	\$ (2,677)	\$ (2,038)	\$ 1,759
Estimated initial impact to Common Equity Tier 1 Capital ratio (bps) ⁽²⁾	(53)	(30)	(25)	21

Note: Each scenario in the table above assumes that the rate change will occur instantaneously. Changes in interest rates for maturities between the overnight rate and the 10-year rate are interpolated.

- (1) Includes the effect of changes in interest rates on AOCI related to investment securities, cash flow hedges and pension liability adjustments.
- (2) The estimated initial impact to the Common Equity Tier 1 Capital ratio considers the effect of Citi's deferred tax asset position and is based on only the estimated AOCI impact above.

As shown in the table above, the magnitude of the impact to Citi's net interest revenue and AOCI is greater under scenario 2 as compared to scenario 3. This is because the combination of changes to Citi's investment portfolio, partially offset by changes related to Citi's pension liabilities, results in a net position that is more sensitive to rates at shorter and intermediate term maturities.

Over the past year, a number of central banks, including the European Central Bank, the Bank of Japan and the Swiss National Bank, have implemented negative interest rates, and additional governmental entities could do so in the future.

While negative interest rates can adversely impact net interest revenue (as well as net interest margin), Citi has, to date, been able to partially offset the impact of negative rates in these jurisdictions through a combination of business and Citi Treasury interest rate risk mitigation activities, as discussed, including applying negative interest rates to client accounts.

Changes in Foreign Exchange Rates—Impacts on AOCI and Capital

As of December 31, 2016, Citi estimates that an unanticipated parallel instantaneous 5% appreciation of the U.S. dollar against all of the other currencies in which Citi has invested capital could reduce Citi's tangible common equity (TCE) by approximately \$1.5 billion, or 0.9%, as a result of changes to Citi's foreign currency translation adjustment in AOCI, net of hedges. This impact would be primarily due to changes in the value of the Mexican peso, the Euro, and the Australian dollar.

This impact is also before any mitigating actions Citi may take, including ongoing management of its foreign currency translation exposure. Specifically, as currency movements change the value of Citi's net investments in foreign currency-denominated capital, these movements also change the value of Citi's risk-weighted assets denominated in those currencies. This, coupled with Citi's foreign currency hedging strategies, such as foreign currency borrowings, foreign currency forwards and other currency hedging instruments, lessens the impact of foreign currency movements on Citi's Common Equity Tier 1 Capital ratio. Changes in these hedging strategies, as well as hedging costs, divestitures and tax impacts, can further impact the actual impact of changes in foreign exchange rates on Citi's capital as compared to an unanticipated parallel shock, as described above.

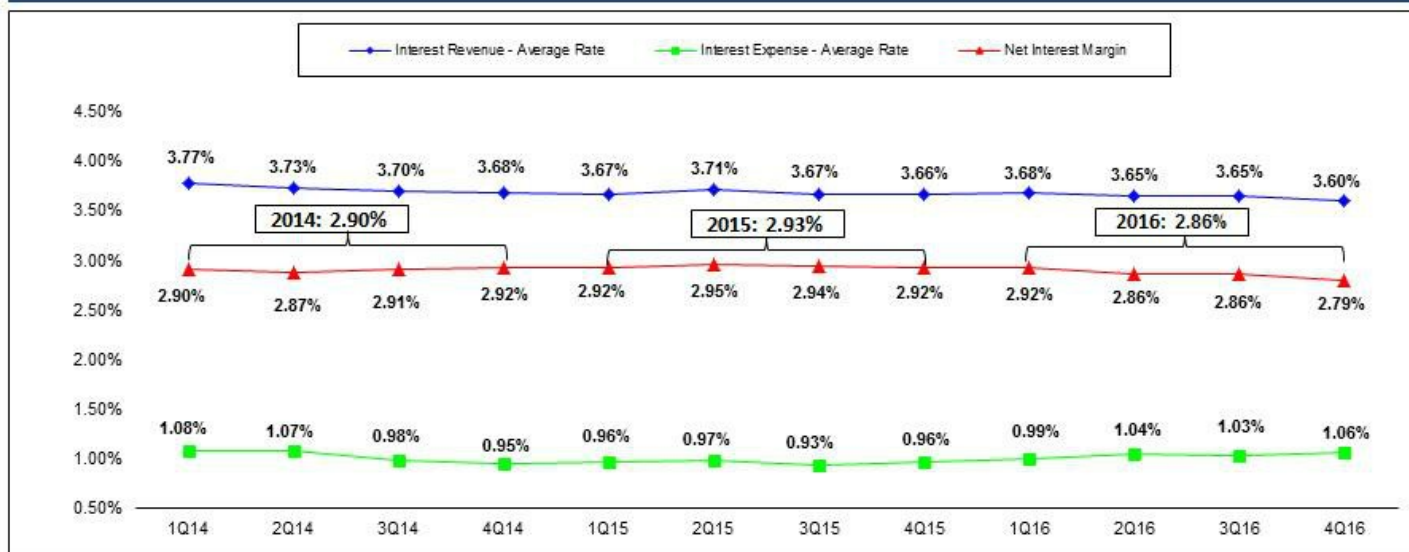
The effect of Citi's ongoing management strategies with respect to changes in foreign exchange rates and the impact of these changes on Citi's TCE and Common Equity Tier 1 Capital ratio are shown in the table below. For additional information on the changes in AOCI, see Note 19 to the Consolidated Financial Statements.

<i>In millions of dollars (unless otherwise noted)</i>	For the quarter ended		
	Dec. 31, 2016	Sept. 30, 2016	Dec. 31, 2015
Change in FX spot rate ⁽¹⁾	(5.2)%	(0.2)%	(1.1)%
Change in TCE due to FX translation, net of hedges	\$ (1,668)	\$ (412)	\$ (696)
As a percentage of TCE	(0.9)%	(0.2)%	(0.4)%
Estimated impact to Common Equity Tier 1 Capital ratio (on a fully implemented basis) due to changes in FX translation, net of hedges (bps)	—	(2)	—

(1) FX spot rate change is a weighted average based upon Citi's quarterly average GAAP capital exposure to foreign countries.

Interest Revenue/Expense and Net Interest Margin

Average Rates - Interest Revenue, Interest Expense, and Net Interest Margin



<i>In millions of dollars, except as otherwise noted</i>	2016	2015	2014	Change 2016 vs. 2015	Change 2015 vs. 2014
Interest revenue ⁽¹⁾	\$ 58,077	\$ 59,040	\$ 62,180	(2)%	(5)%
Interest expense	12,511	11,921	13,690	5	(13)
Net interest revenue ⁽¹⁾⁽²⁾	\$ 45,566	\$ 47,119	\$ 48,490	(3)%	(3)%
Interest revenue—average rate	3.64%	3.68%	3.72%	(4) bps	(4) bps
Interest expense—average rate	1.03	0.95	1.02	8 bps	(7) bps
Net interest margin	2.86	2.93	2.90	(7) bps	3 bps
Interest rate benchmarks					
Two-year U.S. Treasury note—average rate	0.83%	0.69%	0.46%	14 bps	23 bps
10-year U.S. Treasury note—average rate	1.83	2.14	2.54	(31) bps	(40) bps
10-year vs. two-year spread	100 bps	145 bps	208 bps		

Note: All interest expense amounts include FDIC deposit insurance assessments.

(1) *Net interest revenue* includes the taxable equivalent adjustments related to the tax-exempt bond portfolio (based on the U.S. federal statutory tax rate of 35%) of \$462 million, \$487 million and \$498 million for 2016, 2015 and 2014, respectively.

(2) Excludes expenses associated with certain hybrid financial instruments, which are classified as *Long-term debt* and accounted for at fair value.

Citi's net interest margin (NIM) is calculated by dividing gross interest revenue less gross interest expense by average interest earning assets. Citi's NIM was 2.79% in the fourth quarter of 2016, a decrease of 7 basis points from the third quarter of 2016, driven primarily by lower trading NIM, higher funding costs and the higher mix of promotional rate balances in the U.S. cards portfolios. On a full-year basis, Citi's NIM declined to 2.86%, compared to 2.93% in 2015, driven primarily by the divestiture of OneMain Financial, the impact of FX translation and lower trading NIM, partially offset by higher loan volumes (including from the Costco portfolio).

As noted in the tables above, Citi's interest expense includes the impact of FDIC deposit insurance assessments. As part of the Dodd-Frank Act, the FDIC is required to ensure that its deposit insurance fund reserve ratio reaches 1.35% by September 30, 2020. In March 2016, the FDIC issued a final rule that imposes on insured depository institutions with at least \$10 billion in assets, which includes Citibank, a surcharge of 4.5 basis points per annum until the fund reaches the required ratio, which the FDIC estimates would take approximately two years. As previously disclosed, based on its current assessment base, Citi estimates the net impact to Citibank would be approximately \$500 million over the two-year period beginning in the third quarter of 2016.

Additional Interest Rate Details

Average Balances and Interest Rates—Assets⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾

In millions of dollars, except rates	Average volume			Interest revenue			% Average rate		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Assets									
Deposits with banks⁽⁵⁾	\$ 131,925	\$ 133,853	\$ 161,741	\$ 971	\$ 727	\$ 959	0.74%	0.54%	0.59%
Federal funds sold and securities borrowed or purchased under agreements to resell⁽⁶⁾									
In U.S. offices	\$ 147,734	\$ 150,340	\$ 153,703	\$ 1,483	\$ 1,215	\$ 1,034	1.00%	0.81%	0.67%
In offices outside the U.S. ⁽⁵⁾	85,142	84,013	101,184	1,060	1,301	1,332	1.24	1.55	1.32
Total	\$ 232,876	\$ 234,353	\$ 254,887	\$ 2,543	\$ 2,516	\$ 2,366	1.09%	1.07%	0.93%
Trading account assets⁽⁷⁾⁽⁸⁾									
In U.S. offices	\$ 103,610	\$ 113,475	\$ 113,716	\$ 3,791	\$ 3,945	\$ 3,471	3.66%	3.48%	3.05%
In offices outside the U.S. ⁽⁵⁾	94,603	96,333	113,563	2,095	2,140	2,540	2.21	2.22	2.24
Total	\$ 198,213	\$ 209,808	\$ 227,279	\$ 5,886	\$ 6,085	\$ 6,011	2.97%	2.90%	2.64%
Investments									
In U.S. offices									
Taxable	\$ 225,764	\$ 214,683	\$ 188,909	\$ 3,980	\$ 3,812	\$ 3,285	1.76%	1.78%	1.74%
Exempt from U.S. income tax	19,079	20,034	20,383	693	443	626	3.63	2.21	3.07
In offices outside the U.S. ⁽⁵⁾	106,159	102,374	113,182	3,157	3,071	3,627	2.97	3.00	3.20
Total	\$ 351,002	\$ 337,091	\$ 322,474	\$ 7,830	\$ 7,326	\$ 7,538	2.23%	2.17%	2.34%
Loans (net of unearned income)⁽⁹⁾									
In U.S. offices	\$ 360,957	\$ 354,434	\$ 361,773	\$ 24,240	\$ 25,082	\$ 26,076	6.72%	7.08%	7.21%
In offices outside the U.S. ⁽⁵⁾	262,715	273,064	296,666	15,578	15,465	18,723	5.93	5.66	6.31
Total	\$ 623,672	\$ 627,498	\$ 658,439	\$ 39,818	\$ 40,547	\$ 44,799	6.38%	6.46%	6.80%
Other interest-earning assets⁽¹⁰⁾									
Total interest-earning assets	\$ 1,594,086	\$ 1,605,812	\$ 1,673,774	\$ 58,077	\$ 59,040	\$ 62,180	3.64%	3.68%	3.71%
Non-interest-earning assets ⁽⁷⁾									
Total assets from discontinued operations	—	—	—						
Total assets	\$ 1,808,728	\$ 1,823,837	\$ 1,896,915						

(1) *Net interest revenue* includes the taxable equivalent adjustments related to the tax-exempt bond portfolio (based on the U.S. federal statutory tax rate of 35%) of \$462 million, \$487 million and \$498 million for 2016, 2015 and 2014, respectively.

(2) Interest rates and amounts include the effects of risk management activities associated with the respective asset categories.

(3) Monthly or quarterly averages have been used by certain subsidiaries where daily averages are unavailable.

(4) Detailed average volume, *Interest revenue* and *Interest expense* exclude *Discontinued operations*. See Note 2 to the Consolidated Financial Statements.

(5) Average rates reflect prevailing local interest rates, including inflationary effects and monetary corrections in certain countries.

(6) Average volumes of securities borrowed or purchased under agreements to resell are reported net pursuant to ASC 210-20-45. However, *Interest revenue* excludes the impact of ASC 210-20-45.

(7) The fair value carrying amounts of derivative contracts are reported net, pursuant to ASC 815-10-45, in *Non-interest-earning assets* and *Other non-interest-bearing liabilities*.

(8) *Interest expense* on *Trading account liabilities* of ICG is reported as a reduction of *Interest revenue*. *Interest revenue* and *Interest expense* on cash collateral positions are reported in interest on *Trading account assets* and *Trading account liabilities*, respectively.

(9) Includes cash-basis loans.

(10) Includes brokerage receivables.

Average Balances and Interest Rates—Liabilities and Equity, and Net Interest Revenue⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾

<i>In millions of dollars, except rates</i>	Average volume			Interest expense			% Average rate		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Liabilities									
Deposits									
In U.S. offices ⁽⁵⁾	\$ 288,817	\$ 273,135	\$ 292,062	\$ 1,630	\$ 1,291	\$ 1,432	0.56%	0.47%	0.49%
In offices outside the U.S. ⁽⁶⁾	429,608	425,086	465,135	3,670	3,761	4,260	0.85	0.88	0.92
Total	\$ 718,425	\$ 698,221	\$ 757,197	\$ 5,300	\$ 5,052	\$ 5,692	0.74%	0.72%	0.75%
Federal funds purchased and securities loaned or sold under agreements to repurchase⁽⁷⁾									
In U.S. offices	\$ 100,472	\$ 108,320	\$ 102,672	\$ 1,024	\$ 614	\$ 657	1.02%	0.57%	0.64%
In offices outside the U.S. ⁽⁶⁾	57,588	66,130	88,080	888	998	1,238	1.54	1.51	1.41
Total	\$ 158,060	\$ 174,450	\$ 190,752	\$ 1,912	\$ 1,612	\$ 1,895	1.21%	0.92%	0.99%
Trading account liabilities⁽⁸⁾⁽⁹⁾									
In U.S. offices	\$ 29,481	\$ 24,711	\$ 29,263	\$ 242	\$ 107	\$ 74	0.82%	0.43%	0.25%
In offices outside the U.S. ⁽⁶⁾	44,669	45,252	47,904	168	110	94	0.38	0.24	0.20
Total	\$ 74,150	\$ 69,963	\$ 77,167	\$ 410	\$ 217	\$ 168	0.55%	0.31%	0.22%
Short-term borrowings⁽¹⁰⁾									
In U.S. offices	\$ 61,015	\$ 64,973	\$ 77,967	\$ 202	\$ 224	\$ 161	0.33%	0.34%	0.21%
In offices outside the U.S. ⁽⁶⁾	19,184	50,803	40,282	275	299	419	1.43	0.59	1.04
Total	\$ 80,199	\$ 115,776	\$ 118,249	\$ 477	\$ 523	\$ 580	0.59%	0.45%	0.49%
Long-term debt⁽¹¹⁾									
In U.S. offices	\$ 175,342	\$ 182,347	\$ 191,364	\$ 4,179	\$ 4,308	\$ 5,093	2.38%	2.36%	2.66%
In offices outside the U.S. ⁽⁶⁾	6,426	7,642	7,346	233	209	262	3.63	2.73	3.57
Total	\$ 181,768	\$ 189,989	\$ 198,710	\$ 4,412	\$ 4,517	\$ 5,355	2.43%	2.38%	2.69%
Total interest-bearing liabilities	\$ 1,212,602	\$ 1,248,399	\$ 1,342,075	\$ 12,511	\$ 11,921	\$ 13,690	1.03%	0.95%	1.02%
Demand deposits in U.S. offices	\$ 38,120	\$ 26,144	\$ 26,227						
Other non-interest-bearing liabilities ⁽⁸⁾	328,822	330,104	316,061						
Total liabilities from discontinued operations	—	—	—						
Total liabilities	\$ 1,579,544	\$ 1,604,647	\$ 1,684,363						
Citigroup stockholders' equity⁽¹²⁾	\$ 228,065	\$ 217,875	\$ 210,863						
Noncontrolling interest	1,119	1,315	1,689						
Total equity⁽¹²⁾	\$ 229,184	\$ 219,190	\$ 212,552						
Total liabilities and stockholders' equity	\$ 1,808,728	\$ 1,823,837	\$ 1,896,915						
Net interest revenue as a percentage of average interest-earning assets⁽¹³⁾									
In U.S. offices	\$ 859,311	\$ 923,309	\$ 953,394	\$ 27,929	\$ 28,495	\$ 27,496	3.25%	3.09%	2.88%
In offices outside the U.S. ⁽⁶⁾	734,775	682,503	720,380	17,637	18,624	20,994	2.40	2.73	2.91
Total	\$ 1,594,086	\$ 1,605,812	\$ 1,673,774	\$ 45,566	\$ 47,119	\$ 48,490	2.86%	2.93%	2.90%

- (1) *Net interest revenue* includes the taxable equivalent adjustments related to the tax-exempt bond portfolio (based on the U.S. federal statutory tax rate of 35%) of \$462 million, \$487 million and \$498 million for 2016, 2015 and 2014, respectively.
- (2) Interest rates and amounts include the effects of risk management activities associated with the respective liability categories.
- (3) Monthly or quarterly averages have been used by certain subsidiaries where daily averages are unavailable.
- (4) Detailed average volume, *Interest revenue* and *Interest expense* exclude *Discontinued operations*. See Note 2 to the Consolidated Financial Statements.
- (5) Consists of other time deposits and savings deposits. Savings deposits are made up of insured money market accounts, NOW accounts, and other savings deposits. The interest expense on savings deposits includes FDIC deposit insurance assessments.
- (6) Average rates reflect prevailing local interest rates, including inflationary effects and monetary corrections in certain countries.
- (7) Average volumes of securities sold under agreements to repurchase are reported net pursuant to ASC 210-20-45. However, *Interest expense* excludes the impact of ASC 210-20-45.

- (8) The fair value carrying amounts of derivative contracts are reported net, pursuant to ASC 815-10-45, in *Non-interest-earning assets* and *Other non-interest-bearing liabilities*.
- (9) *Interest expense* on *Trading account liabilities* of ICG is reported as a reduction of *Interest revenue*. *Interest revenue* and *Interest expense* on cash collateral positions are reported in interest on *Trading account assets* and *Trading account liabilities*, respectively.
- (10) Includes brokerage payables.
- (11) Excludes hybrid financial instruments and beneficial interests in consolidated VIEs that are classified as *Long-term debt*, as these obligations are accounted for in changes in fair value recorded in *Principal transactions*.
- (12) Includes stockholders' equity from discontinued operations.
- (13) Includes allocations for capital and funding costs based on the location of the asset.

Analysis of Changes in Interest Revenue⁽¹⁾⁽²⁾⁽³⁾

<i>In millions of dollars</i>	2016 vs. 2015			2015 vs. 2014		
	Increase (decrease) due to change in:			Increase (decrease) due to change in:		
	Average volume	Average rate	Net change	Average volume	Average rate	Net change
Deposits with banks⁽⁴⁾	\$ (11)	\$ 255	\$ 244	\$ (156)	\$ (76)	\$ (232)
Federal funds sold and securities borrowed or purchased under agreements to resell						
In U.S. offices	\$ (21)	\$ 289	\$ 268	\$ (23)	\$ 204	\$ 181
In offices outside the U.S. ⁽⁴⁾	17	(258)	(241)	(246)	215	(31)
Total	\$ (4)	\$ 31	\$ 27	\$ (269)	\$ 419	\$ 150
Trading account assets⁽⁵⁾						
In U.S. offices	\$ (354)	\$ 200	\$ (154)	\$ (7)	\$ 481	\$ 474
In offices outside the U.S. ⁽⁴⁾	(38)	(7)	(45)	(383)	(17)	(400)
Total	\$ (392)	\$ 193	\$ (199)	\$ (390)	\$ 464	\$ 74
Investments⁽¹⁾						
In U.S. offices	\$ (167)	\$ 585	\$ 418	\$ 464	\$ (120)	\$ 344
In offices outside the U.S. ⁽⁴⁾	622	(536)	86	(333)	(223)	(556)
Total	\$ 455	\$ 49	\$ 504	\$ 131	\$ (343)	\$ (212)
Loans (net of unearned income)⁽⁶⁾						
In U.S. offices	\$ 455	\$ (1,297)	\$ (842)	\$ (524)	\$ (470)	\$ (994)
In offices outside the U.S. ⁽⁴⁾	(599)	712	113	(1,423)	(1,835)	(3,258)
Total	\$ (144)	\$ (585)	\$ (729)	\$ (1,947)	\$ (2,305)	\$ (4,252)
Other interest-earning assets⁽⁷⁾	\$ (182)	\$ (628)	\$ (810)	\$ 185	\$ 1,147	\$ 1,332
Total interest revenue	\$ (278)	\$ (685)	\$ (963)	\$ (2,446)	\$ (694)	\$ (3,140)

- (1) The taxable equivalent adjustment is related to the tax-exempt bond portfolio based on the U.S. federal statutory tax rate of 35% and is included in this presentation.
- (2) Rate/volume variance is allocated based on the percentage relationship of changes in volume and changes in rate to the total net change.
- (3) Detailed average volume, *Interest revenue* and *Interest expense* exclude *Discontinued operations*. See Note 2 to the Consolidated Financial Statements.
- (4) Changes in average rates reflect changes in prevailing local interest rates, including inflationary effects and monetary corrections in certain countries.
- (5) *Interest expense* on *Trading account liabilities* of ICG is reported as a reduction of *Interest revenue*. *Interest revenue* and *Interest expense* on cash collateral positions are reported in interest on *Trading account assets* and *Trading account liabilities*, respectively.
- (6) Includes cash-basis loans.
- (7) Includes brokerage receivables.

Analysis of Changes in Interest Expense and Net Interest Revenue⁽¹⁾⁽²⁾⁽³⁾

	2016 vs. 2015			2015 vs. 2014		
	Increase (decrease) due to change in:			Increase (decrease) due to change in:		
	Average volume	Average rate	Net change	Average volume	Average rate	Net change
<i>In millions of dollars</i>						
Deposits						
In U.S. offices	\$ 77	\$ 262	\$ 339	\$ (91)	\$ (50)	\$ (141)
In offices outside the U.S. ⁽⁴⁾	40	(131)	(91)	(358)	(141)	(499)
Total	\$ 117	\$ 131	\$ 248	\$ (449)	\$ (191)	\$ (640)
Federal funds purchased and securities loaned or sold under agreements to repurchase						
In U.S. offices	\$ (47)	\$ 457	\$ 410	\$ 35	\$ (78)	\$ (43)
In offices outside the U.S. ⁽⁴⁾	(131)	21	(110)	(326)	86	(240)
Total	\$ (178)	\$ 478	\$ 300	\$ (291)	\$ 8	\$ (283)
Trading account liabilities⁽⁵⁾						
In U.S. offices	\$ 24	\$ 111	\$ 135	\$ (13)	\$ 46	\$ 33
In offices outside the U.S. ⁽⁴⁾	(1)	59	58	(5)	21	16
Total	\$ 23	\$ 170	\$ 193	\$ (18)	\$ 67	\$ 49
Short-term borrowings⁽⁶⁾						
In U.S. offices	\$ (13)	\$ (9)	\$ (22)	\$ (30)	\$ 93	\$ 63
In offices outside the U.S. ⁽⁴⁾	(267)	243	(24)	92	(212)	(120)
Total	\$ (280)	\$ 234	\$ (46)	\$ 62	\$ (119)	\$ (57)
Long-term debt						
In U.S. offices	\$ (167)	\$ 38	\$ (129)	\$ (232)	\$ (553)	\$ (785)
In offices outside the U.S. ⁽⁴⁾	(37)	61	24	10	(63)	(53)
Total	\$ (204)	\$ 99	\$ (105)	\$ (222)	\$ (616)	\$ (838)
Total interest expense	\$ (522)	\$ 1,112	\$ 590	\$ (918)	\$ (851)	\$ (1,769)
Net interest revenue	\$ 244	\$ (1,797)	\$ (1,553)	\$ (1,528)	\$ 157	\$ (1,371)

- (1) The taxable equivalent adjustment is related to the tax-exempt bond portfolio based on the U.S. federal statutory tax rate of 35% and is included in this presentation.
- (2) Rate/volume variance is allocated based on the percentage relationship of changes in volume and changes in rate to the total net change.
- (3) Detailed average volume, *Interest revenue* and *Interest expense* exclude *Discontinued operations*. See Note 2 to the Consolidated Financial Statements.
- (4) Changes in average rates reflect changes in prevailing local interest rates, including inflationary effects and monetary corrections in certain countries.
- (5) *Interest expense* on *Trading account liabilities* of ICG is reported as a reduction of *Interest revenue*. *Interest revenue* and *Interest expense* on cash collateral positions are reported in interest on *Trading account assets* and *Trading account liabilities*, respectively.
- (6) Includes brokerage payables.

Market Risk of Trading Portfolios

Trading portfolios include positions resulting from market making activities, hedges of certain available-for-sale (AFS) debt securities, the CVA relating from derivative counterparties and all associated hedges, fair value option loans, hedges to the loan portfolio and the leverage finance pipeline within capital markets origination within *ICG*.

The market risk of Citi's trading portfolios is monitored using a combination of quantitative and qualitative measures, including, but not limited to:

- factor sensitivities;
- value at risk (VAR); and
- stress testing.

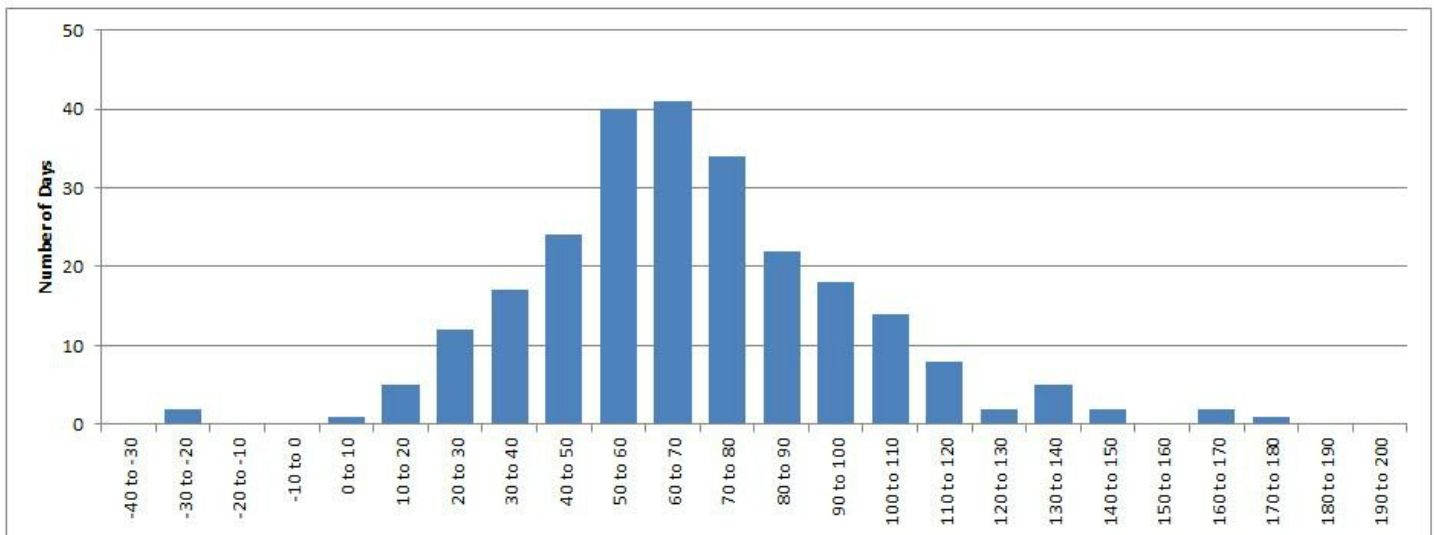
Each trading portfolio across Citi's businesses has its own market risk limit framework encompassing these measures and other controls, including trading mandates, permitted product

lists and a new product approval process for complex products.

The following chart of total daily trading-related revenue (loss) captures trading volatility and shows the number of days in which revenues for Citi's trading businesses fell within particular ranges. Trading-related revenue includes trading, net interest and other revenue associated with Citi's trading businesses. It excludes DVA, FVA and CVA adjustments incurred due to changes in the credit quality of counterparties, as well as any associated hedges to that CVA. In addition, it excludes fees and other revenue associated with capital markets origination activities. Trading-related revenues are driven by both customer flows and the changes in valuation of the trading inventory. As shown in the chart, positive trading-related revenue was achieved for 99% of the trading days in 2016.

Daily Trading-Related Revenue (Loss) ⁽¹⁾— Twelve Months ended December 31, 2016

In millions of dollars



- (1) Reflects the effects of asymmetrical accounting for economic hedges of certain AFS debt securities. Specifically, the change in the fair value of hedging derivatives is included in Trading-related revenue, while the offsetting change in the fair value of hedged AFS debt securities is included in AOCI and not reflected above.

Factor Sensitivities

Factor sensitivities are expressed as the change in the value of a position for a defined change in a market risk factor, such as a change in the value of a U.S. Treasury bill for a one basis point change in interest rates. Citi's Market Risk Management, within the Risk organization, works to ensure that factor sensitivities are calculated, monitored and, in most cases, limited for all material risks taken in the trading portfolios.

Value at Risk (VAR)

VAR estimates, at a 99% confidence level, the potential decline in the value of a position or a portfolio under normal market conditions assuming a one-day holding period. VAR statistics, which are based on historical data, can be materially different across firms due to differences in portfolio composition, differences in VAR methodologies and differences in model parameters. As a result, Citi believes VAR statistics can be used more effectively as indicators of trends in risk-taking within a firm, rather than as a basis for inferring differences in risk-taking across firms.

Citi uses a single, independently approved Monte Carlo simulation VAR model (see "VAR Model Review and Validation" below), which has been designed to capture material risk sensitivities (such as first- and second-order sensitivities of positions to changes in market prices) of various asset classes/risk types (such as interest rate, credit spread, foreign exchange, equity and commodity risks). Citi's VAR includes positions which are measured at fair value; it does not include investment securities classified as AFS or HTM. For information on these securities, see Note 13 to the Consolidated Financial Statements.

Citi believes its VAR model is conservatively calibrated to incorporate fat-tail scaling and the greater of short-term (approximately the most recent month) and long-term (three years) market volatility. The Monte Carlo simulation involves approximately 350,000 market factors, making use of approximately 200,000 time series, with sensitivities updated daily, volatility parameters updated daily to weekly and correlation parameters updated monthly. The conservative features of the VAR calibration contribute an approximate 25% add-on to what would be a VAR estimated under the assumption of stable and perfectly, normally distributed markets.

As set forth in the table below, Citi's average trading VAR decreased from 2015 to 2016, mainly due to changes in interest rate exposures from mark-to-market hedging activity against non-trading positions in the markets and securities services businesses within *ICG*. Additionally, foreign exchange risk declined mainly due to exposure changes throughout 2016. Average trading and credit portfolio VAR also declined, with the further decrease driven by reduction in average credit spreads and volatility affecting the credit portfolio, and by changes in the hedging related to lending activities in 2016. Trading VAR as of December 31, 2016 increased from December 31, 2015 mainly due to higher exposures in the municipals and commodities businesses within *ICG*.

Year-end and Average Trading VAR and Trading and Credit Portfolio VAR

<i>In millions of dollars</i>	December 31, 2016	2016 Average	December 31, 2015	2015 Average
Interest rate	\$ 37	\$ 35	\$ 37	\$ 44
Credit spread	63	62	56	69
Covariance adjustment ⁽¹⁾	(17)	(28)	(25)	(26)
Fully diversified interest rate and credit spread	\$ 83	\$ 69	\$ 68	\$ 87
Foreign exchange	32	24	27	34
Equity	13	14	17	17
Commodity	27	21	17	19
Covariance adjustment ⁽¹⁾	(70)	(58)	(53)	(65)
Total trading VAR—all market risk factors, including general and specific risk (excluding credit portfolios) ⁽²⁾	\$ 85	\$ 70	\$ 76	\$ 92
Specific risk-only component ⁽³⁾	\$ 3	\$ 7	\$ 11	\$ 6
Total trading VAR—general market risk factors only (excluding credit portfolios)⁽²⁾	\$ 82	\$ 63	\$ 65	\$ 86
Incremental impact of the credit portfolio ⁽⁴⁾	\$ 20	\$ 22	\$ 22	\$ 25
Total trading and credit portfolio VAR	\$ 105	\$ 92	\$ 98	\$ 117

- (1) Covariance adjustment (also known as diversification benefit) equals the difference between the total VAR and the sum of the VARs tied to each individual risk type. The benefit reflects the fact that the risks within each and across risk types are not perfectly correlated and, consequently, the total VAR on a given day will be lower than the sum of the VARs relating to each individual risk type. The determination of the primary drivers of changes to the covariance adjustment is made by an examination of the impact of both model parameter and position changes.
- (2) The total trading VAR includes mark-to-market and certain fair value option trading positions from *ICG* and Citi Holdings, with the exception of hedges to the loan portfolio, fair value option loans and all CVA exposures. Available-for-sale and accrual exposures are not included.
- (3) The specific risk-only component represents the level of equity and fixed income issuer-specific risk embedded in VAR.
- (4) The credit portfolio is composed of mark-to-market positions associated with non-trading business units including Citi Treasury, the CVA relating to derivative counterparties and all associated CVA hedges. FVA and DVA are not included. The credit portfolio also includes hedges to the loan portfolio, fair value option loans and hedges to the leveraged finance pipeline within capital markets origination within *ICG*.

The table below provides the range of market factor VARs associated with Citi's total trading VAR, inclusive of specific risk:

<i>In millions of dollars</i>	2016		2015	
	Low	High	Low	High
Interest rate	\$ 25	\$ 64	\$ 28	\$ 84
Credit spread	55	73	56	94
Fully diversified interest rate and credit spread	\$ 59	\$ 97	\$ 65	\$ 127
Foreign exchange	14	46	20	54
Equity	6	26	9	35
Commodity	10	33	12	37
Total trading	\$ 53	\$ 106	\$ 70	\$ 140
Total trading and credit portfolio	72	131	89	158

Note: No covariance adjustment can be inferred from the above table as the high and low for each market factor will be from different close of business dates.

The following table provides the VAR for *ICG*, excluding the CVA relating to derivative counterparties, hedges of CVA, fair value option loans and hedges to the loan portfolio:

<i>In millions of dollars</i>	Dec. 31, 2016	
Total—all market risk factors, including general and specific risk	\$	76
Average—during year	\$	66
High—during year		99
Low—during year		51

VAR Model Review and Validation

Generally, Citi's VAR review and model validation process entails reviewing the model framework, major assumptions, and implementation of the mathematical algorithm. In addition, as part of the model validation process, product specific back-testing on portfolios is periodically completed and reviewed with Citi's U.S. banking regulators. Furthermore, Regulatory VAR back-testing (as described below) is performed against buy-and-hold profit and loss on a monthly basis for multiple sub-portfolios across the organization (trading desk level, *ICG* business segment and Citigroup) and the results are shared with U.S. banking regulators.

Significant VAR model and assumption changes must be independently validated within Citi's risk management organization. This validation process includes a review by Citi's model validation group and further approval from its model validation review committee, which is composed of senior quantitative risk management officers. In the event of significant model changes, parallel model runs are undertaken prior to implementation. In addition, significant model and assumption changes are subject to the periodic reviews and approval by Citi's U.S. banking regulators.

Citi uses the same independently validated VAR model for both Regulatory VAR and Risk Management VAR (i.e., total trading and total trading and credit portfolios VARs) and, as such, the model review and oversight process for both purposes is as described above.

Regulatory VAR, which is calculated in accordance with Basel III, differs from Risk Management VAR due to the fact that certain positions included in Risk Management VAR are

not eligible for market risk treatment in Regulatory VAR. The composition of Risk Management VAR is discussed under "Value at Risk" above. The applicability of the VAR model for positions eligible for market risk treatment under U.S. regulatory capital rules is periodically reviewed and approved by Citi's U.S. banking regulators.

In accordance with Basel III, Regulatory VAR includes all trading book-covered positions and all foreign exchange and commodity exposures. Pursuant to Basel III, Regulatory VAR excludes positions that fail to meet the intent and ability to trade requirements and are therefore classified as non-trading book and categories of exposures that are specifically excluded as covered positions. Regulatory VAR excludes CVA on derivative instruments and DVA on Citi's own fair value option liabilities. CVA hedges are excluded from Regulatory VAR and included in credit risk-weighted assets as computed under the Advanced Approaches for determining risk-weighted assets.

Regulatory VAR Back-testing

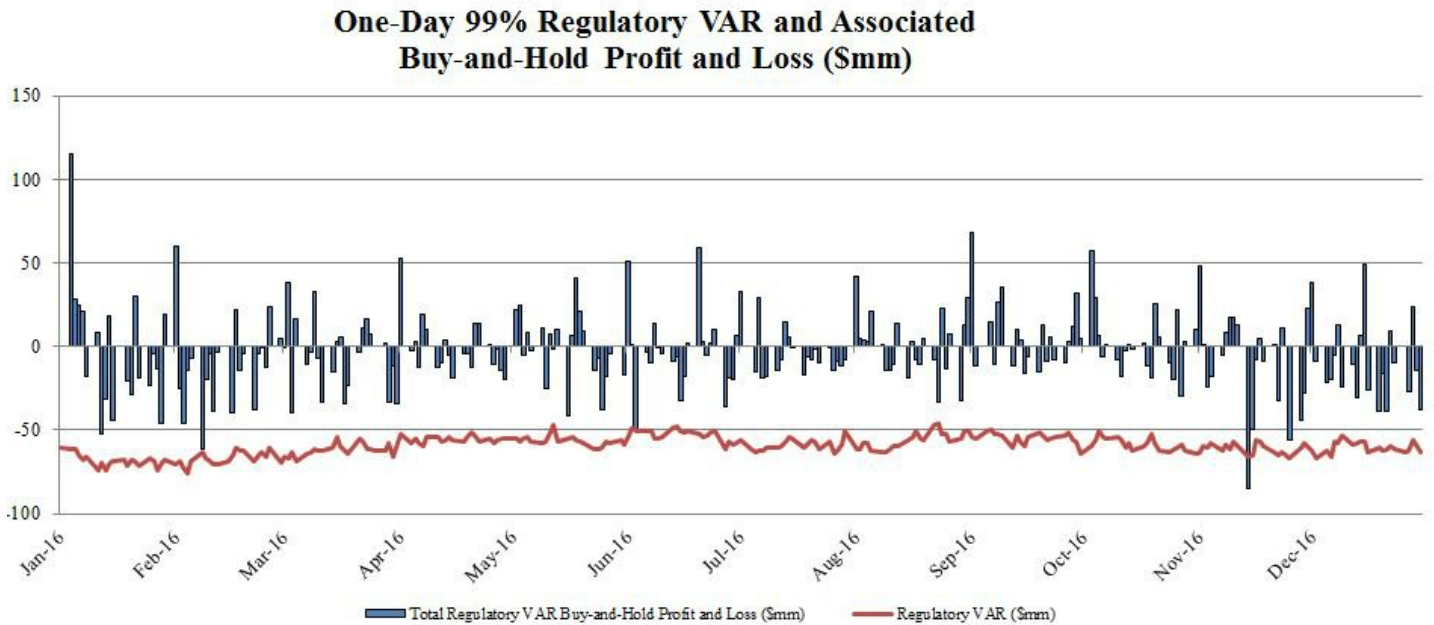
In accordance with Basel III, Citi is required to perform back-testing to evaluate the effectiveness of its Regulatory VAR model. Regulatory VAR back-testing is the process in which the daily one-day VAR, at a 99% confidence interval, is compared to the buy-and-hold profit and loss (i.e., the profit and loss impact if the portfolio is held constant at the end of the day and re-priced the following day). Buy-and-hold profit and loss represents the daily mark-to-market profit and loss attributable to price movements in covered positions from the close of the previous business day. Buy-and-hold profit and loss excludes realized trading revenue, net interest, fees and commissions, intra-day trading profit and loss and changes in reserves.

Based on a 99% confidence level, Citi would expect two to three days in any one year where buy-and-hold losses exceeded the Regulatory VAR. Given the conservative calibration of Citi's VAR model (as a result of taking the greater of short- and long-term volatilities and fat-tail scaling of volatilities), Citi would expect fewer exceptions under normal and stable market conditions. Periods of unstable market conditions could increase the number of back-testing exceptions.

The following graph shows the daily buy-and-hold profit and loss associated with Citi's covered positions compared to Citi's one-day Regulatory VAR during 2016. During 2016, there were two back-testing exceptions observed for Citi's Regulatory VAR. As previously disclosed, trading losses on June 3, 2016 marginally exceeded the VAR estimate at the Citigroup level, driven by higher volatility in the interest rate and foreign exchange markets following the release of weak non-farm payroll data. Separately, trading losses on November 14, 2016 exceeded the VAR estimate at the Citigroup level, driven by the widening of municipal bond yields following the election results in the United States.

The difference between the 41% of days with buy-and-hold gains for Regulatory VAR back-testing and the 99% of days with trading, net interest and other revenue associated with Citi's trading businesses, shown in the histogram of daily trading-related revenue below, reflects, among other things, that a significant portion of Citi's trading-related revenue is not generated from daily price movements on these positions and exposures, as well as differences in the portfolio composition of Regulatory VAR and Risk Management VAR.

Regulatory Trading VAR and Associated Buy-and-Hold Profit and Loss ⁽¹⁾—12 Months ended December 31, 2016
In millions of dollars



(1) Buy-and-hold profit and loss, as defined by the banking regulators under Basel III, represents the daily mark-to-market revenue movement attributable to the trading position from the close of the previous business day. Buy-and-hold profit and loss excludes realized trading revenue, net interest intra-day trading profit and loss on new and terminated trades, as well as changes in reserves. Therefore, it is not comparable to the trading-related revenue presented in the chart of daily trading-related revenue above.

Stress Testing

Citi performs stress testing on a regular basis to estimate the impact of extreme market movements. It is performed on individual positions and trading portfolios, as well as in aggregate, inclusive of multiple trading portfolios. Citi's Market Risk management, after consultations with the businesses, develops both systemic and specific stress scenarios, reviews the output of periodic stress testing exercises, and uses the information to assess the ongoing appropriateness of exposure levels and limits. Citi uses two complementary approaches to market risk stress testing across all major risk factors (i.e., equity, foreign exchange, commodity, interest rate and credit spreads): top-down systemic stresses and bottom-up business-specific stresses. Systemic stresses are designed to quantify the potential impact of extreme market movements on an institution-wide basis, and are constructed using both historical periods of market stress and projections of adverse economic scenarios. Business-specific stresses are designed to probe the risks of particular portfolios and market segments, especially those risks that are not fully captured in VAR and systemic stresses.

The systemic stress scenarios and business-specific stress scenarios at Citi are used in several reports reviewed by senior management and also to calculate internal risk capital for trading market risk. In general, changes in market factors are defined over a one-year horizon. However, for the purpose of calculating internal risk capital, changes in a very limited number of the most liquid market factors are defined over a shorter two-month horizon. The limited set of market factors subject to the shorter two-month time horizon are those that in management's judgment have historically remained very liquid during financial crises, even as the trading liquidity of most other market factors materially decreased.

OPERATIONAL RISK

Overview

Operational risk is the risk of loss resulting from inadequate or failed internal processes, systems or human factors, or from external events. It includes risk of failing to comply with applicable laws and regulations, but excludes strategic risk. Operational risk includes the reputation and franchise risk associated with business practices or market conduct in which Citi is involved, as well as compliance, conduct and legal risks.

Operational risk is inherent in Citi's global business activities, as well as related support processes, and can result in losses arising from events associated with the following, among others:

- fraud, theft and unauthorized activity;
- employment practices and workplace environment;
- clients, products and business practices;
- physical assets and infrastructure; and
- execution, delivery and process management.

Citi manages operational risk consistent with the overall framework described in "Managing Global Risk—Overview" above. The Company's goal is to keep operational risk at appropriate levels relative to the characteristics of Citi's businesses, the markets in which it operates, its capital and liquidity, and the competitive, economic and regulatory environment.

To anticipate, mitigate and control operational risk, Citi has established policies and a global framework for assessing, monitoring and communicating operational risks and the overall operating effectiveness of the internal control environment across Citigroup. As part of this framework, Citi has established a manager's control assessment (MCA) process (a process through which managers at Citi identify, monitor, measure, report on and manage risks and the related controls) to help managers self-assess significant operational risks and key controls and identify and address weaknesses in the design and/or operating effectiveness of internal controls that mitigate significant operational risks.

Each major business segment must implement an operational risk process consistent with the requirements of this framework. The process for operational risk management includes the following steps:

- identify and assess key operational risks;
- design controls to mitigate identified risks;
- establish key risk indicators;
- implement a process for early problem recognition and timely escalation;
- produce comprehensive operational risk reporting; and
- ensure that sufficient resources are available to actively improve the operational risk environment and mitigate emerging risks.

As new products and business activities are developed, processes are designed, modified or sourced through alternative means and operational risks are considered.

An Operational Risk Management Committee has been established to provide oversight for operational risk across Citigroup and to provide a forum to assess Citi's operational risk profile and ensure actions are taken so that Citi's operational risk exposure is actively managed consistent with Citi's risk appetite. The Committee seeks to ensure that these actions address the root causes that persistently lead to operational risk losses and create lasting solutions to minimize these losses. Members include Citi's Chief Risk Officer and Citi's Head of Operational Risk and senior members of their organizations. These members cover multiple dimensions of risk management and include business and regional Chief Risk Officers and senior operational risk managers.

In addition, Risk management, including Operational Risk Management, works proactively with the businesses and other independent control functions to embed a strong operational risk management culture and framework across Citi. Operational Risk Management engages with the businesses to ensure effective implementation of the Operational Risk Management framework by focusing on (i) identification, analysis and assessment of operational risks; (ii) effective challenge of key control issues and operational risks; and (iii) anticipation and mitigation of operational risk events.

Information about the businesses' operational risk, historical operational risk losses and the control environment is reported by each major business segment and functional area. The information is summarized and reported to senior management, as well as to the Audit Committee of Citi's Board of Directors.

Operational risk is measured and assessed through risk capital. Projected operational risk losses under stress scenarios are also required as part of the Federal Reserve Board's CCAR process.

Compliance Risk

Compliance Risk Appetite Framework

Citi's risk appetite framework outlines Citi's compliance risk appetite, how Citi manages its adherence to its compliance risk appetite and how Citi evaluates the effectiveness of its controls for managing compliance risks. This framework is executed through:

- *Establishing a risk appetite:* Citi establishes its compliance risk appetite by setting limits on the types of business in which Citi will engage, the products and services Citi will offer, the types of customers which Citi will service, the counterparties with which Citi will deal and the locations where Citi will do business. These limits are guided by Citi's mission and value proposition and the principle of responsible finance, Citi's adherence to relevant standards of conduct, as well as to relevant and applicable laws, rules, regulations and Citi's internal policies.
- *Adhering to this risk appetite:* Citi manages adherence to its compliance risk appetite through the execution of its compliance program, which includes governance arrangements, a policy framework, customer onboarding

and maintenance processes, product development processes, transaction and communication surveillance processes, conduct- and culture-related programs, monitoring regulatory changes, new products, services and complex transactions approval processes and training. At Citi, it is the responsibility of each employee to escalate breaches of the compliance risk appetite in a timely manner.

- *Evaluating the effectiveness of risk appetite controls:* Each business and Compliance evaluate the effectiveness of controls for managing compliance risk through the manager's control assessment (MCA) process. Citi also relies on compliance risk assessments; a policy framework; compliance testing and monitoring processes; compliance metrics related to key operating risks, key risk indicators, and control-effectiveness indicators; and Internal Audit's examinations and reports.

Compliance Program

Compliance aims to operate Citi's compliance risk appetite—and thus minimize, mitigate or manage compliance risks—through Citi's compliance program. To achieve this mission, Compliance seeks to:

- *Understand the regulatory environment, requirements and expectations to which Citi's activities are subject.* Compliance coordinates with Legal and other independent control functions, as appropriate, to identify, communicate and document key regulatory requirements and changes.
- *Assess the compliance risks of business activities and the state of mitigating controls, including the risks and controls in legal entities in which activity is conducted.* To facilitate the identification and assessment of compliance risk, Compliance works with the businesses and other independent control functions to review and provide credible challenge regarding significant compliance and regulatory issues and the results of testing, monitoring, and internal and external exams and audits.
- *Define Citi's appetite, in conjunction with senior management and Citigroup's Board of Directors, for prudent compliance and regulatory risk consistent with its culture of compliance, control and responsible finance.* As noted above, Citi has developed a compliance risk appetite framework that is designed to identify, measure, monitor, mitigate and control compliance risk.
- *Develop controls and execute programs reasonably designed to promote conduct that is consistent with Citi's compliance risk appetite and promptly detect and mitigate behavior that is inconsistent with this appetite.* Compliance has product-related compliance functions, such as those for *Global Consumer Banking* and the *Institutional Clients Group*. Compliance also has regional programs together with thematic groups and programs, including the enterprise compliance risk management group and programs that focus on anti-bribery and corruption, conduct and culture, ethics, privacy and sanctions. Each of these functions, programs and groups aims to mitigate Citi's exposure to conduct that is inconsistent with Citi's compliance risk appetite.

- *Detect, report on, escalate and remediate key compliance and franchise risks and control issues; test controls for design and operating effectiveness; promptly address issues and track remediation efforts.* Compliance designs and implements policies, standards, procedures, guidelines, surveillance reports and other solutions for use by the business and Compliance to promptly detect, address and remediate issues, test controls for design and operating effectiveness and track remediation efforts.
- *Engage with the Citigroup Board, business management, operating committees and Citi's regulators to foster effective global governance.* Compliance provides regular reports on emerging risks and other issues and their implications for Citi, as well as the performance of the compliance program, to the Citigroup Board of Directors, including the Audit and Ethics and Culture Committees, as well as other committees of the Board. Compliance also engages with business management on an ongoing basis through various mechanisms, including governance committees, and supports and advises the businesses and other global functions in managing regulatory relationships.
- *Advise and train Citi personnel across businesses, functions, regions and legal entities in conforming to laws, regulations and other relevant standards of conduct.* Compliance helps promote a strong culture of compliance and control by increasing awareness and capability across Citi on key compliance issues through training and communication programs. A fundamental element of Citi's culture is the requirement that Citi conduct itself in accordance with the highest standards of ethical behavior. Compliance plays a key role in developing company-wide initiatives designed to further embed ethics in Citi's culture.
- *Enhance the compliance program.* Compliance fulfills its obligation to enhance the compliance program in part by using results from its annual compliance risk assessment to shape annual and multi-year program enhancements.

Conduct Risk

Citi manages its exposure to conduct risk through the three lines of defense, as discussed above. Each employee in each line of defense is guided by Citi's mission and value proposition and the principle of responsible finance. Citi's leadership standards, which are aligned with Citi's mission and value proposition, outline Citi's expectations of employees' behavior, and employees' performance is evaluated against those standards. Citi's businesses and functions are responsible for managing their conduct risks. Compliance advises Citi's businesses and other functions on conduct risks and associated controls. Internal Audit, among other work, assesses the adequacy and effectiveness of Citi's management of and controls for conduct risk.

Citi uses business self-assessment and control function assessments to assess the design and operation of controls that are utilized to manage the institution's conduct risks. Citi also manages its conduct risk through other initiatives, including various culture-related efforts.

Legal Risk

Citi views legal risk as qualitative in nature because it does not lend itself to an appetite expressed through a numerical limit and it cannot be reliably estimated or measured based on forecasts. As such, Citi seeks to manage this risk in accordance with its qualitative risk appetite principle, which generally states that activities in which Citi engages and the risks those activities generate must be consistent with Citi's underlying commitment to the principle of responsible finance and managed with a goal to eliminate, minimize or mitigate this risk, as practicable. To accomplish this goal, legal risk is managed in accordance with the overall framework described in greater detail in "Managing Global Risk—Overview" above.

Reputational Risk

Citi's reputation is a vital asset in building trust with its stakeholders and Citi is diligent in communicating its corporate values, including the importance of protecting Citi's reputation, to its employees, customers and investors. The responsibility for maintaining Citi's reputation is shared by all employees, who are guided by Citi's Code of Conduct. Employees are expected to exercise sound judgment and common sense in every action they take and issues that present potential franchise, reputational and/or systemic risks are to be appropriately escalated. The business practices committees for each of Citi's businesses and regions are part of the governance infrastructure Citi has in place to properly review business activities, sales practices, product design, perceived conflicts of interest and other potential franchise or reputational risks that arise in these businesses and regions. These committees may also raise potential franchise, reputational or systemic risks for due consideration by the business practices committee at the corporate level. All of these committees, which are composed of Citi's most senior executives, provide the guidance necessary for Citi's business practices to meet the highest standards of professionalism, integrity and ethical behavior consistent with Citi's mission and value proposition.

STRATEGIC RISK

Citi senior management, led by Citi's CEO, is responsible for the development and execution of the strategy of the firm. Significant strategic actions are reviewed and approved by, or notified to, the Citigroup and Citibank Boards, as appropriate. The Citigroup Board holds an annual strategic meeting and annual regional strategic meetings, and receives business presentations at its regular meetings, in order to monitor management's execution of Citi's strategy. At the business level, business heads are accountable for the interpretation and execution of the firm-wide strategy, as it applies to their area, including decisions on new business and product entries.

The management of strategic risk rests upon the foundational elements that include an annual financial operating plan encompassing all businesses, products and geographies and defined financial and operating targets, derived from the operating plan, which can be monitored throughout the year in order to assess strategic and operating performance. Strategic risk is monitored through various

mechanisms including regular updates to senior management and the Board on performance against the operating plan, quarterly business reviews between the Citi CEO and business and regional CEOs where the performance and risks of each major business and region are discussed, ongoing reporting to senior management and executive management scorecards.

Country Risk

Top 25 Country Exposures

The following table presents Citi's top 25 exposures by country (excluding the U.S.) as of December 31, 2016. For purposes of the table, loan amounts are reflected in the country where the loan is booked, which is generally based on the domicile of the borrower. For example, a loan to a Chinese subsidiary of a Switzerland-based corporation will generally be categorized as a loan in China. In addition, Citi has developed regional booking centers in certain countries, most significantly in the United Kingdom (U.K.) and Ireland, in order to more efficiently serve its corporate customers. As an example, with respect to the U.K., only 23% of corporate loans presented in the table below are to U.K. domiciled

entities (25% for unfunded commitments), with the balance of the loans predominately to European domiciled counterparties. Approximately 80% of the total U.K. funded loans and 88% of the total U.K. unfunded commitments were investment grade as of December 31, 2016. Trading account assets and investment securities are generally categorized based on the domicile of the issuer of the security of the underlying reference entity. For additional information on the assets included in the table, see the footnotes to the table below.

For a discussion of uncertainties arising as a result of the vote in the U.K. to withdraw from the EU, see "Risk Factors—Strategic Risks" above.

<i>In billions of dollars</i>	ICG loans ⁽¹⁾	GCB loans ⁽²⁾	Other funded ⁽³⁾	Unfunded ⁽⁴⁾	Net MTM on Derivatives/ Repos ⁽⁵⁾	Total hedges (on loans and CVA)	Investment securities ⁽⁶⁾	Trading account assets ⁽⁷⁾	Total as of 4Q16	Total as of 3Q16	Total as of 4Q15
United Kingdom	\$ 28.9	\$ —	\$ 3.4	\$ 56.8	\$ 11.7	\$ (2.1)	\$ 10.0	\$ (1.2)	\$ 107.5	\$ 112.2	\$ 110.4
Mexico	7.4	23.1	0.3	5.7	0.7	(0.8)	13.4	2.6	52.4	56.1	60.4
Singapore	11.5	11.5	—	5.1	0.6	(0.3)	7.4	0.6	36.4	38.1	36.7
Hong Kong	12.2	10.3	0.6	5.3	0.4	(0.7)	5.6	2.2	35.9	35.2	35.2
Korea	2.4	17.9	0.3	3.7	2.0	(1.0)	7.4	1.3	34.0	39.1	39.3
India	10.0	6.3	0.7	4.8	1.8	(1.3)	7.4	1.2	30.9	30.6	33.0
Brazil	13.4	0.2	0.2	3.5	4.4	(2.7)	3.4	4.4	26.8	31.3	23.2
Ireland	7.9	—	0.7	15.6	0.3	—	—	0.3	24.8	24.2	22.0
Australia	3.5	9.6	0.2	5.7	0.8	(0.9)	4.1	(0.6)	22.4	24.4	24.5
Japan	2.5	—	0.2	7.3	5.2	(1.6)	3.3	1.4	18.3	17.6	9.1
China	5.4	4.1	0.2	1.4	1.4	(0.8)	4.6	0.9	17.2	16.2	23.0
Canada	1.7	0.6	2.3	6.3	1.9	(1.1)	4.6	0.7	17.0	17.0	16.5
Taiwan	4.4	8.0	0.1	1.1	0.7	(0.3)	1.3	1.3	16.6	15.9	14.8
Germany	0.1	—	—	3.8	4.3	(3.2)	10.9	0.1	16.0	18.7	18.8
Poland	2.9	1.6	—	2.5	0.2	(0.3)	4.3	0.6	11.8	12.1	13.1
Malaysia	1.6	4.3	0.2	1.6	0.4	(0.2)	0.5	0.9	9.3	10.5	9.2
United Arab Emirates	3.0	1.4	0.1	1.6	0.5	(0.4)	—	(0.2)	6.0	6.2	6.4
Thailand	0.8	2.0	—	1.1	—	—	1.7	0.2	5.8	6.3	5.4
Colombia	2.4	1.7	—	1.1	0.1	(0.1)	0.4	—	5.6	5.6	5.7
Luxembourg	—	—	0.1	—	0.5	(0.2)	4.8	0.2	5.4	6.0	4.9
Russia	2.0	0.9	—	0.9	0.5	(0.3)	0.8	0.5	5.3	4.6	5.0
Italy	0.3	—	—	2.3	6.1	(5.1)	0.2	1.5	5.3	6.7	6.6
Indonesia	1.8	1.1	—	1.1	—	(0.2)	1.3	0.1	5.2	5.6	4.4
Netherlands	—	—	—	—	1.5	(0.7)	5.0	(0.7)	5.1	6.7	7.1
Chile	1.6	—	2.1	0.1	0.2	—	—	—	4.0	4.0	3.8

- (1) ICG loans reflect funded corporate loans and private bank loans, net of unearned income. As of December 31, 2016, private bank loans in the table above totaled \$18.5 billion, concentrated in Singapore (\$6.6 billion), Hong Kong (\$5.4 billion) and the U.K. (\$5.1 billion).
- (2) GCB loans include funded loans in Brazil and Colombia related to businesses that were transferred to Citi Holdings as of January 1, 2016.
- (3) Other funded includes other direct exposure such as accounts receivable, loans held-for-sale, other loans in Citi Holdings and investments accounted for under the equity method.
- (4) Unfunded exposure includes unfunded corporate lending commitments, letters of credit and other contingencies.
- (5) Net mark-to-market (MTM) on derivatives and securities lending / borrowing transactions (repos). Exposures are shown net of collateral and inclusive of CVA. Includes margin loans.

- (6) Investment securities include securities available-for-sale, recorded at fair market value, and securities held-to-maturity, recorded at historical cost.
- (7) Trading account assets are shown on a net basis and include derivative exposure where the underlying reference entity is located in that country.

Argentina

As of December 31, 2016, Citi's net investment in its Argentine operations was approximately \$725 million, compared to \$747 million at December 31, 2015.

Citi uses the Argentine peso as the functional currency in Argentina and translates its financial statements into U.S. dollars using the official exchange rate as published by the Central Bank of Argentina. The impact of devaluations of the Argentine peso on Citi's net investment in Argentina, net of hedges, is reported as a translation loss in stockholders' equity.

Although Citi currently uses the Argentine peso as the functional currency, an increase in inflation resulting in a cumulative three-year inflation rate of 100% or more would result in a change in the functional currency to the U.S. dollar. Citi has historically based its evaluation of the cumulative three-year inflation rate on the CPI (Consumer Price Index) inflation statistics published by INDEC, the Argentine government's statistics agency. However, for the period from November 2015 to April 2016, INDEC did not publish CPI statistics which has led to uncertainty about the cumulative three-year inflation rates. As of December 31, 2016, Citi evaluated the available CPI statistics as well as inflation statistics published by the Argentine Central Bank and concluded that Argentina's cumulative three-year inflation rate had not reached 100%. However, uncertainty continues as to the cumulative three-year inflation rate and additional information received in future periods could result in a change of functional currency to the U.S. dollar in 2017.

While a change in the functional currency to the U.S. dollar would not result in any immediate gains or losses to Citi, it would result in future changes in the Argentine peso to U.S. dollar exchange rate being recorded in earnings for Citi's Argentine peso-denominated assets and liabilities instead of stockholder's equity.

FFIEC—Cross-Border Claims on Third Parties and Local Country Assets

Citi's cross-border disclosures are based on the country exposure bank regulatory reporting guidelines of the Federal Financial Institutions Examination Council (FFIEC). The following summarizes some of the FFIEC key reporting guidelines:

- Amounts are based on the domicile of the ultimate obligor, counterparty, collateral, issuer or guarantor, as applicable.
- Amounts do not consider the benefit of collateral received for securities financing transactions (i.e., repurchase agreements, reverse repurchase agreements and securities loaned and borrowed) and are reported based on notional amounts.
- Netting of derivatives receivables and payables, reported at fair value, is permitted, but only under a legally binding netting agreement with the same specific counterparty, and does not include the benefit of margin received or hedges.
- The netting of long and short positions for AFS securities and trading portfolios is not permitted.
- Credit default swaps (CDS) are included based on the gross notional amount sold and purchased and do not include any offsetting CDS on the same underlying entity.
- Loans are reported without the benefit of hedges.

Given the requirements noted above, Citi's FFIEC cross-border exposures and total outstandings tend to fluctuate, in some cases, significantly, from period to period. As an example, because total outstandings under FFIEC guidelines do not include the benefit of margin or hedges, market volatility in interest rates, foreign exchange rates and credit spreads may cause significant fluctuations in the level of total outstandings, all else being equal.

The tables below set forth each country whose total outstandings exceeded 0.75% of total Citigroup assets:

December 31, 2016

<i>In billions of U.S. dollars</i>	Cross-border claims on third parties and local country assets										
	Banks (a)	Public (a)	NBFIs ⁽¹⁾ (a)	Other (corporate and households) (a)	Trading assets ⁽²⁾ (included in (a))	Short-term claims ⁽²⁾ (included in (a))	Total outstanding ⁽³⁾ (sum of (a))	Commitments and guarantees ⁽⁴⁾	Credit derivatives purchased ⁽⁵⁾	Credit derivatives sold ⁽⁵⁾	
United Kingdom	\$ 15.0	\$ 18.1	\$ 35.4	\$ 23.2	\$ 8.7	\$ 47.0	\$ 91.7	\$ 23.2	\$ 100.0	\$ 98.8	
Mexico	6.4	18.3	7.2	30.2	4.5	29.3	62.1	17.0	6.8	6.2	
Japan	21.1	27.3	7.4	3.0	7.2	42.0	58.8	7.2	25.3	24.9	
Cayman Islands	0.1	—	51.6	3.8	1.3	32.0	55.5	2.9	—	—	
Germany	7.9	27.6	7.9	6.7	4.2	28.3	50.1	12.9	61.8	60.1	
France	15.8	4.3	24.5	2.8	2.9	36.1	47.4	11.9	61.5	61.2	
Korea	2.2	15.4	0.8	21.6	1.4	32.1	40.0	16.4	10.6	9.1	
Singapore	2.6	17.4	2.3	14.3	1.1	28.1	36.6	11.0	1.3	1.3	
India	5.7	11.5	2.1	13.3	2.8	23.2	32.6	7.8	2.0	1.5	
Brazil	3.8	11.4	0.8	15.2	5.1	19.8	31.2	5.1	11.3	9.6	
Australia	6.2	7.4	4.4	12.3	6.0	14.2	30.3	11.0	17.5	17.3	
China	4.2	12.2	2.4	11.2	3.8	25.7	30.0	3.9	12.1	12.8	
Hong Kong	0.9	10.3	2.7	13.5	4.9	24.5	27.4	11.7	3.5	2.7	
Netherlands	4.8	9.9	6.0	4.6	2.1	14.3	25.3	7.7	27.1	27.1	
Switzerland	1.9	13.1	1.1	4.8	0.7	17.1	20.9	5.5	18.9	18.8	
Canada	4.2	4.5	5.1	6.2	2.2	8.4	20.0	13.9	6.0	6.3	
Taiwan	0.9	5.8	1.7	11.4	1.9	15.5	19.8	12.6	0.1	0.1	
Italy	2.4	8.7	1.3	0.7	3.8	5.9	13.1	2.7	63.7	62.1	

December 31, 2015

<i>In billions of U.S. dollars</i>	Cross-border claims on third parties and local country assets										
	Banks (a)	Public (a)	NBFIs ⁽¹⁾ (a)	Other (corporate and households) (a)	Trading assets ⁽²⁾ (included in (a))	Short-term claims ⁽²⁾ (included in (a))	Total outstanding ⁽³⁾ (sum of (a))	Commitments and guarantees ⁽⁴⁾	Credit derivatives purchased ⁽⁵⁾	Credit derivatives sold ⁽⁵⁾	
United Kingdom	\$ 25.0	\$ 20.4	\$ 58.9	\$ 16.1	\$ 12.0	\$ 57.1	\$ 120.4	\$ 23.9	\$ 85.5	\$ 85.2	
Mexico	7.6	22.9	6.7	34.9	6.5	34.9	72.1	17.9	7.1	6.5	
Cayman Islands	0.1	—	59.2	2.6	1.5	40.3	61.9	2.5	—	—	
Germany	10.8	17.7	10.1	6.9	5.3	17.1	45.5	10.5	66.3	66.3	
France	20.4	3.7	17.4	3.2	3.6	27.5	44.7	11.0	71.3	71.1	
Korea	1.1	17.5	0.8	23.5	1.7	34.1	42.9	12.8	11.6	9.7	
Japan	11.4	18.8	4.1	2.5	6.3	26.7	36.8	3.2	27.5	27.2	
China	9.5	10.7	3.5	11.5	5.3	25.1	35.2	4.1	11.8	12.5	
India	6.4	12.7	3.5	12.4	5.8	24.4	35.0	7.7	2.2	1.8	
Singapore	2.3	12.7	2.1	14.6	0.3	22.3	31.7	13.0	1.6	1.5	
Australia	6.7	6.3	4.6	13.7	4.1	9.1	31.3	11.2	25.1	24.7	
Netherlands	5.1	10.2	10.0	5.0	2.6	12.7	30.3	8.1	27.6	27.5	
Brazil	4.5	9.0	1.1	14.2	3.6	17.7	28.8	4.8	12.1	10.2	
Hong Kong	1.3	7.8	3.2	15.2	3.2	18.8	27.5	12.8	2.7	1.9	
Switzerland	5.2	16.1	1.5	4.5	0.6	19.8	27.3	5.3	21.9	22.1	
Canada	5.2	4.2	5.8	6.0	2.1	9.1	21.2	12.8	7.1	8.0	
Taiwan	2.0	5.9	2.1	9.8	1.4	12.2	19.8	12.5	0.1	0.1	
Italy	2.8	11.3	0.6	1.5	6.1	8.0	16.2	3.0	69.3	67.0	

(1) Non-bank financial institutions.

(2) Included in total outstanding.

(3) Total outstanding includes cross-border claims on third parties, as well as local country assets. Cross-border claims on third parties include cross-border loans, securities, deposits with banks and other monetary assets, as well as net revaluation gains on foreign exchange and derivative products.

- (4) Commitments (not included in total outstanding) include legally binding cross-border letters of credit and other commitments and contingencies as defined by the FFIEC guidelines. The FFIEC definition of commitments includes commitments to local residents to be funded with local currency liabilities originated within the country.
- (5) CDS are not included in total outstanding.

SIGNIFICANT ACCOUNTING POLICIES AND SIGNIFICANT ESTIMATES

Note 1 to the Consolidated Financial Statements contains a summary of Citigroup's significant accounting policies, including a discussion of recently issued accounting pronouncements. These policies, as well as estimates made by management, are integral to the presentation of Citi's results of operations and financial condition. While all of these policies require a certain level of management judgment and estimates, this section highlights and discusses the significant accounting policies that require management to make highly difficult, complex or subjective judgments and estimates at times regarding matters that are inherently uncertain and susceptible to change (see also "Risk Factors—Operational Risks" above). Management has discussed each of these significant accounting policies, the related estimates, and its judgments with the Audit Committee of the Citigroup Board of Directors.

Valuations of Financial Instruments

Citigroup holds debt and equity securities, derivatives, retained interests in securitizations, investments in private equity and other financial instruments. Substantially all of these assets and liabilities are reflected at fair value on Citi's Consolidated Balance Sheet.

Citi purchases securities under agreements to resell (reverse repos) and sells securities under agreements to repurchase (repos), a majority of which are carried at fair value. In addition, certain loans, short-term borrowings, long-term debt and deposits, as well as certain securities borrowed and loaned positions that are collateralized with cash, are carried at fair value. Citigroup holds its investments, trading assets and liabilities, and resale and repurchase agreements on the Consolidated Balance Sheet to meet customer needs and to manage liquidity needs, interest rate risks and private equity investing.

When available, Citi generally uses quoted market prices to determine fair value and classifies such items within Level 1 of the fair value hierarchy established under ASC 820-10, *Fair Value Measurement*. If quoted market prices are not available, fair value is based upon internally developed valuation models that use, where possible, current market-based or independently sourced market parameters, such as interest rates, currency rates and option volatilities. Such models are often based on a discounted cash flow analysis. In addition, items valued using such internally generated valuation techniques are classified according to the lowest level input or value driver that is significant to the valuation. Thus, an item may be classified under the fair value hierarchy as Level 3 even though there may be some significant inputs that are readily observable.

Citi is required to exercise subjective judgments relating to the applicability and functionality of internal valuation models, the significance of inputs or value drivers to the valuation of an instrument and the degree of illiquidity and subsequent lack of observability in certain markets. These judgments have the potential to impact the Company's financial performance for instruments where the changes in

fair value are recognized in either the Consolidated Statement of Income or in AOCI.

Moreover, for certain investments, decreases in fair value are only recognized in earnings in the Consolidated Statement of Income if such decreases are judged to be an other-than-temporary impairment (OTTI). Adjudicating the temporary nature of fair value impairments is also inherently judgmental.

The fair value of financial instruments incorporates the effects of Citi's own credit risk and the market view of counterparty credit risk, the quantification of which is also complex and judgmental. For additional information on Citi's fair value analysis, see Notes 1, 6, 24 and 25 to the Consolidated Financial Statements.

Allowance for Credit Losses

Management provides reserves for an estimate of probable losses inherent in the funded loan portfolio and in unfunded loan commitments and standby letters of credit on the Consolidated Balance Sheet in the *Allowance for loan losses* and in *Other liabilities*, respectively.

Estimates of these probable losses are based upon (i) Citigroup's internal system of credit-risk ratings that are analogous to the risk ratings of the major credit rating agencies; and (ii) historical default and loss data, including rating agency information regarding default rates from 1983 to 2015, and internal data dating to the early 1970s on severity of losses in the event of default. Adjustments may be made to this data, including (i) statistically calculated estimates to cover the historical fluctuation of the default rates over the credit cycle, the historical variability of loss severity among defaulted loans and the degree to which there are large obligor concentrations in the global portfolio; and (ii) adjustments made for specifically known items, such as current environmental factors and credit trends.

In addition, representatives from both the risk management and finance staffs who cover business areas with delinquency-managed portfolios containing smaller balance homogeneous loans present their recommended reserve balances based upon leading credit indicators, including loan delinquencies and changes in portfolio size, as well as economic trends, including housing prices, unemployment and GDP. This methodology is applied separately for each individual product within each geographic region in which these portfolios exist.

This evaluation process is subject to numerous estimates and judgments. The frequency of default, risk ratings, loss recovery rates, the size and diversity of individual large credits, and the ability of borrowers with foreign currency obligations to obtain the foreign currency necessary for orderly debt servicing, among other things, are all taken into account during this review. Changes in these estimates could have a direct impact on Citi's credit costs and the allowance in any period.

For a further description of the loan loss reserve and related accounts, see Notes 1 and 15 to the Consolidated Financial Statements.

Goodwill

Citi tests goodwill for impairment annually on July 1 (the annual test) and between annual tests (the interim test) if an event occurs or circumstances change that would more-likely-than-not reduce the fair value of a reporting unit below its carrying amount, such as a significant adverse change in the business climate, a decision to sell or dispose of all or a significant portion of a reporting unit, or a significant decline in Citi's stock price. During 2016, annual and interim tests were performed, which resulted in no goodwill impairment as described in Note 16 to the Consolidated Financial Statements.

As of December 31, 2016, Citigroup consists of the following business segments: *Global Consumer Banking*, *Institutional Clients Group* and Citi Holdings. Goodwill impairment testing is performed at the level below the business segment (referred to as a reporting unit). Goodwill is recorded in a business combination under the acquisition method of accounting when the acquisition price is higher than the fair value of net assets, including identifiable intangible assets. At the time a business is acquired, goodwill is allocated to Citi's applicable reporting units based on relative fair value. Once goodwill has been allocated to the reporting units, it generally no longer retains its identification with a particular acquisition, but instead becomes identified with the reporting unit as a whole. As a result, all of the fair value of each reporting unit is available to support the allocated goodwill. If any significant business reorganization occurs, Citi may reallocate the goodwill.

Consistent with prior years, Citi utilizes allocated equity as a proxy for the carrying value of its reporting units for purposes of goodwill impairment testing. The allocated equity in the reporting units is determined based on the capital the business would require if it were operating as a standalone entity, incorporating sufficient capital to be in compliance with regulatory capital requirements, including capital for specifically identified goodwill and intangible assets. The capital allocated to the businesses is incorporated into the annual budget process, which is reviewed by Citi's Board of Directors.

Goodwill impairment testing involves management judgment, requiring an assessment of whether the carrying value of the reporting unit can be supported by the fair value of the reporting unit using widely accepted valuation techniques, such as the market approach (earnings multiples and/or transaction multiples) and/or the income approach (discounted cash flow (DCF) method). In applying these methodologies, Citi utilizes a number of factors, including actual operating results, future business plans, economic projections and market data.

Similar to 2015, Citigroup engaged an independent valuation specialist in 2016 to assist in Citi's valuation for most of the reporting units employing both the market approach and the DCF method. For reporting units where both methods were utilized in 2016, the resulting fair values were relatively consistent and appropriate weighting was given to outputs from both methods.

The DCF method utilized at the time of each impairment test used discount rates that Citi believes adequately reflected the risk and uncertainty in the financial markets in the

internally generated cash flow projections. The DCF method employs a capital asset pricing model in estimating the discount rate. Citi continues to value the remaining reporting units where it believes the risk of impairment to be low, using primarily the market approach.

Since none of the Company's reporting units are publicly traded, individual reporting unit fair-value determinations cannot be directly correlated to Citigroup's common stock price. The sum of the fair values of the reporting units at July 1, 2016 exceeded the overall market capitalization of Citi as of July 1, 2016. However, Citi believes that it is not meaningful to reconcile the sum of the fair values of the Company's reporting units to its market capitalization due to several factors. The market capitalization of Citigroup reflects the execution risk in a transaction involving Citigroup due to its size. However, the individual reporting units' fair values are not subject to the same level of execution risk nor a business model that is perceived to be as complex. In addition, the market capitalization of Citigroup does not include consideration of the individual reporting unit's control premium.

See Note 16 to the Consolidated Financial Statements for additional information on goodwill, including the changes in the goodwill balance year-over-year and the reporting unit goodwill balances as of December 31, 2016.

Income Taxes

Overview

Citi is subject to the income tax laws of the U.S., its states and local municipalities and the foreign jurisdictions in which Citi operates. These tax laws are complex and are subject to differing interpretations by the taxpayer and the relevant governmental taxing authorities. Disputes over interpretations of the tax laws may be subject to review and adjudication by the court systems of the various tax jurisdictions or may be settled with the taxing authority upon audit.

In establishing a provision for income tax expense, Citi must make judgments and interpretations about the application of these inherently complex tax laws. Citi must also make estimates about when in the future certain items will affect taxable income in the various tax jurisdictions, both domestic and foreign. Deferred taxes are recorded for the future consequences of events that have been recognized in the financial statements or tax returns, based upon enacted tax laws and rates. Deferred tax assets (DTAs) are recognized subject to management's judgment that realization is more-likely-than-not.

DTAs

At December 31, 2016, Citi had recorded net DTAs of \$46.7 billion. In the fourth quarter of 2016, Citi's DTAs increased by \$1.2 billion, driven by movements in AOCI, partially offset by earnings. On a full-year basis, Citi's DTAs decreased \$1.2 billion from \$47.8 billion at December 31, 2015. The decrease in total DTAs year-over-year was primarily due to earnings partially offset by an increase in AOCI.

Foreign tax credits (FTCs) comprised approximately \$14.2 billion of Citi's DTAs as of December 31, 2016,

compared to approximately \$15.9 billion as of December 31, 2015. The decrease in FTCs year-over-year was due to the generation of U.S. taxable income and represented \$1.7 billion of the \$1.2 billion decrease in Citi's overall DTAs noted above, offset by the increase in the AOCI-related DTAs. The FTCs carry-forward periods represent the most time-sensitive component of Citi's DTAs. Accordingly, in 2017, Citi will continue to prioritize reducing the FTC carry-forward component of the DTAs. Secondly, Citi's actions will focus on reducing other DTA components and, thereby, reduce the total DTAs. Citi's DTAs will decline primarily as additional domestic GAAP taxable income is generated.

While Citi's net total DTAs decreased year-over-year, the time remaining for utilization has shortened, given the passage of time, particularly with respect to the FTCs component of the DTAs. Although realization is not assured, Citi believes that the realization of the recognized net DTAs of \$46.7 billion at December 31, 2016 is more-likely-than-not based upon management's expectations as to future taxable income in the jurisdictions in which the DTAs arise as well as available tax planning strategies (as defined in ASC 740, *Income Taxes*) that would be implemented, if necessary, to prevent a carry-forward from expiring.

Citi has concluded that it has the necessary positive evidence to support the full realization of its DTAs. Specifically, Citi forecasts sufficient U.S. taxable income in the carry-forward periods, exclusive of ASC 740 tax planning strategies. Citi's forecasted taxable income, which will continue to be subject to overall market and global economic conditions, incorporates geographic business forecasts and taxable income adjustments to those forecasts (e.g., U.S. tax exempt income, loan loss reserves deductible for U.S. tax reporting in subsequent years), and actions intended to optimize its U.S. taxable earnings. In general, Citi would need to generate approximately \$57 billion of U.S. taxable income during the FTCs carry-forward periods to prevent Citi's FTCs from expiring unutilized.

In addition to its forecasted U.S. taxable income, Citi has tax planning strategies available to it under ASC 740 that would be implemented, if necessary, to prevent a carry-forward from expiring unutilized. These strategies include (i) repatriating low-taxed foreign source earnings for which an assertion that the earnings have been indefinitely reinvested has not been made; (ii) accelerating U.S. taxable income into, or deferring U.S. tax deductions out of, the latter years of the carry-forward period (e.g., selling appreciated assets, electing straight-line depreciation); (iii) accelerating deductible temporary differences outside the U.S.; and (iv) selling certain assets that produce tax-exempt income, while purchasing assets that produce fully taxable income. In addition, the sale or restructuring of certain businesses can produce significant U.S. taxable income within the relevant carry-forward periods.

Based upon the foregoing discussion, Citi believes the U.S. federal and New York state and city net operating loss carry-forward period of 20 years provides enough time to fully utilize the DTAs pertaining to the existing net operating loss carry-forwards and any net operating loss that would be created by the reversal of the future net deductions that have not yet been taken on a tax return.

With respect to the FTCs component of the DTAs, the carry-forward period is 10 years. Citi believes that it will generate sufficient U.S. taxable income within the 10-year carry-forward period to be able to fully utilize the FTCs, in addition to any FTCs produced in such period, which must be used prior to any carry-forward utilization.

For additional information on Citi's income taxes, including its income tax provision, tax assets and liabilities, and a tabular summary of Citi's net DTAs balance as of December 31, 2016 (including the FTCs and applicable expiration dates of the FTCs), see Note 9 to the Consolidated Financial Statements. For a discussion of the potential impact to Citi's DTAs that could arise from U.S. corporate tax reform, see "Risk Factors—Strategic Risks" above.

Litigation Accruals

See the discussion in Note 27 to the Consolidated Financial Statements for information regarding Citi's policies on establishing accruals for litigation and regulatory contingencies.

Accounting Changes and Future Application of Accounting Standards

See Note 1 to the Consolidated Financial Statements for a discussion of "Accounting Changes" and the "Future Application of Accounting Standards."

DISCLOSURE CONTROLS AND PROCEDURES

Citi's disclosure controls and procedures are designed to ensure that information required to be disclosed under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, including without limitation that information required to be disclosed by Citi in its SEC filings is accumulated and communicated to management, including the Chief Executive Officer (CEO) and Chief Financial Officer (CFO), as appropriate, to allow for timely decisions regarding required disclosure.

Citi's Disclosure Committee assists the CEO and CFO in their responsibilities to design, establish, maintain and evaluate the effectiveness of Citi's disclosure controls and procedures. The Disclosure Committee is responsible for, among other things, the oversight, maintenance and implementation of the disclosure controls and procedures, subject to the supervision and oversight of the CEO and CFO.

Citi's management, with the participation of its CEO and CFO, has evaluated the effectiveness of Citigroup's disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934) as of December 31, 2016 and, based on that evaluation, the CEO and CFO have concluded that at that date, Citigroup's disclosure controls and procedures were effective.

MANAGEMENT'S ANNUAL REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

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

Because of its inherent limitations, internal control over financial reporting may not prevent or detect all 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. In addition, given Citi's large size, complex operations and global footprint, lapses or deficiencies in internal controls may occur from time to time.

Citi's management assessed the effectiveness of Citigroup's internal control over financial reporting as of December 31, 2016 based on 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 believes that, as of December 31, 2016, Citi's internal control over financial reporting was effective. In addition, there were no changes in Citi's internal control over financial reporting during the fiscal quarter ended December 31, 2016 that materially affected, or are reasonably likely to materially affect, Citi's internal control over financial reporting.

The effectiveness of Citi's internal control over financial reporting as of December 31, 2016 has been audited by KPMG LLP, Citi's independent registered public accounting firm, as stated in their report below, which expressed an unqualified opinion on the effectiveness of Citi's internal control over financial reporting as of December 31, 2016.

FORWARD-LOOKING STATEMENTS

Certain statements in this Form 10-K, including but not limited to statements included within the Management's Discussion and Analysis of Financial Condition and Results of Operations, are "forward-looking statements" within the meaning of the rules and regulations of the U.S. Securities and Exchange Commission (SEC). In addition, Citigroup also may make forward-looking statements in its other documents filed or furnished with the SEC and its management may make forward-looking statements orally to analysts, investors, representatives of the media and others.

Generally, forward-looking statements are not based on historical facts, but instead represent Citigroup's and its management's beliefs regarding future events. Such statements may be identified by words such as believe, expect, anticipate, intend, estimate, may increase, may fluctuate and similar expressions or future or conditional verbs such as will, should, would and could.

Such statements are based on management's current expectations and are subject to risks, uncertainties and changes in circumstances. Actual results and capital and other financial conditions may differ materially from those included in these statements due to a variety of factors, including, without limitation, the precautionary statements included within each individual business's discussion and analysis of its results of operations and the factors listed and described under "Risk Factors" above.

Any forward-looking statements made by or on behalf of Citigroup speak only as to the date they are made and Citi does not undertake to update forward-looking statements to reflect the impact of circumstances or events that arise after the date the forward-looking statements were made.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM— INTERNAL CONTROL OVER FINANCIAL REPORTING



The Board of Directors and Stockholders
Citigroup Inc.:

We have audited Citigroup Inc. and subsidiaries' (the "Company" or "Citigroup") internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). 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 annual 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 conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). 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 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.

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.

In our opinion, Citigroup maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, 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), the consolidated balance sheet of Citigroup as of December 31, 2016 and 2015, and the related consolidated statements of income, comprehensive income, changes in stockholders' equity and cash flows for each of the years in the three-year period ended December 31, 2016, and our report dated February 24, 2017 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP
New York, New York
February 24, 2017

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM— CONSOLIDATED FINANCIAL STATEMENTS



The Board of Directors and Stockholders
Citigroup Inc.:

We have audited the accompanying consolidated balance sheet of Citigroup Inc. and subsidiaries (the “Company” or “Citigroup”) as of December 31, 2016 and 2015, and the related consolidated statements of income, comprehensive income, changes in stockholders’ equity and cash flows for each of the years in the three-year period ended December 31, 2016. 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 conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Citigroup as of December 31, 2016 and 2015, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2016, 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), Citigroup’s internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated February 24, 2017 expressed an unqualified opinion on the effectiveness of the Company’s internal control over financial reporting.

/s/ KPMG LLP
New York, New York
February 24, 2017

FINANCIAL STATEMENTS AND NOTES TABLE OF CONTENTS

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Statement of Income— For the Years Ended December 31, 2016, 2015 and 2014	129
Consolidated Statement of Comprehensive Income— For the Years Ended December 31, 2016, 2015 and 2014	131
Consolidated Balance Sheet—December 31, 2016 and 2015	132
Consolidated Statement of Changes in Stockholders' Equity —For the Years Ended December 31, 2016, 2015 and 2014	134
Consolidated Statement of Cash Flows— For the Years Ended December 31, 2016, 2015 and 2014	136

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1—Summary of Significant Accounting Policies	138	Note 16—Goodwill and Intangible Assets	211
Note 2—Discontinued Operations and Significant Disposals	150	Note 17—Debt	214
Note 3—Business Segments	152	Note 18—Regulatory Capital	216
Note 4—Interest Revenue and Expense	153	Note 19—Changes in Accumulated Other Comprehensive Income (Loss)	217
Note 5—Commissions and Fees	154	Note 20—Preferred Stock	220
Note 6—Principal Transactions	155	Note 21—Securitizations and Variable Interest Entities	222
Note 7—Incentive Plans	156	Note 22—Derivatives Activities	235
Note 8—Retirement Benefits	160	Note 23—Concentrations of Credit Risk	250
Note 9—Income Taxes	174	Note 24—Fair Value Measurement	251
Note 10—Earnings per Share	178	Note 25—Fair Value Elections	272
Note 11—Federal Funds, Securities Borrowed, Loaned and Subject to Repurchase Agreements	179	Note 26—Pledged Assets, Collateral, Guarantees and Commitments	276
Note 12—Brokerage Receivables and Brokerage Payables	183	Note 27—Contingencies	283
Note 13—Investments	184	Note 28—Condensed Consolidating Financial Statements	292
Note 14—Loans	196	Note 29—Subsequent Event	303
Note 15—Allowance for Credit Losses	208	Note 30—Selected Quarterly Financial Data (Unaudited)	304

CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED STATEMENT OF INCOME

Citigroup Inc. and Subsidiaries

<i>In millions of dollars, except per share amounts</i>	Years ended December 31,		
	2016	2015	2014
Revenues⁽¹⁾			
Interest revenue	\$ 57,615	\$ 58,551	\$ 61,683
Interest expense	12,511	11,921	13,690
Net interest revenue	\$ 45,104	\$ 46,630	\$ 47,993
Commissions and fees	\$ 10,521	\$ 11,848	\$ 13,032
Principal transactions	7,585	6,008	6,698
Administration and other fiduciary fees	3,364	3,648	4,013
Realized gains on sales of investments, net	948	682	570
Other-than-temporary impairment losses on investments			
Gross impairment losses	(620)	(265)	(432)
Less: Impairments recognized in AOCI	—	—	8
Net impairment losses recognized in earnings	\$ (620)	\$ (265)	\$ (424)
Insurance premiums	\$ 836	\$ 1,845	\$ 2,110
Other revenue	2,137	5,958	3,227
Total non-interest revenues	\$ 24,771	\$ 29,724	\$ 29,226
Total revenues, net of interest expense	\$ 69,875	\$ 76,354	\$ 77,219
Provisions for credit losses and for benefits and claims			
Provision for loan losses	\$ 6,749	\$ 7,108	\$ 6,828
Policyholder benefits and claims	204	731	801
Provision (release) for unfunded lending commitments	29	74	(162)
Total provisions for credit losses and for benefits and claims	\$ 6,982	\$ 7,913	\$ 7,467
Operating expenses⁽¹⁾			
Compensation and benefits	\$ 20,970	\$ 21,769	\$ 23,959
Premises and equipment	2,542	2,878	3,178
Technology/communication	6,685	6,581	6,436
Advertising and marketing	1,632	1,547	1,844
Other operating	9,587	10,840	19,634
Total operating expenses	\$ 41,416	\$ 43,615	\$ 55,051
Income from continuing operations before income taxes	\$ 21,477	\$ 24,826	\$ 14,701
Provision for income taxes	6,444	7,440	7,197
Income from continuing operations	\$ 15,033	\$ 17,386	\$ 7,504
Discontinued operations			
Income (loss) from discontinued operations	\$ (80)	\$ (83)	\$ 10
Provision (benefit) for income taxes	(22)	(29)	12
Loss from discontinued operations, net of taxes	\$ (58)	\$ (54)	\$ (2)
Net income before attribution of noncontrolling interests	\$ 14,975	\$ 17,332	\$ 7,502
Noncontrolling interests	63	90	192
Citigroup's net income	\$ 14,912	\$ 17,242	\$ 7,310
Basic earnings per share⁽²⁾			
Income from continuing operations	\$ 4.74	\$ 5.43	\$ 2.21
Loss from discontinued operations, net of taxes	(0.02)	(0.02)	—
Net income	\$ 4.72	\$ 5.41	\$ 2.21
Weighted average common shares outstanding	2,888.1	3,004.0	3,031.6

Diluted earnings per share⁽²⁾						
Income from continuing operations	\$	4.74	\$	5.42	\$	2.20
Income (loss) from discontinued operations, net of taxes		(0.02)		(0.02)		—
Net income	\$	4.72	\$	5.40	\$	2.20
Adjusted weighted average common shares outstanding		2,888.3		3,007.7		3,037.0

(1) Certain prior-period revenue and expense lines and totals were reclassified to conform to the current period's presentation. See Note 3 to the Consolidated Financial Statements.

(2) Due to rounding, earnings per share on continuing operations and discontinued operations may not sum to earnings per share on net income.

The Notes to the Consolidated Financial Statements are an integral part of these Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
Citigroup Inc. and Subsidiaries

<i>In millions of dollars</i>	Years ended December 31,		
	2016	2015	2014
Net income before attribution of noncontrolling interests	\$ 14,975	\$ 17,332	\$ 7,502
Add: Citigroup's other comprehensive income (loss)			
Net change in unrealized gains and losses on investment securities, net of taxes	108	(964)	1,697
Net change in debt valuation adjustment (DVA), net of taxes ⁽¹⁾	(337)	—	—
Net change in cash flow hedges, net of taxes	57	292	336
Benefit plans liability adjustment, net of taxes ⁽²⁾	(48)	43	(1,170)
Net change in foreign currency translation adjustment, net of taxes and hedges	(2,802)	(5,499)	(4,946)
Citigroup's total other comprehensive income (loss)	\$ (3,022)	\$ (6,128)	\$ (4,083)
Total comprehensive income before attribution of noncontrolling interests	\$ 11,953	\$ 11,204	\$ 3,419
Less: Net income attributable to noncontrolling interests	63	90	192
Citigroup's comprehensive income	\$ 11,890	\$ 11,114	\$ 3,227

(1) See Note 1 to the Consolidated Financial Statements.

(2) Reflects adjustments based on the actuarial valuations of Citi's pension and postretirement plans, including changes in the mortality assumptions at December 31, 2014, and amortization of amounts previously recognized in *Accumulated other comprehensive income (loss)*. See Note 8 to the Consolidated Financial Statements.

The Notes to the Consolidated Financial Statements are an integral part of these Consolidated Financial Statements.

CONSOLIDATED BALANCE SHEET
Citigroup Inc. and Subsidiaries

<i>In millions of dollars</i>	December 31,	
	2016	2015
Assets		
Cash and due from banks (including segregated cash and other deposits)	\$ 23,043	\$ 20,900
Deposits with banks	137,451	112,197
Federal funds sold and securities borrowed or purchased under agreements to resell (including \$133,204 and \$137,964 as of December 31, 2016 and December 31, 2015, respectively, at fair value)	236,813	219,675
Brokerage receivables	28,887	27,683
Trading account assets (including \$80,986 and \$92,123 pledged to creditors at December 31, 2016 and December 31, 2015, respectively)	243,925	241,215
Investments:		
Available for sale (including \$8,239 and \$10,698 pledged to creditors as of December 31, 2016 and December 31, 2015, respectively)	299,424	299,136
Held to maturity (including \$843 and \$3,630 pledged to creditors as of December 31, 2016 and December 31, 2015, respectively)	45,667	36,215
Non-marketable equity securities (including \$1,774 and \$2,088 at fair value as of December 31, 2016 and December 31, 2015, respectively)	8,213	7,604
Total investments	\$ 353,304	\$ 342,955
Loans:		
Consumer (including \$29 and \$34 as of December 31, 2016 and December 31, 2015, respectively, at fair value)	325,366	325,785
Corporate (including \$3,457 and \$4,971 as of December 31, 2016 and December 31, 2015, respectively, at fair value)	299,003	291,832
Loans, net of unearned income	\$ 624,369	\$ 617,617
Allowance for loan losses	(12,060)	(12,626)
Total loans, net	\$ 612,309	\$ 604,991
Goodwill	21,659	22,349
Intangible assets (other than MSRs)	5,114	3,721
Mortgage servicing rights (MSRs)	1,564	1,781
Other assets (including \$15,729 and \$6,121 as of December 31, 2016 and December 31, 2015, respectively, at fair value)	128,008	133,743
Total assets	\$ 1,792,077	\$ 1,731,210

The following table presents certain assets of consolidated variable interest entities (VIEs), which are included in the Consolidated Balance Sheet above. The assets in the table below include those assets that can only be used to settle obligations of consolidated VIEs, presented on the following page, and are in excess of those obligations. Additionally, the assets in the table below include third-party assets of consolidated VIEs only and exclude intercompany balances that eliminate in consolidation.

<i>In millions of dollars</i>	December 31,	
	2016	2015
Assets of consolidated VIEs to be used to settle obligations of consolidated VIEs		
Cash and due from banks	\$ 142	\$ 153
Trading account assets	602	583
Investments	3,636	5,263
Loans, net of unearned income		
Consumer	53,401	58,772
Corporate	20,121	22,008
Loans, net of unearned income	\$ 73,522	\$ 80,780
Allowance for loan losses	(1,769)	(2,135)
Total loans, net	\$ 71,753	\$ 78,645
Other assets	158	150
Total assets of consolidated VIEs to be used to settle obligations of consolidated VIEs	\$ 76,291	\$ 84,794

Statement continues on the next page.

CONSOLIDATED BALANCE SHEET
(Continued)

Citigroup Inc. and Subsidiaries

<i>In millions of dollars, except shares and per share amounts</i>	December 31,	
	2016	2015
Liabilities		
Non-interest-bearing deposits in U.S. offices	\$ 136,698	\$ 139,249
Interest-bearing deposits in U.S. offices (including \$434 and \$923 as of December 31, 2016 and December 31, 2015, respectively, at fair value)	300,972	280,234
Non-interest-bearing deposits in offices outside the U.S.	77,616	71,577
Interest-bearing deposits in offices outside the U.S. (including \$778 and \$667 as of December 31, 2016 and December 31, 2015, respectively, at fair value)	414,120	416,827
Total deposits	\$ 929,406	\$ 907,887
Federal funds purchased and securities loaned or sold under agreements to repurchase (including \$33,663 and \$36,843 as of December 31, 2016 and December 31, 2015, respectively, at fair value)	141,821	146,496
Brokerage payables	57,152	53,722
Trading account liabilities	139,045	117,512
Short-term borrowings (including \$2,700 and \$1,207 as of December 31, 2016 and December 31, 2015, respectively, at fair value)	30,701	21,079
Long-term debt (including \$26,254 and \$25,293 as of December 31, 2016 and December 31, 2015, respectively, at fair value)	206,178	201,275
Other liabilities (including \$1,500 and \$1,624 as of December 31, 2016 and December 31, 2015, respectively, at fair value)	61,631	60,147
Total liabilities	\$ 1,565,934	\$ 1,508,118
Stockholders' equity		
Preferred stock (\$1.00 par value; authorized shares: 30 million), issued shares: 770,120 as of December 31, 2016 and 668,720 as of December 31, 2015, at aggregate liquidation value	\$ 19,253	\$ 16,718
Common stock (\$0.01 par value; authorized shares: 6 billion), issued shares: 3,099,482,042 as of December 31, 2016 and December 31, 2015	31	31
Additional paid-in capital	108,042	108,288
Retained earnings	146,477	133,841
Treasury stock, at cost: December 31, 2016—327,090,192 shares and December 31, 2015—146,203,311 shares	(16,302)	(7,677)
Accumulated other comprehensive income (loss)	(32,381)	(29,344)
Total Citigroup stockholders' equity	\$ 225,120	\$ 221,857
Noncontrolling interest	1,023	1,235
Total equity	\$ 226,143	\$ 223,092
Total liabilities and equity	\$ 1,792,077	\$ 1,731,210

The following table presents certain liabilities of consolidated VIEs, which are included in the Consolidated Balance Sheet above. The liabilities in the table below include third-party liabilities of consolidated VIEs only and exclude intercompany balances that eliminate in consolidation. The liabilities also exclude amounts where creditors or beneficial interest holders have recourse to the general credit of Citigroup.

<i>In millions of dollars</i>	December 31,	
	2016	2015
Liabilities of consolidated VIEs for which creditors or beneficial interest holders do not have recourse to the general credit of Citigroup		
Short-term borrowings	\$ 10,697	\$ 11,965
Long-term debt	23,919	31,273
Other liabilities	1,275	2,099
Total liabilities of consolidated VIEs for which creditors or beneficial interest holders do not have recourse to the general credit of Citigroup	\$ 35,891	\$ 45,337

The Notes to the Consolidated Financial Statements are an integral part of these Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF CHANGES IN STOCKHOLDERS' EQUITY
Citigroup Inc. and Subsidiaries

	Years ended December 31,					
	Amounts			Shares		
	2016	2015	2014	2016	2015	2014
<i>In millions of dollars, except shares in thousands</i>						
Preferred stock at aggregate liquidation value						
Balance, beginning of year	\$ 16,718	\$ 10,468	\$ 6,738	669	419	270
Issuance of new preferred stock	2,535	6,250	3,730	101	250	149
Balance, end of period	\$ 19,253	\$ 16,718	\$ 10,468	770	669	419
Common stock and additional paid-in capital						
Balance, beginning of year	\$ 108,319	\$ 108,010	\$ 107,224	3,099,482	3,082,038	3,062,099
Employee benefit plans	(251)	357	798	—	17,438	19,928
Preferred stock issuance expense	(37)	(23)	(31)	—	—	—
Other	42	(25)	19	—	6	11
Balance, end of period	\$ 108,073	\$ 108,319	\$ 108,010	3,099,482	3,099,482	3,082,038
Retained earnings						
Balance, beginning of year	\$ 133,841	\$ 117,852	\$ 110,821			
Adjustment to opening balance, net of taxes ⁽¹⁾	15	—	—			
Adjusted balance, beginning of period	\$ 133,856	\$ 117,852	\$ 110,821			
Citigroup's net income	14,912	17,242	7,310			
Common dividends ⁽²⁾	(1,214)	(484)	(122)			
Preferred dividends	(1,077)	(769)	(511)			
Tax benefit	—	—	353			
Other	—	—	1			
Balance, end of period	\$ 146,477	\$ 133,841	\$ 117,852			
Treasury stock, at cost						
Balance, beginning of year	\$ (7,677)	\$ (2,929)	\$ (1,658)	(146,203)	(58,119)	(32,856)
Employee benefit plans ⁽³⁾	826	704	(39)	14,256	13,318	(483)
Treasury stock acquired ⁽⁴⁾	(9,451)	(5,452)	(1,232)	(195,143)	(101,402)	(24,780)
Balance, end of period	\$ (16,302)	\$ (7,677)	\$ (2,929)	(327,090)	(146,203)	(58,119)
Citigroup's accumulated other comprehensive income (loss)						
Balance, beginning of year	\$ (29,344)	\$ (23,216)	\$ (19,133)			
Adjustment to opening balance, net of taxes ⁽¹⁾	(15)	—	—			
Adjusted balance, beginning of period	\$ (29,359)	\$ (23,216)	\$ (19,133)			
Citigroup's total other comprehensive income (loss)	(3,022)	(6,128)	(4,083)			
Balance, end of period	\$ (32,381)	\$ (29,344)	\$ (23,216)			
Total Citigroup common stockholders' equity	\$ 205,867	\$ 205,139	\$ 199,717	2,772,392	2,953,279	3,023,919
Total Citigroup stockholders' equity	\$ 225,120	\$ 221,857	\$ 210,185			
Noncontrolling interests						
Balance, beginning of year	\$ 1,235	\$ 1,511	\$ 1,794			
Transactions between noncontrolling-interest shareholders and the related consolidated subsidiary	(11)	—	—			
Transactions between Citigroup and the noncontrolling-interest shareholders	(130)	(164)	(96)			
Net income attributable to noncontrolling-interest shareholders	63	90	192			
Dividends paid to noncontrolling-interest shareholders	(42)	(78)	(91)			
Other comprehensive income (loss) attributable to noncontrolling-interest shareholders	(56)	(83)	(106)			
Other	(36)	(41)	(182)			
Net change in noncontrolling interests	\$ (212)	\$ (276)	\$ (283)			
Balance, end of period	\$ 1,023	\$ 1,235	\$ 1,511			
Total equity	\$ 226,143	\$ 223,092	\$ 211,696			

- (1) Accounting reflects the early adoption of the provisions of ASU 2016-01 relating to Citi's debt valuation adjustments (DVA) for liabilities for which the fair value adoption was elected. See Note 1 to the Consolidated Financial Statements.
- (2) Common dividends declared were \$0.05 per share in the first and second quarters and \$0.16 per share in the third and fourth quarters of 2016; \$0.01 per share in the first quarter and \$0.05 in the second, third and fourth quarters of 2015; and \$0.01 per share in each quarter of 2014.
- (3) Includes treasury stock related to (i) certain activity on employee stock option program exercises, where the employee delivers existing shares to cover the option exercise, or (ii) under Citi's employee-restricted or deferred-stock programs, where shares are withheld to satisfy tax requirements.
- (4) For 2016, 2015 and 2014, primarily consists of open market purchases under Citi's Board of Directors-approved common stock repurchase program.

The Notes to the Consolidated Financial Statements are an integral part of these Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF CASH FLOWS
Citigroup Inc. and Subsidiaries

<i>In millions of dollars</i>	Years ended December 31,		
	2016	2015	2014
Cash flows from operating activities of continuing operations			
Net income before attribution of noncontrolling interests	\$ 14,975	\$ 17,332	\$ 7,502
Net income attributable to noncontrolling interests	63	90	192
Citigroup's net income	\$ 14,912	\$ 17,242	\$ 7,310
Loss from discontinued operations, net of taxes	(58)	(54)	(2)
Income from continuing operations—excluding noncontrolling interests	\$ 14,970	\$ 17,296	\$ 7,312
Adjustments to reconcile net income to net cash provided by operating activities of continuing operations			
Gains on significant disposals ⁽¹⁾	(404)	(3,210)	(452)
Amortization of deferred policy acquisition costs and present value of future profits	33	191	210
Additions to deferred policy acquisition costs	(41)	(62)	(64)
Depreciation and amortization	3,720	3,506	3,589
Deferred tax provision	1,459	2,794	3,347
Provision for loan losses	6,749	7,108	6,828
Realized gains from sales of investments	(948)	(682)	(570)
Net impairment losses on investments, goodwill and intangible assets	621	318	426
Change in trading account assets	(2,710)	46,830	(10,858)
Change in trading account liabilities	21,533	(21,524)	30,274
Change in brokerage receivables, net of brokerage payables	2,226	2,278	(4,272)
Change in loans held-for-sale (HFS)	6,603	(7,207)	(1,144)
Change in other assets	(6,859)	(32)	(1,690)
Change in other liabilities	(28)	(1,135)	7,973
Other, net	7,008	(6,732)	5,434
Total adjustments	\$ 38,962	\$ 22,441	\$ 39,031
Net cash provided by operating activities of continuing operations	\$ 53,932	\$ 39,737	\$ 46,343
Cash flows from investing activities of continuing operations			
Change in deposits with banks	\$ (25,311)	\$ 15,488	\$ 40,916
Change in federal funds sold and securities borrowed or purchased under agreements to resell	(17,138)	22,895	14,467
Change in loans	(39,761)	1,353	1,170
Proceeds from sales and securitizations of loans	18,140	9,610	4,752
Purchases of investments	(211,402)	(242,362)	(258,992)
Proceeds from sales of investments ⁽²⁾	132,183	141,470	135,824
Proceeds from maturities of investments	65,525	82,047	94,117
Proceeds from significant disposals ⁽¹⁾	265	5,932	346
Payments due to transfers of net liabilities associated with significant disposals ⁽¹⁾⁽³⁾	—	(18,929)	(1,255)
Capital expenditures on premises and equipment and capitalized software	(2,756)	(3,198)	(3,386)
Proceeds from sales of premises and equipment, subsidiaries and affiliates, and repossessed assets	667	577	623
Net cash provided by (used in) investing activities of continuing operations	\$ (79,588)	\$ 14,883	\$ 28,582
Cash flows from financing activities of continuing operations			
Dividends paid	\$ (2,287)	\$ (1,253)	\$ (633)
Issuance of preferred stock	2,498	6,227	3,699
Treasury stock acquired	(9,290)	(5,452)	(1,232)
Stock tendered for payment of withholding taxes	(316)	(428)	(508)
Change in federal funds purchased and securities loaned or sold under agreements to repurchase	(4,675)	(26,942)	(30,074)
Issuance of long-term debt	63,806	44,619	66,836
Payments and redemptions of long-term debt	(55,460)	(52,843)	(58,923)

Change in deposits	24,394	8,555	(48,336)
Change in short-term borrowings	9,622	(37,256)	(1,099)
Net cash provided by (used in) financing activities of continuing operations	\$ 28,292	\$ (64,773)	\$ (70,270)
Effect of exchange rate changes on cash and cash equivalents	\$ (493)	\$ (1,055)	\$ (2,432)
Change in cash and due from banks	\$ 2,143	\$ (11,208)	\$ 2,223
Cash and due from banks at beginning of period	20,900	32,108	29,885
Cash and due from banks at end of period	\$ 23,043	\$ 20,900	\$ 32,108
Supplemental disclosure of cash flow information for continuing operations			
Cash paid during the year for income taxes	\$ 4,359	\$ 4,978	\$ 4,632
Cash paid during the year for interest	12,067	12,031	14,001
Non-cash investing activities			
Change in loans due to consolidation/deconsolidation of VIEs	\$ —	\$ —	\$ (374)
Decrease in net loans associated with significant disposals reclassified to HFS	—	(9,063)	—
Decrease in investments associated with significant disposals reclassified to HFS	—	(1,402)	—
Decrease in goodwill and intangible assets associated with significant disposals reclassified to HFS	—	(223)	—
Decrease in deposits associated with banks with significant disposals reclassified to HFS	—	(404)	—
Transfers to loans HFS from loans	13,900	28,600	15,100
Transfers to OREO and other repossessed assets	165	276	321
Non-cash financing activities			
Decrease in long-term debt associated with significant disposals reclassified to HFS	\$ —	\$ (4,673)	\$ —
Decrease in deposits associated with reclassification to HFS	—	—	(20,605)
Increase in short-term borrowings due to consolidation of VIEs	—	—	500
Decrease in long-term debt due to deconsolidation of VIEs	—	—	(864)

- (1) See Note 1 to the Consolidated Financial Statements for the adoption of ASU No. 2014-08 in the second quarter of 2014 and Note 2 for further information on significant disposals.
- (2) Proceeds for 2016 include approximately \$3.3 billion from the sale of Citi's investment in China Guangfa Bank.
- (3) The payments associated with significant disposals result primarily from the sale of deposit liabilities.

The Notes to the Consolidated Financial Statements are an integral part of these Consolidated Financial Statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Throughout these Notes, “Citigroup,” “Citi” and the “Company” refer to Citigroup Inc. and its consolidated subsidiaries.

Certain reclassifications have been made to the prior periods’ financial statements and Notes to conform to the current period’s presentation.

Principles of Consolidation

The Consolidated Financial Statements include the accounts of Citigroup and its subsidiaries prepared in accordance with U.S. Generally Accepted Accounting Principles (GAAP). The Company consolidates subsidiaries in which it holds, directly or indirectly, more than 50% of the voting rights or where it exercises control. Entities where the Company holds 20% to 50% of the voting rights and/or has the ability to exercise significant influence, other than investments of designated venture capital subsidiaries or investments accounted for at fair value under the fair value option, are accounted for under the equity method, and the pro rata share of their income (loss) is included in *Other revenue*. Income from investments in less-than-20%-owned companies is recognized when dividends are received. As discussed in more detail in Note 21 to the Consolidated Financial Statements, Citigroup also consolidates entities deemed to be variable interest entities when Citigroup is determined to be the primary beneficiary. Gains and losses on the disposition of branches, subsidiaries, affiliates, buildings and other investments are included in *Other revenue*.

Citibank

Citibank, N.A. (Citibank) is a commercial bank and wholly owned subsidiary of Citigroup. Citibank’s principal offerings include consumer finance, mortgage lending and retail banking (including commercial banking) products and services; investment banking, cash management and trade finance; and private banking products and services.

Variable Interest Entities

An entity is a variable interest entity (VIE) if it meets the criteria outlined in Accounting Standards Codification (ASC) Topic 810, *Consolidation*, which are (i) the entity has equity that is insufficient to permit the entity to finance its activities without additional subordinated financial support from other parties; or (ii) the entity has equity investors that cannot make significant decisions about the entity’s operations or that do not absorb their proportionate share of the entity’s expected losses or expected returns.

The Company consolidates a VIE when it has both the power to direct the activities that most significantly impact the VIE’s economic performance and a right to receive benefits or the obligation to absorb losses of the entity that could be potentially significant to the VIE (that is, Citi is the primary beneficiary). In addition to variable interests held in

consolidated VIEs, the Company has variable interests in other VIEs that are not consolidated because the Company is not the primary beneficiary.

However, these VIEs and all other unconsolidated VIEs are monitored by the Company to assess whether any events have occurred to cause its primary beneficiary status to change.

All other entities not deemed to be VIEs with which the Company has involvement are evaluated for consolidation under other subtopics of ASC 810. See Note 21 to the Consolidated Financial Statements for more detailed information.

Foreign Currency Translation

Assets and liabilities of Citi’s foreign operations are translated from their respective functional currencies into U.S. dollars using period-end spot foreign exchange rates. The effects of those translation adjustments are reported in *Accumulated other comprehensive income (loss)*, a component of stockholders’ equity, along with any related hedge and tax effects, until realized upon sale or substantial liquidation of the foreign operation. Revenues and expenses of Citi’s foreign operations are translated monthly from their respective functional currencies into U.S. dollars at amounts that approximate weighted average exchange rates.

For transactions that are denominated in a currency other than the functional currency, including transactions denominated in the local currencies of foreign operations with the U.S. dollar as their functional currency, the effects of changes in exchange rates are primarily included in *Principal transactions*, along with the related effects of any economic hedges. Instruments used to hedge foreign currency exposures include foreign currency forward, option and swap contracts and in certain instances, designated issues of non-U.S. dollar debt. Foreign operations in countries with highly inflationary economies designate the U.S. dollar as their functional currency, with the effects of changes in exchange rates primarily included in *Other revenue*.

Investment Securities

Investments include fixed income and equity securities. Fixed income instruments include bonds, notes and redeemable preferred stocks, as well as certain loan-backed and structured securities that are subject to prepayment risk. Equity securities include common and nonredeemable preferred stock.

Investment securities are classified and accounted for as follows:

- Fixed income securities classified as “held-to-maturity” are securities that the Company has both the ability and the intent to hold until maturity and are carried at amortized cost. Interest income on such securities is included in *Interest revenue*.
- Fixed income securities and marketable equity securities classified as “available-for-sale” are carried at fair value with changes in fair value reported in *Accumulated*

other comprehensive income (loss), a component of stockholders' equity, net of applicable income taxes and hedges. Realized gains and losses on sales are included in income primarily on a specific identification cost basis. Interest and dividend income on such securities is included in *Interest revenue*.

- Certain investments in non-marketable equity securities and certain investments that would otherwise have been accounted for using the equity method are carried at fair value, since the Company has elected to apply fair value accounting. Changes in fair value of such investments are recorded in earnings.
- Certain non-marketable equity securities are carried at cost.

For investments in fixed income securities classified as held-to-maturity or available-for-sale, the accrual of interest income is suspended for investments that are in default or for which it is likely that future interest payments will not be made as scheduled.

Investment securities are subject to evaluation for other-than-temporary impairment as described in Note 13 to the Consolidated Financial Statements.

The Company uses a number of valuation techniques for investments carried at fair value, which are described in Note 24 to the Consolidated Financial Statements. Realized gains and losses on sales of investments are included in earnings.

Trading Account Assets and Liabilities

Trading account assets include debt and marketable equity securities, derivatives in a receivable position, residual interests in securitizations and physical commodities inventory. In addition, as described in Note 25 to the Consolidated Financial Statements, certain assets that Citigroup has elected to carry at fair value under the fair value option, such as loans and purchased guarantees, are also included in *Trading account assets*.

Trading account liabilities include securities sold, not yet purchased (short positions) and derivatives in a net payable position, as well as certain liabilities that Citigroup has elected to carry at fair value (as described in Note 25 to the Consolidated Financial Statements).

Other than physical commodities inventory, all trading account assets and liabilities are carried at fair value.

Revenues generated from trading assets and trading liabilities are generally reported in *Principal transactions* and include realized gains and losses as well as unrealized gains and losses resulting from changes in the fair value of such instruments. Interest income on trading assets is recorded in *Interest revenue* reduced by interest expense on trading liabilities.

Physical commodities inventory is carried at the lower of cost or market with related losses reported in *Principal transactions*. Realized gains and losses on sales of commodities inventory are included in *Principal transactions*. Investments in unallocated precious metals accounts (gold, silver, platinum and palladium) are accounted for as hybrid instruments containing a debt host

contract and an embedded non-financial derivative instrument indexed to the price of the relevant precious metal. The embedded derivative instrument is separated from the debt host contract and accounted for at fair value. The debt host contract is accounted for at fair value under the fair value option, as described in Note 26 to the Consolidated Financial Statements.

Derivatives used for trading purposes include interest rate, currency, equity, credit, and commodity swap agreements, options, caps and floors, warrants, and financial and commodity futures and forward contracts. Derivative asset and liability positions are presented net by counterparty on the Consolidated Balance Sheet when a valid master netting agreement exists and the other conditions set out in ASC 210-20, *Balance Sheet—Offsetting*, are met. See Note 22 to the Consolidated Financial Statements.

The Company uses a number of techniques to determine the fair value of trading assets and liabilities, which are described in Note 24 to the Consolidated Financial Statements.

Securities Borrowed and Securities Loaned

Securities borrowing and lending transactions do not constitute a sale of the underlying securities for accounting purposes and are treated as collateralized financing transactions. Such transactions are recorded at the amount of proceeds advanced or received plus accrued interest. As described in Note 25 to the Consolidated Financial Statements, the Company has elected to apply fair value accounting to a number of securities borrowing and lending transactions. Fees paid or received for all securities lending and borrowing transactions are recorded in *Interest expense* or *Interest revenue* at the contractually specified rate.

The Company monitors the fair value of securities borrowed or loaned on a daily basis and obtains or posts additional collateral in order to maintain contractual margin protection.

As described in Note 24 to the Consolidated Financial Statements, the Company uses a discounted cash flow technique to determine the fair value of securities lending and borrowing transactions.

Repurchase and Resale Agreements

Securities sold under agreements to repurchase (repos) and securities purchased under agreements to resell (reverse repos) do not constitute a sale (or purchase) of the underlying securities for accounting purposes and are treated as collateralized financing transactions. As described in Note 25 to the Consolidated Financial Statements, the Company has elected to apply fair value accounting to the majority of such transactions, with changes in fair value reported in earnings. Any transactions for which fair value accounting has not been elected are recorded at the amount of cash advanced or received plus accrued interest. Irrespective of whether the Company has elected fair value accounting, interest paid or received on all repo and reverse repo transactions is recorded in *Interest expense* or *Interest revenue* at the contractually specified rate.

Where the conditions of ASC 210-20-45-11, *Balance Sheet-Offsetting: Repurchase and Reverse Repurchase Agreements*, are met, repos and reverse repos are presented net on the Consolidated Balance Sheet.

The Company's policy is to take possession of securities purchased under reverse repurchase agreements. The Company monitors the fair value of securities subject to repurchase or resale on a daily basis and obtains or posts additional collateral in order to maintain contractual margin protection.

As described in Note 24 to the Consolidated Financial Statements, the Company uses a discounted cash flow technique to determine the fair value of repo and reverse repo transactions.

Loans

Loans are reported at their outstanding principal balances net of any unearned income and unamortized deferred fees and costs except that credit card receivable balances also include accrued interest and fees. Loan origination fees and certain direct origination costs are generally deferred and recognized as adjustments to income over the lives of the related loans.

As described in Note 25 to the Consolidated Financial Statements, Citi has elected fair value accounting for certain loans. Such loans are carried at fair value with changes in fair value reported in earnings. Interest income on such loans is recorded in *Interest revenue* at the contractually specified rate.

Loans that are held-for-investment are classified as *Loans, net of unearned income* on the Consolidated Balance Sheet, and the related cash flows are included within the cash flows from investing activities category in the Consolidated Statement of Cash Flows on the line *Change in loans*. However, when the initial intent for holding a loan has changed from held-for-investment to held-for-sale, the loan is reclassified to held-for-sale, but the related cash flows continue to be reported in cash flows from investing activities in the Consolidated Statement of Cash Flows on the line *Proceeds from sales and securitizations of loans*.

Consumer Loans

Consumer loans represent loans and leases managed primarily by the *Global Consumer Banking (GCB)* businesses and Citi Holdings.

Consumer Non-accrual and Re-aging Policies

As a general rule, interest accrual ceases for installment and real estate (both open- and closed-end) loans when payments are 90 days contractually past due. For credit cards and other unsecured revolving loans, however, Citi generally accrues interest until payments are 180 days past due. As a result of OCC guidance, home equity loans in regulated bank entities are classified as non-accrual if the related residential first mortgage is 90 days or more past due. Also as a result of OCC guidance, mortgage loans in regulated bank entities discharged through Chapter 7 bankruptcy, other than FHA-insured loans, are classified as non-accrual. Commercial market loans are placed on a cash (non-accrual) basis when

it is determined, based on actual experience and a forward-looking assessment of the collectability of the loan in full, that the payment of interest or principal is doubtful or when interest or principal is 90 days past due.

Loans that have been modified to grant a concession to a borrower in financial difficulty may not be accruing interest at the time of the modification. The policy for returning such modified loans to accrual status varies by product and/or region. In most cases, a minimum number of payments (ranging from one to six) is required, while in other cases the loan is never returned to accrual status. For regulated bank entities, such modified loans are returned to accrual status if a credit evaluation at the time of, or subsequent to, the modification indicates the borrower is able to meet the restructured terms, and the borrower is current and has demonstrated a reasonable period of sustained payment performance (minimum six months of consecutive payments).

For U.S. consumer loans, generally one of the conditions to qualify for modification is that a minimum number of payments (typically ranging from one to three) must be made. Upon modification, the loan is re-aged to current status. However, re-aging practices for certain open-ended consumer loans, such as credit cards, are governed by Federal Financial Institutions Examination Council (FFIEC) guidelines. For open-ended consumer loans subject to FFIEC guidelines, one of the conditions for the loan to be re-aged to current status is that at least three consecutive minimum monthly payments, or the equivalent amount, must be received. In addition, under FFIEC guidelines, the number of times that such a loan can be re-aged is subject to limitations (generally once in 12 months and twice in five years). Furthermore, Federal Housing Administration (FHA) and Department of Veterans Affairs (VA) loans may only be modified under those respective agencies' guidelines and payments are not always required in order to re-age a modified loan to current.

Consumer Charge-Off Policies

Citi's charge-off policies follow the general guidelines below:

- Unsecured installment loans are charged off at 120 days contractually past due.
- Unsecured revolving loans and credit card loans are charged off at 180 days contractually past due.
- Loans secured with non-real estate collateral are written down to the estimated value of the collateral, less costs to sell, at 120 days contractually past due.
- Real estate-secured loans are written down to the estimated value of the property, less costs to sell, at 180 days contractually past due.
- Real estate-secured loans are charged off no later than 180 days contractually past due if a decision has been made not to foreclose on the loans.
- Non-bank real estate-secured loans are charged off at the earlier of 180 days contractually past due, if there have been no payments within the last six months, or

360 days contractually past due, if a decision has been made not to foreclose on the loans.

- Non-bank loans secured by real estate are written down to the estimated value of the property, less costs to sell, at the earlier of the receipt of title, the initiation of foreclosure (a process that generally commences when payments are 120 days contractually past due), when the loan is 180 days contractually past due if there have been no payments within the past six months, or 360 days contractually past due.
- Non-bank unsecured personal loans are charged off at the earlier of 180 days contractually past due if there have been no payments within the last six months, or 360 days contractually past due.
- Unsecured loans in bankruptcy are charged off within 60 days of notification of filing by the bankruptcy court or in accordance with Citi's charge-off policy, whichever occurs earlier.
- Real estate-secured loans that were discharged through Chapter 7 bankruptcy, other than FHA-insured loans, are written down to the estimated value of the property, less costs to sell. Other real estate-secured loans in bankruptcy are written down to the estimated value of the property, less costs to sell, at the later of 60 days after notification or 60 days contractually past due.
- Non-bank loans secured by real estate that are discharged through Chapter 7 bankruptcy are written down to the estimated value of the property, less costs to sell, at 60 days contractually past due.
- Non-bank unsecured personal loans in bankruptcy are charged off when they are 30 days contractually past due.
- Commercial market loans are written down to the extent that principal is judged to be uncollectable.

Corporate Loans

Corporate loans represent loans and leases managed by *Institutional Clients Group (ICG)*. Corporate loans are identified as impaired and placed on a cash (non-accrual) basis when it is determined, based on actual experience and a forward-looking assessment of the collectability of the loan in full, that the payment of interest or principal is doubtful or when interest or principal is 90 days past due, except when the loan is well collateralized and in the process of collection. Any interest accrued on impaired corporate loans and leases is reversed at 90 days past due and charged against current earnings, and interest is thereafter included in earnings only to the extent actually received in cash. When there is doubt regarding the ultimate collectability of principal, all cash receipts are thereafter applied to reduce the recorded investment in the loan.

Impaired corporate loans and leases are written down to the extent that principal is deemed to be uncollectable. Impaired collateral-dependent loans and leases, where repayment is expected to be provided solely by the sale of the underlying collateral and there are no other available and reliable sources of repayment, are written down to the lower of cost or collateral value. Cash-basis loans are returned to accrual status when all contractual principal and interest

amounts are reasonably assured of repayment and there is a sustained period of repayment performance in accordance with the contractual terms.

Loans Held-for-Sale

Corporate and consumer loans that have been identified for sale are classified as loans held-for-sale and included in *Other assets*. The practice of Citi's U.S. prime mortgage business has been to sell substantially all of its conforming loans. As such, U.S. prime mortgage conforming loans are classified as held-for-sale and the fair value option is elected at origination, with changes in fair value recorded in *Other revenue*. With the exception of those loans for which the fair value option has been elected, held-for-sale loans are accounted for at the lower of cost or market value, with any write-downs or subsequent recoveries charged to *Other revenue*. The related cash flows are classified in the Consolidated Statement of Cash Flows in the cash flows from operating activities category on the line *Change in loans held-for-sale*.

Allowance for Loan Losses

Allowance for loan losses represents management's best estimate of probable losses inherent in the portfolio, including probable losses related to large individually evaluated impaired loans and troubled debt restructurings. Attribution of the allowance is made for analytical purposes only, and the entire allowance is available to absorb probable loan losses inherent in the overall portfolio. Additions to the allowance are made through the *Provision for loan losses*. Loan losses are deducted from the allowance and subsequent recoveries are added. Assets received in exchange for loan claims in a restructuring are initially recorded at fair value, with any gain or loss reflected as a recovery or charge-off to the provision.

Consumer Loans

For consumer loans, each portfolio of non-modified smaller-balance homogeneous loans is independently evaluated for impairment by product type (e.g., residential mortgage, credit card, etc.) in accordance with ASC 450, *Contingencies*. The allowance for loan losses attributed to these loans is established via a process that estimates the probable losses inherent in the specific portfolio. This process includes migration analysis, in which historical delinquency and credit loss experience is applied to the current aging of the portfolio, together with analyses that reflect current and anticipated economic conditions, including changes in housing prices and unemployment trends. Citi's allowance for loan losses under ASC 450 only considers contractual principal amounts due, except for credit card loans where estimated loss amounts related to accrued interest receivable are also included.

Management also considers overall portfolio indicators, including historical credit losses, delinquent, non-performing and classified loans, trends in volumes and terms of loans, an evaluation of overall credit quality, the credit process, including lending policies and procedures, and economic, geographical, product and other environmental factors.

Separate valuation allowances are determined for impaired smaller-balance homogeneous loans whose terms have been modified in a troubled debt restructuring (TDR). Long-term modification programs, and short-term (less than 12 months) modifications that provide concessions (such as interest rate reductions) to borrowers in financial difficulty, are reported as TDRs. In addition, loan modifications that involve a trial period are reported as TDRs at the start of the trial period. The allowance for loan losses for TDRs is determined in accordance with ASC 310-10-35, *Receivables—Subsequent Measurement* (formerly SFAS 114) considering all available evidence, including, as appropriate, the present value of the expected future cash flows discounted at the loan's original contractual effective rate, the secondary market value of the loan and the fair value of collateral less disposal costs. These expected cash flows incorporate modification program default rate assumptions. The original contractual effective rate for credit card loans is the pre-modification rate, which may include interest rate increases under the original contractual agreement with the borrower.

Valuation allowances for commercial market loans, which are classifiably managed consumer loans, are determined in the same manner as for corporate loans and are described in more detail in the following section. Generally, an asset-specific component is calculated under ASC 310-10-35 on an individual basis for larger-balance, non-homogeneous loans that are considered impaired and the allowance for the remainder of the classifiably managed consumer loan portfolio is calculated under ASC 450 using a statistical methodology that may be supplemented by management adjustment.

Corporate Loans

In the corporate portfolios, the *Allowance for loan losses* includes an asset-specific component and a statistically based component. The asset-specific component is calculated under ASC 310-10-35, on an individual basis for larger-balance, non-homogeneous loans, which are considered impaired. An asset-specific allowance is established when the discounted cash flows, collateral value (less disposal costs) or observable market price of the impaired loan are lower than its carrying value. This allowance considers the borrower's overall financial condition, resources, and payment record, the prospects for support from any financially responsible guarantors (discussed further below) and, if appropriate, the realizable value of any collateral. The asset-specific component of the allowance for smaller balance impaired loans is calculated on a pool basis considering historical loss experience.

The allowance for the remainder of the loan portfolio is determined under ASC 450 using a statistical methodology, supplemented by management judgment. The statistical analysis considers the portfolio's size, remaining tenor and credit quality as measured by internal risk ratings assigned to individual credit facilities, which reflect probability of default and loss given default. The statistical analysis considers historical default rates and historical loss severity in the event of default, including historical average levels

and historical variability. The result is an estimated range for inherent losses. The best estimate within the range is then determined by management's quantitative and qualitative assessment of current conditions, including general economic conditions, specific industry and geographic trends, and internal factors including portfolio concentrations, trends in internal credit quality indicators, and current and past underwriting standards.

For both the asset-specific and the statistically based components of the *Allowance for loan losses*, management may incorporate guarantor support. The financial wherewithal of the guarantor is evaluated, as applicable, based on net worth, cash flow statements and personal or company financial statements which are updated and reviewed at least annually. Citi seeks performance on guarantee arrangements in the normal course of business. Seeking performance entails obtaining satisfactory cooperation from the guarantor or borrower in the specific situation. This regular cooperation is indicative of pursuit and successful enforcement of the guarantee; the exposure is reduced without the expense and burden of pursuing a legal remedy. A guarantor's reputation and willingness to work with Citigroup is evaluated based on the historical experience with the guarantor and the knowledge of the marketplace. In the rare event that the guarantor is unwilling or unable to perform or facilitate borrower cooperation, Citi pursues a legal remedy; however, enforcing a guarantee via legal action against the guarantor is not the primary means of resolving a troubled loan situation and rarely occurs. If Citi does not pursue a legal remedy, it is because Citi does not believe that the guarantor has the financial wherewithal to perform regardless of legal action or because there are legal limitations on simultaneously pursuing guarantors and foreclosure. A guarantor's reputation does not impact Citi's decision or ability to seek performance under the guarantee.

In cases where a guarantee is a factor in the assessment of loan losses, it is included via adjustment to the loan's internal risk rating, which in turn is the basis for the adjustment to the statistically based component of the *Allowance for loan losses*. To date, it is only in rare circumstances that an impaired commercial loan or commercial real estate loan is carried at a value in excess of the appraised value due to a guarantee.

When Citi's monitoring of the loan indicates that the guarantor's wherewithal to pay is uncertain or has deteriorated, there is either no change in the risk rating, because the guarantor's credit support was never initially factored in, or the risk rating is adjusted to reflect that uncertainty or deterioration. Accordingly, a guarantor's ultimate failure to perform or a lack of legal enforcement of the guarantee does not materially impact the allowance for loan losses, as there is typically no further significant adjustment of the loan's risk rating at that time. Where Citi is not seeking performance under the guarantee contract, it provides for loan losses as if the loans were non-performing and not guaranteed.

Reserve Estimates and Policies

Management provides reserves for an estimate of probable losses inherent in the funded loan portfolio on the Consolidated Balance Sheet in the form of an allowance for loan losses. These reserves are established in accordance with Citigroup's credit reserve policies, as approved by the Audit Committee of the Citigroup Board of Directors. Citi's Chief Risk Officer and Chief Financial Officer review the adequacy of the credit loss reserves each quarter with representatives from the risk management and finance staffs for each applicable business area. Applicable business areas include those having classifiably managed portfolios, where internal credit-risk ratings are assigned (primarily *ICG* and *GCB*) or modified consumer loans, where concessions were granted due to the borrowers' financial difficulties.

The above-mentioned representatives for these business areas present recommended reserve balances for their funded and unfunded lending portfolios along with supporting quantitative and qualitative data discussed below:

Estimated probable losses for non-performing, non-homogeneous exposures within a business line's classifiably managed portfolio and impaired smaller-balance homogeneous loans whose terms have been modified due to the borrowers' financial difficulties, where it was determined that a concession was granted to the borrower.

Consideration may be given to the following, as appropriate, when determining this estimate: (i) the present value of expected future cash flows discounted at the loan's original effective rate; (ii) the borrower's overall financial condition, resources and payment record; and (iii) the prospects for support from financially responsible guarantors or the realizable value of any collateral. In the determination of the allowance for loan losses for TDRs, management considers a combination of historical re-default rates, the current economic environment and the nature of the modification program when forecasting expected cash flows. When impairment is measured based on the present value of expected future cash flows, the entire change in present value is recorded in the *Provision for loan losses*.

Statistically calculated losses inherent in the classifiably managed portfolio for performing and de minimis non-performing exposures. The calculation is based on (i) Citi's internal system of credit-risk ratings, which are analogous to the risk ratings of the major rating agencies; and (ii) historical default and loss data, including rating agency information regarding default rates from 1983 to 2015 and internal data dating to the early 1970s on severity of losses in the event of default. Adjustments may be made to this data. Such adjustments include (i) statistically calculated estimates to cover the historical fluctuation of the default rates over the credit cycle, the historical variability of loss severity among defaulted loans, and the degree to which there are large obligor concentrations in the global portfolio; and (ii) adjustments made for specific known items, such as current environmental factors and credit trends.

In addition, representatives from each of the risk management and finance staffs that cover business areas

with delinquency-managed portfolios containing smaller-balance homogeneous loans present their recommended reserve balances based on leading credit indicators, including loan delinquencies and changes in portfolio size as well as economic trends, including current and future housing prices, unemployment, length of time in foreclosure, costs to sell and GDP. This methodology is applied separately for each individual product within each geographic region in which these portfolios exist.

This evaluation process is subject to numerous estimates and judgments. The frequency of default, risk ratings, loss recovery rates, the size and diversity of individual large credits, and the ability of borrowers with foreign currency obligations to obtain the foreign currency necessary for orderly debt servicing, among other things, are all taken into account during this review. Changes in these estimates could have a direct impact on the credit costs in any period and could result in a change in the allowance.

Allowance for Unfunded Lending Commitments

A similar approach to the allowance for loan losses is used for calculating a reserve for the expected losses related to unfunded lending commitments and standby letters of credit. This reserve is classified on the balance sheet in *Other liabilities*. Changes to the allowance for unfunded lending commitments are recorded in the *Provision for unfunded lending commitments*.

Mortgage Servicing Rights

Mortgage servicing rights (MSRs) are recognized as intangible assets when purchased or when the Company sells or securitizes loans acquired through purchase or origination and retains the right to service the loans. Mortgage servicing rights are accounted for at fair value, with changes in value recorded in *Other revenue* in the Company's Consolidated Statement of Income.

For additional information on the Company's MSRs, see Notes 16, 21 and 29 to the Consolidated Financial Statements.

Goodwill

Goodwill represents the excess of acquisition cost over the fair value of net tangible and intangible assets acquired in a business combination. Goodwill is subject to annual impairment testing and between annual tests if an event occurs or circumstances change that would more-likely-than-not reduce the fair value of a reporting unit below its carrying amount.

Under ASC 350, *Intangibles—Goodwill and Other*, the Company has an option to assess qualitative factors to determine if it is necessary to perform the goodwill impairment test. If, after assessing the totality of events or circumstances, the Company determines that it is not more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, no further testing is necessary. If, however, the Company determines that it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, then the Company must perform the first step of the two-step goodwill impairment test.

The Company has an unconditional option to bypass the qualitative assessment for any reporting unit in any reporting period and proceed directly to the first step of the goodwill impairment test.

The first step requires a comparison of the fair value of the individual reporting unit to its carrying value, including goodwill. If the fair value of the reporting unit is in excess of the carrying value, the related goodwill is considered not impaired and no further analysis is necessary. If the carrying value of the reporting unit exceeds the fair value, this is an indication of potential impairment and a second step of testing is performed to measure the amount of impairment, if any, for that reporting unit.

If required, the second step involves calculating the implied fair value of goodwill for each of the affected reporting units. The implied fair value of goodwill is determined in the same manner as the amount of goodwill recognized in a business combination, which is the excess of the fair value of the reporting unit determined in step one over the fair value of the net assets and identifiable intangibles as if the reporting unit were being acquired. If the amount of the goodwill allocated to the reporting unit exceeds the implied fair value of the goodwill in the pro forma purchase price allocation, an impairment charge is recorded for the excess. A recognized impairment charge cannot exceed the amount of goodwill allocated to a reporting unit and cannot subsequently be reversed even if the fair value of the reporting unit recovers.

Furthermore, on any business dispositions, goodwill is allocated to the disposed business based on the ratio of the fair value of the disposed business to the fair value of the reporting unit.

Additional information on Citi's goodwill impairment testing can be found in Note 16 to the Consolidated Financial Statements.

Intangible Assets

Intangible assets, including core deposit intangibles, present value of future profits, purchased credit card relationships, credit card contract related intangibles, other customer relationships, and other intangible assets, but excluding MSRs, are amortized over their estimated useful lives. Intangible assets deemed to have indefinite useful lives, primarily certain asset management contracts and trade names, are not amortized and are subject to annual impairment tests. An impairment exists if the carrying value of the indefinite-lived intangible asset exceeds its fair value. For other intangible assets subject to amortization, an impairment is recognized if the carrying amount is not recoverable and exceeds the fair value of the intangible asset.

Other Assets and Other Liabilities

Other assets include, among other items, loans held-for-sale, deferred tax assets, equity method investments, interest and fees receivable, premises and equipment (including purchased and developed software), repossessed assets, and other receivables. *Other liabilities* include, among other items, accrued expenses and other payables, deferred tax

liabilities, and reserves for legal claims, taxes, unfunded lending commitments, repositioning reserves, and other matters.

Other Real Estate Owned and Repossessed Assets

Real estate or other assets received through foreclosure or repossession are generally reported in *Other assets*, net of a valuation allowance for selling costs and subsequent declines in fair value.

Securitizations

There are two key accounting determinations that must be made relating to securitizations. Citi first makes a determination as to whether the securitization entity must be consolidated. Second, it determines whether the transfer of financial assets to the entity is considered a sale under GAAP. If the securitization entity is a VIE, the Company consolidates the VIE if it is the primary beneficiary (as discussed in "Variable Interest Entities" above). For all other securitization entities determined not to be VIEs in which Citigroup participates, consolidation is based on which party has voting control of the entity, giving consideration to removal and liquidation rights in certain partnership structures. Only securitization entities controlled by Citigroup are consolidated.

Interests in the securitized and sold assets may be retained in the form of subordinated or senior interest-only strips, subordinated tranches, spread accounts and servicing rights. In credit card securitizations, the Company retains a seller's interest in the credit card receivables transferred to the trusts, which is not in securitized form. In the case of consolidated securitization entities, including the credit card trusts, these retained interests are not reported on Citi's Consolidated Balance Sheet. The securitized loans remain on the balance sheet. Substantially all of the consumer loans sold or securitized through non-consolidated trusts by Citigroup are U.S. prime residential mortgage loans. Retained interests in non-consolidated mortgage securitization trusts are classified as *Trading account assets*, except for MSRs, which are included in *Mortgage servicing rights* on Citigroup's Consolidated Balance Sheet.

Debt

Short-term borrowings and *Long-term debt* are accounted for at amortized cost, except where the Company has elected to report the debt instruments, including certain structured notes at fair value, or the debt is in a fair value hedging relationship.

Transfers of Financial Assets

For a transfer of financial assets to be considered a sale: (i) the assets must have been legally isolated from the Company, even in bankruptcy or other receivership; (ii) the purchaser must have the right to pledge or sell the assets transferred or, if the purchaser is an entity whose sole purpose is to engage in securitization and asset-backed financing activities through the issuance of beneficial interests and that entity is constrained from pledging the assets it receives, each beneficial interest holder must have

the right to sell or pledge their beneficial interests; and (iii) the Company may not have an option or obligation to reacquire the assets.

If these sale requirements are met, the assets are removed from the Company's Consolidated Balance Sheet. If the conditions for sale are not met, the transfer is considered to be a secured borrowing, the assets remain on the Consolidated Balance Sheet and the sale proceeds are recognized as the Company's liability. A legal opinion on a sale generally is obtained for complex transactions or where the Company has continuing involvement with assets transferred or with the securitization entity. For a transfer to be eligible for sale accounting, those opinions must state that the asset transfer would be considered a sale and that the assets transferred would not be consolidated with the Company's other assets in the event of the Company's insolvency.

For a transfer of a portion of a financial asset to be considered a sale, the portion transferred must meet the definition of a participating interest. A participating interest must represent a pro rata ownership in an entire financial asset; all cash flows must be divided proportionately, with the same priority of payment; no participating interest in the transferred asset may be subordinated to the interest of another participating interest holder; and no party may have the right to pledge or exchange the entire financial asset unless all participating interest holders agree. Otherwise, the transfer is accounted for as a secured borrowing.

See Note 21 to the Consolidated Financial Statements for further discussion.

Risk Management Activities—Derivatives Used for Hedging Purposes

The Company manages its exposures to market rate movements outside of its trading activities by modifying the asset and liability mix, either directly or through the use of derivative financial products, including interest-rate swaps, futures, forwards, and purchased options, as well as foreign-exchange contracts. These end-user derivatives are carried at fair value in *Other assets*, *Other liabilities*, *Trading account assets* and *Trading account liabilities*.

See Note 22 to the Consolidated Financial Statements for a further discussion of the Company's hedging and derivative activities.

Employee Benefits Expense

Employee benefits expense includes current service costs of pension and other postretirement benefit plans (which are accrued on a current basis), contributions and unrestricted awards under other employee plans, the amortization of restricted stock awards and costs of other employee benefits. For its most significant pension and postretirement benefit plans (Significant Plans), Citigroup measures and discloses plan obligations, plan assets and periodic plan expense quarterly, instead of annually. The effect of remeasuring the Significant Plan obligations and assets by updating plan actuarial assumptions on a quarterly basis is reflected in *Accumulated other comprehensive income (loss)* and periodic plan expense. All other plans (All Other Plans) are

remeasured annually. See Note 8 to the Consolidated Financial Statements.

Stock-Based Compensation

The Company recognizes compensation expense related to stock and option awards over the requisite service period, generally based on the instruments' grant-date fair value, reduced by expected forfeitures. Compensation cost related to awards granted to employees who meet certain age plus years-of-service requirements (retirement-eligible employees) is accrued in the year prior to the grant date, in the same manner as the accrual for cash incentive compensation. Certain stock awards with performance conditions or certain clawback provisions are subject to variable accounting, pursuant to which the associated compensation expense fluctuates with changes in Citigroup's stock price. See Note 7 to the Consolidated Financial Statements.

Income Taxes

The Company is subject to the income tax laws of the U.S. and its states and municipalities, and the foreign jurisdictions in which it operates. These tax laws are complex and subject to different interpretations by the taxpayer and the relevant governmental taxing authorities. In establishing a provision for income tax expense, the Company must make judgments and interpretations about the application of these inherently complex tax laws. The Company must also make estimates about when in the future certain items will affect taxable income in the various tax jurisdictions, both domestic and foreign.

Disputes over interpretations of the tax laws may be subject to review and adjudication by the court systems of the various tax jurisdictions or may be settled with the taxing authority upon examination or audit. The Company treats interest and penalties on income taxes as a component of *Income tax expense*.

Deferred taxes are recorded for the future consequences of events that have been recognized for financial statements or tax returns, based upon enacted tax laws and rates. Deferred tax assets are recognized subject to management's judgment that realization is more-likely-than-not. FASB Interpretation No. 48, "Accounting for Uncertainty in Income Taxes" (FIN 48) (now incorporated into ASC 740, *Income Taxes*), sets out a consistent framework to determine the appropriate level of tax reserves to maintain for uncertain tax positions. This interpretation uses a two-step approach wherein a tax benefit is recognized if a position is more-likely-than-not to be sustained. The amount of the benefit is then measured to be the highest tax benefit that is greater than 50% likely to be realized. ASC 740 also sets out disclosure requirements to enhance transparency of an entity's tax reserves.

See Note 9 to the Consolidated Financial Statements for a further description of the Company's tax provision and related income tax assets and liabilities.

Commissions, Underwriting and Principal Transactions

Commissions revenues are recognized in income when earned. Underwriting revenues are recognized in income typically at the closing of the transaction. Principal transactions revenues are recognized in income on a trade-date basis. See Note 5 to the Consolidated Financial Statements for a description of the Company's revenue recognition policies for commissions and fees, and Note 6 to the Consolidated Financial Statements for details of principal transactions revenue.

Earnings per Share

Earnings per share (EPS) is computed after deducting preferred stock dividends. The Company has granted restricted and deferred share awards with dividend rights that are considered to be participating securities, which are akin to a second class of common stock. Accordingly, a portion of Citigroup's earnings is allocated to those participating securities in the EPS calculation.

Basic earnings per share is computed by dividing income available to common stockholders after the allocation of dividends and undistributed earnings to the participating securities by the weighted average number of common shares outstanding for the period. Diluted earnings per share reflects the potential dilution that could occur if securities or other contracts to issue common stock were exercised. It is computed after giving consideration to the weighted average dilutive effect of the Company's stock options and warrants and convertible securities and after the allocation of earnings to the participating securities. Anti-dilutive options and warrants are disregarded in the EPS calculations.

Use of Estimates

Management must make estimates and assumptions that affect the Consolidated Financial Statements and the related Notes to the Consolidated Financial Statements. Such estimates are used in connection with certain fair value measurements. See Note 24 to the Consolidated Financial Statements for further discussions on estimates used in the determination of fair value. Moreover, estimates are significant in determining the amounts of other-than-temporary impairments, impairments of goodwill and other intangible assets, provisions for probable losses that may arise from credit-related exposures and probable and estimable losses related to litigation and regulatory proceedings, and tax reserves. While management makes its best judgment, actual amounts or results could differ from those estimates.

Cash Flows

Cash equivalents are defined as those amounts included in *Cash and due from banks*. Cash flows from risk management activities are classified in the same category as the related assets and liabilities.

Related Party Transactions

The Company has related party transactions with certain of its subsidiaries and affiliates. These transactions, which are

primarily short-term in nature, include cash accounts, collateralized financing transactions, margin accounts, derivative transactions, charges for operational support and the borrowing and lending of funds, and are entered into in the ordinary course of business.

ACCOUNTING CHANGES

Recognition and Measurement of Financial Assets and Financial Liabilities

In January 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2016-01, *Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities*, which addresses certain aspects of recognition, measurement, presentation and disclosure of financial instruments.

This ASU requires entities to present separately in *Accumulated other comprehensive income (loss)* (AOCI) the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk when the entity has elected to measure the liability at fair value in accordance with the fair value option for financial instruments. It also requires equity investments (except those accounted for under the equity method of accounting or those that result in consolidation of the investee) to be measured at fair value with changes in fair value recognized in net income, thus eliminating eligibility for the current available-for-sale category. However, Federal Reserve Bank and Federal Home Loan Bank stock as well as certain exchange seats will continue to be presented at cost.

Citi early adopted only the provisions of this ASU related to presentation of the changes in fair value of liabilities for which the fair value option was elected, related to changes in Citigroup's own credit spreads in AOCI effective January 1, 2016. Accordingly, as of the first quarter 2016, these amounts are reflected as a component of AOCI, whereas, these amounts were previously recognized in Citigroup's revenues and net income. The impact of adopting this amendment resulted in a cumulative catch-up reclassification from retained earnings to AOCI of an accumulated after-tax loss of approximately \$15 million at January 1, 2016. Financial statements for periods prior to 2016 were not subject to restatement under the provisions of this ASU. For additional information, see Note 19, Note 24 and Note 25 to the Consolidated Financial Statements. The Company is evaluating the effect that the other provisions of ASU 2016-01, which are effective on January 1, 2018, will have on its Consolidated Financial Statements and related disclosures.

Accounting for Investments in Tax Credit Partnerships

In January 2014, the FASB issued ASU No. 2014-01, *Investments—Equity Method and Joint Ventures (Topic 323): Accounting for Investments in Qualified Affordable Housing Projects*. Any transition adjustment is reflected as an adjustment to retained earnings in the earliest period presented (retrospective application).

The ASU is applicable to Citi's portfolio of low income housing tax credit (LIHTC) partnership interests. The new standard widens the scope of investments eligible to elect to apply a new alternative method, the proportional amortization method, under which the cost of the investment is amortized to tax expense in proportion to the amount of tax credits and other tax benefits received. Citi qualifies to elect the proportional amortization method under the ASU for its entire LIHTC portfolio. These investments were previously accounted for under the equity method, which resulted in losses (due to amortization of the investment) being recognized in *Other revenue* and tax credits and benefits being recognized in the *Income tax expense* line. In contrast, the proportional amortization method combines the amortization of the investment and receipt of the tax credits/benefits into one line, *Income tax expense*.

Citi adopted ASU 2014-01 in the first quarter of 2015. The adoption of this ASU was applied retrospectively and cumulatively reduced *Retained earnings* by approximately \$349 million, *Other assets* by approximately \$178 million and deferred tax assets by approximately \$171 million.

Accounting for Repurchase-to-Maturity Transactions

In June 2014, the FASB issued ASU No. 2014-11, *Transfers and Servicing (Topic 860): Repurchase-to-Maturity Transactions, Repurchase Financings, and Disclosures*. The ASU changes the accounting for repurchase-to-maturity transactions and linked repurchase financings to secured borrowing accounting, which is consistent with the accounting for other repurchase agreements. The ASU also requires disclosures about transfers accounted for as sales in transactions that are economically similar to repurchase agreements (see Note 24 to the Consolidated Financial Statements) and about the types of collateral pledged in repurchase agreements and similar transactions accounted for as secured borrowings (see Note 11 to the Consolidated Financial Statements). The ASU's provisions became effective for Citi in the first quarter of 2015, with the exception of the collateral disclosures which became effective in the second quarter of 2015. The effect of adopting the ASU was required to be reflected as a cumulative effect adjustment to retained earnings as of the beginning of the period of adoption. Adoption of the ASU did not have a material effect on the Company's financial statements.

Disclosures for Investments in Certain Entities That Calculate Net Asset Value (NAV) per Share

In May 2015, the FASB issued ASU No. 2015-07, *Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent)*, which is intended to reduce diversity in practice related to the categorization of investments measured at NAV within the fair value hierarchy. The ASU removes the current requirement to categorize investments for which fair value is measured using the NAV per share practical expedient within the fair value hierarchy. Citi elected to early adopt the ASU in the second quarter of 2015. The adoption of the ASU was applied retrospectively and

reduced Level 3 assets by \$1.0 billion and \$1.1 billion as of December 31, 2015 and December 31, 2014, respectively.

FUTURE APPLICATION OF ACCOUNTING STANDARDS

Accounting for Financial Instruments—Credit Losses

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments—Credit Losses* (Topic 326). The ASU introduces a new accounting model, the Current Expected Credit Losses model (CECL), which requires earlier recognition of credit losses, while also providing additional transparency about credit risk.

The FASB's CECL model utilizes a lifetime "expected credit loss" measurement objective for the recognition of credit losses for loans, held-to-maturity securities and other receivables at the time the financial asset is originated or acquired. The expected credit losses are adjusted each period for changes in expected lifetime credit losses. For available-for-sale securities where fair value is less than cost, credit-related impairment, if any, will be recognized in an allowance for credit losses and adjusted each period for changes in expected credit risk. This model replaces the multiple existing impairment models in current GAAP, which generally require that a loss be incurred before it is recognized.

The CECL model represents a significant departure from existing GAAP, and may result in material changes to the Company's accounting for financial instruments. The Company is evaluating the effect that ASU 2016-13 will have on its Consolidated Financial Statements and related disclosures. The impact of the ASU will depend upon the state of the economy and the nature of Citi's portfolios at the date of adoption. The ASU will be effective for Citi as of January 1, 2020. Early application is permitted for annual periods beginning January 1, 2019.

Revenue Recognition

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers*, which requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. The Company will adopt the guidance as of January 1, 2018 with a cumulative-effect adjustment to opening retained earnings. While the guidance will replace most existing revenue recognition guidance in GAAP, the ASU is not applicable to financial instruments and, therefore, will not impact a majority of the Company's revenue, including net interest income.

While in scope of the new guidance, the Company does not expect a material change in the timing or measurement of revenues related to deposit fees. Citi's credit cardholder fees and mortgage servicing fees have been concluded to be out of scope of the standard and therefore will not be impacted by the issuance of this guidance. The Company expects the presentation of expenses associated with underwriting activity to change from the current reporting where underwriting revenue is recorded net of the related expenses to a gross presentation where the expenses are

recorded in *Other operating expenses*. This change to a gross presentation will result in an equivalent increase in underwriting revenue recorded in *Commissions and fees* and associated underwriting expenses recorded in *Other operating expenses*; however, this change in presentation will not have an impact on *Income from continuing operations*. The Company continues to evaluate the effect that the guidance will have on other revenue streams within its scope, including the presentation of certain contract expenses, as well as changes in disclosures required by the new guidance.

Lease Accounting

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*, which is intended to increase transparency and comparability of accounting for lease transactions. The ASU will require lessees to recognize all leases on the balance sheet as lease assets and lease liabilities and will require both quantitative and qualitative disclosures regarding key information about leasing arrangements. Lessor accounting is largely unchanged. The guidance is effective beginning January 1, 2019 with an option to early adopt. The Company does not plan to early adopt the ASU. The Company is evaluating the effect that the standard will have on its Consolidated Financial Statements, regulatory capital and related disclosures.

Accounting for Stock-Based Compensation

In March 2016, the FASB issued ASU 2016-09, *Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting* in order to simplify certain complex aspects of the accounting for income taxes and forfeitures related to employee stock-based compensation. The guidance is effective for Citi beginning on January 1, 2017. Under the new standard, excess tax benefits and deficiencies related to employee stock-based compensation will be recognized directly within income tax expense or benefit in Citi's Consolidated Statement of Income, rather than within additional paid-in capital. Additionally, as permitted under the new guidance, Citi will make an accounting policy election to account for forfeitures of awards as they occur, which represents a change from the current requirement to estimate forfeitures when recognizing compensation expense. The Company continues to evaluate the effect that ASU 2016-09 will have on its Consolidated Financial Statements.

Income Tax Impact of Intra-Entity Transfers of Assets

In October 2016, the FASB issued ASU No. 2016-16, *Income Taxes—Intra-Entity Transfers of Assets Other Than Inventory*, which will require an entity to recognize the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. The ASU is effective on January 1, 2018 with early adoption permitted. The Company continues to evaluate the impact of this standard, which is expected to increase DTAs, with an associated decrease in Prepaid Taxes.

Subsequent Measurement of Goodwill

In January 2017, the FASB issued ASU No. 2017-04, *Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*. The ASU simplifies the subsequent measurement of goodwill impairment by eliminating the requirement to calculate the implied fair value of goodwill (i.e., the current Step 2 of the goodwill impairment test) to measure a goodwill impairment charge. With the ASU, the impairment test is simply the comparison of the fair value of a reporting unit with its carrying amount (the current Step 1), with the impairment charge being the deficit in fair value but not exceeding the total amount of goodwill allocated to that reporting unit. The simplified one-step impairment test applies to all reporting units (including those with zero or negative carrying amounts).

The ASU is effective for Citi as of January 1, 2020. Early adoption is permitted for interim and annual goodwill impairment testing dates after January 1, 2017. The impact of the ASU will depend upon the performance of the reporting units and the market conditions impacting the fair value of each reporting unit going forward.

Clarifying the Definition of a Business

In January 2017, the FASB issued ASU No. 2017-01, *Business Combinations (Topic 805): Clarifying the Definition of a Business*. The definition of a business directly and indirectly affects many areas of accounting (e.g., acquisitions, disposals, goodwill and consolidation). The ASU narrows the definition of a business by introducing a quantitative screen as the first step, such that if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets, the set of transferred assets and activities is not a business. If the set is not scoped out from the quantitative screen, the entity then evaluates whether the set meets the requirement that a business include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs.

The ASU is effective for Citi as of January 1, 2018. The ASU will be applied prospectively, with early adoption permitted. The impact of the ASU will depend upon the acquisition and disposal activities of Citi. If fewer transactions qualify as a business, there could be less initial recognition of goodwill, but also less goodwill allocated to disposals.

Other Potential Amendments to Current Accounting Standards

The FASB has issued a proposed ASU that will provide targeted improvements to the accounting guidance for hedging activities. The exposure draft contains many proposals for improving how the economic results of risk management are reflected in financial reporting. Specifically, among other improvements, the ASU is expected to expand the list of benchmark interest rates and also increase the ability for entities to construct hedges of interest rate risk that hedge only certain cash flows of a hedged item. If issued in its current form, the ASU is also expected to modify existing guidance related to the timing and

income statement line recognition of ineffectiveness and components excluded from hedge relationships and add incremental disclosures regarding hedging activities.

The FASB has also issued a proposed ASU that will change the period of amortization of premiums on certain callable debt securities from the full contractual life of the security to the first call date of the security. The proposed change will not change the accretion of discounts. It is expected that the final standard will be issued during the second quarter of 2017, and will be eligible for early adoption with an effective date of January 1, 2017 through a cumulative effect adjustment to retained earnings. This accounting change will primarily affect Citi's portfolios of available-for-sale and held-to-maturity State and municipal debt securities.

The impact of these final ASUs on the Company's financial statements will be assessed when the respective final standards are issued.

2. DISCONTINUED OPERATIONS AND SIGNIFICANT DISPOSALS

Discontinued Operations

The following *Discontinued operations* are recorded within the *Corporate/Other* segment.

Sale of Brazil Credicard Business

Citi sold its non-Citibank-branded cards and consumer finance business in Brazil (Credicard) in 2013. Residual costs and resolution of certain contingencies from the disposal resulted in income from *Discontinued operations*, net of taxes, of \$0 million, \$6 million and \$52 million for 2016, 2015 and 2014, respectively.

Sale of Certain Citi Capital Advisors Business

Citi sold its liquid strategies business within Citi Capital Advisors (CCA) pursuant to two separate transactions in 2013 and reported them as *Discontinued operations*. Residual costs from the disposals resulted in income from *Discontinued operations*, net of taxes, of \$0 million and \$1 million and losses from *Discontinued operations*, net of taxes, of \$4 million for 2016, 2015 and 2014, respectively.

Sale of Egg Banking plc Credit Card Business

Citi sold the Egg Banking plc (Egg) credit card business in 2011 and reported it as *Discontinued operations*. Residual costs from the disposal resulted in losses from *Discontinued operations*, net of taxes, of \$48 million, \$61 million and \$30 million for 2016, 2015 and 2014, respectively.

Audit of Citi German Consumer Tax Group

Citi completed the sale of its German retail banking operations in 2008 and reported them as *Discontinued operations*. During 2014, residual costs from the disposal resulted in a tax expense of \$20 million.

Combined Results for Discontinued Operations

The following summarizes financial information for all *Discontinued operations* for which Citi continues to have minimal residual costs associated with the sales:

<i>In millions of dollars</i>	2016	2015	2014
Total revenues, net of interest expense⁽¹⁾	\$ —	\$ —	\$ 74
Income (loss) from discontinued operations	\$ (80)	\$ (83)	\$ 10
Provision (benefit) for income taxes	(22)	(29)	12
Loss from discontinued operations, net of taxes	\$ (58)	\$ (54)	\$ (2)

(1) Total revenues include gain or loss on sale, if applicable.

Cash flows for the *Discontinued operations* were not material for all periods presented.

Significant Disposals

The following sales completed during 2016, 2015 and 2014 were identified as significant disposals. The major classes of assets and liabilities derecognized from the Consolidated Balance Sheet, and the income (loss) before taxes related to each business until the disposal date, are presented below.

Novation of the Primerica 80% Coinsurance Agreement

Effective January 1, 2016, Citi completed a novation (an arrangement that extinguishes Citi's rights and obligations under a contract) of the Primerica 80% coinsurance agreement, which was recorded in Citi Holdings, to a third-party re-insurer. The novation resulted in revenues of \$404 million recorded in *Other revenue* (\$263 million after-tax) during the year. Furthermore, the novation resulted in derecognition of \$1.5 billion of available-for-sale securities and cash, \$0.95 billion of deferred acquisition costs and \$2.7 billion of insurance liabilities.

Income before taxes, excluding the revenue upon novation, was as follows:

<i>In millions of dollars</i>	2016	2015	2014
Income before taxes	\$ —	\$ 135	\$ 143

Sale of OneMain Financial Business

On November 15, 2015, Citi sold OneMain Financial (OneMain), which was part of Citi Holdings, including 1,100 retail branches, 5,500 employees, and approximately 1.3 million customer accounts. OneMain had approximately \$10.2 billion of assets, including \$7.8 billion of loans (net of allowance), and \$1.4 billion of available-for-sale securities. OneMain also had \$8.4 billion of liabilities, including \$6.2 billion of long-term debt and \$1.1 billion of short-term borrowings. The transaction generated a pretax gain on sale of \$2.6 billion, recorded in *Other revenue* (\$1.6 billion after-tax) in 2015. However, when combined with the loss on redemption of certain long-term debt supporting remaining Citi Holdings' assets during the fourth quarter of 2015, the resulting net after-tax gain was \$0.8 billion.

Income before taxes, excluding the pretax gain on sale and loss on redemption of debt, was as follows:

<i>In millions of dollars</i>	2016	2015	2014
Income before taxes	\$ —	\$ 663	\$ 890

Sale of Japan Cards Business

On December 14, 2015, Citi sold its Japan cards business, which was part of Citi Holdings, including \$1,350 million of consumer loans (net of allowance), approximately 720,000 customer accounts and 840 employees. The transaction generated a pretax gain on sale of \$180 million, recorded in *Other revenue* (\$155 million after-tax) in 2015. Loss before taxes, excluding the pretax gain on sale, was as follows:

<i>In millions of dollars</i>	2016	2015	2014
Loss before taxes	\$ —	\$ (5)	\$ —

Sale of Japan Retail Banking Business

On November 1, 2015, Citi sold its Japan retail banking business, which was part of Citi Holdings, including \$563 million of consumer loans (net of allowance), \$20 billion of deposits, approximately 725,000 customer accounts, 1,600 employees and 32 branches. The transaction generated a pretax gain on sale of \$446 million, recorded in *Other revenue* (\$276 million after-tax) in 2015. Loss before taxes, excluding the pretax gain on sale, was as follows:

<i>In millions of dollars</i>	2016	2015	2014
Loss before taxes	\$ —	\$ (57)	\$ (5)

Sale of Spain Consumer Operations

On September 22, 2014, Citi sold its consumer operations in Spain, which were part of Citi Holdings, including \$1.7 billion of consumer loans (net of allowance), \$3.4 billion of assets under management, \$2.2 billion of customer deposits, 45 branches, 48 ATMs and 938 employees, with the buyer assuming the related current pension commitments at closing. The transaction generated a pretax gain on sale of \$243 million, recorded in *Other revenue* (\$131 million after-tax) in 2014. Income before taxes, excluding the pretax gain on sale, was as follows:

<i>In millions of dollars</i>	2016	2015	2014
Income before taxes	\$ —	\$ —	\$ 130

Sale of Greece Consumer Operations

On September 30, 2014, Citi sold its consumer operations in Greece, which were part of Citi Holdings, including \$353 million of consumer loans (net of allowance), \$1.1 billion of assets under management, \$1.2 billion of customer deposits, 20 branches, 85 ATMs and 719 employees, with the buyer assuming certain limited pension obligations related to Diners' Club's employees at closing. The transaction generated a pretax gain on sale of \$209 million, recorded in *Other revenue* (\$91 million after-tax). Loss before taxes, excluding the pretax gain on sale in 2014, was as follows:

<i>In millions of dollars</i>	2016	2015	2014
Loss before taxes	\$ —	\$ —	(76)

3. BUSINESS SEGMENTS

Citigroup's activities are conducted through the following business segments: *Global Consumer Banking (GCB)*, *Institutional Clients Group (ICG)* and Citi Holdings. In addition, *Corporate/Other* includes activities not assigned to a specific business segment.

The business segments are determined based on products and services provided or type of customers served, of which those identified as non-core are recorded in Citi Holdings, and reflective of how management currently evaluates financial information to make business decisions.

GCB includes a global, full-service consumer franchise delivering a wide array of banking, including commercial banking, credit card lending and investment services through a network of local branches, offices and electronic delivery systems and is composed of three *GCB* businesses: *North America*, *Latin America* and *Asia* (including certain *EMEA* consumer operations).

ICG is composed of *Banking and Markets and securities services* and provides corporate, institutional, public sector and high-net-worth clients in over 100 countries and jurisdictions with a broad range of banking and financial products and services.

Citi Holdings is composed of businesses and portfolios of assets that Citigroup has determined are not central to its core Citicorp businesses.

Corporate/Other includes certain unallocated costs of global functions, other corporate expenses and net treasury results, unallocated corporate expenses, offsets to certain line-item reclassifications and eliminations, the results of discontinued operations and unallocated taxes.

The accounting policies of these reportable segments are the same as those disclosed in Note 1 to the Consolidated Financial Statements.

The prior-period balances reflect reclassifications to conform the presentation to the current period's presentation. Effective January 1, 2016, historical financial data was reclassified from Citicorp to Citi Holdings as a result of the reorganization of the legacy *Latin America GCB* reporting unit, which included the transfer of the consumer businesses in Argentina, Brazil and Colombia to Citi Holdings. Citi's consolidated results remain unchanged for all periods presented as a result of the reorganization.

The following table presents certain information regarding the Company's continuing operations by segment:

	Revenues, net of interest expense ⁽¹⁾			Provision (benefits) for income taxes			Income (loss) from continuing operations ⁽²⁾			Identifiable assets	
	2016	2015	2014	2016	2015	2014	2016	2015	2014	2016	2015
<i>In millions of dollars, except identifiable assets in billions</i>											
<i>Global Consumer Banking</i>	\$ 31,763	\$ 32,495	\$ 34,296	\$ 2,712	\$ 3,430	\$ 3,404	\$ 5,108	\$ 6,376	\$ 6,702	\$ 413	\$ 381
<i>Institutional Clients Group</i>	33,850	33,991	33,312	4,497	4,426	4,129	9,928	9,529	9,645	1,276	1,217
<i>Corporate/Other</i>	410	908	303	(771)	(1,338)	(344)	(609)	496	(5,373)	49	52
Total Citicorp	\$ 66,023	\$ 67,394	\$ 67,911	\$ 6,438	\$ 6,518	\$ 7,189	\$ 14,427	\$ 16,401	\$ 10,974	\$ 1,738	\$ 1,650
Citi Holdings	3,852	8,960	9,308	6	922	8	606	985	(3,470)	54	81
Total	\$ 69,875	\$ 76,354	\$ 77,219	\$ 6,444	\$ 7,440	\$ 7,197	\$ 15,033	\$ 17,386	\$ 7,504	\$ 1,792	\$ 1,731

(1) Includes Citicorp (excluding *Corporate/Other*) total revenues, net of interest expense, in *North America* of \$32.8 billion, \$32.7 billion and \$32.9 billion; in *EMEA* of \$10.0 billion, \$10.0 billion and \$9.5 billion; in *Latin America* of \$9.0 billion, \$9.8 billion and \$10.8 billion; and in *Asia* of \$13.8 billion, \$14.0 billion and \$14.4 billion in 2016, 2015 and 2014, respectively.

(2) Includes pretax provisions for credit losses and for benefits and claims in the *GCB* results of \$6.4 billion, \$5.5 billion and \$5.5 billion; in the *ICG* results of \$486 million, \$962 million and \$47 million; and in Citi Holdings results of \$0.1 billion, \$1.5 billion and \$1.9 billion in 2016, 2015 and 2014, respectively.

4. INTEREST REVENUE AND EXPENSE

Interest revenue and Interest expense consisted of the following:

<i>In millions of dollars</i>	2016	2015	2014
Interest revenue			
Loan interest, including fees	\$ 39,752	\$ 40,510	\$ 44,776
Deposits with banks	971	727	959
Federal funds sold and securities borrowed or purchased under agreements to resell	2,543	2,516	2,366
Investments, including dividends	7,582	7,017	7,195
Trading account assets ⁽¹⁾	5,738	5,942	5,880
Other interest ⁽²⁾	1,029	1,839	507
Total interest revenue	\$ 57,615	\$ 58,551	\$ 61,683
Interest expense			
Deposits ⁽³⁾	\$ 5,300	\$ 5,052	\$ 5,692
Federal funds purchased and securities loaned or sold under agreements to repurchase	1,912	1,612	1,895
Trading account liabilities ⁽¹⁾	410	217	168
Short-term borrowings	477	523	580
Long-term debt	4,412	4,517	5,355
Total interest expense	\$ 12,511	\$ 11,921	\$ 13,690
Net interest revenue	\$ 45,104	\$ 46,630	\$ 47,993
Provision for loan losses	6,749	7,108	6,828
Net interest revenue after provision for loan losses	\$ 38,355	\$ 39,522	\$ 41,165

(1) Interest expense on *Trading account liabilities* of ICG is reported as a reduction of interest revenue from *Trading account assets*.

(2) During 2015, interest earned related to assets of significant disposals (primarily OneMain Financial) were reclassified to *Other interest*.

(3) Includes deposit insurance fees and charges of \$1,145 million, \$1,118 million and \$1,038 million for 2016, 2015 and 2014, respectively.

5. COMMISSIONS AND FEES

The primary components of *Commissions and fees* revenue are investment banking fees, trading-related fees, fees related to trade and securities services in *ICG* and credit card and bank card fees.

Investment banking fees are substantially composed of underwriting and advisory revenues and are recognized when Citigroup's performance under the terms of a contractual arrangement is completed, which is typically at the closing of a transaction. Underwriting revenue is recorded in *Commissions and fees*, net of both reimbursable and non-reimbursable expenses, consistent with the AICPA Accounting Guide for Brokers and Dealers in Securities (codified in ASC 940-605-05-1). Expenses associated with advisory transactions are recorded in *Other operating expenses*, net of client reimbursements. Out-of-pocket expenses are deferred and recognized at the time the related revenue is recognized. In general, expenses incurred related to investment banking transactions that fail to close (are not consummated) are recorded gross in *Other operating expenses*.

Trading-related fees primarily include commissions and fees from the following: executing transactions for clients on exchanges and over-the-counter markets; sales of mutual funds, insurance and other annuity products; and assisting clients in clearing transactions, providing brokerage services and other such activities. Trading-related fees are recognized when earned in *Commissions and fees*. Gains or losses, if any, on these transactions are included in *Principal transactions* (see Note 6 to the Consolidated Financial Statements).

Credit card and bank card fees are primarily composed of interchange revenue and certain card fees, including annual fees, reduced by reward program costs and certain partner payments. Interchange revenue and fees are recognized when earned. Annual card fees are deferred and amortized on a straight-line basis over a 12-month period. Reward costs are recognized when points are earned by the customers.

The following table presents *Commissions and fees* revenue:

<i>In millions of dollars</i>	2016	2015	2014
Investment banking	\$ 2,847	\$ 3,423	\$ 3,687
Trading-related	2,219	2,345	2,503
Trade and securities services	1,564	1,735	1,871
Credit cards and bank cards	1,324	1,786	2,227
Other consumer ⁽¹⁾	659	685	885
Corporate finance ⁽²⁾	686	493	531
Checking-related	467	497	531
Loan servicing	325	404	380
Other	430	480	417
Total commissions and fees	\$ 10,521	\$ 11,848	\$ 13,032

(1) Primarily consists of fees for investment fund administration and management, third-party collections, commercial demand deposit accounts and certain credit card services.

(2) Consists primarily of fees earned from structuring and underwriting loan syndications.

6. PRINCIPAL TRANSACTIONS

Principal transactions revenue consists of realized and unrealized gains and losses from trading activities. Trading activities include revenues from fixed income, equities, credit and commodities products and foreign exchange transactions which are managed on a portfolio basis characterized by primary risk. Not included in the table below is the impact of net interest revenue related to trading activities, which is an integral part of trading activities' profitability. See Note 4 to the Consolidated Financial Statements for information about

net interest revenue related to trading activities. Principal transactions include CVA (credit valuation adjustments on derivatives), FVA (funding valuation adjustments) on over-the-counter derivatives and, prior to 2016, DVA (debt valuation adjustments on issued liabilities for which the fair value option has been elected). These adjustments are discussed further in Note 24 to the Consolidated Financial Statements.

The following table presents principal transactions revenue:

<i>In millions of dollars</i>	2016	2015	2014
<i>Global Consumer Banking</i> ⁽¹⁾	\$ 634	\$ 582	\$ 633
<i>Institutional Clients Group</i>	7,330	5,818	5,889
<i>Corporate/Other</i> ⁽¹⁾	(508)	(445)	(378)
Subtotal Citicorp	\$ 7,456	\$ 5,955	\$ 6,144
Citi Holdings	129	53	554
Total Citigroup	\$ 7,585	\$ 6,008	\$ 6,698
Interest rate risks ⁽²⁾	\$ 4,115	\$ 3,798	\$ 3,657
Foreign exchange risks ⁽³⁾	1,726	1,532	2,008
Equity risks ⁽⁴⁾	189	(303)	(260)
Commodity and other risks ⁽⁵⁾	806	750	590
Credit products and risks ⁽⁶⁾	749	231	703
Total	\$ 7,585	\$ 6,008	\$ 6,698

(1) Primarily relates to foreign exchange risks.

(2) Includes revenues from government securities and corporate debt, municipal securities, mortgage securities and other debt instruments. Also includes spot and forward trading of currencies and exchange-traded and over-the-counter (OTC) currency options, options on fixed income securities, interest rate swaps, currency swaps, swap options, caps and floors, financial futures, OTC options and forward contracts on fixed income securities.

(3) Includes revenues from foreign exchange spot, forward, option and swap contracts, as well as foreign currency translation (FX translation) gains and losses.

(4) Includes revenues from common, preferred and convertible preferred stock, convertible corporate debt, equity-linked notes and exchange-traded and OTC equity options and warrants.

(5) Primarily includes revenues from crude oil, refined oil products, natural gas and other commodities trades.

(6) Includes revenues from structured credit products.

7. INCENTIVE PLANS

Discretionary Annual Incentive Awards

Citigroup grants immediate cash bonus payments and various forms of immediate and deferred awards as part of its discretionary annual incentive award program involving a large segment of Citigroup's employees worldwide. Most of the shares of common stock issued by Citigroup as part of its equity compensation programs are to settle the vesting of the stock components of these awards.

Discretionary annual incentive awards are generally awarded in the first quarter of the year based upon the previous year's performance. Awards valued at less than U.S. \$100,000 (or the local currency equivalent) are generally paid entirely in the form of an immediate cash bonus. Pursuant to Citigroup policy and/or regulatory requirements, certain employees and officers are subject to mandatory deferrals of incentive pay and generally receive 25% to 60% of their awards in a combination of restricted or deferred stock, deferred cash stock units, or deferred cash. Discretionary annual incentive awards to many employees in the EU are subject to deferral requirements regardless of the total award value, with 50% of the immediate incentive delivered in the form of a stock payment or stock unit award subject to a restriction on sale or transfer or hold back (generally, for six months).

Deferred annual incentive awards may be delivered in the form of one or more award types—a restricted or deferred stock award under Citi's Capital Accumulation Program (CAP), or a deferred cash stock unit award and/or a deferred cash award under Citi's Deferred Cash Award Plan. The applicable mix of awards may vary based on the employee's minimum deferral requirement and the country of employment.

Subject to certain exceptions (principally, for retirement-eligible employees), continuous employment within Citigroup is required to vest in CAP, deferred cash stock unit and deferred cash awards. Post employment vesting by retirement-eligible employees and participants who meet other conditions is generally conditioned upon their refraining from competition with Citigroup during the remaining vesting period, unless the employment relationship has been terminated by Citigroup under certain conditions.

Generally, the deferred awards vest in equal annual installments over three- or four-year periods. Vested CAP awards are delivered in shares of common stock. Deferred cash awards are payable in cash and earn a fixed notional rate of interest that is paid only if and when the underlying principal award amount vests. Deferred cash stock unit awards are payable in cash at the vesting value of the underlying stock. Generally, in the EU, vested CAP shares are subject to a restriction on sale or transfer after vesting, and vested deferred cash awards and deferred cash stock units are subject to hold back (generally, for six months in each case).

Unvested CAP, deferred cash stock units and deferred cash awards made in January 2011 or later are subject to one or more clawback provisions that apply in certain circumstances, including in the case of employee risk-limit violations or other misconduct, or where the awards were

based on earnings that were misstated. CAP awards made to certain employees in February 2013 and later, deferred cash stock units made to certain employees in February 2016 and later, and deferred cash awards made to certain employees in January 2012, are subject to a formulaic performance-based vesting condition pursuant to which amounts otherwise scheduled to vest will be reduced based on the amount of any pretax loss in the participant's business in the calendar year preceding the scheduled vesting date. For CAP awards made in February 2013 and later, and deferred cash stock units made in February 2016 and later, a minimum reduction of 20% applies for the first dollar of loss.

In addition, deferred cash awards made to certain employees in February 2013 and later are subject to a discretionary performance-based vesting condition under which an amount otherwise scheduled to vest may be reduced in the event of a "material adverse outcome" for which a participant has "significant responsibility." Deferred cash awards made to these employees in February 2014 and later are subject to an additional clawback provision pursuant to which unvested awards may be canceled if the employee engaged in misconduct or exercised materially imprudent judgment, or failed to supervise or escalate the behavior of other employees who did.

Certain CAP and other stock-based awards, including those to participants in the EU that are subject to certain discretionary clawback provisions, are subject to variable accounting, pursuant to which the associated value of the award fluctuates with changes in Citigroup's common stock price until the date that the award is settled, either in cash or shares. For these awards, the total amount that will be recognized as expense cannot be determined in full until the settlement date.

Sign-on and Long-Term Retention Awards

Stock awards and deferred cash awards may be made at various times during the year as sign-on awards to induce new hires to join Citi or to high-potential employees as long-term retention awards.

Vesting periods and other terms and conditions pertaining to these awards tend to vary by grant. Generally, recipients must remain employed through the vesting dates to vest in the awards, except in cases of death, disability or involuntary termination other than for "gross misconduct." These awards do not usually provide for post employment vesting by retirement-eligible participants.

Outstanding (Unvested) Stock Awards

A summary of the status of unvested stock awards granted as discretionary annual incentive or sign-on and long-term retention awards is presented below:

Unvested stock awards	Shares	Weighted-average grant date fair value per share
Unvested at January 1, 2016	41,860,291	\$ 45.73
Granted ⁽¹⁾	23,355,805	37.35
Canceled	(1,522,125)	43.76
Vested ⁽²⁾	(21,021,795)	41.63
Unvested at December 31, 2016	42,672,176	\$ 43.24

- (1) The weighted-average fair value of the shares granted during 2015 and 2014 was \$50.33 and \$49.65, respectively.
- (2) The weighted-average fair value of the shares vesting during 2016 was approximately \$40.08 per share.

Total unrecognized compensation cost related to unvested stock awards, excluding the impact of forfeiture estimates, was \$597 million at December 31, 2016. The cost is expected to be recognized over a weighted-average period of 1.6 years. However, the value of the portion of these awards that is subject to variable accounting will fluctuate with changes in Citigroup's common stock price.

Performance Share Units

Certain executive officers were awarded a target number of performance share units (PSUs) on February 19, 2013, for performance in 2012, and to a broader group of executives on February 18, 2014, February 18, 2015 and February 16, 2016 for performance in the year prior to the award date. For grants prior to 2016, PSUs will be earned only to the extent that Citigroup attains specified performance goals relating to Citigroup's return on assets and relative total shareholder return against peers over the three-year period beginning with the year of award. The actual dollar amounts ultimately earned could vary from zero, if performance goals are not met, to as much as 150% of target, if performance goals are meaningfully exceeded. The value of each PSU is equal to the value of one share of Citi common stock.

The PSUs granted on February 16, 2016 are earned over a three-year performance period based on Citigroup's relative total shareholder return as compared to peers. The actual dollar amounts ultimately earned could vary from zero, if performance goals are not met, to as much as 150% of target, if performance goals are meaningfully exceeded. If the total shareholder return is negative over the three-year performance period, executives may earn no more than 100% of the target PSUs, regardless of the extent to which Citi outperforms peer firms. The value of each PSU is equal to the value of one share of Citi common stock.

PSUs are subject to variable accounting, pursuant to which the associated value of the award will fluctuate with changes in Citigroup's stock price and the attainment of the specified performance goals for each award, until the award is settled solely in cash after the end of the performance period. The value of the award, subject to the performance goals, is estimated using a simulation model that incorporates multiple valuation assumptions, including the probability of achieving the specified performance goals of each award. The risk-free rate used in the model is based on the applicable U.S. Treasury yield curve. Other significant assumptions for the awards are as follows:

Valuation Assumptions	2016	2015	2014
Expected volatility	24.37%	27.13%	39.12%
Expected dividend yield	0.40%	0.08%	0.08%

A summary of the performance share unit activity for 2016 is presented below:

Performance Share Units	Units	Weighted-average grant date fair value per unit
Outstanding, beginning of period	1,357,257	\$ 45.45
Granted ⁽¹⁾	772,653	27.03
Canceled	(91,597)	42.26
Payments	(193,753)	42.26
Outstanding, end of period	1,844,560	\$ 38.22

- (1) The weighted-average grant date fair value per unit awarded in 2015 and 2014 was \$44.07 and \$48.34, respectively.

Stock Option Programs

Stock options have not been granted to Citi's employees as part of the annual incentive award programs since 2009.

All outstanding stock options are fully vested with the related expense recognized as a charge to income in prior periods. Generally, the stock options outstanding have a six-year term, with some stock options subject to various transfer restrictions. Cash received from employee stock option exercises under this program for the year ended December 31, 2016 was approximately \$53 million.

Information with respect to stock option activity under Citigroup's stock option programs is shown below:

	2016			2015			2014		
	Options	Weighted-average exercise price	Intrinsic value per share	Options	Weighted-average exercise price	Intrinsic value per share	Options	Weighted-average exercise price	Intrinsic value per share
Outstanding, beginning of period	6,656,588	\$ 67.92	\$ —	26,514,119	\$ 48.00	\$ 6.11	31,508,106	\$ 50.72	\$ 1.39
Canceled	(25,334)	40.80	—	(7,901)	40.80	—	(28,257)	40.80	—
Expired	(2,613,909)	48.80	—	(1,646,581)	40.85	—	(602,093)	242.43	—
Exercised	(2,489,949)	49.10	6.60	(18,203,048)	41.39	13.03	(4,363,637)	40.82	11.37
Outstanding, end of period	1,527,396	\$ 131.78	\$ —	6,656,588	\$ 67.92	\$ —	26,514,119	\$ 48.00	\$ 6.11
Exercisable, end of period	1,527,396			6,656,588			26,514,119		

The following table summarizes information about stock options outstanding under Citigroup's stock option programs at December 31, 2016:

Range of exercise prices	Options outstanding			Options exercisable	
	Number outstanding	Weighted-average contractual life remaining	Weighted-average exercise price	Number exercisable	Weighted-average exercise price
\$39.00—\$99.99	700,892	3.0 years	\$ 43.45	700,892	\$ 43.45
\$100.00—\$199.99	502,416	2.0 years	147.13	502,416	147.13
\$200.00—\$299.99	124,088	1.1 years	240.28	124,088	240.28
\$300.00—\$399.99	200,000	1.1 years	335.50	200,000	335.50
Total at December 31, 2016	1,527,396	2.2 years	\$ 131.78	1,527,396	\$ 131.78

Other Variable Incentive Compensation

Citigroup has various incentive plans globally that are used to motivate and reward performance primarily in the areas of sales, operational excellence and customer satisfaction. Participation in these plans is generally limited to employees who are not eligible for discretionary annual incentive awards.

Summary

Except for awards subject to variable accounting, the total expense recognized for stock awards represents the grant date fair value of such awards, which is generally recognized as a charge to income ratably over the vesting period, other than for awards to retirement-eligible employees and immediately vested awards. Whenever awards are made or are expected to be made to retirement-eligible employees, the charge to income is accelerated based on when the applicable conditions to retirement eligibility were or will be met. If the employee is retirement eligible on the grant date, or the award is vested at grant date, the entire expense is recognized in the year prior to grant.

Recipients of Citigroup stock awards generally do not have any stockholder rights until shares are delivered upon vesting or exercise, or after the expiration of applicable required holding periods. Recipients of restricted or deferred stock awards and deferred cash stock unit awards, however, may be entitled to receive dividends or dividend-equivalent payments during the vesting period. Recipients of restricted stock awards generally are entitled to vote the shares in their award during the vesting period. Once a stock award vests, the

shares are freely transferable, unless they are subject to a restriction on sale or transfer for a specified period.

All equity awards granted since April 19, 2005 have been made pursuant to stockholder-approved stock incentive plans that are administered by the Personnel and Compensation Committee of the Citigroup Board of Directors, which is composed entirely of independent non-employee directors.

At December 31, 2016, approximately 52.1 million shares of Citigroup common stock were authorized and available for grant under Citigroup's 2014 Stock Incentive Plan, the only plan from which equity awards are currently granted.

The 2014 Stock Incentive Plan and predecessor plans permit the use of treasury stock or newly issued shares in connection with awards granted under the plans. Newly issued shares were distributed to settle the vesting of the majority of annual deferred stock awards from 2012 to 2015. Treasury shares were used to settle vestings in 2016 and the first quarter of 2017, except where securities laws require newly issued shares. The use of treasury stock or newly issued shares to settle stock awards does not affect the compensation expense recorded in the Consolidated Statement of Income for equity awards.

Incentive Compensation Cost

The following table shows components of compensation expense, relating to certain of the above incentive compensation programs:

<i>In millions of dollars</i>	2016	2015	2014
Charges for estimated awards to retirement-eligible employees	\$ 555	\$ 541	\$ 525
Amortization of deferred cash awards, deferred cash stock units and performance stock units	336	325	311
Immediately vested stock award expense ⁽¹⁾	73	61	51
Amortization of restricted and deferred stock awards ⁽²⁾	509	461	668
Option expense	—	—	1
Other variable incentive compensation	710	773	803
Profit sharing plan	—	—	1
Total	\$ 2,183	\$ 2,161	\$ 2,360

- (1) Represents expense for immediately vested stock awards that generally were stock payments in lieu of cash compensation. The expense is generally accrued as cash incentive compensation in the year prior to grant.
- (2) All periods include amortization expense for all unvested awards to non-retirement-eligible employees. Amortization is recognized net of estimated forfeitures of awards.

Future Expenses Associated with Outstanding (Unvested) Awards

Citi expects to record compensation expense in future periods as a result of awards granted for performance in 2016 and prior years. Because the awards contain service or other conditions that will be satisfied in the future, the expense of these already-granted awards is recognized over those future periods. The portion of these awards that is subject to variable accounting will cause the expense amount to fluctuate with changes in Citigroup's common stock price. Citi's expected future expenses, excluding the impact of forfeitures, cancellations, clawbacks and repositioning-related accelerations that have not yet occurred, are summarized in the table below:

<i>In millions of dollars</i>	2017	2018	2019	2020 and beyond ⁽¹⁾	Total
Awards granted in 2016 and prior:					
Deferred stock awards	\$ 304	\$ 177	\$ 76	\$ 5	\$ 562
Deferred cash awards	182	96	36	3	317
Future expense related to awards already granted					
	\$ 486	\$ 273	\$ 112	\$ 8	\$ 879
Future expense related to awards granted in 2017⁽²⁾					
	242	181	145	101	669
Total	\$ 728	\$ 454	\$ 257	\$ 109	\$ 1,548

- (1) Principally 2020.
- (2) Refers to awards granted on or about February 16, 2017, as part of Citi's discretionary annual incentive awards for services performed in 2016.

8. RETIREMENT BENEFITS

Pension and Postretirement Plans

The Company has several non-contributory defined benefit pension plans covering certain U.S. employees and has various defined benefit pension and termination indemnity plans covering employees outside the U.S.

The U.S. qualified defined benefit plan was frozen effective January 1, 2008 for most employees. Accordingly, no additional compensation-based contributions have been credited to the cash balance portion of the plan for existing plan participants after 2007. However, certain employees covered under the prior final pay plan formula continue to accrue benefits. The Company also offers postretirement health care and life insurance benefits to certain eligible U.S. retired employees, as well as to certain eligible employees outside the U.S.

The Company also sponsors a number of non-contributory, nonqualified pension plans. These plans, which are unfunded, provide supplemental defined pension benefits to certain U.S.

employees. With the exception of certain employees covered under the prior final pay plan formula, the benefits under these plans were frozen in prior years.

The plan obligations, plan assets and periodic plan expense for the Company's most significant pension and postretirement benefit plans (Significant Plans) are measured and disclosed quarterly, instead of annually. The Significant Plans captured approximately 90% of the Company's global pension and postretirement plan obligations as of December 31, 2016. All other plans (All Other Plans) are measured annually with a December 31 measurement date.

Net (Benefit) Expense

The following table summarizes the components of net (benefit) expense recognized in the Consolidated Statement of Income for the Company's pension and postretirement plans, for Significant Plans and All Other Plans:

In millions of dollars	Pension plans						Postretirement benefit plans					
	U.S. plans			Non-U.S. plans			U.S. plans			Non-U.S. plans		
	2016	2015	2014	2016	2015	2014	2016	2015	2014	2016	2015	2014
Qualified plans												
Benefits earned during the year	\$ 3	\$ 4	\$ 6	\$ 154	\$ 168	\$ 178	\$ —	\$ —	\$ —	\$ 10	\$ 12	\$ 15
Interest cost on benefit obligation	520	553	541	282	317	376	25	33	33	94	108	120
Expected return on plan assets	(886)	(893)	(878)	(287)	(323)	(384)	(9)	(3)	(1)	(86)	(105)	(121)
Amortization of unrecognized												
Prior service (benefit) cost	—	(3)	(3)	(1)	2	1	—	—	—	(10)	(11)	(12)
Net actuarial loss	160	139	105	69	73	77	(1)	—	—	30	43	39
Curtailment loss (gain) ⁽¹⁾	13	14	—	(2)	—	14	—	—	—	—	(1)	—
Settlement loss (gain) ⁽¹⁾	—	—	—	6	44	53	—	—	—	—	—	—
Special termination benefits ⁽¹⁾	—	—	—	—	—	9	—	—	—	—	—	—
Net qualified plans (benefit) expense	\$ (190)	\$ (186)	\$ (229)	\$ 221	\$ 281	\$ 324	\$ 15	\$ 30	\$ 32	\$ 38	\$ 46	\$ 41
Nonqualified plans expense	\$ 40	\$ 43	\$ 45	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Total net (benefit) expense	\$ (150)	\$ (143)	\$ (184)	\$ 221	\$ 281	\$ 324	\$ 15	\$ 30	\$ 32	\$ 38	\$ 46	\$ 41

(1) Losses and gains due to curtailment, settlement and special termination benefits relate to repositioning and divestiture actions.

The estimated net actuarial loss and prior service (benefit) cost that will be amortized from *Accumulated other comprehensive income (loss)* into net expense in 2017 are approximately \$233 million and \$(2) million, respectively, for defined benefit pension plans.

For postretirement plans, the estimated 2017 net actuarial loss and prior service (benefit) cost amortizations are approximately \$28 million and \$(9) million, respectively.

Contributions

The Company's funding practice for U.S. and non-U.S. pension and postretirement plans is generally to fund to minimum funding requirements in accordance with applicable local laws and regulations. The Company may increase its contributions above the minimum required contribution, if appropriate. In addition, management has the ability to change its funding practices. For the U.S. pension plans, there were no required minimum cash contributions for 2016 or 2015.

The following table summarizes the actual Company contributions for the years ended December 31, 2016 and 2015, as well as estimated expected Company contributions for 2017. Expected contributions are subject to change, since contribution decisions are affected by various factors, such as market performance, tax considerations, and regulatory requirements.

<i>In millions of dollars</i>	Pension plans ⁽¹⁾						Postretirement benefit plans ⁽¹⁾					
	U.S. plans ⁽²⁾			Non-U.S. plans			U.S. plans			Non-U.S. plans		
	2017	2016	2015	2017	2016	2015	2017	2016	2015	2017	2016	2015
Contributions made by the Company	\$ —	\$ 500	\$ —	\$ 90	\$ 82	\$ 92	\$ —	\$ —	\$ 174	\$ 4	\$ 4	\$ 4
Benefits paid directly by the Company	71	56	52	44	44	42	—	6	61	5	5	5

(1) Amounts reported for 2017 are expected amounts.

(2) The U.S. pension plans include benefits paid directly by the Company for the nonqualified pension plans.

Funded Status and Accumulated Other Comprehensive Income

The following tables summarize the funded status and amounts recognized in the Consolidated Balance Sheet for the Company's pension and postretirement plans:

<i>In millions of dollars</i>	Pension plans				Postretirement benefit plans			
	U.S. plans		Non-U.S. plans		U.S. plans		Non-U.S. plans	
	2016	2015	2016	2015	2016	2015	2016	2015
Change in projected benefit obligation								
Qualified plans								
Projected benefit obligation at beginning of year	\$ 13,231	\$ 14,060	\$ 6,534	\$ 7,252	\$ 817	\$ 917	\$ 1,291	\$ 1,527
Benefits earned during the year	3	4	154	168	—	—	10	12
Interest cost on benefit obligation	520	553	282	317	25	33	94	108
Plan amendments	—	—	(28)	6	—	—	—	—
Actuarial loss (gain)	351	(649)	589	(28)	(105)	(55)	3	(88)
Benefits paid, net of participants' contributions	(722)	(751)	(323)	(294)	(64)	(90)	(59)	(57)
Expected government subsidy	—	—	—	—	13	12	—	—
Divestitures	—	—	(22)	(147)	—	—	—	—
Settlement (gain) loss ⁽¹⁾	—	—	(38)	(61)	—	—	—	—
Curtailed (gain) loss ⁽¹⁾	13	14	(15)	(8)	—	—	(4)	—
Foreign exchange impact and other	(125)	—	(611)	(671)	—	—	(194)	(211)
Qualified plans	\$ 13,271	\$ 13,231	\$ 6,522	\$ 6,534	\$ 686	\$ 817	\$ 1,141	\$ 1,291
Nonqualified plans	729	712	—	—	—	—	—	—
Projected benefit obligation at year end	\$ 14,000	\$ 13,943	\$ 6,522	\$ 6,534	\$ 686	\$ 817	\$ 1,141	\$ 1,291

(1) Curtailment and settlement (gains) losses relate to repositioning and divestiture activities.

<i>In millions of dollars</i>	Pension plans				Postretirement benefit plans			
	U.S. plans		Non-U.S. plans		U.S. plans		Non-U.S. plans	
	2016	2015	2016	2015	2016	2015	2016	2015
Change in plan assets								
Qualified plans								
Plan assets at fair value at beginning of year	\$ 12,137	\$ 13,071	\$ 6,104	\$ 7,057	\$ 166	\$ 10	\$ 1,133	\$ 1,384
Actual return on plan assets	572	(183)	967	56	8	(1)	122	(5)
Company contributions	500	—	126	134	6	235	9	9
Plan participants' contributions	—	—	5	5	49	49	—	—
Divestitures	—	—	(5)	(131)	—	—	—	—
Settlements	—	—	(38)	(61)	—	—	—	—
Benefits paid, net of government subsidy	(722)	(751)	(329)	(299)	(100)	(127)	(59)	(57)
Foreign exchange impact and other	(124)	—	(681)	(657)	—	—	(190)	(198)
Qualified plans	\$ 12,363	\$ 12,137	\$ 6,149	\$ 6,104	\$ 129	\$ 166	\$ 1,015	\$ 1,133
Nonqualified plans	—	—	—	—	—	—	—	—
Plan assets at fair value at year end	\$ 12,363	\$ 12,137	\$ 6,149	\$ 6,104	\$ 129	\$ 166	\$ 1,015	\$ 1,133
Funded status of the plans								
Qualified plans⁽¹⁾	\$ (908)	\$ (1,094)	\$ (373)	\$ (430)	\$ (557)	\$ (651)	\$ (126)	\$ (158)
Nonqualified plans⁽²⁾	(729)	(712)	—	—	—	—	—	—
Funded status of the plans at year end	\$ (1,637)	\$ (1,806)	\$ (373)	\$ (430)	\$ (557)	\$ (651)	\$ (126)	\$ (158)
Net amount recognized								
Qualified plans								
Benefit asset	\$ —	\$ —	\$ 711	\$ 726	\$ —	\$ —	\$ 166	\$ 115
Benefit liability	(908)	(1,094)	(1,084)	(1,156)	(557)	(651)	(292)	(273)
Qualified plans	\$ (908)	\$ (1,094)	\$ (373)	\$ (430)	\$ (557)	\$ (651)	\$ (126)	\$ (158)
Nonqualified plans	(729)	(712)	—	—	—	—	—	—
Net amount recognized on the balance sheet	\$ (1,637)	\$ (1,806)	\$ (373)	\$ (430)	\$ (557)	\$ (651)	\$ (126)	\$ (158)
Amounts recognized in Accumulated other comprehensive income (loss)								
Qualified plans								
Net transition obligation	\$ —	\$ —	\$ (1)	\$ (1)	\$ —	\$ —	\$ —	\$ —
Prior service benefit	—	—	29	5	—	—	98	125
Net actuarial gain (loss)	(6,612)	(6,107)	(1,302)	(1,613)	106	3	(399)	(547)
Qualified plans	\$ (6,612)	\$ (6,107)	\$ (1,274)	\$ (1,609)	\$ 106	\$ 3	\$ (301)	\$ (422)
Nonqualified plans	(296)	(266)	—	—	—	—	—	—
Net amount recognized in equity (pretax)	\$ (6,908)	\$ (6,373)	\$ (1,274)	\$ (1,609)	\$ 106	\$ 3	\$ (301)	\$ (422)
Accumulated benefit obligation								
Qualified plans	\$ 13,268	\$ 13,226	\$ 6,090	\$ 6,049	\$ 686	\$ 817	\$ 1,141	\$ 1,291
Nonqualified plans	726	706	—	—	—	—	—	—
Accumulated benefit obligation at year end	\$ 13,994	\$ 13,932	\$ 6,090	\$ 6,049	\$ 686	\$ 817	\$ 1,141	\$ 1,291

(1) The U.S. qualified pension plan is fully funded under specified Employee Retirement Income Security Act (ERISA) funding rules as of January 1, 2017 and no minimum required funding is expected for 2017.

(2) The nonqualified plans of the Company are unfunded.

The following table shows the change in *Accumulated other comprehensive income (loss)* related to the Company's pension, postretirement and post employment plans:

<i>In millions of dollars</i>	2016	2015	2014
Beginning of year balance, net of tax⁽¹⁾⁽²⁾	\$ (5,116)	\$ (5,159)	\$ (3,989)
Actuarial assumptions changes and plan experience	(854)	898	(3,404)
Net asset gain (loss) due to difference between actual and expected returns	400	(1,457)	833
Net amortizations	232	236	202
Prior service (cost) credit	28	(6)	13
Curtailement/settlement gain ⁽³⁾	17	57	67
Foreign exchange impact and other	99	291	459
Change in deferred taxes, net	30	24	660
Change, net of tax	\$ (48)	\$ 43	\$ (1,170)
End of year balance, net of tax⁽¹⁾⁽²⁾	\$ (5,164)	\$ (5,116)	\$ (5,159)

(1) See Note 19 to the Consolidated Financial Statements for further discussion of net *Accumulated other comprehensive income (loss)* balance.

(2) Includes net-of-tax amounts for certain profit sharing plans outside the U.S.

(3) Curtailement and settlement gains relate to repositioning and divestiture activities.

At December 31, 2016 and 2015, the aggregate projected benefit obligation (PBO), the aggregate accumulated benefit obligation (ABO), and the aggregate fair value of plan assets are presented for all defined benefit pension plans with a PBO in excess of plan assets and for all defined benefit pension plans with an ABO in excess of plan assets as follows:

<i>In millions of dollars</i>	PBO exceeds fair value of plan assets				ABO exceeds fair value of plan assets			
	U.S. plans ⁽¹⁾		Non-U.S. plans		U.S. plans ⁽¹⁾		Non-U.S. plans	
	2016	2015	2016	2015	2016	2015	2016	2015
Projected benefit obligation	\$ 14,000	\$ 13,943	\$ 2,484	\$ 3,918	\$ 14,000	\$ 13,943	\$ 2,282	\$ 2,369
Accumulated benefit obligation	13,994	13,932	2,168	3,488	13,994	13,932	2,012	2,047
Fair value of plan assets	12,363	12,137	1,399	2,762	12,363	12,137	1,224	1,243

(1) At December 31, 2016 and 2015, for both the U.S. qualified plan and nonqualified plans, the aggregate PBO and the aggregate ABO exceeded plan assets.

Plan Assumptions

The Company utilizes a number of assumptions to determine plan obligations and expenses. Changes in one or a combination of these assumptions will have an impact on the Company's pension and postretirement PBO, funded status and (benefit) expense. Changes in the plans' funded status resulting from changes in the PBO and fair value of plan assets will have a corresponding impact on *Accumulated other comprehensive income (loss)*.

The actuarial assumptions at the respective years ended December 31 in the table below are used to measure the year-end PBO and the net periodic (benefit) expense for the subsequent year (period). Since Citi's Significant Plans are measured on a quarterly basis, the year-end rates for those plans are used to calculate the net periodic (benefit) expense for the subsequent year's first quarter. As a result of the quarterly measurement process, the net periodic (benefit) expense for the Significant Plans is calculated at each respective quarter end based on the preceding quarter-end rates (as shown below for the U.S. and non-U.S. pension and postretirement plans). The actuarial assumptions for All Other Plans are measured annually.

Certain assumptions used in determining pension and postretirement benefit obligations and net benefit expense for the Company's plans are shown in the following table:

<i>At year end</i>	2016	2015
Discount rate		
U.S. plans		
Qualified pension	4.10%	4.40%
Nonqualified pension	4.00	4.35
Postretirement	3.90	4.20
Non-U.S. pension plans		
Range	0.25 to 72.50	0.25 to 42.00
Weighted average	4.40	4.76
Non-U.S. postretirement plans		
Range	1.75 to 11.05	2.00 to 13.20
Weighted average	8.27	7.90
Future compensation increase rate⁽¹⁾		
Non-U.S. pension plans		
Range	1.25 to 70.00	1.00 to 40.00
Weighted average	3.21	3.24
Expected return on assets		
U.S. plans	6.80	7.00
Non-U.S. pension plans		
Range	1.00 to 11.50	1.60 to 11.50
Weighted average	4.55	4.95
Non-U.S. postretirement plans		
Range	8.00 to 10.30	8.00 to 10.70
Weighted average	8.02	8.01

(1) Not material for U.S. plans

<i>During the year</i>	2016	2015	2014
Discount rate			
U.S. plans			
Qualified pension	4.40%/3.95%/ 3.65%/3.55%	4.00%/3.85%/ 4.45%/4.35%	4.75%/4.55%/ 4.25%/4.25%
Nonqualified pension	4.35/3.90/ 3.55/3.45	3.90/3.70/ 4.30/4.25	4.75
Postretirement	4.20/3.75/ 3.40/3.30	3.80/3.65/ 4.20/4.10	4.35/4.15/ 3.95/4.00
Non-U.S. pension plans ⁽¹⁾			
Range	0.25 to 42.00	1.00 to 32.50	1.60 to 29.25
Weighted average	4.76	4.74	5.60
Non-U.S. postretirement plans ⁽¹⁾			
Range	2.00 to 13.20	2.25 to 12.00	3.50 to 11.90
Weighted average	7.90	7.50	8.65
Future compensation increase rate⁽²⁾			
Non-U.S. pension plans ⁽¹⁾			
Range	1.00 to 40.00	0.75 to 30.00	1.00 to 26.00
Weighted average	3.24	3.27	3.40
Expected return on assets			
U.S. plans	7.00	7.00	7.00
Non-U.S. pension plans ⁽¹⁾			
Range	1.60 to 11.50	1.30 to 11.50	1.20 to 11.50
Weighted average	4.95	5.08	5.68
Non-U.S. postretirement plans ⁽¹⁾			
Range	8.00 to 10.70	8.50 to 10.40	8.50 to 8.90
Weighted average	8.01	8.51	8.50

(1) Reflects rates utilized to determine the first quarter expense for Significant non-U.S. pension and postretirement plans.

(2) Not material for U.S. plans

Discount Rate

The discount rates for the U.S. pension and postretirement plans were selected by reference to a Citigroup-specific analysis using each plan's specific cash flows and compared with high-quality corporate bond indices for reasonableness. The discount rates for the non-U.S. pension and postretirement plans are selected by reference to high-quality corporate bond rates in countries that have developed corporate bond markets. However, where developed corporate bond markets do not exist, the discount rates are selected by reference to local government bond rates with a premium added to reflect the additional risk for corporate bonds in certain countries. Effective December 31, 2016, the established rounding convention was to the nearest 5 basis points for the top five non-U.S. countries, 10 basis points for Japan, and 25 basis points for all other countries.

Expected Rate of Return

The Company determines its assumptions for the expected rate of return on plan assets for its U.S. pension and postretirement plans using a "building block" approach, which focuses on ranges of anticipated rates of return for each asset class. A weighted average range of nominal rates is then determined based on target allocations to each asset class. Market performance over a number of earlier years is evaluated covering a wide range of economic conditions to determine whether there are sound reasons for projecting any past trends.

The Company considers the expected rate of return to be a long-term assessment of return expectations and does not anticipate changing this assumption unless there are significant changes in investment strategy or economic conditions. This contrasts with the selection of the discount rate and certain other assumptions, which are reconsidered annually (or quarterly for the Significant Plans) in accordance with GAAP.

The expected rate of return for the U.S. pension and postretirement plans was 6.80% at December 31, 2016, and was 7.00% at December 31, 2015 and 2014. The expected return on assets reflects the expected annual appreciation of the plan assets and reduces the Company's annual pension expense. The expected return on assets is deducted from the sum of service cost, interest cost and other components of pension expense to arrive at the net pension (benefit) expense. Net pension (benefit) expense for the U.S. pension plans for 2016, 2015 and 2014 reflects deductions of \$886 million, \$893 million and \$878 million of expected returns, respectively.

The following table shows the expected rates of return used in determining the Company's pension expense compared to the actual rate of return on plan assets during 2016, 2015 and 2014 for the U.S. pension and postretirement plans:

	2016	2015	2014
Expected rate of return	7.00%	7.00%	7.00%
Actual rate of return ⁽¹⁾	4.90	(1.70)	7.80

(1) Actual rates of return are presented net of fees.

For the non-U.S. pension plans, pension expense for 2016 was reduced by the expected return of \$287 million, compared with the actual return of \$967 million. Pension expense for 2015 and 2014 was reduced by expected returns of \$323 million and \$384 million, respectively.

Mortality Tables

At December 31, 2016, the Company maintained the Retirement Plan 2014 (RP-2014) mortality table and adopted the Mortality Projection 2016 (MP-2016) projection table for the U.S. plans.

U.S. plans	2016 ⁽²⁾	2015 ⁽³⁾
Mortality⁽¹⁾		
Pension	RP-2014/MP-2016	RP-2014/MP-2015
Postretirement	RP-2014/MP-2016	RP-2014/MP-2015

- (1) The RP-2014 table is the white-collar RP-2014 table, with a 4% increase in rates to reflect the lower life expectancy of Citi plan participants.
- (2) The MP-2016 projection scale is projected from 2011, with convergence to 0.75% ultimate rate of annual improvement by 2032.
- (3) The MP-2015 projection scale is projected from 2011, with convergence to 0.5% ultimate rate of annual improvement by 2029.

Sensitivities of Certain Key Assumptions

The following tables summarize the effect on pension expense of a one-percentage-point change in the discount rate:

<i>In millions of dollars</i>	One-percentage-point increase		
	2016	2015	2014
U.S. plans	\$ 31	\$ 26	\$ 28
Non-U.S. plans	(33)	(32)	(39)

<i>In millions of dollars</i>	One-percentage-point decrease		
	2016	2015	2014
U.S. plans	\$ (47)	\$ (44)	\$ (45)
Non-U.S. plans	37	44	56

Since the U.S. qualified pension plan was frozen, most of the prospective service cost has been eliminated and the gain/loss amortization period was changed to the life expectancy for inactive participants. As a result, pension expense for the U.S. qualified pension plan is driven more by interest costs than service costs, and an increase in the discount rate would increase pension expense, while a decrease in the discount rate would decrease pension expense.

The following tables summarize the effect on pension expense of a one-percentage-point change in the expected rates of return:

<i>In millions of dollars</i>	One-percentage-point increase		
	2016	2015	2014
U.S. plans	\$ (127)	\$ (128)	\$ (129)
Non-U.S. plans	(61)	(63)	(67)

<i>In millions of dollars</i>	One-percentage-point decrease		
	2016	2015	2014
U.S. plans	\$ 127	\$ 128	\$ 129
Non-U.S. plans	61	63	67

Health Care Cost Trend Rate

Assumed health care cost trend rates were as follows:

	2016	2015
Health care cost increase rate for U.S. plans		
Following year	6.50%	7.00%
Ultimate rate to which cost increase is assumed to decline	5.00	5.00
Year in which the ultimate rate is reached ⁽¹⁾	2023	2020

(1) Weighted average for plans with different following year and ultimate rates.

	2016	2015
Health care cost increase rate for Non-U.S. plans (weighted average)		
Following year	6.86%	6.87%
Ultimate rate to which cost increase is assumed to decline	6.85	6.36
Range of years in which the ultimate rate is reached	2017–2029	2016–2029

A one-percentage-point change in assumed health care cost trend rates would have the following effects:

<i>In millions of dollars</i>	One-percentage-point increase		One-percentage-point decrease	
	2016	2015	2016	2015
U.S. plans				
Effect on benefits earned and interest cost for postretirement plans	\$ 1	\$ 2	\$ (1)	\$ (2)
Effect on accumulated postretirement benefit obligation for postretirement plans	30	45	(26)	(38)

<i>In millions of dollars</i>	One-percentage-point increase		One-percentage-point decrease	
	2016	2015	2016	2015
Non-U.S. plans				
Effect on benefits earned and interest cost for postretirement plans	\$ 12	\$ 15	\$ (10)	\$ (12)
Effect on accumulated postretirement benefit obligation for postretirement plans	144	156	(118)	(128)

Plan Assets

Citigroup's pension and postretirement plans' asset allocations for the U.S. plans and the target allocations by asset category based on asset fair values, are as follows:

Asset category ⁽¹⁾	Target asset allocation	U.S. pension assets at December 31,		U.S. postretirement assets at December 31,	
	2017	2016	2015	2016	2015
Equity securities ⁽²⁾	0–30%	18%	19%	18%	19%
Debt securities	20–72	47	46	47	46
Real estate	0–10	5	4	5	4
Private equity	0–12	4	6	4	6
Other investments	12–29	26	25	26	25
Total		100%	100%	100%	100%

- (1) Asset allocations for the U.S. plans are set by investment strategy, not by investment product. For example, private equities with an underlying investment in real estate are classified in the real estate asset category, not private equity.
- (2) Equity securities in the U.S. pension and postretirement plans do not include any Citigroup common stock at the end of 2016 and 2015.

Third-party investment managers and advisers provide their services to Citigroup's U.S. pension and postretirement plans. Assets are rebalanced as the Company's Pension Plan Investment Committee deems appropriate. Citigroup's investment strategy, with respect to its assets, is to maintain a globally diversified investment portfolio across several asset classes that, when combined with Citigroup's contributions to

the plans, will maintain the plans' ability to meet all required benefit obligations.

Citigroup's pension and postretirement plans' weighted-average asset allocations for the non-U.S. plans and the actual ranges, and the weighted-average target allocations by asset category based on asset fair values, are as follows:

Asset category ⁽¹⁾	Non-U.S. pension plans				
	Target asset allocation	Actual range at December 31,		Weighted-average at December 31,	
	2017	2016	2015	2016	2015
Equity securities	0–63%	0–69%	0–68%	14%	16%
Debt securities	0–100	0–100	0–100	79	77
Real estate	0–18	0–18	0–18	1	1
Other investments	0–100	0–100	0–100	6	6
Total				100%	100%

- (1) Similar to the U.S. plans, asset allocations for certain non-U.S. plans are set by investment strategy, not by investment product.

Asset category ⁽¹⁾	Non-U.S. postretirement plans				
	Target asset allocation	Actual range at December 31,		Weighted-average at December 31,	
	2017	2016	2015	2016	2015
Equity securities	0–39%	0–38%	0–41%	38%	41%
Debt securities	57–100	57–100	56–100	58	56
Other investments	0–3	0–4	0–3	4	3
Total				100%	100%

- (1) Similar to the U.S. plans, asset allocations for certain non-U.S. plans are set by investment strategy, not by investment product.

Fair Value Disclosure

For information on fair value measurements, including descriptions of Levels 1, 2 and 3 of the fair value hierarchy and the valuation methodology utilized by the Company, see Note 1 and Note 25 to the Consolidated Financial Statements. ASU 2015-07 removed the requirement to categorize within the fair value hierarchy investments for which fair value is measured using the NAV per share practical expedient.

Certain investments may transfer between the fair value hierarchy classifications during the year due to changes in valuation methodology and pricing sources. There were no significant transfers of investments between Level 1 and Level 2 during 2016 and 2015.

Plan assets by detailed asset categories and the fair value hierarchy are as follows:

<i>In millions of dollars</i>	U.S. pension and postretirement benefit plans ⁽¹⁾			
	Fair value measurement at December 31, 2016			
Asset categories	Level 1	Level 2	Level 3	Total
U.S. equities	\$ 639	\$ —	\$ —	\$ 639
Non-U.S. equities	773	—	—	773
Mutual funds	216	—	—	216
Commingled funds	—	866	—	866
Debt securities	1,297	2,845	—	4,142
Annuity contracts	—	—	3	3
Derivatives	8	543	—	551
Other investments	—	—	2	2
Total investments	\$ 2,933	\$ 4,254	\$ 5	\$ 7,192
Cash and short-term investments	\$ 19	\$ 1,239	\$ —	\$ 1,258
Other investment liabilities	(9)	(553)	—	(562)
Net investments at fair value	\$ 2,943	\$ 4,940	\$ 5	\$ 7,888
Other investment receivables redeemed at NAV				\$ 100
Securities valued at NAV				4,504
Total net assets				\$ 12,492

(1) The investments of the U.S. pension and postretirement plans are commingled in one trust. At December 31, 2016, the allocable interests of the U.S. pension and postretirement plans were 99.0% and 1.0%, respectively.

<i>In millions of dollars</i>	U.S. pension and postretirement benefit plans ⁽¹⁾			
	Fair value measurement at December 31, 2015			
Asset categories	Level 1	Level 2	Level 3	Total
U.S. equities	\$ 694	\$ —	\$ —	\$ 694
Non-U.S. equities	816	—	—	816
Mutual funds	223	—	—	223
Commingled funds	—	915	—	915
Debt securities	1,172	2,761	—	3,933
Annuity contracts	—	—	27	27
Derivatives	6	521	—	527
Other investments	—	—	147	147
Total investments	\$ 2,911	\$ 4,197	\$ 174	\$ 7,282
Cash and short-term investments	\$ 138	\$ 1,064	\$ —	\$ 1,202
Other investment liabilities	(10)	(515)	—	(525)
Net investments at fair value	\$ 3,039	\$ 4,746	\$ 174	\$ 7,959
Other investment receivables redeemed at NAV				\$ 18
Securities valued at NAV				4,326
Total net assets				\$ 12,303

(1) The investments of the U.S. pension and postretirement plans are commingled in one trust. At December 31, 2015, the allocable interests of the U.S. pension and postretirement plans were 98.6% and 1.4%, respectively.

Non-U.S. pension and postretirement benefit plans

Fair value measurement at December 31, 2016

In millions of dollars

Asset categories	Level 1	Level 2	Level 3	Total
U.S. equities	\$ 4	\$ 11	\$ —	\$ 15
Non-U.S. equities	87	174	1	262
Mutual funds	2,345	406	—	2,751
Commingled funds	22	—	—	22
Debt securities	3,406	1,206	7	4,619
Real estate	—	3	1	4
Annuity contracts	—	1	36	37
Derivatives	—	43	—	43
Other investments	1	—	159	160
Total investments	\$ 5,865	\$ 1,844	\$ 204	\$ 7,913
Cash and short-term investments	\$ 116	\$ 2	\$ —	\$ 118
Other investment liabilities	(1)	(960)	—	(961)
Net investments at fair value	\$ 5,980	\$ 886	\$ 204	\$ 7,070
Securities valued at NAV				\$ 92
Total net assets				\$ 7,162

Non-U.S. pension and postretirement benefit plans

Fair value measurement at December 31, 2015

In millions of dollars

Asset categories	Level 1	Level 2	Level 3	Total
U.S. equities	\$ 5	\$ 11	\$ —	\$ 16
Non-U.S. equities	74	222	47	343
Mutual funds	2,935	—	—	2,935
Commingled funds	26	—	—	26
Debt securities	2,995	1,215	5	4,215
Real estate	—	3	1	4
Annuity contracts	—	1	41	42
Other investments	1	—	163	164
Total investments	\$ 6,036	\$ 1,452	\$ 257	\$ 7,745
Cash and short-term investments	\$ 73	\$ 2	\$ —	\$ 75
Other investment liabilities	—	(690)	—	(690)
Net investments at fair value	\$ 6,109	\$ 764	\$ 257	\$ 7,130
Securities valued at NAV				\$ 107
Total net assets				\$ 7,237

Level 3 Rollforward

The reconciliations of the beginning and ending balances during the year for Level 3 assets are as follows:

In millions of dollars

U.S. pension and postretirement benefit plans						
Asset categories	Beginning Level 3 fair value at Dec. 31, 2015	Realized gains (losses)	Unrealized gains (losses)	Purchases, sales, and issuances	Transfers in and/or out of Level 3	Ending Level 3 fair value at Dec. 31, 2016
Annuity contracts	\$ 27	\$ —	\$ (3)	\$ (21)	\$ —	\$ 3
Other investments	147	8	(10)	(143)	—	2
U.S. equities	—	(2)	2	—	—	—
Total investments	\$ 174	\$ 6	\$ (11)	\$ (164)	\$ —	\$ 5

In millions of dollars

U.S. pension and postretirement benefit plans						
Asset categories	Beginning Level 3 fair value at Dec. 31, 2014 ⁽¹⁾	Realized gains (losses)	Unrealized gains (losses)	Purchases, sales, and issuances	Transfers in and/or out of Level 3	Ending Level 3 fair value at Dec. 31, 2015
Annuity contracts	\$ 59	\$ —	\$ (4)	\$ (28)	\$ —	\$ 27
Other investments	161	(1)	(9)	(4)	—	147
Total investments	\$ 220	\$ (1)	\$ (13)	\$ (32)	\$ —	\$ 174

(1) Beginning balance was adjusted to exclude \$2,496 million of investments valued at NAV.

In millions of dollars

Non-U.S. pension and postretirement benefit plans					
Asset categories	Beginning Level 3 fair value at Dec. 31, 2015	Unrealized gains (losses)	Purchases, sales, and issuances	Transfers in and/or out of Level 3	Ending Level 3 fair value at Dec. 31, 2016
Non-U.S. equities	\$ 47	\$ (3)	\$ (2)	\$ (41)	\$ 1
Debt securities	5	—	2	—	7
Real estate	1	—	—	—	1
Annuity contracts	41	(4)	(1)	—	36
Other investments	163	4	(8)	—	159
Total investments	\$ 257	\$ (3)	\$ (9)	\$ (41)	\$ 204

In millions of dollars

Non-U.S. pension and postretirement benefit plans					
Asset categories	Beginning Level 3 fair value at Dec. 31, 2014 ⁽¹⁾	Unrealized gains (losses)	Purchases, sales, and issuances	Transfers in and/or out of Level 3	Ending Level 3 fair value at Dec. 31, 2015
Non-U.S. equities	\$ 48	\$ (1)	\$ —	\$ —	\$ 47
Debt securities	6	(1)	—	—	5
Real estate	—	—	—	1	1
Annuity contracts	32	2	4	3	41
Other investments	165	(2)	2	(2)	163
Total investments	\$ 251	\$ (2)	\$ 6	\$ 2	\$ 257

(1) Beginning balance was adjusted to exclude \$5 million of investments valued at NAV.

Investment Strategy

The Company's global pension and postretirement funds' investment strategy is to invest in a prudent manner for the exclusive purpose of providing benefits to participants. The investment strategies are targeted to produce a total return that, when combined with the Company's contributions to the funds, will maintain the funds' ability to meet all required benefit obligations. Risk is controlled through diversification of asset types and investments in domestic and international equities, fixed-income securities and cash and short-term investments. The target asset allocation in most locations outside the U.S. is primarily in equity and debt securities. These allocations may vary by geographic region and country depending on the nature of applicable obligations and various other regional considerations. The wide variation in the actual range of plan asset allocations for the funded non-U.S. plans is a result of differing local statutory requirements and economic conditions. For example, in certain countries local law requires that all pension plan assets must be invested in fixed-income investments, government funds, or local-country securities.

Significant Concentrations of Risk in Plan Assets

The assets of the Company's pension plans are diversified to limit the impact of any individual investment. The U.S. qualified pension plan is diversified across multiple asset classes, with publicly traded fixed income, hedge funds, publicly traded equity, and private equity representing the most significant asset allocations. Investments in these four asset classes are further diversified across funds, managers, strategies, vintages, sectors and geographies, depending on the specific characteristics of each asset class. The pension assets for the Company's non-U.S. Significant Plans are primarily invested in publicly traded fixed income and publicly traded equity securities.

Oversight and Risk Management Practices

The framework for the Company's pension oversight process includes monitoring of retirement plans by plan fiduciaries and/or management at the global, regional or country level, as appropriate. Independent Risk Management contributes to the risk oversight and monitoring for the Company's U.S. qualified pension plan and non-U.S. Significant Pension Plans. Although the specific components of the oversight process are tailored to the requirements of each region, country and plan, the following elements are common to the Company's monitoring and risk management process:

- periodic asset/liability management studies and strategic asset allocation reviews;
- periodic monitoring of funding levels and funding ratios;
- periodic monitoring of compliance with asset allocation guidelines;
- periodic monitoring of asset class and/or investment manager performance against benchmarks; and
- periodic risk capital analysis and stress testing.

Estimated Future Benefit Payments

The Company expects to pay the following estimated benefit payments in future years:

<i>In millions of dollars</i>	Pension plans		Postretirement benefit plans	
	U.S. plans	Non-U.S. plans	U.S. plans	Non-U.S. plans
2017	\$ 893	\$ 357	\$ 62	\$ 57
2018	798	337	60	61
2019	810	359	58	66
2020	838	388	56	71
2021	857	404	55	76
2022–2026	4,455	2,352	247	475

Prescription Drugs

In December 2003, the Medicare Prescription Drug Improvement and Modernization Act of 2003 (Act of 2003) was enacted. The Act of 2003 established a prescription drug benefit under Medicare known as “Medicare Part D,” and a federal subsidy to sponsors of U.S. retiree health care benefit plans that provide a benefit that is at least actuarially equivalent to Medicare Part D. The benefits provided to certain participants are at least actuarially equivalent to Medicare Part D and, accordingly, the Company is entitled to a subsidy.

The subsidy reduced the accumulated postretirement benefit obligation (APBO) by approximately \$5 million as of December 31, 2016 and 2015 and the postretirement expense by approximately \$0.2 million for 2016 and 2015.

The following table shows the estimated future benefit payments from the Medicare Part D subsidy of the U.S. postretirement plan.

<i>In millions of dollars</i>	Expected U.S. postretirement benefit payments		
	Before Medicare Part D subsidy	Medicare Part D subsidy	After Medicare Part D subsidy
2017	\$ 62	\$ —	\$ 62
2018	60	—	60
2019	58	—	58
2020	56	—	56
2021	55	—	55
2022–2026	248	1	247

Certain provisions of the Patient Protection and Affordable Care Act of 2010 improved the Medicare Part D option known as the Employer Group Waiver Plan (EGWP) with respect to the Medicare Part D subsidy. The EGWP provides prescription drug benefits that are more cost effective for Medicare-eligible participants and large employers. Effective April 1, 2013, the Company began sponsoring and implementing an EGWP for eligible retirees. The Company subsidy received under the EGWP for 2016 and 2015 was \$12.9 million and \$11.6 million, respectively.

The other provisions of the Act of 2010 are not expected to have a significant impact on Citigroup’s pension and postretirement plans.

Post Employment Plans

The Company sponsors U.S. post employment plans that provide income continuation and health and welfare benefits to certain eligible U.S. employees on long-term disability.

As of December 31, 2016 and 2015, the plans’ funded status recognized in the Company’s Consolidated Balance Sheet was \$(157) million and \$(183) million, respectively. The amounts recognized in *Accumulated other comprehensive income (loss)* as of December 31, 2016 and 2015 were \$34 million and \$45 million, respectively. Effective January 1, 2014, the Company made changes to its post employment plans that limit the period for which future disabled employees are eligible for continued Company-subsidized medical benefits.

The following table summarizes the components of net expense recognized in the Consolidated Statement of Income for the Company’s U.S. post employment plans.

<i>In millions of dollars</i>	Net expense		
	2016	2015	2014
Service related expense			
Interest cost on benefit obligation	\$ 3	\$ 4	\$ 5
Amortization of unrecognized			
Prior service (benefit) cost	(31)	(31)	(31)
Net actuarial loss	5	12	14
Total service related benefit	\$ (23)	\$ (15)	\$ (12)
Non-service related expense	\$ 21	\$ 3	\$ 37
Total net (benefit) expense	\$ (2)	\$ (12)	\$ 25

The following table summarizes certain assumptions used in determining the post employment benefit obligations and net benefit expense for the Company's U.S. post employment plans.

	2016	2015
Discount rate	3.40%	3.70%
Health care cost increase rate		
Following year	6.50%	7.00%
Ultimate rate to which cost increase is assumed to decline	5.00	5.00
Year in which the ultimate rate is reached	2023	2020

Defined Contribution Plans

The Company sponsors defined contribution plans in the U.S. and in certain non-U.S. locations, all of which are administered in accordance with local laws. The most significant defined contribution plan is the Citi Retirement Savings Plan (formerly known as the Citigroup 401(k) Plan) sponsored by the Company in the U.S.

Under the Citi Retirement Savings Plan, eligible U.S. employees received matching contributions of up to 6% of their eligible compensation for 2016 and 2015, subject to statutory limits. Additionally, for eligible employees whose eligible compensation is \$100,000 or less, a fixed contribution of up to 2% of eligible compensation is provided. All Company contributions are invested according to participants' individual elections. The following table summarizes the Company contributions for the defined contribution plans:

	U.S. plans		
<i>In millions of dollars</i>	2016	2015	2014
Company contributions	\$ 371	\$ 380	\$ 383

	Non U.S. plans		
<i>In millions of dollars</i>	2016	2015	2014
Company contributions	\$ 268	\$ 282	\$ 302

9. INCOME TAXES

Details of the Company's income tax provision are presented below:

Income Tax Provision

<i>In millions of dollars</i>	2016	2015	2014
Current			
Federal	\$ 1,016	\$ 861	\$ 181
Foreign	3,585	3,397	3,281
State	384	388	388
Total current income taxes	\$ 4,985	\$ 4,646	\$ 3,850
Deferred			
Federal	\$ 1,280	\$ 3,019	\$ 2,510
Foreign	53	(4)	361
State	126	(221)	476
Total deferred income taxes	\$ 1,459	\$ 2,794	\$ 3,347
Provision for income tax on continuing operations before non-controlling interests⁽¹⁾	\$ 6,444	\$ 7,440	\$ 7,197
Provision (benefit) for income taxes on discontinued operations	(22)	(29)	12
Income tax expense (benefit) reported in stockholders' equity related to:			
FX translation	(402)	(906)	65
Investment securities	59	(498)	1,007
Employee stock plans	13	(35)	(87)
Cash flow hedges	27	176	207
Benefit plans	(30)	(24)	(660)
FVO DVA	(201)	—	—
Retained earnings ⁽²⁾	—	—	(353)
Income taxes before non-controlling interests	\$ 5,888	\$ 6,124	\$ 7,388

(1) Includes the effect of securities transactions and other-than-temporary-impairment losses resulting in a provision (benefit) of \$332 million and \$(217) million in 2016, \$239 million and \$(93) million in 2015 and \$200 million and \$(148) million in 2014, respectively.

(2) See "Consolidated Statement of Changes in Stockholders' Equity" above.

Tax Rate

The reconciliation of the federal statutory income tax rate to the Company's effective income tax rate applicable to income from continuing operations (before non-controlling interests and the cumulative effect of accounting changes) for each of the periods indicated is as follows:

	2016	2015	2014
Federal statutory rate	35.0%	35.0%	35.0%
State income taxes, net of federal benefit	1.8	1.7	3.4
Foreign income tax rate differential	(3.6)	(4.6)	(0.3)
Audit settlements ⁽¹⁾	(0.6)	(1.7)	(2.4)
Effect of tax law changes ⁽²⁾	—	0.4	1.2
Nondeductible legal and related expenses	—	0.3	18.3
Basis difference in affiliates	(0.1)	—	(2.5)
Tax advantaged investments	(2.4)	(1.8)	(3.6)
Other, net	(0.1)	0.7	(0.1)
Effective income tax rate	30.0%	30.0%	49.0%

(1) For 2016, primarily relates to the conclusion of an IRS audit for 2012–2013. For 2015, primarily relates to the conclusion of a New York City tax audit for 2009–2011. For 2014, relates to the conclusion of the audit of various issues in the Company's 2009–2011 U.S. federal tax audit and the conclusion of a New York State tax audit for 2006–2008.

(2) For 2015, includes the results of tax reforms enacted in New York City and several states, which resulted in a DTA charge of approximately \$101 million. For 2014, includes the results of tax reforms enacted in New York State and South Dakota, which resulted in a DTA charge of approximately \$210 million.

As set forth in the table above, Citi's effective tax rate for 2016 was 30.0%, the same as the effective tax rate in 2015.

Deferred Income Taxes

Deferred income taxes at December 31 related to the following:

<i>In millions of dollars</i>	2016	2015
Deferred tax assets		
Credit loss deduction	\$ 5,146	\$ 6,058
Deferred compensation and employee benefits	3,798	4,110
Repositioning and settlement reserves	1,033	1,429
Unremitted foreign earnings	9,311	8,403
Investment and loan basis differences	4,829	3,248
Cash flow hedges	327	359
Tax credit and net operating loss carry-forwards	20,793	23,053
Fixed assets and leases	1,739	1,356
Other deferred tax assets	2,714	3,176
Gross deferred tax assets	\$49,690	\$51,192
Valuation allowance	—	—
Deferred tax assets after valuation allowance	\$49,690	\$51,192
Deferred tax liabilities		
Deferred policy acquisition costs and value of insurance in force	\$ (5)	\$ (327)
Intangibles	(1,711)	(1,146)
Debt issuances	(641)	(850)
Other deferred tax liabilities	(665)	(1,020)
Gross deferred tax liabilities	\$ (3,022)	\$ (3,343)
Net deferred tax assets	\$46,668	\$47,849

In millions of dollars

	2016		2015		2014	
	Pretax	Net of tax	Pretax	Net of tax	Pretax	Net of tax
Total interest and penalties in the Consolidated Balance Sheet at January 1	\$ 233	\$ 146	\$ 269	\$ 169	\$ 277	\$ 173
Total interest and penalties in the Consolidated Statement of Income	105	68	(29)	(18)	(1)	(1)
Total interest and penalties in the Consolidated Balance Sheet at December 31 ⁽¹⁾	260	164	233	146	269	169

(1) Includes \$3 million, \$3 million, and \$2 million for foreign penalties in 2016, 2015 and 2014, respectively. Also includes \$3 million for state penalties in 2016, 2015 and 2014.

As of December 31, 2016, Citi is under audit by the Internal Revenue Service and other major taxing jurisdictions around the world. It is thus reasonably possible that significant changes in the gross balance of unrecognized tax benefits may occur within the next 12 months, although Citi does not expect such audits to result in amounts that would cause a significant change to its effective tax rate, other than as discussed below.

Citi has concluded certain state and local tax audits. The gross uncertain tax positions at December 31, 2016 relating to such audits are \$78 million. The tax benefit to continuing operations is expected to be \$51 million in the first quarter of 2017.

Unrecognized Tax Benefits

The following is a rollforward of the Company's unrecognized tax benefits.

<i>In millions of dollars</i>	2016	2015	2014
Total unrecognized tax benefits at January 1	\$ 1,235	\$ 1,060	\$ 1,574
Net amount of increases for current year's tax positions	34	32	135
Gross amount of increases for prior years' tax positions	273	311	175
Gross amount of decreases for prior years' tax positions	(225)	(61)	(772)
Amounts of decreases relating to settlements	(174)	(45)	(28)
Reductions due to lapse of statutes of limitation	(21)	(22)	(30)
Foreign exchange, acquisitions and dispositions	(30)	(40)	6
Total unrecognized tax benefits at December 31	\$ 1,092	\$ 1,235	\$ 1,060

The total amounts of unrecognized tax benefits at December 31, 2016, 2015 and 2014 that, if recognized, would affect Citi's tax expense, are \$0.8 billion, \$0.9 billion and \$0.8 billion, respectively. The remaining uncertain tax positions have offsetting amounts in other jurisdictions or are temporary differences.

Interest and penalties (not included in "unrecognized tax benefits" above) are a component of the *Provision for income taxes*.

The following are the major tax jurisdictions in which the Company and its affiliates operate and the earliest tax year subject to examination:

Jurisdiction	Tax year
United States	2014
Mexico	2009
New York State and City	2006
United Kingdom	2014
India	2013
Singapore	2011
Hong Kong	2010
Ireland	2012

Foreign Earnings

Foreign pretax earnings approximated \$11.6 billion in 2016, \$11.3 billion in 2015 and \$10.1 billion in 2014. As a U.S. corporation, Citigroup and its U.S. subsidiaries are currently subject to U.S. taxation on all foreign pretax earnings of a foreign branch. Pretax earnings of a foreign subsidiary or affiliate are subject to U.S. taxation when effectively repatriated. The Company provides income taxes on the undistributed earnings of non-U.S. subsidiaries except to the extent that such earnings are indefinitely reinvested outside the United States.

At December 31, 2016, \$47.0 billion of accumulated undistributed earnings of non-U.S. subsidiaries was indefinitely invested. At the existing U.S. federal income tax rate, additional taxes (net of U.S. foreign tax credits) of \$13.1 billion would have to be provided if such earnings were remitted currently. The current year's effect on the income tax expense from continuing operations is included in the "Foreign income tax rate differential" line in the reconciliation of the federal statutory rate to the Company's effective income tax rate in the table above.

Income taxes are not provided for the Company's "savings bank base year bad debt reserves" that arose before 1988, because under current U.S. tax rules, such taxes will become payable only to the extent such amounts are distributed in excess of limits prescribed by federal law. At December 31, 2016, the amount of the base year reserves totaled approximately \$358 million (subject to a tax of \$125 million).

Deferred Tax Assets

As of December 31, 2016 and 2015, Citi had no valuation allowance on its DTAs. The following table summarizes Citi's DTAs.

In billions of dollars

Jurisdiction/component	DTAs balance December 31, 2016	DTAs balance December 31, 2015
U.S. federal⁽¹⁾		
Net operating losses (NOLs) ⁽²⁾	\$ 3.5	\$ 3.4
Foreign tax credits (FTCs) ⁽³⁾	14.2	15.9
General business credits (GBCs)	0.9	1.3
Future tax deductions and credits	21.9	20.7
Total U.S. federal	\$ 40.5	\$ 41.3
State and local		
New York NOLs	\$ 2.2	\$ 2.4
Other state NOLs	0.2	0.3
Future tax deductions	1.7	1.2
Total state and local	\$ 4.1	\$ 3.9
Foreign		
APB 23 subsidiary NOLs	\$ 0.1	\$ 0.2
Non-APB 23 subsidiary NOLs	0.4	0.4
Future tax deductions	1.6	2.0
Total foreign	\$ 2.1	\$ 2.6
Total	\$ 46.7	\$ 47.8

- (1) Included in the net U.S. federal DTAs of \$40.5 billion as of December 31, 2016 were deferred tax liabilities of \$2 billion that will reverse in the relevant carry-forward period and may be used to support the DTAs.
- (2) 2016 consists of non-consolidated tax return NOL carry-forwards that are eventually expected to be utilized in Citigroup's consolidated tax return. 2015 includes \$0.5 billion of non-consolidated NOL carry-forwards that were used in 2016 separately from Citigroup's consolidated tax return, and \$2.9 billion of non-consolidated tax return NOL carry-forwards that are eventually expected to be utilized in Citigroup's consolidated tax return.
- (3) Includes \$1.9 billion and \$1.7 billion for 2016 and 2015, respectively, of non-consolidated tax return FTC carry-forwards that are eventually expected to be utilized in Citigroup's consolidated tax return.

The following table summarizes the amounts of tax carry-forwards and their expiration dates:

In billions of dollars

Year of expiration	December 31, 2016	December 31, 2015
U.S. tax return foreign tax credit carry-forwards		
2018	\$ 2.7	\$ 4.8
2019	1.3	1.2
2020	3.1	3.1
2021	1.9	1.7
2022	3.3	3.4
2023 ⁽¹⁾	0.5	0.4
2025 ⁽¹⁾	1.4	1.3
Total U.S. tax return foreign tax credit carry-forwards	\$ 14.2	\$ 15.9
U.S. tax return general business credit carry-forwards		
2031	\$ —	\$ 0.2
2032	—	0.4
2033	0.3	0.3
2034	0.2	0.2
2035	0.2	0.2
2036	0.2	—
Total U.S. tax return general business credit carry-forwards	\$ 0.9	\$ 1.3
U.S. subsidiary separate federal NOL carry-forwards		
2027	\$ 0.2	\$ 0.2
2028	0.1	0.1
2030	0.3	0.3
2031	—	1.5
2033	1.7	1.7
2034	2.3	2.3
2035	3.2	3.6
2036	2.2	—
Total U.S. subsidiary separate federal NOL carry-forwards⁽²⁾	\$ 10.0	\$ 9.7
New York State NOL carry-forwards⁽²⁾		
2034	\$ 13.0	\$ 14.6
New York City NOL carry-forwards⁽²⁾		
2034	\$ 12.2	\$ 13.3
APB 23 subsidiary NOL carry-forwards		
Various	\$ 0.1	\$ 0.2

- (1) The \$1.9 billion in FTC carry-forwards that expire in 2023 and 2025 are in a non-consolidated tax return entity but are eventually expected to be utilized in Citigroup's consolidated tax return.
- (2) Pretax.

While Citi's net total DTAs decreased year-over-year, the time remaining for utilization has shortened, given the passage of time, particularly with respect to the foreign tax credit (FTC) component of the DTAs. Although realization is not assured, Citi believes that the realization of the recognized net DTAs of \$46.7 billion at December 31, 2016 is more-likely-than-not based upon expectations as to future taxable income in the jurisdictions in which the DTAs arise and available tax planning strategies (as defined in ASC 740, *Income Taxes*) that would be implemented, if necessary, to prevent a carry-forward from expiring.

Citi has concluded that it has the necessary positive evidence to support the full realization of its DTAs. Specifically, Citi forecasts sufficient U.S. taxable income in the carry-forward periods, exclusive of ASC 740 tax planning strategies. Citi's forecasted taxable income, which will continue to be subject to overall market and global economic conditions, incorporates geographic business forecasts and taxable income adjustments to those forecasts (e.g., U.S. tax-exempt income, loan loss reserves deductible for U.S. tax reporting in subsequent years), and actions intended to optimize its U.S. taxable earnings. In general, Citi would need to generate approximately \$57 billion of U.S. taxable income during the FTC carry-forward periods to prevent this most time-sensitive component of Citi's FTCs from expiring.

In addition to its forecasted U.S. taxable income, Citi has sufficient tax planning strategies available to it under ASC 740 that would be implemented, if necessary, to prevent a carry-forward from expiring. These strategies include repatriating low-taxed foreign source earnings for which an assertion that the earnings have been indefinitely reinvested has not been made, accelerating U.S. taxable income into, or deferring U.S. tax deductions out of, the latter years of the carry-forward period (e.g., selling appreciated assets, electing straight-line depreciation), accelerating deductible temporary differences outside the U.S., and selling certain assets that produce tax-exempt income, while purchasing assets that produce fully taxable income. In addition, the sale or restructuring of certain businesses can produce significant U.S. taxable income within the relevant carry-forward periods.

Based upon the foregoing discussion, Citi believes the U.S. federal and New York state and city NOL carry-forward period of 20 years provides enough time to fully utilize the DTAs pertaining to the existing NOL carry-forwards and any NOL that would be created by the reversal of the future net deductions that have not yet been taken on a tax return.

With respect to the FTCs component of the DTAs, the carry-forward period is 10 years. Utilization of FTCs in any year is restricted to 35% of foreign source taxable income in that year. However, overall domestic losses that Citi has incurred of approximately \$49 billion as of December 31, 2016 are allowed to be reclassified as foreign source income to the extent of 50% of domestic source income produced in subsequent years. Such resulting foreign source income would cover the FTCs being carried forward. As noted in the table above, Citi's FTC carry-forwards were \$14.2 billion as of December 31, 2016, compared to \$15.9 billion as of December 31, 2015. This decrease represented \$1.7 billion of

the \$1.2 billion decrease in Citi's overall DTAs during 2016, partially offset by an increase in AOCI related DTAs. Citi believes that it will generate sufficient U.S. taxable income within the 10-year carry-forward period to be able to fully utilize the FTCs, in addition to any FTCs produced in the tax return for such period, which must be used prior to any carry-forward utilization.

10. EARNINGS PER SHARE

The following table reconciles the income and share data used in the basic and diluted earnings per share (EPS) computations:

<i>In millions, except per-share amounts</i>	2016	2015	2014
Income from continuing operations before attribution of noncontrolling interests	\$ 15,033	\$ 17,386	\$ 7,504
Less: Noncontrolling interests from continuing operations	63	90	192
Net income from continuing operations (for EPS purposes)	\$ 14,970	\$ 17,296	\$ 7,312
Income (loss) from discontinued operations, net of taxes	(58)	(54)	(2)
Citigroup's net income	\$ 14,912	\$ 17,242	\$ 7,310
Less: Preferred dividends ⁽¹⁾	1,077	769	511
Net income available to common shareholders	\$ 13,835	\$ 16,473	\$ 6,799
Less: Dividends and undistributed earnings allocated to employee restricted and deferred shares with nonforfeitable rights to dividends, applicable to basic EPS	195	224	111
Net income allocated to common shareholders for basic EPS	\$ 13,640	\$ 16,249	\$ 6,688
Add: Interest expense, net of tax, and dividends on convertible securities and adjustment of undistributed earnings allocated to employee restricted and deferred shares with nonforfeitable rights to dividends, applicable to diluted EPS	—	—	1
Net income allocated to common shareholders for diluted EPS	\$ 13,640	\$ 16,249	\$ 6,689
Weighted-average common shares outstanding applicable to basic EPS	2,888.1	3,004.0	3,031.6
Effect of dilutive securities ⁽²⁾			
Options ⁽³⁾	0.1	3.6	5.1
Other employee plans	0.1	0.1	0.3
Adjusted weighted-average common shares outstanding applicable to diluted EPS⁽⁴⁾	2,888.3	3,007.7	3,037.0
Basic earnings per share⁽⁵⁾			
Income from continuing operations	\$ 4.74	\$ 5.43	\$ 2.21
Discontinued operations	(0.02)	(0.02)	—
Net income	\$ 4.72	\$ 5.41	\$ 2.21
Diluted earnings per share⁽⁵⁾			
Income from continuing operations	\$ 4.74	\$ 5.42	\$ 2.20
Discontinued operations	(0.02)	(0.02)	—
Net income	\$ 4.72	\$ 5.40	\$ 2.20

(1) See Note 20 to the Consolidated Financial Statements for the potential future impact of preferred stock dividends.

(2) Warrants issued to the U.S. Treasury as part of the Troubled Asset Relief Program (TARP) and the loss-sharing agreement (all of which were subsequently sold to the public in January 2011), with exercise prices of \$178.50 and \$105.83 per share for approximately 21.0 million and 25.5 million shares of Citigroup common stock, respectively. Both warrants were not included in the computation of earnings per share in 2016, 2015 and 2014 because they were anti-dilutive.

(3) During 2016, 2015 and 2014, weighted-average options to purchase 4.2 million, 0.9 million and 2.8 million shares of common stock, respectively, were outstanding but not included in the computation of earnings per share because the weighted-average exercise prices of \$98.01, \$199.16 and \$153.91 per share, respectively, were anti-dilutive.

(4) Due to rounding, common shares outstanding applicable to basic EPS and the effect of dilutive securities may not sum to common shares outstanding applicable to diluted EPS.

(5) Due to rounding, earnings per share on continuing operations and discontinued operations may not sum to earnings per share on net income.

11. FEDERAL FUNDS, SECURITIES BORROWED, LOANED AND SUBJECT TO REPURCHASE AGREEMENTS

Federal funds sold and securities borrowed or purchased under agreements to resell, at their respective carrying values, consisted of the following:

<i>In millions of dollars</i>	2016	2015
Federal funds sold	\$ —	\$ 25
Securities purchased under agreements to resell	131,473	119,777
Deposits paid for securities borrowed	105,340	99,873
Total⁽¹⁾	\$ 236,813	\$ 219,675

Federal funds purchased and securities loaned or sold under agreements to repurchase, at their respective carrying values, consisted of the following:

<i>In millions of dollars</i>	2016	2015
Federal funds purchased	\$ 178	\$ 189
Securities sold under agreements to repurchase	125,685	131,650
Deposits received for securities loaned	15,958	14,657
Total⁽¹⁾	\$ 141,821	\$ 146,496

- (1) The above tables do not include securities-for-securities lending transactions of \$9.3 billion and \$8.8 billion at December 31, 2016 and December 31, 2015, respectively, where the Company acts as lender and receives securities that can be sold or pledged as collateral. In these transactions, the Company recognizes the securities received at fair value within *Other assets* and the obligation to return those securities as a liability within *Brokerage payables*.

The resale and repurchase agreements represent collateralized financing transactions. Citi executes these transactions primarily through its broker-dealer subsidiaries to facilitate customer matched-book activity and to efficiently fund a portion of Citi's trading inventory. Transactions executed by Citi's bank subsidiaries primarily facilitate customer financing activity.

To maintain reliable funding under a wide range of market conditions, including under periods of stress, Citi manages these activities by taking into consideration the quality of the underlying collateral, and stipulating financing tenor. Citi manages the risks in its collateralized financing transactions by conducting daily stress tests to account for changes in capacity, tenors, haircut, collateral profile and client actions. Additionally, Citi maintains counterparty diversification by establishing concentration triggers and assessing counterparty reliability and stability under stress.

It is Citi's policy to take possession of the underlying collateral, monitor its market value relative to the amounts due under the agreements and, when necessary, require prompt transfer of additional collateral in order to maintain contractual margin protection. For resale and repurchase

agreements, when necessary, Citi posts additional collateral in order to maintain contractual margin protection.

Collateral typically consists of government and government-agency securities, corporate and municipal bonds, equities, and mortgage-backed and other asset-backed securities.

The resale and repurchase agreements are generally documented under industry standard agreements that allow the prompt close-out of all transactions (including the liquidation of securities held) and the offsetting of obligations to return cash or securities by the non-defaulting party, following a payment default or other type of default under the relevant master agreement. Events of default generally include (i) failure to deliver cash or securities as required under the transaction, (ii) failure to provide or return cash or securities as used for margining purposes, (iii) breach of representation, (iv) cross-default to another transaction entered into among the parties, or, in some cases, their affiliates, and (v) a repudiation of obligations under the agreement. The counterparty that receives the securities in these transactions is generally unrestricted in its use of the securities, with the exception of transactions executed on a tri-party basis, where the collateral is maintained by a custodian and operational limitations may restrict its use of the securities.

A substantial portion of the resale and repurchase agreements is recorded at fair value, as described in Notes 24 and 25 to the Consolidated Financial Statements. The remaining portion is carried at the amount of cash initially advanced or received, plus accrued interest, as specified in the respective agreements.

The securities borrowing and lending agreements also represent collateralized financing transactions similar to the resale and repurchase agreements. Collateral typically consists of government and government-agency securities and corporate debt and equity securities.

Similar to the resale and repurchase agreements, securities borrowing and lending agreements are generally documented under industry standard agreements that allow the prompt close-out of all transactions (including the liquidation of securities held) and the offsetting of obligations to return cash or securities by the non-defaulting party, following a payment default or other default by the other party under the relevant master agreement. Events of default and rights to use securities under the securities borrowing and lending agreements are similar to the resale and repurchase agreements referenced above.

A substantial portion of securities borrowing and lending agreements is recorded at the amount of cash advanced or received. The remaining portion is recorded at fair value as Citi elected the fair value option for certain securities borrowed and loaned portfolios, as described in Note 25 to the Consolidated Financial Statements. With respect to securities loaned, Citi receives cash collateral in an amount generally in excess of the market value of the securities loaned. Citi monitors the market value of securities borrowed and securities loaned on a daily basis and obtains or posts additional collateral in order to maintain contractual margin protection.

The enforceability of offsetting rights incorporated in the master netting agreements for resale and repurchase agreements and securities borrowing and lending agreements is evidenced to the extent that a supportive legal opinion has been obtained from counsel of recognized standing that provides the requisite level of certainty regarding the enforceability of these agreements. Also, the exercise of rights by the non-defaulting party to terminate and closeout transactions on a net basis under these agreements will not be stayed or avoided under applicable law upon an event of default including bankruptcy, insolvency or similar proceeding.

A legal opinion may not have been sought or obtained for certain jurisdictions where local law is silent or sufficiently ambiguous to determine the enforceability of offsetting rights or where adverse case law or conflicting regulation may cast doubt on the enforceability of such rights. In some

jurisdictions and for some counterparty types, the insolvency law for a particular counterparty type may be nonexistent or unclear as overlapping regimes may exist. For example, this may be the case for certain sovereigns, municipalities, central banks and U.S. pension plans.

The following tables present the gross and net resale and repurchase agreements and securities borrowing and lending agreements and the related offsetting amount permitted under ASC 210-20-45. The tables also include amounts related to financial instruments that are not permitted to be offset under ASC 210-20-45 but would be eligible for offsetting to the extent that an event of default occurred and a legal opinion supporting enforceability of the offsetting rights has been obtained. Remaining exposures continue to be secured by financial collateral, but Citi may not have sought or been able to obtain a legal opinion evidencing enforceability of the offsetting right.

As of December 31, 2016

<i>In millions of dollars</i>	Gross amounts of recognized assets	Gross amounts offset on the Consolidated Balance Sheet ⁽¹⁾	Net amounts of assets included on the Consolidated Balance Sheet ⁽²⁾	Amounts not offset on the Consolidated Balance Sheet but eligible for offsetting upon counterparty default ⁽³⁾	Net amounts ⁽⁴⁾
Securities purchased under agreements to resell	\$ 176,284	\$ 44,811	\$ 131,473	\$ 102,874	\$ 28,599
Deposits paid for securities borrowed	105,340	—	105,340	16,200	89,140
Total	\$ 281,624	\$ 44,811	\$ 236,813	\$ 119,074	\$ 117,739

<i>In millions of dollars</i>	Gross amounts of recognized liabilities	Gross amounts offset on the Consolidated Balance Sheet ⁽¹⁾	Net amounts of liabilities included on the Consolidated Balance Sheet ⁽²⁾	Amounts not offset on the Consolidated Balance Sheet but eligible for offsetting upon counterparty default ⁽³⁾	Net amounts ⁽⁴⁾
Securities sold under agreements to repurchase	\$ 170,496	\$ 44,811	\$ 125,685	\$ 63,517	\$ 62,168
Deposits received for securities loaned	15,958	—	15,958	3,529	12,429
Total	\$ 186,454	\$ 44,811	\$ 141,643	\$ 67,046	\$ 74,597

As of December 31, 2015

<i>In millions of dollars</i>	Gross amounts of recognized assets	Gross amounts offset on the Consolidated Balance Sheet ⁽¹⁾	Net amounts of assets included on the Consolidated Balance Sheet ⁽²⁾	Amounts not offset on the Consolidated Balance Sheet but eligible for offsetting upon counterparty default ⁽³⁾	Net amounts ⁽⁴⁾
Securities purchased under agreements to resell	\$ 176,167	\$ 56,390	\$ 119,777	\$ 92,039	\$ 27,738
Deposits paid for securities borrowed	99,873	—	99,873	16,619	83,254
Total	\$ 276,040	\$ 56,390	\$ 219,650	\$ 108,658	\$ 110,992

<i>In millions of dollars</i>	Gross amounts of recognized liabilities	Gross amounts offset on the Consolidated Balance Sheet ⁽¹⁾	Net amounts of liabilities included on the Consolidated Balance Sheet ⁽²⁾	Amounts not offset on the Consolidated Balance Sheet but eligible for offsetting upon counterparty default ⁽³⁾	Net amounts ⁽⁴⁾
Securities sold under agreements to repurchase	\$ 188,040	\$ 56,390	\$ 131,650	\$ 60,641	\$ 71,009
Deposits received for securities loaned	14,657	—	14,657	3,226	11,431
Total	\$ 202,697	\$ 56,390	\$ 146,307	\$ 63,867	\$ 82,440

- (1) Includes financial instruments subject to enforceable master netting agreements that are permitted to be offset under ASC 210-20-45.
(2) The total of this column for each period excludes Federal funds sold/purchased. See tables above.
(3) Includes financial instruments subject to enforceable master netting agreements that are not permitted to be offset under ASC 210-20-45 but would be eligible for offsetting to the extent that an event of default has occurred and a legal opinion supporting enforceability of the offsetting right has been obtained.
(4) Remaining exposures continue to be secured by financial collateral, but Citi may not have sought or been able to obtain a legal opinion evidencing enforceability of the offsetting right.

The following tables present the gross amount of liabilities associated with repurchase agreements and securities lending agreements, by remaining contractual maturity:

As of December 31, 2016

<i>In millions of dollars</i>	Open and overnight	Up to 30 days	31–90 days	Greater than 90 days	Total
Securities sold under agreements to repurchase	\$ 79,740	\$ 50,399	\$ 19,396	\$ 20,961	\$ 170,496
Deposits received for securities loaned	10,813	2,169	2,044	932	15,958
Total	\$ 90,553	\$ 52,568	\$ 21,440	\$ 21,893	\$ 186,454

As of December 31, 2015

<i>In millions of dollars</i>	Open and overnight	Up to 30 days	31–90 days	Greater than 90 days	Total
Securities sold under agreements to repurchase	\$ 89,732	\$ 54,336	\$ 21,541	\$ 22,431	\$ 188,040
Deposits received for securities loaned	9,096	1,823	2,324	1,414	14,657
Total	\$ 98,828	\$ 56,159	\$ 23,865	\$ 23,845	\$ 202,697

The following tables present the gross amount of liabilities associated with repurchase agreements and securities lending agreements, by class of underlying collateral:

As of December 31, 2016

<i>In millions of dollars</i>	Repurchase agreements	Securities lending agreements	Total
U.S. Treasury and federal agency securities	\$ 66,263	\$ —	\$ 66,263
State and municipal securities	334	—	334
Foreign government securities	52,988	1,390	54,378
Corporate bonds	17,164	630	17,794
Equity securities	12,206	13,913	26,119
Mortgage-backed securities	11,421	—	11,421
Asset-backed securities	5,428	—	5,428
Other	4,692	25	4,717
Total	\$ 170,496	\$ 15,958	\$ 186,454

As of December 31, 2015

<i>In millions of dollars</i>	Repurchase agreements	Securities lending agreements	Total
U.S. Treasury and federal agency securities	\$ 67,005	\$ —	\$ 67,005
State and municipal securities	403	—	403
Foreign government securities	66,633	789	67,422
Corporate bonds	15,355	1,085	16,440
Equity securities	10,297	12,484	22,781
Mortgage-backed securities	19,913	—	19,913
Asset-backed securities	4,572	—	4,572
Other	3,862	299	4,161
Total	\$ 188,040	\$ 14,657	\$ 202,697

12. BROKERAGE RECEIVABLES AND BROKERAGE PAYABLES

Citi has receivables and payables for financial instruments sold to and purchased from brokers, dealers and customers, which arise in the ordinary course of business. Citi is exposed to risk of loss from the inability of brokers, dealers or customers to pay for purchases or to deliver the financial instruments sold, in which case Citi would have to sell or purchase the financial instruments at prevailing market prices. Credit risk is reduced to the extent that an exchange or clearing organization acts as a counterparty to the transaction and replaces the broker, dealer or customer in question.

Citi seeks to protect itself from the risks associated with customer activities by requiring customers to maintain margin collateral in compliance with regulatory and internal guidelines. Margin levels are monitored daily, and customers deposit additional collateral as required. Where customers cannot meet collateral requirements, Citi may liquidate sufficient underlying financial instruments to bring the customer into compliance with the required margin level.

Exposure to credit risk is impacted by market volatility, which may impair the ability of clients to satisfy their obligations to Citi. Credit limits are established and closely monitored for customers and for brokers and dealers engaged in forwards, futures and other transactions deemed to be credit sensitive.

Brokerage receivables and Brokerage payables consisted of the following:

<i>In millions of dollars</i>	December 31,	
	2016	2015
Receivables from customers	\$ 10,374	\$ 10,435
Receivables from brokers, dealers, and clearing organizations	18,513	17,248
Total brokerage receivables⁽¹⁾	\$ 28,887	\$ 27,683
Payables to customers	\$ 37,237	\$ 35,653
Payables to brokers, dealers, and clearing organizations	19,915	18,069
Total brokerage payables⁽¹⁾	\$ 57,152	\$ 53,722

- (1) Includes brokerage receivables and payables recorded by Citi broker-dealer entities that are accounted for in accordance with the AICPA Accounting Guide for Brokers and Dealers in Securities as codified in ASC 940-320.

13. INVESTMENTS

Overview

The following table presents Citi's investments by category:

<i>In millions of dollars</i>	December 31,	
	2016	2015
Securities available-for-sale (AFS)	\$ 299,424	\$ 299,136
Debt securities held-to-maturity (HTM) ⁽¹⁾	45,667	36,215
Non-marketable equity securities carried at fair value ⁽²⁾	1,774	2,088
Non-marketable equity securities carried at cost ⁽³⁾	6,439	5,516
Total investments	\$ 353,304	\$ 342,955

(1) Carried at adjusted amortized cost basis, net of any credit-related impairment.

(2) Unrealized gains and losses for non-marketable equity securities carried at fair value are recognized in earnings.

(3) Primarily consists of shares issued by the Federal Reserve Bank, Federal Home Loan Banks, foreign central banks and various clearing houses of which Citigroup is a member.

The following table presents interest and dividend income on investments:

<i>In millions of dollars</i>	2016	2015	2014
Taxable interest	\$ 6,924	\$ 6,414	\$ 6,311
Interest exempt from U.S. federal income tax	483	215	439
Dividend income	175	388	445
Total interest and dividend income	\$ 7,582	\$ 7,017	\$ 7,195

The following table presents realized gains and losses on the sale of investments, which excludes losses from other-than-temporary impairment (OTTI):

<i>In millions of dollars</i>	2016	2015	2014
Gross realized investment gains	\$ 1,460	\$ 1,124	\$ 1,020
Gross realized investment losses	(512)	(442)	(450)
Net realized gains on sale of investments	\$ 948	\$ 682	\$ 570

The Company has sold certain debt securities that were classified as HTM. These sales were in response to significant deterioration in the creditworthiness of the issuers or securities or because the Company has collected a substantial portion (at least 85%) of the principal outstanding at acquisition of the security. In addition, certain other securities were reclassified to AFS investments in response to

significant credit deterioration. Because the Company generally intends to sell these reclassified securities, Citi recorded OTTI on the securities. The following table sets forth, for the periods indicated, the carrying value of HTM securities sold and reclassified to AFS, as well as the related gain (loss) or the OTTI losses recorded on these securities.

<i>In millions of dollars</i>	2016	2015	2014
Carrying value of HTM securities sold	\$ 49	\$ 392	\$ 8
Net realized gain (loss) on sale of HTM securities	14	10	—
Carrying value of securities reclassified to AFS	150	243	889
OTTI losses on securities reclassified to AFS	(6)	(15)	(25)

Securities Available-for-Sale

The amortized cost and fair value of AFS securities were as follows:

<i>In millions of dollars</i>	2016				2015			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Debt securities AFS								
Mortgage-backed securities ⁽¹⁾								
U.S. government-sponsored agency guaranteed	\$ 38,663	\$ 248	\$ 506	\$ 38,405	\$ 39,584	\$ 367	\$ 237	\$ 39,714
Prime	2	—	—	2	2	—	—	2
Alt-A	43	7	—	50	50	5	—	55
Non-U.S. residential	3,852	13	7	3,858	5,909	31	11	5,929
Commercial	357	2	1	358	573	2	4	571
Total mortgage-backed securities	\$ 42,917	\$ 270	\$ 514	\$ 42,673	\$ 46,118	\$ 405	\$ 252	\$ 46,271
U.S. Treasury and federal agency securities								
U.S. Treasury	\$ 113,606	\$ 629	\$ 452	\$ 113,783	\$ 113,096	\$ 254	\$ 515	\$ 112,835
Agency obligations	9,952	21	85	9,888	10,095	22	37	10,080
Total U.S. Treasury and federal agency securities	\$ 123,558	\$ 650	\$ 537	\$ 123,671	\$ 123,191	\$ 276	\$ 552	\$ 122,915
State and municipal	\$ 10,797	\$ 80	\$ 757	\$ 10,120	\$ 12,099	\$ 132	\$ 772	\$ 11,459
Foreign government	98,112	590	554	98,148	88,751	402	479	88,674
Corporate	17,195	105	176	17,124	19,492	129	291	19,330
Asset-backed securities ⁽¹⁾	6,810	6	22	6,794	9,261	5	92	9,174
Other debt securities	503	—	—	503	688	—	—	688
Total debt securities AFS	\$ 299,892	\$ 1,701	\$ 2,560	\$ 299,033	\$ 299,600	\$ 1,349	\$ 2,438	\$ 298,511
Marketable equity securities AFS	\$ 377	\$ 20	\$ 6	\$ 391	\$ 602	\$ 26	\$ 3	\$ 625
Total securities AFS	\$ 300,269	\$ 1,721	\$ 2,566	\$ 299,424	\$ 300,202	\$ 1,375	\$ 2,441	\$ 299,136

- (1) The Company invests in mortgage-backed and asset-backed securities. These securitizations are generally considered VIEs. The Company's maximum exposure to loss from these VIEs is equal to the carrying amount of the securities, which is reflected in the table above. For mortgage-backed and asset-backed securitizations in which the Company has other involvement, see Note 21 to the Consolidated Financial Statements.

At December 31, 2016, the amortized cost of approximately 4,319 investments in equity and fixed income securities exceeded their fair value by \$2,566 million. Of the \$2,566 million, the gross unrealized losses on equity securities were \$6 million. Of the remainder, \$1,392 million represented unrealized losses on fixed income investments that have been in a gross-unrealized-loss position for less than a year and, of these, 98% were rated investment grade; and \$1,168 million represented unrealized losses on fixed income investments that have been in a gross-unrealized-loss position for a year or more and, of these, 76% were rated investment grade. Of the \$1,168 million mentioned above, \$702 million represent state and municipal securities.

At December 31, 2016, the AFS mortgage-backed securities portfolio fair value balance of \$42,673 million consisted of \$38,405 million of government-sponsored agency securities, and \$4,268 million of privately sponsored securities, substantially all of which were backed by non-U.S. residential mortgages.

As discussed in more detail below, Citi conducts periodic reviews of all securities with unrealized losses to evaluate whether the impairment is other-than-temporary. For debt securities which Citi plans to sell or more-likely-than-not will be required to sell, the entire impairment is recognized in the Consolidated Statement of Income. For those securities that the Company does not intend to sell and is not likely to be required to sell, only the credit-related impairment is recognized in earnings and any non-credit-related impairment is recorded in AOCI.

The following table shows the fair value of AFS securities that have been in an unrealized loss position:

	Less than 12 months		12 months or longer		Total	
	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses
<i>In millions of dollars</i>						
December 31, 2016						
Securities AFS						
Mortgage-backed securities						
U.S. government-sponsored agency guaranteed	\$ 23,534	\$ 436	\$ 2,236	\$ 70	\$ 25,770	\$ 506
Prime	1	—	—	—	1	—
Non-U.S. residential	486	—	1,276	7	1,762	7
Commercial	75	1	58	—	133	1
Total mortgage-backed securities	\$ 24,096	\$ 437	\$ 3,570	\$ 77	\$ 27,666	\$ 514
U.S. Treasury and federal agency securities						
U.S. Treasury	\$ 44,342	\$ 445	\$ 1,335	\$ 7	\$ 45,677	\$ 452
Agency obligations	6,552	83	250	2	6,802	85
Total U.S. Treasury and federal agency securities	\$ 50,894	\$ 528	\$ 1,585	\$ 9	\$ 52,479	\$ 537
State and municipal	\$ 1,616	\$ 55	\$ 3,116	\$ 702	\$ 4,732	\$ 757
Foreign government	38,226	243	8,973	311	47,199	554
Corporate	7,011	129	1,877	47	8,888	176
Asset-backed securities	411	—	3,213	22	3,624	22
Other debt securities	5	—	—	—	5	—
Marketable equity securities AFS	19	2	24	4	43	6
Total securities AFS	\$ 122,278	\$ 1,394	\$ 22,358	\$ 1,172	\$ 144,636	\$ 2,566
December 31, 2015						
Securities AFS						
Mortgage-backed securities						
U.S. government-sponsored agency guaranteed	\$ 17,816	\$ 141	\$ 2,618	\$ 96	\$ 20,434	\$ 237
Prime	—	—	1	—	1	—
Non-U.S. residential	2,217	7	825	4	3,042	11
Commercial	291	3	55	1	346	4
Total mortgage-backed securities	\$ 20,324	\$ 151	\$ 3,499	\$ 101	\$ 23,823	\$ 252
U.S. Treasury and federal agency securities						
U.S. Treasury	\$ 59,384	\$ 505	\$ 1,204	\$ 10	\$ 60,588	\$ 515
Agency obligations	6,716	30	196	7	6,912	37
Total U.S. Treasury and federal agency securities	\$ 66,100	\$ 535	\$ 1,400	\$ 17	\$ 67,500	\$ 552
State and municipal	\$ 635	\$ 26	\$ 4,450	\$ 746	\$ 5,085	\$ 772
Foreign government	34,053	371	4,021	108	38,074	479
Corporate	7,024	190	1,919	101	8,943	291
Asset-backed securities	5,311	58	2,247	34	7,558	92
Other debt securities	27	—	—	—	27	—
Marketable equity securities AFS	132	3	1	—	133	3
Total securities AFS	\$ 133,606	\$ 1,334	\$ 17,537	\$ 1,107	\$ 151,143	\$ 2,441

The following table presents the amortized cost and fair value of AFS debt securities by contractual maturity dates:

<i>In millions of dollars</i>	December 31,			
	2016		2015	
	Amortized cost	Fair value	Amortized cost	Fair value
Mortgage-backed securities⁽¹⁾				
Due within 1 year	\$ 132	\$ 132	\$ 114	\$ 114
After 1 but within 5 years	736	738	1,408	1,411
After 5 but within 10 years	2,279	2,265	1,750	1,751
After 10 years ⁽²⁾	39,770	39,538	42,846	42,995
Total	\$ 42,917	\$ 42,673	\$ 46,118	\$ 46,271
U.S. Treasury and federal agency securities				
Due within 1 year	\$ 4,945	\$ 4,945	\$ 3,016	\$ 3,014
After 1 but within 5 years	101,369	101,323	107,034	106,878
After 5 but within 10 years	17,153	17,314	12,786	12,684
After 10 years ⁽²⁾	91	89	355	339
Total	\$ 123,558	\$ 123,671	\$ 123,191	\$ 122,915
State and municipal				
Due within 1 year	\$ 2,093	\$ 2,092	\$ 3,289	\$ 3,287
After 1 but within 5 years	2,668	2,662	1,781	1,781
After 5 but within 10 years	335	334	502	516
After 10 years ⁽²⁾	5,701	5,032	6,527	5,875
Total	\$ 10,797	\$ 10,120	\$ 12,099	\$ 11,459
Foreign government				
Due within 1 year	\$ 32,540	\$ 32,547	\$ 25,898	\$ 25,905
After 1 but within 5 years	51,008	50,881	43,514	43,464
After 5 but within 10 years	12,388	12,440	17,013	16,968
After 10 years ⁽²⁾	2,176	2,280	2,326	2,337
Total	\$ 98,112	\$ 98,148	\$ 88,751	\$ 88,674
All other⁽³⁾				
Due within 1 year	\$ 2,629	\$ 2,628	\$ 2,354	\$ 2,355
After 1 but within 5 years	12,339	12,334	14,035	14,054
After 5 but within 10 years	6,566	6,528	9,789	9,593
After 10 years ⁽²⁾	2,974	2,931	3,263	3,190
Total	\$ 24,508	\$ 24,421	\$ 29,441	\$ 29,192
Total debt securities AFS	\$ 299,892	\$ 299,033	\$ 299,600	\$ 298,511

(1) Includes mortgage-backed securities of U.S. government-sponsored agencies.

(2) Investments with no stated maturities are included as contractual maturities of greater than 10 years. Actual maturities may differ due to call or prepayment rights.

(3) Includes corporate, asset-backed and other debt securities.

Debt Securities Held-to-Maturity

The carrying value and fair value of debt securities HTM were as follows:

<i>In millions of dollars</i>	Amortized cost basis ⁽¹⁾	Net unrealized gains (losses) recognized in AOCI	Carrying value ⁽²⁾	Gross unrealized gains	Gross unrealized (losses)	Fair value
December 31, 2016						
Debt securities held-to-maturity						
Mortgage-backed securities⁽³⁾						
U.S. government agency guaranteed	\$ 22,462	\$ 33	\$ 22,495	\$ 47	\$ (186)	\$ 22,356
Prime	31	(7)	24	10	(1)	33
Alt-A	314	(27)	287	69	(1)	355
Subprime	—	—	—	—	—	—
Non-U.S. residential	1,871	(47)	1,824	49	—	1,873
Commercial	14	—	14	—	—	14
Total mortgage-backed securities	\$ 24,692	\$ (48)	\$ 24,644	\$ 175	\$ (188)	\$ 24,631
State and municipal	\$ 9,025	\$ (442)	\$ 8,583	\$ 129	\$ (238)	\$ 8,474
Foreign government	1,339	—	1,339	—	(26)	1,313
Asset-backed securities ⁽³⁾	11,107	(6)	11,101	41	(5)	11,137
Total debt securities held-to-maturity⁽⁴⁾	\$ 46,163	\$ (496)	\$ 45,667	\$ 345	\$ (457)	\$ 45,555
December 31, 2015						
Debt securities held-to-maturity						
Mortgage-backed securities⁽³⁾						
U.S. government agency guaranteed	\$ 17,648	\$ 138	\$ 17,786	\$ 71	\$ (100)	\$ 17,757
Prime	121	(78)	43	3	(1)	45
Alt-A	433	(1)	432	259	(162)	529
Subprime	2	—	2	13	—	15
Non-U.S. residential	1,330	(60)	1,270	37	—	1,307
Commercial	—	—	—	—	—	—
Total mortgage-backed securities	\$ 19,534	\$ (1)	\$ 19,533	\$ 383	\$ (263)	\$ 19,653
State and municipal	\$ 8,581	\$ (438)	\$ 8,143	\$ 245	\$ (87)	\$ 8,301
Foreign government	4,068	—	4,068	28	(3)	4,093
Asset-backed securities ⁽³⁾	4,485	(14)	4,471	34	(41)	4,464
Total debt securities held-to-maturity⁽⁴⁾	\$ 36,668	\$ (453)	\$ 36,215	\$ 690	\$ (394)	\$ 36,511

- (1) For securities transferred to HTM from *Trading account assets*, amortized cost basis is defined as the fair value of the securities at the date of transfer plus any accretion income and less any impairments recognized in earnings subsequent to transfer. For securities transferred to HTM from AFS, amortized cost is defined as the original purchase cost, adjusted for the cumulative accretion or amortization of any purchase discount or premium, plus or minus any cumulative fair value hedge adjustments, net of accretion or amortization, and less any other-than-temporary impairment recognized in earnings.
- (2) HTM securities are carried on the Consolidated Balance Sheet at amortized cost basis, plus or minus any unamortized unrealized gains and losses and fair value hedge adjustments recognized in AOCI prior to reclassifying the securities from AFS to HTM. Changes in the values of these securities are not reported in the financial statements, except for the amortization of any difference between the carrying value at the transfer date and par value of the securities, and the recognition of any non-credit fair value adjustments in AOCI in connection with the recognition of any credit impairment in earnings related to securities the Company continues to intend to hold until maturity.
- (3) The Company invests in mortgage-backed and asset-backed securities. These securitizations are generally considered VIEs. The Company's maximum exposure to loss from these VIEs is equal to the carrying amount of the securities, which is reflected in the table above. For mortgage-backed and asset-backed securitizations in which the Company has other involvement, see Note 21 to the Consolidated Financial Statements.

- (4) During the fourth quarter of 2016, securities with a total fair value of approximately \$5.8 billion were transferred from AFS to HTM, comprised of \$5 billion of U.S. government agency mortgage-backed securities and \$830 million of municipal securities. During the second quarter of 2015, securities with a total fair value of approximately \$7.1 billion were transferred from AFS to HTM, consisting of \$7.0 billion of U.S. government agency mortgage-backed securities and \$0.1 billion of obligations of U.S. states and municipalities. The transfer reflects the Company's intent to hold these securities to maturity or to issuer call, in part, in order to reduce the impact of price volatility on AOCI and certain capital measures under Basel III. While these securities were transferred to HTM at fair value as of the transfer date, no subsequent changes in value may be recorded, other than in connection with the recognition of any subsequent other-than-temporary impairment and the amortization of differences between the carrying values at the transfer date and the par values of each security as an adjustment of yield over the remaining contractual life of each security. Any net unrealized holding losses within AOCI related to the respective securities at the date of transfer, inclusive of any cumulative fair value hedge adjustments, will be amortized over the remaining contractual life of each security as an adjustment of yield in a manner consistent with the amortization of any premium or discount.

The Company has the positive intent and ability to hold these securities to maturity or, where applicable, the exercise of any issuer call options, absent any unforeseen significant changes in circumstances, including deterioration in credit or changes in regulatory capital requirements.

The net unrealized losses classified in AOCI primarily relate to debt securities previously classified as AFS that have been transferred to HTM, and include any cumulative fair

value hedge adjustments. The net unrealized loss amount also includes any non-credit-related changes in fair value of HTM securities that have suffered credit impairment recorded in earnings. The AOCI balance related to HTM securities is amortized over the remaining contractual life of the related securities as an adjustment of yield in a manner consistent with the accretion of any difference between the carrying value at the transfer date and par value of the same debt securities.

The table below shows the fair value of debt securities HTM that have been in an unrecognized loss position:

	Less than 12 months		12 months or longer		Total	
	Fair value	Gross unrecognized losses	Fair value	Gross unrecognized losses	Fair value	Gross unrecognized losses
<i>In millions of dollars</i>						
December 31, 2016						
Debt securities held-to-maturity						
Mortgage-backed securities	\$ 17	\$ —	\$ 17,176	\$ 188	\$ 17,193	\$ 188
State and municipal	2,200	58	1,210	180	3,410	238
Foreign government	1,313	26	—	—	1,313	26
Asset-backed securities	2	—	2,503	5	2,505	5
Total debt securities held-to-maturity	\$ 3,532	\$ 84	\$ 20,889	\$ 373	\$ 24,421	\$ 457
December 31, 2015						
Debt securities held-to-maturity						
Mortgage-backed securities	\$ 935	\$ 1	\$ 10,301	\$ 262	\$ 11,236	\$ 263
State and municipal	881	20	1,826	67	2,707	87
Foreign government	180	3	—	—	180	3
Asset-backed securities	132	13	3,232	28	3,364	41
Total debt securities held-to-maturity	\$ 2,128	\$ 37	\$ 15,359	\$ 357	\$ 17,487	\$ 394

Note: Excluded from the gross unrecognized losses presented in the above table are \$(496) million and \$(453) million of net unrealized losses recorded in AOCI as of December 31, 2016 and December 31, 2015, respectively, primarily related to the difference between the amortized cost and carrying value of HTM securities that were reclassified from AFS. Substantially all of these net unrecognized losses relate to securities that have been in a loss position for 12 months or longer at December 31, 2016 and December 31, 2015.

The following table presents the carrying value and fair value of HTM debt securities by contractual maturity dates:

<i>In millions of dollars</i>	December 31,			
	2016		2015	
	Carrying value	Fair value	Carrying value	Fair value
Mortgage-backed securities				
Due within 1 year	\$ —	\$ —	\$ —	\$ —
After 1 but within 5 years	760	766	172	172
After 5 but within 10 years	54	55	660	663
After 10 years ⁽¹⁾	23,830	23,810	18,701	18,818
Total	\$ 24,644	\$ 24,631	\$ 19,533	\$ 19,653
State and municipal				
Due within 1 year	\$ 406	\$ 406	\$ 309	\$ 305
After 1 but within 5 years	112	110	336	335
After 5 but within 10 years	363	367	262	270
After 10 years ⁽¹⁾	7,702	7,591	7,236	7,391
Total	\$ 8,583	\$ 8,474	\$ 8,143	\$ 8,301
Foreign government				
Due within 1 year	\$ 824	\$ 818	\$ —	\$ —
After 1 but within 5 years	515	495	4,068	4,093
After 5 but within 10 years	—	—	—	—
After 10 years ⁽¹⁾	—	—	—	—
Total	\$ 1,339	\$ 1,313	\$ 4,068	\$ 4,093
All other⁽²⁾				
Due within 1 year	\$ —	\$ —	\$ —	\$ —
After 1 but within 5 years	—	—	—	—
After 5 but within 10 years	513	514	—	—
After 10 years ⁽¹⁾	10,588	10,623	4,471	4,464
Total	\$ 11,101	\$ 11,137	\$ 4,471	\$ 4,464
Total debt securities held-to-maturity	\$ 45,667	\$ 45,555	\$ 36,215	\$ 36,511

(1) Investments with no stated maturities are included as contractual maturities of greater than 10 years. Actual maturities may differ due to call or prepayment rights.

(2) Includes corporate and asset-backed securities.

Evaluating Investments for Other-Than-Temporary Impairment

Overview

The Company conducts periodic reviews of all securities with unrealized losses to evaluate whether the impairment is other-than-temporary.

An unrealized loss exists when the current fair value of an individual security is less than its amortized cost basis. Unrealized losses that are determined to be temporary in nature are recorded, net of tax, in AOCI for AFS securities. Losses related to HTM securities generally are not recorded, as these investments are carried at adjusted amortized cost basis. However, for HTM securities with credit-related losses, the credit loss is recognized in earnings as OTTI and any difference between the cost basis adjusted for the OTTI and fair value is recognized in AOCI and amortized as an adjustment of yield over the remaining contractual life of the security. For securities transferred to HTM from *Trading account assets*, amortized cost is defined as the fair value of the securities at the date of transfer, plus any accretion income and less any impairment recognized in earnings subsequent to transfer. For securities transferred to HTM from AFS, amortized cost is defined as the original purchase cost, adjusted for the cumulative accretion or amortization of any purchase discount or premium, plus or minus any cumulative fair value hedge adjustments, net of accretion or amortization, and less any impairment recognized in earnings.

Regardless of the classification of the securities as AFS or HTM, the Company assesses each position with an unrealized loss for OTTI. Factors considered in determining whether a loss is temporary include:

- the length of time and the extent to which fair value has been below cost;
- the severity of the impairment;
- the cause of the impairment and the financial condition and near-term prospects of the issuer;
- activity in the market of the issuer that may indicate adverse credit conditions; and
- the Company's ability and intent to hold the investment for a period of time sufficient to allow for recovery of amortized cost basis.

The Company's review for impairment generally entails:

- identification and evaluation of impaired investments;
- analysis of individual investments that have fair values less than amortized cost, including consideration of the length of time the investment has been in an unrealized loss position and the expected recovery period;
- consideration of evidential matter, including an evaluation of factors or triggers that could cause individual investments to qualify as having other-than-temporary impairment and those that would not support other-than-temporary impairment; and
- documentation of the results of these analyses, as required under business policies.

Debt Securities

The entire difference between amortized cost basis and fair value is recognized in earnings as OTTI for impaired debt securities that the Company has an intent to sell or for which the Company believes it will more-likely-than-not be required to sell prior to recovery of the amortized cost basis. However, for those securities that the Company does not intend to sell and is not likely to be required to sell, only the credit-related impairment is recognized in earnings and any non-credit-related impairment is recorded in AOCI.

For debt securities, credit impairment exists where management does not expect to receive contractual principal and interest cash flows sufficient to recover the entire amortized cost basis of a security.

Equity Securities

For equity securities, management considers the various factors described above, including its intent and ability to hold the equity security for a period of time sufficient for recovery to cost or whether it is more-likely-than-not that the Company will be required to sell the security prior to recovery of its cost basis. Where management lacks that intent or ability, the security's decline in fair value is deemed to be other-than-temporary and is recorded in earnings. AFS equity securities deemed to be other-than-temporarily impaired are written down to fair value, with the full difference between fair value and cost recognized in earnings.

Management assesses equity method investments that have fair values that are less than their respective carrying values for OTTI. Fair value is measured as price multiplied by quantity if the investee has publicly listed securities. If the investee is not publicly listed, other methods are used (see Note 24 to the Consolidated Financial Statements).

For impaired equity method investments that Citi plans to sell prior to recovery of value or would likely be required to sell, with no expectation that the fair value will recover prior to the expected sale date, the full impairment is recognized in earnings as OTTI regardless of severity and duration. The measurement of the OTTI does not include partial projected recoveries subsequent to the balance sheet date.

For impaired equity method investments that management does not plan to sell and is not likely to be required to sell prior to recovery of value, the evaluation of whether an impairment is other-than-temporary is based on (i) whether and when an equity method investment will recover in value and (ii) whether the investor has the intent and ability to hold that investment for a period of time sufficient to recover the value. The determination of whether the impairment is considered other-than-temporary considers the following indicators, regardless of the time and extent of impairment:

- the cause of the impairment and the financial condition and near-term prospects of the issuer, including any specific events that may influence the operations of the issuer;
- the intent and ability to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value; and

- the length of time and extent to which fair value has been less than the carrying value.

The sections below describe the Company's process for identifying credit-related impairments for security types that have the most significant unrealized losses as of December 31, 2016.

Mortgage-Backed Securities

For U.S. mortgage-backed securities (and in particular for Alt-A and other mortgage-backed securities that have significant unrealized losses as a percentage of amortized cost), credit impairment is assessed using a cash flow model that estimates the principal and interest cash flows on the underlying mortgages using the security-specific collateral and transaction structure. The model distributes the estimated cash flows to the various tranches of securities, considering the transaction structure and any subordination and credit enhancements that exist in that structure. The cash flow model incorporates actual cash flows on the mortgage-backed securities through the current period and then estimates the remaining cash flows using a number of assumptions, including default rates, prepayment rates, recovery rates (on foreclosed properties) and loss severity rates (on non-agency mortgage-backed securities).

Management develops specific assumptions using market data, internal estimates and estimates published by rating agencies and other third-party sources. Default rates are projected by considering current underlying mortgage loan performance, generally assuming the default of (i) 10% of current loans, (ii) 25% of 30–59 day delinquent loans, (iii) 70% of 60–90 day delinquent loans and (iv) 100% of 91+ day delinquent loans. These estimates are extrapolated along a default timing curve to estimate the total lifetime pool default

rate. Other assumptions contemplate the actual collateral attributes, including geographic concentrations, rating actions and current market prices.

Cash flow projections are developed using different stress test scenarios. Management evaluates the results of those stress tests (including the severity of any cash shortfall indicated and the likelihood of the stress scenarios actually occurring based on the underlying pool's characteristics and performance) to assess whether management expects to recover the amortized cost basis of the security. If cash flow projections indicate that the Company does not expect to recover its amortized cost basis, the Company recognizes the estimated credit loss in earnings.

State and Municipal Securities

The process for identifying credit impairments in Citigroup's AFS and HTM state and municipal bonds is primarily based on a credit analysis that incorporates third-party credit ratings. Citigroup monitors the bond issuers and any insurers providing default protection in the form of financial guarantee insurance. The average external credit rating, ignoring any insurance, is Aa3/AA-. In the event of an external rating downgrade or other indicator of credit impairment (i.e., based on instrument-specific estimates of cash flows or probability of issuer default), the subject bond is specifically reviewed for adverse changes in the amount or timing of expected contractual principal and interest payments.

For state and municipal bonds with unrealized losses that Citigroup plans to sell (for AFS only), would be more-likely-than-not required to sell (for AFS only) or will be subject to an issuer call deemed probable of exercise prior to the expected recovery of its amortized cost basis (for AFS and HTM), the full impairment is recognized in earnings.

Recognition and Measurement of OTTI

The following tables present total OTTI recognized in earnings:

OTTI on Investments and Other Assets	Year ended December 31, 2016			
	AFS⁽¹⁾⁽²⁾	HTM	Other Assets⁽³⁾	Total
<i>In millions of dollars</i>				
Impairment losses related to securities that the Company does not intend to sell nor will likely be required to sell:				
Total OTTI losses recognized during the period	\$ 3	\$ 1	\$ —	\$ 4
Less: portion of impairment loss recognized in AOCI (before taxes)	—	—	—	—
Net impairment losses recognized in earnings for securities that the Company does not intend to sell nor will likely be required to sell	\$ 3	\$ 1	\$ —	\$ 4
Impairment losses recognized in earnings for securities that the Company intends to sell, would be more likely than not required to sell or will be subject to an issuer call deemed probable of exercise	246	38	332	616
Total impairment losses recognized in earnings	\$ 249	\$ 39	\$ 332	\$ 620

(1) Includes OTTI on non-marketable equity securities.

(2) Includes a \$160 million impairment related to AFS securities affected by changes in the Venezuela exchange rate during the year ended December 31, 2016.

(3) The impairment charge is related to the carrying value of an equity investment, which was sold in 2016.

OTTI on Investments and Other AssetsYear ended
December 31, 2015

<i>In millions of dollars</i>	AFS ⁽¹⁾	HTM	Other Assets	Total
Impairment losses related to securities that the Company does not intend to sell nor will likely be required to sell:				
Total OTTI losses recognized during the period	\$ 33	\$ 1	\$ —	\$ 34
Less: portion of impairment loss recognized in AOCI (before taxes)	—	—	—	—
Net impairment losses recognized in earnings for securities that the Company does not intend to sell nor will likely be required to sell	\$ 33	\$ 1	\$ —	\$ 34
Impairment losses recognized in earnings for securities that the Company intends to sell, would be more likely than not required to sell or will be subject to an issuer call deemed probable of exercise	182	43	6	231
Total impairment losses recognized in earnings	\$ 215	\$ 44	\$ 6	\$ 265

(1) Includes OTTI on non-marketable equity securities.

OTTI on Investments and Other AssetsYear ended
December 31, 2014

<i>In millions of dollars</i>	AFS ⁽¹⁾	HTM	Other Assets	Total
Impairment losses related to securities that the Company does not intend to sell nor will likely be required to sell:				
Total OTTI losses recognized during the period	\$ 21	\$ 5	\$ —	\$ 26
Less: portion of impairment loss recognized in AOCI (before taxes)	8	—	—	8
Net impairment losses recognized in earnings for securities that the Company does not intend to sell nor will likely be required to sell	\$ 13	\$ 5	\$ —	\$ 18
Impairment losses recognized in earnings for securities that the Company intends to sell or more-likely-than-not will be required to sell before recovery	380	26	—	406
Total impairment losses recognized in earnings	\$ 393	\$ 31	\$ —	\$ 424

(1) Includes OTTI on non-marketable equity securities.

The following are 12-month rollforwards of the credit-related impairments recognized in earnings for AFS and HTM debt securities held that the Company does not intend to sell nor likely will be required to sell:

Cumulative OTTI credit losses recognized in earnings on securities still held					
<i>In millions of dollars</i>	Dec. 31, 2015 balance	Credit impairments recognized in earnings on securities not previously impaired	Credit impairments recognized in earnings on securities that have been previously impaired	Reductions due to credit-impaired securities sold, transferred or matured	Dec. 31, 2016 balance
AFS debt securities					
Mortgage-backed securities	\$ —	\$ 1	\$ —	\$ (1)	\$ —
State and municipal	12	—	—	(8)	4
Foreign government securities	5	—	—	(5)	—
Corporate	9	1	1	(6)	5
All other debt securities	47	—	—	(25)	22
Total OTTI credit losses recognized for AFS debt securities	\$ 73	\$ 2	\$ 1	\$ (45)	\$ 31
HTM debt securities					
Mortgage-backed securities ⁽¹⁾	\$ 132	\$ —	\$ —	\$ (31)	\$ 101
Corporate	—	1	—	(1)	—
All other debt securities	4	—	—	(1)	3
Total OTTI credit losses recognized for HTM debt securities	\$ 136	\$ 1	\$ —	\$ (33)	\$ 104

(1) Primarily consists of Alt-A securities.

Cumulative OTTI credit losses recognized in earnings on securities still held					
<i>In millions of dollars</i>	Dec. 31, 2014 balance	Credit impairments recognized in earnings on securities not previously impaired	Credit impairments recognized in earnings on securities that have been previously impaired	Reductions due to credit-impaired securities sold, transferred or matured	Dec. 31, 2015 balance
AFS debt securities					
Mortgage-backed securities	\$ 1	\$ —	\$ —	\$ (1)	\$ —
State and municipal	4	8	—	—	12
Foreign government securities	6	—	—	(1)	5
Corporate	15	2	—	(8)	9
All other debt securities	48	23	—	(24)	47
Total OTTI credit losses recognized for AFS debt securities	\$ 74	\$ 33	\$ —	\$ (34)	\$ 73
HTM debt securities					
Mortgage-backed securities ⁽¹⁾	\$ 246	\$ 1	\$ —	\$ (115)	\$ 132
Corporate	—	—	—	—	—
All other debt securities	5	—	—	(1)	4
Total OTTI credit losses recognized for HTM debt securities	\$ 251	\$ 1	\$ —	\$ (116)	\$ 136

(1) Primarily consists of Alt-A securities.

Investments in Alternative Investment Funds That Calculate Net Asset Value

The Company holds investments in certain alternative investment funds that calculate net asset value (NAV) or its equivalent, including hedge funds, private equity funds, funds of funds and real estate funds, as provided by third-party asset managers. Investments in such funds are generally classified as non-marketable equity securities carried at fair value. The fair values of these investments are estimated using the NAV of the Company's ownership interest in the funds. Some of these investments are in "covered funds" for purposes of the Volcker Rule, which prohibits certain proprietary investment activities and limits the ownership of, and relationships with, covered funds. The deadline for compliance with the Volcker Rule is July 21, 2017, by which date Citi is required to sell those of its investments in covered funds prohibited by the rule. Citi has submitted an application to request an extension of the permitted holding period for certain of its investments in illiquid funds subject to the Volcker Rule. If an extension is not granted and such investments need to be divested, the Company may receive value that is lower than the reported NAV for these investments.

	Fair value		Unfunded commitments		Redemption frequency (if currently eligible) monthly, quarterly, annually	Redemption notice period
	December 31, 2016	December 31, 2015	December 31, 2016	December 31, 2015		
<i>In millions of dollars</i>						
Hedge funds	\$ 4	\$ 3	\$ —	\$ —	Generally quarterly	10–95 days
Private equity funds ⁽¹⁾⁽²⁾	348	762	82	173	—	—
Real estate funds ⁽²⁾⁽³⁾	56	130	20	21	—	—
Total	\$ 408	\$ 895	\$ 102	\$ 194	—	—

(1) Private equity funds include funds that invest in infrastructure, emerging markets and venture capital.

(2) With respect to the Company's investments in private equity funds and real estate funds, distributions from each fund will be received as the underlying assets held by these funds are liquidated. It is estimated that the underlying assets of these funds will be liquidated over a period of several years as market conditions allow. Private equity and real estate funds do not allow redemption of investments by their investors. Investors are permitted to sell or transfer their investments, subject to the approval of the general partner or investment manager of these funds, which generally may not be unreasonably withheld.

(3) Includes several real estate funds that invest primarily in commercial real estate in the U.S., Europe and Asia.

14. LOANS

Citigroup loans are reported in two categories—consumer and corporate. These categories are classified primarily according to the segment and subsegment that manage the loans.

Consumer Loans

Consumer loans represent loans and leases managed primarily by *GCB* in Citicorp and in Citi Holdings. The following table provides Citi's consumer loans by loan type:

<i>In millions of dollars</i>	December 31,	
	2016	2015
In U.S. offices		
Mortgage and real estate ⁽¹⁾	\$ 72,957	\$ 80,281
Installment, revolving credit and other	3,395	3,480
Cards ⁽²⁾	132,654	112,800
Commercial and industrial	7,159	6,407
	\$ 216,165	\$ 202,968
In offices outside the U.S.		
Mortgage and real estate ⁽¹⁾	\$ 42,803	\$ 47,062
Installment, revolving credit and other	24,887	29,480
Cards	23,783	27,342
Commercial and industrial	16,871	17,741
Lease financing	81	362
	\$ 108,425	\$ 121,987
Total consumer loans	\$ 324,590	\$ 324,955
Net unearned income	\$ 776	\$ 830
Consumer loans, net of unearned income	\$ 325,366	\$ 325,785

(1) Loans secured primarily by real estate.

(2) December 31, 2016 balance includes loans related to the acquisition of the Costco U.S. co-branded credit card portfolio, completed on June 17, 2016.

Citigroup has established a risk management process to monitor, evaluate and manage the principal risks associated with its consumer loan portfolio. Credit quality indicators that are actively monitored include delinquency status, consumer credit scores (FICO) and loan to value (LTV) ratios, each as discussed in more detail below.

Included in the loan table above are lending products whose terms may give rise to greater credit issues. Credit cards with below-market introductory interest rates and interest-only loans are examples of such products. These products are closely managed using credit techniques that are intended to mitigate their higher inherent risk.

During the years ended December 31, 2016 and 2015, the Company sold and/or reclassified to held-for-sale, \$9.7 billion and \$25.8 billion, respectively, of consumer loans.

Delinquency Status

Delinquency status is monitored and considered a key indicator of credit quality of consumer loans. Principally, the U.S. residential first mortgage loans use the Mortgage Bankers Association (MBA) method of reporting delinquencies, which considers a loan delinquent if a monthly payment has not been received by the end of the day immediately preceding the loan's next due date. All other loans use a method of reporting delinquencies that considers a loan delinquent if a monthly payment has not been received by the close of business on the loan's next due date.

As a general policy, residential first mortgages, home equity loans and installment loans are classified as non-accrual when loan payments are 90 days contractually past due. Credit cards and unsecured revolving loans generally accrue interest until payments are 180 days past due. Home equity loans in regulated bank entities are classified as non-accrual if the related residential first mortgage is 90 days or more past due. Mortgage loans in regulated bank entities discharged through Chapter 7 bankruptcy, other than Federal Housing Administration (FHA)-insured loans, are classified as non-accrual. Commercial market loans are placed on a cash (non-accrual) basis when it is determined, based on actual experience and a forward-looking assessment of the collectability of the loan in full, that the payment of interest or principal is doubtful or when interest or principal is 90 days past due.

The policy for re-aging modified U.S. consumer loans to current status varies by product. Generally, one of the conditions to qualify for these modifications is that a minimum number of payments (typically ranging from one to three) be made. Upon modification, the loan is re-aged to current status. However, re-aging practices for certain open-ended consumer loans, such as credit cards, are governed by Federal Financial Institutions Examination Council (FFIEC) guidelines. For open-ended consumer loans subject to FFIEC guidelines, one of the conditions for a loan to be re-aged to current status is that at least three consecutive minimum monthly payments, or the equivalent amount, must be received. In addition, under FFIEC guidelines, the number of times that such a loan can be re-aged is subject to limitations (generally once in 12 months and twice in five years). Furthermore, FHA and Department of Veterans Affairs (VA) loans are modified under those respective agencies' guidelines and payments are not always required in order to re-age a modified loan to current.

Consumer Loan Delinquency and Non-Accrual Details at December 31, 2016

<i>In millions of dollars</i>	Total current ⁽¹⁾⁽²⁾	30–89 days past due ⁽³⁾	≥ 90 days past due ⁽³⁾	Past due government guaranteed ⁽⁴⁾	Total loans ⁽²⁾	Total non- accrual	90 days past due and accruing
In North America offices							
Residential first mortgages ⁽⁵⁾	\$ 50,766	\$ 522	\$ 371	\$ 1,474	\$ 53,133	\$ 1,046	\$ 1,227
Home equity loans ⁽⁶⁾⁽⁷⁾	18,767	249	438	—	19,454	716	—
Credit cards	130,327	1,465	1,509	—	133,301	—	1,509
Installment and other	4,486	106	38	—	4,630	70	2
Commercial market loans	8,876	23	74	—	8,973	328	14
Total	\$ 213,222	\$ 2,365	\$ 2,430	\$ 1,474	\$ 219,491	\$ 2,160	\$ 2,752
In offices outside North America							
Residential first mortgages ⁽⁵⁾	\$ 35,873	\$ 206	\$ 135	\$ —	\$ 36,214	\$ 360	\$ —
Credit cards	22,358	370	327	—	23,055	259	239
Installment and other	22,638	295	128	—	23,061	231	—
Commercial market loans	23,391	41	110	—	23,542	148	—
Total	\$ 104,260	\$ 912	\$ 700	\$ —	\$ 105,872	\$ 998	\$ 239
Total <i>GCB</i> and Citi Holdings consumer	\$ 317,482	\$ 3,277	\$ 3,130	\$ 1,474	\$ 325,363	\$ 3,158	\$ 2,991
Other⁽⁸⁾	3	—	—	—	3	—	—
Total Citigroup	\$ 317,485	\$ 3,277	\$ 3,130	\$ 1,474	\$ 325,366	\$ 3,158	\$ 2,991

(1) Loans less than 30 days past due are presented as current.

(2) Includes \$29 million of residential first mortgages recorded at fair value.

(3) Excludes loans guaranteed by U.S. government-sponsored entities.

(4) Consists of residential first mortgages that are guaranteed by U.S. government-sponsored entities that are 30–89 days past due of \$0.2 billion and 90 days or more past due of \$1.3 billion.

(5) Includes approximately \$0.1 billion of residential first mortgage loans in process of foreclosure.

(6) Includes approximately \$0.1 billion of home equity loans in process of foreclosure.

(7) Fixed-rate home equity loans and loans extended under home equity lines of credit, which are typically in junior lien positions.

(8) Represents loans classified as consumer loans on the Consolidated Balance Sheet that are not included in the Citi Holdings consumer credit metrics.

Consumer Loan Delinquency and Non-Accrual Details at December 31, 2015

<i>In millions of dollars</i>	Total current ⁽¹⁾⁽²⁾	30–89 days past due ⁽³⁾	≥ 90 days past due ⁽³⁾	Past due government guaranteed ⁽⁴⁾	Total loans ⁽²⁾	Total non-accrual	90 days past due and accruing
In North America offices							
Residential first mortgages ⁽⁵⁾	\$ 53,146	\$ 846	\$ 564	\$ 2,318	\$ 56,874	\$ 1,216	\$ 1,997
Home equity loans ⁽⁶⁾⁽⁷⁾	22,335	136	277	—	22,748	1,017	—
Credit cards	110,814	1,296	1,243	—	113,353	—	1,243
Installment and other	4,576	80	33	—	4,689	56	2
Commercial market loans	8,241	16	61	—	8,318	222	17
Total	\$ 199,112	\$ 2,374	\$ 2,178	\$ 2,318	\$ 205,982	\$ 2,511	\$ 3,259
In offices outside North America							
Residential first mortgages ⁽⁸⁾	\$ 39,551	\$ 240	\$ 175	\$ —	\$ 39,966	\$ 388	\$ —
Credit cards	25,698	477	442	—	26,617	261	278
Installment and other	27,664	317	220	—	28,201	226	—
Commercial market loans	24,764	46	31	—	24,841	247	—
Total	\$ 117,677	\$ 1,080	\$ 868	\$ —	\$ 119,625	\$ 1,122	\$ 278
Total <i>GCB</i> and Citi Holdings	\$ 316,789	\$ 3,454	\$ 3,046	\$ 2,318	\$ 325,607	\$ 3,633	\$ 3,537
Other⁽⁹⁾	164	7	7	—	178	25	—
Total Citigroup	\$ 316,953	\$ 3,461	\$ 3,053	\$ 2,318	\$ 325,785	\$ 3,658	\$ 3,537

- (1) Loans less than 30 days past due are presented as current.
- (2) Includes \$34 million of residential first mortgages recorded at fair value.
- (3) Excludes loans guaranteed by U.S. government-sponsored entities.
- (4) Consists of residential first mortgages that are guaranteed by U.S. government-sponsored entities that are 30–89 days past due of \$0.3 billion and 90 days or more past due of \$2.0 billion.
- (5) Includes approximately \$0.2 billion of residential first mortgage loans in process of foreclosure.
- (6) Includes approximately \$0.1 billion of home equity loans in process of foreclosure.
- (7) Fixed-rate home equity loans and loans extended under home equity lines of credit, which are typically in junior lien positions.
- (8) Includes approximately \$0.1 billion of residential first mortgage loans in process of foreclosure.
- (9) Represents loans classified as consumer loans on the Consolidated Balance Sheet that are not included in the Citi Holdings consumer credit metrics.

Consumer Credit Scores (FICO)

In the U.S., independent credit agencies rate an individual's risk for assuming debt based on the individual's credit history and assign every consumer a "FICO" (Fair Isaac Corporation) credit score. These scores are continually updated by the agencies based upon an individual's credit actions (e.g., taking out a loan or missed or late payments).

The following tables provide details on the FICO scores for Citi's U.S. consumer loan portfolio (commercial market loans are excluded in the table since they are business based and FICO scores are not a primary driver in their credit evaluation). FICO scores are updated monthly for substantially all of the portfolio or, otherwise, on a quarterly basis for the remaining portfolio.

<i>In millions of dollars</i>	FICO score distribution in U.S. portfolio ⁽¹⁾⁽²⁾		
	December 31, 2016		
	Less than 620	≥ 620 but less than 660	Equal to or greater than 660
Residential first mortgages	\$ 2,744	\$ 2,422	\$ 44,279
Home equity loans	1,750	1,418	14,743
Credit cards	8,310	11,320	110,522
Installment and other	284	271	2,601
Total	\$ 13,088	\$ 15,431	\$ 172,145

Impaired Consumer Loans

Impaired loans are those loans where Citi believes it is probable all amounts due according to the original contractual terms of the loan will not be collected. Impaired consumer loans include non-accrual commercial market loans, as well as smaller-balance homogeneous loans whose terms have been modified due to the borrower's financial difficulties and where Citi has granted a concession to the borrower. These modifications may include interest rate reductions and/or principal forgiveness. Impaired consumer loans exclude smaller-balance homogeneous loans that have not been modified and are carried on a non-accrual basis.

FICO score distribution in U.S. portfolio ⁽¹⁾⁽²⁾	December 31, 2015		
	Less than 620	≥ 620 but less than 660	Equal to or greater than 660
<i>In millions of dollars</i>			
Residential first mortgages	\$ 3,483	\$ 3,036	\$ 45,047
Home equity loans	2,067	1,782	17,837
Credit cards	7,341	10,072	93,194
Installment and other	337	270	2,662
Total	\$ 13,228	\$ 15,160	\$ 158,740

- (1) Excludes loans guaranteed by U.S. government entities, loans subject to long-term standby commitments (LTSCs) with U.S. government-sponsored entities and loans recorded at fair value.
- (2) Excludes balances where FICO was not available. Such amounts are not material.

Loan to Value (LTV) Ratios

LTV ratios (loan balance divided by appraised value) are calculated at origination and updated by applying market price data.

The following tables provide details on the LTV ratios for Citi's U.S. consumer mortgage portfolios. LTV ratios are updated monthly using the most recent Core Logic Home Price Index data available for substantially all of the portfolio applied at the Metropolitan Statistical Area level, if available, or the state level if not. The remainder of the portfolio is updated in a similar manner using the Federal Housing Finance Agency indices.

LTV distribution in U.S. portfolio ⁽¹⁾⁽²⁾	December 31, 2016		
	Less than or equal to 80%	> 80% but less than or equal to 100%	Greater than 100%
<i>In millions of dollars</i>			
Residential first mortgages	\$ 45,849	\$ 3,467	\$ 324
Home equity loans	12,869	3,653	1,305
Total	\$ 58,718	\$ 7,120	\$ 1,629

LTV distribution in U.S. portfolio ⁽¹⁾⁽²⁾	December 31, 2015		
	Less than or equal to 80%	> 80% but less than or equal to 100%	Greater than 100%
<i>In millions of dollars</i>			
Residential first mortgages	\$ 46,559	\$ 4,478	\$ 626
Home equity loans	13,904	5,147	2,527
Total	\$ 60,463	\$ 9,625	\$ 3,153

- (1) Excludes loans guaranteed by U.S. government entities, loans subject to LTSCs with U.S. government-sponsored entities and loans recorded at fair value.
- (2) Excludes balances where LTV was not available. Such amounts are not material.

The following tables present information about impaired consumer loans and interest income recognized on impaired consumer loans:

<i>In millions of dollars</i>	At and for the year ended December 31, 2016				
	Recorded investment ⁽¹⁾⁽²⁾	Unpaid principal balance	Related specific allowance ⁽³⁾	Average carrying value ⁽⁴⁾	Interest income recognized ⁽⁵⁾
Mortgage and real estate					
Residential first mortgages	\$ 3,786	\$ 4,157	\$ 540	\$ 4,632	\$ 170
Home equity loans	1,298	1,824	189	1,326	35
Credit cards	1,747	1,781	566	1,831	158
Installment and other					
Individual installment and other	455	481	215	475	27
Commercial market loans	513	744	98	538	12
Total	\$ 7,799	\$ 8,987	\$ 1,608	\$ 8,802	\$ 402

- (1) Recorded investment in a loan includes net deferred loan fees and costs, unamortized premium or discount and direct write-downs and includes accrued interest only on credit card loans.
- (2) \$740 million of residential first mortgages, \$406 million of home equity loans and \$97 million of commercial market loans do not have a specific allowance.
- (3) Included in the *Allowance for loan losses*.
- (4) Average carrying value represents the average recorded investment ending balance for the last four quarters and does not include the related specific allowance.
- (5) Includes amounts recognized on both an accrual and cash basis.

<i>In millions of dollars</i>	At and for the year ended December 31, 2015				
	Recorded investment ⁽¹⁾⁽²⁾	Unpaid principal balance	Related specific allowance ⁽³⁾	Average carrying value ⁽⁴⁾	Interest income recognized ⁽⁵⁾⁽⁶⁾
Mortgage and real estate					
Residential first mortgages	\$ 6,038	\$ 6,610	\$ 739	\$ 8,932	\$ 439
Home equity loans	1,399	1,972	406	1,778	64
Credit cards	1,950	1,986	604	2,079	179
Installment and other					
Individual installment and other	464	519	197	449	33
Commercial market loans	341	572	100	361	13
Total	\$ 10,192	\$ 11,659	\$ 2,046	\$ 13,599	\$ 728

- (1) Recorded investment in a loan includes net deferred loan fees and costs, unamortized premium or discount and direct write-downs and includes accrued interest only on credit card loans.
- (2) \$1,151 million of residential first mortgages, \$459 million of home equity loans and \$86 million of commercial market loans do not have a specific allowance.
- (3) Included in the *Allowance for loan losses*.
- (4) Average carrying value represents the average recorded investment ending balance for the last four quarters and does not include the related specific allowance.
- (5) Includes amounts recognized on both an accrual and cash basis.
- (6) Interest income recognized for the year ended December 31, 2014 was \$1,106 million.

Consumer Troubled Debt Restructurings

At and for the year ended December 31, 2016

<i>In millions of dollars except number of loans modified</i>	Number of loans modified	Post-modification recorded investment ⁽¹⁾⁽²⁾	Deferred principal ⁽³⁾	Contingent principal forgiveness ⁽⁴⁾	Principal forgiveness ⁽⁵⁾	Average interest rate reduction
North America						
Residential first mortgages	5,023	\$ 726	\$ 6	\$ —	\$ 3	1%
Home equity loans	4,100	200	6	—	1	2
Credit cards	196,004	762	—	—	—	17
Installment and other revolving	5,649	47	—	—	—	14
Commercial markets ⁽⁶⁾	132	91	—	—	—	—
Total⁽⁸⁾	210,908	\$ 1,826	\$ 12	\$ —	\$ 4	
International						
Residential first mortgages	2,722	\$ 80	\$ —	\$ —	\$ —	—%
Credit cards	137,466	385	—	—	9	12
Installment and other revolving	60,094	276	—	—	7	7
Commercial markets ⁽⁶⁾	162	109	—	—	—	—
Total⁽⁸⁾	200,444	\$ 850	\$ —	\$ —	\$ 16	

At and for the year ended December 31, 2015

<i>In millions of dollars except number of loans modified</i>	Number of loans modified	Post-modification recorded investment ⁽¹⁾⁽⁷⁾	Deferred principal ⁽³⁾	Contingent principal forgiveness ⁽⁴⁾	Principal forgiveness ⁽⁵⁾	Average interest rate reduction
North America						
Residential first mortgages	9,487	\$ 1,282	\$ 9	\$ 4	\$ 25	1%
Home equity loans	4,317	157	1	—	3	2
Credit cards	188,502	771	—	—	—	16
Installment and other revolving	4,287	37	—	—	—	13
Commercial markets ⁽⁶⁾	300	47	—	—	—	—
Total⁽⁸⁾	206,893	\$ 2,294	\$ 10	\$ 4	\$ 28	
International						
Residential first mortgages	3,918	\$ 104	\$ —	\$ —	\$ —	—%
Credit cards	142,851	374	—	—	7	13
Installment and other revolving	65,895	280	—	—	5	5
Commercial markets ⁽⁶⁾	239	87	—	—	—	1
Total⁽⁸⁾	212,903	\$ 845	\$ —	\$ —	\$ 12	

- (1) Post-modification balances include past due amounts that are capitalized at the modification date.
- (2) Post-modification balances in *North America* include \$74 million of residential first mortgages and \$22 million of home equity loans to borrowers who have gone through Chapter 7 bankruptcy in the year ended December 31, 2016. These amounts include \$48 million of residential first mortgages and \$20 million of home equity loans that were newly classified as TDRs during 2016, based on previously received OCC guidance.
- (3) Represents portion of contractual loan principal that is non-interest bearing, but still due from the borrower. Such deferred principal is charged off at the time of permanent modification to the extent that the related loan balance exceeds the underlying collateral value.
- (4) Represents portion of contractual loan principal that is non-interest bearing and, depending upon borrower performance, eligible for forgiveness.
- (5) Represents portion of contractual loan principal that was forgiven at the time of permanent modification.
- (6) Commercial markets loans are generally borrower-specific modifications and incorporate changes in the amount and/or timing of principal and/or interest.
- (7) Post-modification balances in *North America* include \$209 million of residential first mortgages and \$55 million of home equity loans to borrowers who have gone through Chapter 7 bankruptcy in the year ended December 31, 2015. These amounts include \$126 million of residential first mortgages and \$47 million of home equity loans that were newly classified as TDRs during 2015, based on previously received OCC guidance.
- (8) The above tables reflect activity for loans outstanding as of the end of the reporting period that were considered TDRs.

The following table presents consumer TDRs that defaulted, for which the payment default occurred within one year of a permanent modification. Default is defined as 60 days past due, except for classifiably managed commercial markets loans, where default is defined as 90 days past due.

<i>In millions of dollars</i>	2016	2015
North America		
Residential first mortgages	\$ 229	\$ 420
Home equity loans	25	38
Credit cards	188	187
Installment and other revolving	9	8
Commercial markets	15	9
Total	\$ 466	\$ 662
International		
Residential first mortgages	\$ 11	\$ 22
Credit cards	148	141
Installment and other revolving	90	88
Commercial markets	37	28
Total	\$ 286	\$ 279

Corporate Loans

Corporate loans represent loans and leases managed by ICG. The following table presents information by corporate loan type:

<i>In millions of dollars</i>	December 31, 2016	December 31, 2015
In U.S. offices		
Commercial and industrial	\$ 49,586	\$ 46,011
Financial institutions	35,517	36,425
Mortgage and real estate ⁽¹⁾	38,691	32,623
Installment, revolving credit and other	34,501	33,423
Lease financing	1,518	1,780
	\$ 159,813	\$ 150,262
In offices outside the U.S.		
Commercial and industrial	\$ 81,579	\$ 82,358
Financial institutions	26,886	28,704
Mortgage and real estate ⁽¹⁾	5,363	5,106
Installment, revolving credit and other	19,965	20,853
Lease financing	251	303
Governments and official institutions	5,850	4,911
	\$ 139,894	\$ 142,235
Total corporate loans	\$ 299,707	\$ 292,497
Net unearned income	(704)	(665)
Corporate loans, net of unearned income	\$ 299,003	\$ 291,832

(1) Loans secured primarily by real estate.

The Company sold and/or reclassified to held-for-sale \$4.2 billion and \$2.8 billion of corporate loans during the years ended December 31, 2016 and 2015, respectively. The Company did not have significant purchases of corporate loans classified as held-for-investment for the years ended December 31, 2016 or 2015.

Delinquency Status

Citi generally does not manage corporate loans on a delinquency basis. Corporate loans are identified as impaired and placed on a cash (non-accrual) basis when it is determined, based on actual experience and a forward-looking assessment of the collectability of the loan in full, that the payment of interest or principal is doubtful or when interest or principal is 90 days past due, except when the loan is well collateralized and in the process of collection. Any interest accrued on impaired corporate loans and leases is reversed at 90 days and charged against current earnings, and interest is thereafter included in earnings only to the extent actually received in cash. When there is doubt regarding the ultimate collectability of principal, all cash receipts are thereafter applied to reduce the recorded investment in the loan. While corporate loans are generally managed based on their internally assigned risk rating (see further discussion below), the following tables present delinquency information by corporate loan type.

Corporate Loan Delinquency and Non-Accrual Details at December 31, 2016

<i>In millions of dollars</i>	30–89 days past due and accruing ⁽¹⁾	≥ 90 days past due and accruing ⁽¹⁾	Total past due and accruing	Total non-accrual ⁽²⁾	Total current ⁽³⁾	Total loans ⁽⁴⁾
Commercial and industrial	\$ 143	\$ 52	\$ 195	\$ 1,909	\$ 126,709	\$ 128,813
Financial institutions	119	2	121	185	61,254	61,560
Mortgage and real estate	148	137	285	139	43,607	44,031
Leases	27	8	35	56	1,678	1,769
Other	349	12	361	132	58,880	59,373
Loans at fair value						3,457
Purchased distressed loans						—
Total	\$ 786	\$ 211	\$ 997	\$ 2,421	\$ 292,128	\$ 299,003

Corporate Loan Delinquency and Non-Accrual Details at December 31, 2015

<i>In millions of dollars</i>	30–89 days past due and accruing ⁽¹⁾	≥ 90 days past due and accruing ⁽¹⁾	Total past due and accruing	Total non-accrual ⁽²⁾	Total current ⁽³⁾	Total loans ⁽⁴⁾
Commercial and industrial	\$ 87	\$ 4	\$ 91	\$ 1,071	\$ 123,192	\$ 124,354
Financial institutions	16	—	16	173	64,157	64,346
Mortgage and real estate	137	7	144	232	37,290	37,666
Leases	—	—	—	76	2,006	2,082
Other	29	—	29	44	58,335	58,408
Loans at fair value						4,971
Purchased distressed loans						5
Total	\$ 269	\$ 11	\$ 280	\$ 1,596	\$ 284,980	\$ 291,832

- (1) Corporate loans that are 90 days past due are generally classified as non-accrual. Corporate loans are considered past due when principal or interest is contractually due but unpaid.
- (2) Non-accrual loans generally include those loans that are ≥ 90 days past due or those loans for which Citi believes, based on actual experience and a forward-looking assessment of the collectability of the loan in full, that the payment of interest or principal is doubtful.
- (3) Corporate loans are past due when principal or interest is contractually due but unpaid. Loans less than 30 days past due are presented as current.
- (4) Total loans include loans at fair value, which are not included in the various delinquency columns.

Citigroup has a risk management process to monitor, evaluate and manage the principal risks associated with its corporate loan portfolio. As part of its risk management process, Citi assigns numeric risk ratings to its corporate loan facilities based on quantitative and qualitative assessments of the obligor and facility. These risk ratings are reviewed at least annually or more often if material events related to the obligor or facility warrant. Factors considered in assigning the risk ratings include financial condition of the obligor, qualitative assessment of management and strategy, amount and sources of repayment, amount and type of collateral and guarantee arrangements, amount and type of any contingencies associated with the obligor, and the obligor's industry and geography.

The obligor risk ratings are defined by ranges of default probabilities. The facility risk ratings are defined by ranges of loss norms, which are the product of the probability of default and the loss given default. The investment grade rating categories are similar to the category BBB-/Baa3 and above as defined by S&P and Moody's. Loans classified according to the bank regulatory definitions as special mention, substandard and doubtful will have risk ratings within the non-investment grade categories.

Corporate Loans Credit Quality Indicators

<i>In millions of dollars</i>	Recorded investment in loans⁽¹⁾	
	December 31, 2016	December 31, 2015
Investment grade⁽²⁾		
Commercial and industrial	\$ 85,066	\$ 89,632
Financial institutions	49,915	53,551
Mortgage and real estate	18,718	14,987
Leases	1,303	1,725
Other	51,930	51,498
Total investment grade	\$ 206,932	\$ 211,393
Non-investment grade⁽²⁾		
<i>Accrual</i>		
Commercial and industrial	\$ 41,838	\$ 32,726
Financial institutions	11,459	10,622
Mortgage and real estate	1,821	2,800
Leases	410	282
Other	7,312	6,867
<i>Non-accrual</i>		
Commercial and industrial	1,909	1,071
Financial institutions	185	173
Mortgage and real estate	139	232
Leases	56	76
Other	132	44
Total non-investment grade	\$ 65,261	\$ 54,893
Private bank loans managed on a delinquency basis⁽²⁾	\$ 23,353	\$ 20,575
Loans at fair value	3,457	4,971
Corporate loans, net of unearned income	\$ 299,003	\$ 291,832

- (1) Recorded investment in a loan includes net deferred loan fees and costs, unamortized premium or discount, less any direct write-downs.
- (2) Held-for-investment loans are accounted for on an amortized cost basis.

Impaired collateral-dependent loans and leases, where repayment is expected to be provided solely by the sale of the underlying collateral and there are no other available and reliable sources of repayment, are written down to the lower of cost or collateral value, less cost to sell. Cash-basis loans are returned to an accrual status when all contractual principal and interest amounts are reasonably assured of repayment and there is a sustained period of repayment performance, generally six months, in accordance with the contractual terms of the loan.

The following tables present non-accrual loan information by corporate loan type and interest income recognized on non-accrual corporate loans:

Non-Accrual Corporate Loans

At and for the year ended December 31, 2016

<i>In millions of dollars</i>	Recorded investment ⁽¹⁾	Unpaid principal balance	Related specific allowance	Average carrying value ⁽²⁾	Interest income recognized ⁽³⁾
Non-accrual corporate loans					
Commercial and industrial	\$ 1,909	\$ 2,259	\$ 362	\$ 1,919	\$ 25
Financial institutions	185	192	16	183	3
Mortgage and real estate	139	250	10	174	6
Lease financing	56	56	4	44	—
Other	132	197	—	87	6
Total non-accrual corporate loans	\$ 2,421	\$ 2,954	\$ 392	\$ 2,407	\$ 40

At and for the year ended December 31, 2015

<i>In millions of dollars</i>	Recorded investment ⁽¹⁾	Unpaid principal balance	Related specific allowance	Average carrying value ⁽²⁾	Interest income recognized ⁽³⁾
Non-accrual corporate loans					
Commercial and industrial	\$ 1,071	\$ 1,238	\$ 246	\$ 859	\$ 7
Financial institutions	173	196	10	194	—
Mortgage and real estate	232	322	21	240	4
Lease financing	76	76	54	62	—
Other	44	114	32	39	—
Total non-accrual corporate loans	\$ 1,596	\$ 1,946	\$ 363	\$ 1,394	\$ 11

<i>In millions of dollars</i>	December 31, 2016		December 31, 2015	
	Recorded investment ⁽¹⁾	Related specific allowance	Recorded investment ⁽¹⁾	Related specific allowance
Non-accrual corporate loans with valuation allowances				
Commercial and industrial	\$ 1,343	\$ 362	\$ 571	\$ 246
Financial institutions	45	16	18	10
Mortgage and real estate	41	10	60	21
Lease financing	55	4	75	54
Other	1	—	40	32
Total non-accrual corporate loans with specific allowance	\$ 1,485	\$ 392	\$ 764	\$ 363
Non-accrual corporate loans without specific allowance				
Commercial and industrial	\$ 566		\$ 500	
Financial institutions	140		155	
Mortgage and real estate	98		172	
Lease financing	1		1	
Other	131		4	
Total non-accrual corporate loans without specific allowance	\$ 936	N/A	\$ 832	N/A

(1) Recorded investment in a loan includes net deferred loan fees and costs, unamortized premium or discount, less any direct write-downs.

(2) Average carrying value represents the average recorded investment balance and does not include related specific allowance.

(3) Interest income recognized for the year ended December 31, 2014 was \$47 million.

N/A Not Applicable

Corporate Troubled Debt Restructurings

The following table presents corporate TDR activity at and for the year ended December 31, 2016:

<i>In millions of dollars</i>	Carrying Value	TDRs involving changes in the amount and/or timing of principal payments ⁽¹⁾	TDRs involving changes in the amount and/or timing of interest payments ⁽²⁾	TDRs involving changes in the amount and/or timing of both principal and interest payments
Commercial and industrial	\$ 338	\$ 176	\$ 34	\$ 128
Financial institutions	10	10	—	—
Mortgage and real estate	15	6	—	9
Other	142	—	142	—
Total	\$ 505	\$ 192	\$ 176	\$ 137

The following table presents corporate TDR activity at and for the year ended December 31, 2015:

<i>In millions of dollars</i>	Carrying Value	TDRs involving changes in the amount and/or timing of principal payments ⁽¹⁾	TDRs involving changes in the amount and/or timing of interest payments ⁽²⁾	TDRs involving changes in the amount and/or timing of both principal and interest payments
Commercial and industrial	\$ 120	\$ 67	\$ —	\$ 53
Mortgage and real estate	47	3	—	44
Total	\$ 167	\$ 70	\$ —	\$ 97

- (1) TDRs involving changes in the amount or timing of principal payments may involve principal forgiveness or deferral of periodic and/or final principal payments. Because forgiveness of principal is rare for corporate loans, modifications typically have little to no impact on the loans' projected cash flows and thus little to no impact on the allowance established for the loans. Charge-offs for amounts deemed uncollectable may be recorded at the time of the restructuring or may have already been recorded in prior periods such that no charge-off is required at the time of the modification.
- (2) TDRs involving changes in the amount or timing of interest payments may involve a below-market interest rate.

The following table presents total corporate loans modified in a TDR as well as those TDRs that defaulted and for which the payment default occurred within one year of a permanent modification. Default is defined as 60 days past due, except for classifiably managed commercial banking loans, where default is defined as 90 days past due.

<i>In millions of dollars</i>	TDR balances at December 31, 2016	TDR loans in payment default during the year ended December 31, 2016	TDR balances at December 31, 2015	TDR loans in payment default during the year ended December 31, 2015
Commercial and industrial	\$ 408	\$ 7	\$ 142	\$ —
Loans to financial institutions	9	—	5	1
Mortgage and real estate	87	8	131	—
Other	228	—	308	—
Total⁽¹⁾	\$ 732	\$ 15	\$ 586	\$ 1

- (1) The above tables reflect activity for loans outstanding as of the end of the reporting period that were considered TDRs.

15. ALLOWANCE FOR CREDIT LOSSES

<i>In millions of dollars</i>	2016	2015	2014
Allowance for loan losses at beginning of period	\$ 12,626	\$ 15,994	\$ 19,648
Gross credit losses	(8,222)	(9,041)	(11,108)
Gross recoveries ⁽¹⁾	1,661	1,739	2,135
Net credit losses (NCLs)	\$ (6,561)	\$ (7,302)	\$ (8,973)
NCLs	\$ 6,561	\$ 7,302	\$ 8,973
Net reserve builds (releases)	340	139	(1,879)
Net specific reserve releases	(152)	(333)	(266)
Total provision for loan losses	\$ 6,749	\$ 7,108	\$ 6,828
Other, net (see table below)	(754)	(3,174)	(1,509)
Allowance for loan losses at end of period	\$ 12,060	\$ 12,626	\$ 15,994
Allowance for credit losses on unfunded lending commitments at beginning of period	\$ 1,402	\$ 1,063	\$ 1,229
Provision (release) for unfunded lending commitments	29	74	(162)
Other, net ⁽²⁾	(13)	265	(4)
Allowance for credit losses on unfunded lending commitments at end of period⁽³⁾	\$ 1,418	\$ 1,402	\$ 1,063
Total allowance for loans, leases, and unfunded lending commitments	\$ 13,478	\$ 14,028	\$ 17,057

(1) Recoveries have been reduced by certain collection costs that are incurred only if collection efforts are successful.

(2) 2015 includes a reclassification of \$271 million of Allowance for loan losses to Allowance for unfunded lending commitments, included in Other, net. This reclassification reflects the re-attribution of \$271 million in Allowances for credit losses between the funded and unfunded portions of the corporate credit portfolios and does not reflect a change in the underlying credit performance of these portfolios.

(3) Represents additional credit loss reserves for unfunded lending commitments and letters of credit recorded in *Other liabilities* on the Consolidated Balance Sheet.

Other, net details:

<i>In millions of dollars</i>	2016	2015	2014
Sales or transfers of various consumer loan portfolios to held-for-sale			
Transfer of real estate loan portfolios	\$ (106)	\$ (1,462)	\$ (411)
Transfer of other loan portfolios	(468)	(948)	(657)
Sales or transfers of various consumer loan portfolios to held-for-sale	\$ (574)	\$ (2,410)	\$ (1,068)
FX translation, consumer	(199)	(474)	(463)
Other	19	(290)	22
Other, net	\$ (754)	\$ (3,174)	\$ (1,509)

Allowance for Credit Losses and Investment in Loans at December 31, 2016

<i>In millions of dollars</i>	Corporate	Consumer	Total
Allowance for loan losses at beginning of period	\$ 2,791	\$ 9,835	\$ 12,626
Charge-offs	(578)	(7,644)	(8,222)
Recoveries	67	1,594	1,661
Replenishment of net charge-offs	511	6,050	6,561
Net reserve builds (releases)	(85)	425	340
Net specific reserve releases	—	(152)	(152)
Other	(4)	(750)	(754)
Ending balance	\$ 2,702	\$ 9,358	\$ 12,060
Allowance for loan losses			
Determined in accordance with ASC 450	\$ 2,310	\$ 7,744	\$ 10,054
Determined in accordance with ASC 310-10-35	392	1,608	2,000
Determined in accordance with ASC 310-30	—	6	6
Total allowance for loan losses	\$ 2,702	\$ 9,358	\$ 12,060
Loans, net of unearned income			
Loans collectively evaluated for impairment in accordance with ASC 450	\$ 292,915	\$ 317,351	\$ 610,266
Loans individually evaluated for impairment in accordance with ASC 310-10-35	2,631	7,799	10,430
Loans acquired with deteriorated credit quality in accordance with ASC 310-30	—	187	187
Loans held at fair value	3,457	29	3,486
Total loans, net of unearned income	\$ 299,003	\$ 325,366	\$ 624,369

Allowance for Credit Losses and Investment in Loans at December 31, 2015

<i>In millions of dollars</i>	Corporate	Consumer	Total
Allowance for loan losses at beginning of period	\$ 2,447	\$ 13,547	\$ 15,994
Charge-offs	(349)	(8,692)	(9,041)
Recoveries	105	1,634	1,739
Replenishment of net charge-offs	244	7,058	7,302
Net reserve builds (releases)	550	(411)	139
Net specific reserve builds (releases)	86	(419)	(333)
Other	(292)	(2,882)	(3,174)
Ending balance	\$ 2,791	\$ 9,835	\$ 12,626
Allowance for loan losses			
Determined in accordance with ASC 450	\$ 2,408	\$ 7,776	\$ 10,184
Determined in accordance with ASC 310-10-35	380	2,046	2,426
Determined in accordance with ASC 310-30	3	13	16
Total allowance for loan losses	\$ 2,791	\$ 9,835	\$ 12,626
Loans, net of unearned income			
Loans collectively evaluated for impairment in accordance with ASC 450	\$ 285,053	\$ 315,314	\$ 600,367
Loans individually evaluated for impairment in accordance with ASC 310-10-35	1,803	10,192	11,995
Loans acquired with deteriorated credit quality in accordance with ASC 310-30	5	245	250
Loans held at fair value	4,971	34	5,005
Total loans, net of unearned income	\$ 291,832	\$ 325,785	\$ 617,617

Allowance for Credit Losses at December 31, 2014

<i>In millions of dollars</i>	Corporate	Consumer	Total
Allowance for loan losses at beginning of period	\$ 2,674	\$ 16,974	\$ 19,648
Charge-offs	(458)	(10,650)	(11,108)
Recoveries	160	1,975	2,135
Replenishment of net charge-offs	298	8,675	8,973
Net reserve releases	(145)	(1,734)	(1,879)
Net specific reserve releases	(20)	(246)	(266)
Other	(62)	(1,447)	(1,509)
Ending balance	\$ 2,447	\$ 13,547	\$ 15,994

16. GOODWILL AND INTANGIBLE ASSETS

Goodwill

The changes in *Goodwill* were as follows:

In millions of dollars

Balance at December 31, 2013	\$	25,009
Foreign exchange translation and other		(1,214)
Divestitures and purchase accounting adjustments ⁽¹⁾		(203)
Balance at December 31, 2014	\$	23,592
Foreign exchange translation and other	\$	(1,000)
Divestitures ⁽²⁾		(212)
Impairment of Goodwill ⁽³⁾		(31)
Balance at December 31, 2015	\$	22,349
Foreign exchange translation and other	\$	(613)
Divestitures ⁽⁴⁾		(77)
Balance at December 31, 2016	\$	21,659

The changes in *Goodwill* by segment were as follows:

<i>In millions of dollars</i>	Global Consumer Banking	Institutional Clients Group	Citi Holdings	Total
Balance at December 31, 2014 ⁽⁵⁾	\$ 13,111	\$ 10,190	\$ 291	\$ 23,592
Foreign exchange translation and other	(355)	(644)	(1)	(1,000)
Impairment of goodwill ⁽³⁾	—	—	(31)	(31)
Divestitures ⁽²⁾	(24)	(1)	(187)	(212)
Balance at December 31, 2015	\$ 12,732	\$ 9,545	\$ 72	\$ 22,349
Foreign exchange translation and other	(174)	(447)	8	(613)
Divestitures ⁽⁴⁾	—	(13)	(64)	(77)
Balance at December 31, 2016	\$ 12,558	\$ 9,085	\$ 16	\$ 21,659

- (1) Primarily related to the sales of the Spain consumer operations and the Japan retail banking business. See Note 2 to the Consolidated Financial Statements.
- (2) Primarily related to the sales of the Latin America Retirement Services and Japan cards businesses completed during the year, and agreements to sell certain businesses in Citi Holdings as of December 31, 2015. See Note 2 to the Consolidated Financial Statements.
- (3) Goodwill impairment related to reporting units subsequently sold, including Citi Holdings—*Consumer Finance South Korea* of \$16 million and Citi Holdings—*Consumer Latin America* of \$15 million.
- (4) Primarily related to the sale of the private equity services business and the announced sales of the Argentina and Brazil consumer operations.
- (5) December 31, 2014 has been restated to reflect intersegment goodwill allocations that resulted from the reorganizations in 2015 and 2016, including transfers of *GCB* businesses to *ICG* and Citi Holdings. See Note 3 to the Consolidated Financial Statements.

Goodwill impairment testing is performed at the level below each business segment (referred to as a reporting unit). The Company performed its annual goodwill impairment test as of July 1, 2016 resulting in no impairment for any of the reporting units.

Furthermore, interim goodwill impairment tests were performed during the years presented, which resulted in no goodwill impairment, except for the \$31 million of goodwill impairment recorded in *Operating expenses* in 2015.

Effective January 1, 2016, the *Latin America GCB* reporting unit was reorganized, which included the transfer of the consumer businesses in Argentina, Brazil and Colombia to Citi Holdings.

Goodwill balances associated with the transfers were allocated to each of the component businesses based on their relative fair values to the legacy reporting units. An

interim goodwill impairment test was performed as of January 1, 2016 for the impacted reporting units resulting in no impairment under the legacy and current reporting unit structures.

During the fourth quarter of 2016, Citigroup signed separate agreements for the sale of its Argentina and Brazil consumer businesses and allocated goodwill to these disposals, which are now classified as held-for-sale. The disposed businesses represent a significant portion of the Citi Holdings—*Consumer Latin America*, and therefore was considered a trigger event. As a result, an interim goodwill impairment test was performed during the quarter, resulting in no impairment on the remaining reporting unit. While there was no indication of impairment, the \$16 million of goodwill present in Citi Holdings—*Consumer Latin America* may be particularly sensitive to further

deterioration in economic conditions. The fair value as a percentage of allocated book value as of December 31, 2016 was 107%.

The fair values of the Company's reporting units exceeded their carrying values and did not indicate a risk of impairment based on current valuations.

The following table shows reporting units with goodwill balances as of December 31, 2016 and the fair value as a percentage of allocated book value as of the latest impairment test:

In millions of dollars

Reporting unit ⁽¹⁾⁽²⁾	Goodwill	Fair value as a % of allocated book value
North America Global Consumer Banking	\$ 6,758	148%
Asia Global Consumer Banking ⁽³⁾	4,709	157
Latin America Global Consumer Banking ⁽⁴⁾	1,092	180
ICG—Banking	2,694	194
ICG—Markets and Securities Services	6,390	115
Citi Holdings—Consumer Latin America	16	107
Total	\$ 21,659	

- (1) Citi Holdings—Other and Citi Holdings—ICG are excluded from the table as there is no goodwill allocated to them.
- (2) Citi Holdings—Consumer EMEA is excluded from the table as the entire reporting unit, together with allocated goodwill, is classified as held-for-sale as of December 31, 2016.
- (3) Asia Global Consumer Banking includes the consumer businesses in UK, Russia, Poland, UAE and Bahrain beginning in the first quarter of 2016.
- (4) Latin America Global Consumer Banking contains only the consumer business in Mexico beginning in the first quarter of 2016.

Intangible Assets

The components of intangible assets were as follows:

	December 31, 2016			December 31, 2015		
	Gross carrying amount	Accumulated amortization	Net carrying amount	Gross carrying amount	Accumulated amortization	Net carrying amount
<i>In millions of dollars</i>						
Purchased credit card relationships	\$ 8,215	\$ 6,549	\$ 1,666	\$ 7,606	\$ 6,520	\$ 1,086
Credit card contract related intangibles	5,149	2,177	2,972	3,922	2,021	1,901
Core deposit intangibles	801	771	30	1,050	969	81
Other customer relationships	474	272	202	471	252	219
Present value of future profits	31	27	4	37	31	6
Indefinite-lived intangible assets	210	—	210	284	—	284
Other	504	474	30	737	593	144
Intangible assets (excluding MSR)	\$ 15,384	\$ 10,270	\$ 5,114	\$ 14,107	\$ 10,386	\$ 3,721
Mortgage servicing rights (MSRs) ⁽¹⁾	1,564	—	1,564	1,781	—	1,781
Total intangible assets	\$ 16,948	\$ 10,270	\$ 6,678	\$ 15,888	\$ 10,386	\$ 5,502

- (1) In January 2017, Citi signed agreements to effectively exit its U.S. mortgage servicing operations by the end of 2018 and intensify its focus on loan originations. For additional information on these transactions, see Note 29 to the Consolidated Financial Statements.

Intangible assets amortization expense was \$595 million, \$625 million and \$756 million for 2016, 2015 and 2014, respectively. Intangible assets amortization expense is estimated to be \$579 million in 2017, \$514 million in 2018, \$478 million in 2019, \$317 million in 2020 and \$321 million in 2021.

The changes in intangible assets were as follows:

<i>In millions of dollars</i>	Net carrying amount at December 31, 2015	Acquisitions/ divestitures ⁽¹⁾	Amortization	Impairments	FX translation and other	Net carrying amount at December 31, 2016
Purchased credit card relationships	\$ 1,086	\$ 827	\$ (203)	\$ —	\$ (44)	\$ 1,666
Credit card contract-related intangibles ⁽²⁾	1,901	1,314	(326)	—	83	2,972
Core deposit intangibles	81	(18)	(28)	—	(5)	30
Other customer relationships	219	—	(25)	—	8	202
Present value of future profits	6	—	(1)	—	(1)	4
Indefinite-lived intangible assets	284	(25)	—	(1)	(48)	210
Other	144	(109)	(12)	—	7	30
Intangible assets (excluding MSRs)	\$ 3,721	\$ 1,989	\$ (595)	\$ (1)	\$ —	\$ 5,114
Mortgage servicing rights (MSRs) ⁽³⁾	1,781					1,564
Total intangible assets	\$ 5,502					\$ 6,678

- (1) Reflects the recognition during the second quarter of 2016 of additional purchased credit card relationships and contract-related intangible assets as a result of the acquisition of the Costco cards portfolio, as well as the renewal and extension of the co-branded credit card program agreement with American Airlines.
- (2) Primarily reflects contract-related intangibles associated with the American Airlines, Sears, The Home Depot, Costco and AT&T credit card program agreements, which represent 97% of the aggregate net carrying amount as of December 31, 2016.
- (3) For additional information on Citi's MSRs, including the rollforward from 2015 to 2016, see Note 21 to the Consolidated Financial Statements.

17. DEBT

Short-Term Borrowings

<i>In millions of dollars</i>	2016		2015	
	Balance	Weighted average coupon	Balance	Weighted average coupon
Commercial paper	\$ 9,989	0.79%	\$ 9,995	0.22%
Other borrowings⁽¹⁾	20,712	1.39	11,084	1.5
Total	\$ 30,701		\$ 21,079	

(1) Includes borrowings from the Federal Home Loan Banks and other market participants. At December 31, 2016, collateralized short-term advances from the Federal Home Loan Banks were \$12.0 billion. At December 31, 2015, no amounts were outstanding.

Borrowings under bank lines of credit may be at interest rates based on LIBOR, CD rates, the prime rate or bids submitted by the banks. Citigroup pays commitment fees for its lines of credit.

Some of Citigroup's non-bank subsidiaries have credit facilities with Citigroup's subsidiary depository institutions, including Citibank. Borrowings under these facilities are secured in accordance with Section 23A of the Federal Reserve Act.

Citigroup Global Markets Holdings Inc. (CGMHI) has borrowing agreements consisting of facilities that CGMHI has been advised are available, but where no contractual lending obligation exists. These arrangements are reviewed on an ongoing basis to ensure flexibility in meeting CGMHI's short-term requirements.

Long-Term Debt

<i>In millions of dollars</i>	Weighted average coupon	Maturities	Balances at December 31,	
			2016	2015
Citigroup Inc.⁽¹⁾				
Senior debt	4.00%	2017-2098	\$ 118,881	\$ 113,569
Subordinated debt ⁽²⁾	4.48	2017-2046	26,758	26,875
Trust preferred securities	6.90	2036-2067	1,694	1,713
Bank⁽³⁾				
Senior debt	1.88	2017-2038	49,454	55,131
Broker-dealer⁽⁴⁾				
Senior debt	2.08	2017-2047	9,387	3,968
Subordinated debt ⁽²⁾	0.95	2033-2037	4	19
Total	3.49%		\$ 206,178	\$ 201,275
Senior debt			\$ 177,722	\$ 172,668
Subordinated debt ⁽²⁾			26,762	26,894
Trust preferred securities			1,694	1,713
Total			\$ 206,178	\$ 201,275

(1) Parent holding company, Citigroup Inc.

(2) Includes notes that are subordinated within certain countries, regions or subsidiaries.

(3) Represents Citibank entities as well as other bank entities. At December 31, 2016 and December 31, 2015, collateralized long-term advances from the Federal Home Loan Banks were \$21.6 billion and \$17.8 billion, respectively.

(4) Represents broker-dealer subsidiaries that are consolidated into Citigroup Inc., the parent holding company.

The Company issues both fixed- and variable-rate debt in a range of currencies. It uses derivative contracts, primarily interest rate swaps, to effectively convert a portion of its fixed-rate debt to variable-rate debt and variable-rate debt to fixed-rate debt. The maturity structure of the derivatives generally corresponds to the maturity structure of the debt being hedged. In addition, the Company uses other derivative contracts to manage the foreign exchange impact of certain debt issuances. At December 31, 2016, the Company's overall weighted average interest rate for long-term debt was 3.49% on a contractual basis and 2.63% including the effects of derivative contracts.

Aggregate annual maturities of long-term debt obligations (based on final maturity dates) including trust preferred securities are as follows:

<i>In millions of dollars</i>	2017	2018	2019	2020	2021	Thereafter	Total
Bank	\$ 15,046	\$ 24,128	\$ 4,865	\$ 445	\$ 3,903	\$ 1,067	\$ 49,454
Broker-dealer	2,637	1,388	283	1,103	168	3,812	9,391
Citigroup Inc.	18,442	20,573	16,865	8,627	15,060	67,766	147,333
Total	\$ 36,125	\$ 46,089	\$ 22,013	\$ 10,175	\$ 19,131	\$ 72,645	\$ 206,178

The following table summarizes the Company's outstanding trust preferred securities at December 31, 2016:

Trust	Issuance date	Securities issued	Liquidation value ⁽¹⁾	Coupon rate ⁽²⁾	Common shares issued to parent	Junior subordinated debentures owned by trust		
						Amount	Maturity	Redeemable by issuer beginning
<i>In millions of dollars, except share amounts</i>								
Citigroup Capital III	Dec. 1996	194,053	\$ 194	7.625%	6,003	\$ 200	Dec. 1, 2036	Not redeemable
Citigroup Capital XIII	Sept. 2010	89,840,000	2,246	3 mo LIBOR + 637 bps	1,000	2,246	Oct. 30, 2040	Oct. 30, 2015
Citigroup Capital XVIII	June 2007	99,901	123	6.829	50	124	June 28, 2067	June 28, 2017
Total obligated			\$ 2,563			\$ 2,570		

Note: Distributions on the trust preferred securities and interest on the subordinated debentures are payable semi-annually for Citigroup Capital III and Citigroup Capital XVIII and quarterly for Citigroup Capital XIII.

(1) Represents the notional value received by investors from the trusts at the time of issuance.

(2) In each case, the coupon rate on the subordinated debentures is the same as that on the trust preferred securities.

18. REGULATORY CAPITAL

Citigroup is subject to risk-based capital and leverage standards issued by the Federal Reserve Board which constitute the U.S. Basel III rules. Citi's U.S. insured depository institution subsidiaries, including Citibank, are subject to similar standards issued by their respective primary federal bank regulatory agencies. These standards are used to evaluate capital adequacy and include the required minimums shown in the following table. The regulatory agencies are

required by law to take specific prompt actions with respect to institutions that do not meet minimum capital standards.

The following table sets forth for Citigroup and Citibank the regulatory capital tiers, total risk-weighted assets, quarterly adjusted average total assets, Total Leverage Exposure, risk-based capital ratios and leverage ratios in accordance with current regulatory standards (reflecting Basel III Transition Arrangements).

	Citigroup			Citibank	
	Stated minimum	Well capitalized minimum	December 31, 2016	Well capitalized minimum	December 31, 2016
<i>In millions of dollars, except ratios</i>					
Common Equity Tier 1 Capital			\$ 167,378	\$ 126,277	
Tier 1 Capital			178,387	126,282	
Total Capital (Tier 1 Capital + Tier 2 Capital)			202,146	138,638	
Total risk-weighted assets ⁽¹⁾			1,166,764	973,739	
Quarterly adjusted average total assets ⁽²⁾			1,768,415	1,332,978	
Total Leverage Exposure ⁽³⁾			2,351,883	1,859,211	
Common Equity Tier 1 Capital ratio ⁽⁴⁾	4.5%	N/A	14.35%	6.5%	12.62%
Tier 1 Capital ratio ⁽⁴⁾	6.0	6.0%	15.29	8.0	12.62
Total Capital ratio ⁽⁴⁾	8.0	10.0	17.33	10.0	14.24
Tier 1 Leverage ratio	4.0	N/A	10.09	5.0	9.47
Supplementary Leverage ratio ⁽⁵⁾	N/A	N/A	7.58	N/A	6.79

(1) Reflected in the table above are Citigroup's and Citibank's total risk-weighted assets as derived under the Basel III Advanced Approaches. At December 31, 2016, Citigroup's and Citibank's total risk-weighted assets as derived under the Basel III Standardized Approach were \$1,126 billion and \$1,001 billion, respectively.

(2) Tier 1 Leverage ratio denominator.

(3) Supplementary Leverage ratio denominator.

(4) As of December 31, 2016, Citigroup's reportable Common Equity Tier 1 Capital, Tier 1 Capital, and Total Capital ratios were the lower derived under the Basel III Advanced Approaches framework. As of December 31, 2016, Citibank's reportable Common Equity Tier 1 Capital and Tier 1 Capital ratios were the lower derived under the Basel III Standardized Approach framework, while Citibank's reportable Total Capital ratio was the lower derived under the Basel III Advanced Approaches framework.

(5) Commencing on January 1, 2018, Citi and Citibank will be required to maintain a stated minimum Supplementary Leverage ratio of 3%, and Citibank will be required to maintain a Supplementary Leverage ratio of 6% to be considered "well capitalized."

N/A Not Applicable

As indicated in the table above, Citigroup and Citibank were "well capitalized" under the current federal bank regulatory definitions as of December 31, 2016.

organizations should generally pay dividends out of current operating earnings. Citigroup received \$13.8 billion and \$13.5 billion in dividends from Citibank during 2016 and 2015, respectively.

Banking Subsidiaries—Constraints on Dividends

There are various legal limitations on the ability of Citigroup's subsidiary depository institutions to extend credit, pay dividends or otherwise supply funds to Citigroup and its non-bank subsidiaries. The approval of the Office of the Comptroller of the Currency is required if total dividends declared in any calendar year exceed amounts specified by the applicable agency's regulations. State-chartered depository institutions are subject to dividend limitations imposed by applicable state law.

In determining the dividends, each depository institution must also consider its effect on applicable risk-based capital and leverage ratio requirements, as well as policy statements of the federal regulatory agencies that indicate that banking

19. CHANGES IN ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

Changes in each component of Citigroup's *Accumulated other comprehensive income (loss)*:

<i>In millions of dollars</i>	Net unrealized gains (losses) on investment securities	Debt valuation adjustment (DVA) ⁽¹⁾	Cash flow hedges ⁽²⁾	Benefit plans ⁽³⁾	Foreign currency translation adjustment (CTA), net of hedges ⁽⁴⁾	Accumulated other comprehensive income (loss)
Balance, December 31, 2013	\$ (1,640)	\$ —	\$ (1,245)	\$ (3,989)	\$ (12,259)	\$ (19,133)
Other comprehensive income before reclassifications	1,790	—	85	(1,346)	(4,946)	(4,417)
Increase (decrease) due to amounts reclassified from AOCI	(93)	—	251	176	—	334
Change, net of taxes ⁽⁵⁾	\$ 1,697	\$ —	\$ 336	\$ (1,170)	\$ (4,946)	\$ (4,083)
Balance, December 31, 2014	\$ 57	\$ —	\$ (909)	\$ (5,159)	\$ (17,205)	\$ (23,216)
Other comprehensive income before reclassifications	\$ (695)	\$ —	\$ 83	\$ (143)	\$ (5,465)	\$ (6,220)
Increase (decrease) due to amounts reclassified from AOCI	(269)	—	209	186	(34)	92
Change, net of taxes	\$ (964)	\$ —	\$ 292	\$ 43	\$ (5,499)	\$ (6,128)
Balance, December 31, 2015	\$ (907)	\$ —	\$ (617)	\$ (5,116)	\$ (22,704)	\$ (29,344)
Adjustment to opening balance, net of taxes	\$ —	\$ (15)	\$ —	\$ —	\$ —	\$ (15)
Adjusted balance, beginning of period	\$ (907)	\$ (15)	\$ (617)	\$ (5,116)	\$ (22,704)	\$ (29,359)
Other comprehensive income before reclassifications	530	(335)	(88)	(208)	(2,802)	(2,903)
Increase (decrease) due to amounts reclassified from AOCI	(422)	(2)	145	160	—	(119)
Change, net of taxes	\$ 108	\$ (337)	\$ 57	\$ (48)	\$ (2,802)	\$ (3,022)
Balance at December 31, 2016	\$ (799)	\$ (352)	\$ (560)	\$ (5,164)	\$ (25,506)	\$ (32,381)

- (1) Beginning in the first quarter of 2016, changes in DVA are reflected as a component of AOCI, pursuant to the adoption of only the provisions of ASU No. 2016-01 relating to the presentation of DVA on fair value option liabilities. See Note 1 to the Consolidated Financial Statements for further information regarding this change.
- (2) Primarily driven by Citi's pay fixed/receive floating interest rate swap programs that hedge the floating rates on liabilities.
- (3) Primarily reflects adjustments based on the quarterly actuarial valuations of Citi's significant pension and postretirement plans, annual actuarial valuations of all other plans, and amortization of amounts previously recognized in Other comprehensive income.
- (4) Primarily reflects the movements in (by order of impact) the Mexican peso, Euro, British pound and Indian rupee against the U.S. dollar, and changes in related tax effects and hedges for the year ended December 31, 2016. Primarily reflects the movements in (by order of impact) the Mexican peso, Brazilian real, Korean won and Euro against the U.S. dollar, and changes in related tax effects and hedges for the year ended December 31, 2015. Primarily reflects the movements in (by order of impact) the Mexican peso, Euro, Japanese yen, and Russian ruble against the U.S. dollar, and changes in related tax effects and hedges for the year ended December 31, 2014.
- (5) During 2014, \$137 million (\$84 million net of tax) was reclassified to reflect the allocation of FX translation between Net unrealized gains (losses) on investment securities to Foreign currency translation adjustment (CTA).

The pretax and after-tax changes in each component of *Accumulated other comprehensive income (loss)* are as follows:

<i>In millions of dollars</i>	Pretax	Tax effect	After-tax
Balance, December 31, 2013	\$ (27,596)	\$ 8,463	\$ (19,133)
Change in net unrealized gains (losses) on investment securities	2,704	(1,007)	1,697
Cash flow hedges	543	(207)	336
Benefit plans	(1,830)	660	(1,170)
Foreign currency translation adjustment	(4,881)	(65)	(4,946)
Change	\$ (3,464)	\$ (619)	\$ (4,083)
Balance, December 31, 2014	\$ (31,060)	\$ 7,844	\$ (23,216)
Change in net unrealized gains (losses) on investment securities	(1,462)	498	(964)
Cash flow hedges	468	(176)	292
Benefit plans	19	24	43
Foreign currency translation adjustment	(6,405)	906	(5,499)
Change	\$ (7,380)	\$ 1,252	\$ (6,128)
Balance, December 31, 2015	\$ (38,440)	\$ 9,096	\$ (29,344)
Adjustment to opening balance ⁽¹⁾	(26)	11	(15)
Adjusted balance, beginning of period	\$ (38,466)	\$ 9,107	\$ (29,359)
Change in net unrealized gains (losses) on investment securities	167	(59)	108
Debt valuation adjustment (DVA)	(538)	201	(337)
Cash flow hedges	84	(27)	57
Benefit plans	(78)	30	(48)
Foreign currency translation adjustment	(3,204)	402	(2,802)
Change	\$ (3,569)	\$ 547	\$ (3,022)
Balance, December 31, 2016	\$ (42,035)	\$ 9,654	\$ (32,381)

(1) Represents the \$(15) million adjustment related to the initial adoption of ASU No. 2016-01. See Note 1 to the Consolidated Financial Statements.

The Company recognized pretax gain (loss) related to amounts in AOCI reclassified in the Consolidated Statement of Income as follows:

<i>In millions of dollars</i>	Increase (decrease) in AOCI due to amounts reclassified to Consolidated Statement of Income		
	Year ended December 31,		
	2016	2015	2014
Realized (gains) losses on sales of investments	\$ (948)	\$ (682)	\$ (570)
OTTI gross impairment losses	288	265	424
Subtotal, pretax	\$ (660)	\$ (417)	\$ (146)
Tax effect	238	148	53
Net realized (gains) losses on investment securities, after-tax⁽¹⁾	\$ (422)	\$ (269)	\$ (93)
Realized DVA (gains) losses on fair value option liabilities	\$ (3)	\$ —	\$ —
Subtotal, pretax	\$ (3)	\$ —	\$ —
Tax effect	1	—	—
Net realized debt valuation adjustment, after-tax	\$ (2)	\$ —	\$ —
Interest rate contracts	\$ 140	\$ 186	\$ 260
Foreign exchange contracts	93	146	149
Subtotal, pretax	\$ 233	\$ 332	\$ 409
Tax effect	(88)	(123)	(158)
Amortization of cash flow hedges, after-tax⁽²⁾	\$ 145	\$ 209	\$ 251
Amortization of unrecognized			
Prior service cost (benefit)	\$ (40)	\$ (40)	\$ (40)
Net actuarial loss	272	276	243
Curtailment/settlement impact ⁽³⁾	18	57	76
Subtotal, pretax	\$ 250	\$ 293	\$ 279
Tax effect	(90)	(107)	(103)
Amortization of benefit plans, after-tax⁽³⁾	\$ 160	\$ 186	\$ 176
Foreign currency translation adjustment	\$ —	\$ (53)	\$ —
Tax effect	—	19	—
Foreign currency translation adjustment	\$ —	\$ (34)	\$ —
Total amounts reclassified out of AOCI, pretax	\$ (180)	\$ 155	\$ 542
Total tax effect	61	(63)	(208)
Total amounts reclassified out of AOCI, after-tax	\$ (119)	\$ 92	\$ 334

(1) The pretax amount is reclassified to *Realized gains (losses) on sales of investments, net* and *Gross impairment losses* on the Consolidated Statement of Income. See Note 13 to the Consolidated Financial Statements for additional details.

(2) See Note 23 to the Consolidated Financial Statements for additional details.

(3) See Note 8 to the Consolidated Financial Statements for additional details.

20. PREFERRED STOCK

The following table summarizes the Company's preferred stock outstanding:

	Issuance date	Redeemable by issuer beginning	Dividend rate	Redemption price per depositary share/preference share	Number of depositary shares	Carrying value <i>in millions of dollars</i>	
						December 31, 2016	December 31, 2015
Series AA ⁽¹⁾	January 25, 2008	February 15, 2018	8.125%	\$ 25	3,870,330	\$ 97	\$ 97
Series E ⁽²⁾	April 28, 2008	April 30, 2018	8.400	1,000	121,254	121	121
Series A ⁽³⁾	October 29, 2012	January 30, 2023	5.950	1,000	1,500,000	1,500	1,500
Series B ⁽⁴⁾	December 13, 2012	February 15, 2023	5.900	1,000	750,000	750	750
Series C ⁽⁵⁾	March 26, 2013	April 22, 2018	5.800	25	23,000,000	575	575
Series D ⁽⁶⁾	April 30, 2013	May 15, 2023	5.350	1,000	1,250,000	1,250	1,250
Series J ⁽⁷⁾	September 19, 2013	September 30, 2023	7.125	25	38,000,000	950	950
Series K ⁽⁸⁾	October 31, 2013	November 15, 2023	6.875	25	59,800,000	1,495	1,495
Series L ⁽⁹⁾	February 12, 2014	February 12, 2019	6.875	25	19,200,000	480	480
Series M ⁽¹⁰⁾	April 30, 2014	May 15, 2024	6.300	1,000	1,750,000	1,750	1,750
Series N ⁽¹¹⁾	October 29, 2014	November 15, 2019	5.800	1,000	1,500,000	1,500	1,500
Series O ⁽¹²⁾	March 20, 2015	March 27, 2020	5.875	1,000	1,500,000	1,500	1,500
Series P ⁽¹³⁾	April 24, 2015	May 15, 2025	5.950	1,000	2,000,000	2,000	2,000
Series Q ⁽¹⁴⁾	August 12, 2015	August 15, 2020	5.950	1,000	1,250,000	1,250	1,250
Series R ⁽¹⁵⁾	November 13, 2015	November 15, 2020	6.125	1,000	1,500,000	1,500	1,500
Series S ⁽¹⁶⁾	February 2, 2016	February 12, 2021	6.300	25	41,400,000	1,035	—
Series T ⁽¹⁷⁾	April 25, 2016	August 15, 2026	6.250	1,000	1,500,000	1,500	—
						\$ 19,253	\$ 16,718

- (1) Issued as depositary shares, each representing a 1/1,000th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable quarterly on February 15, May 15, August 15 and November 15, in each case when, as and if declared by the Citi Board of Directors.
- (2) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semi-annually on April 30 and October 30 at a fixed rate until April 30, 2018, thereafter payable quarterly on January 30, April 30, July 30 and October 30 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.
- (3) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semi-annually on January 30 and July 30 at a fixed rate until January 30, 2023, thereafter payable quarterly on January 30, April 30, July 30 and October 30 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.
- (4) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semi-annually on February 15 and August 15 at a fixed rate until February 15, 2023, thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.
- (5) Issued as depositary shares, each representing a 1/1,000th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable quarterly on January 22, April 22, July 22 and October 22 when, as and if declared by the Citi Board of Directors.
- (6) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semi-annually on May 15 and November 15 at a fixed rate until May 15, 2023, thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.
- (7) Issued as depositary shares, each representing a 1/1,000th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable quarterly on March 30, June 30, September 30 and December 30 at a fixed rate until September 30, 2023, thereafter payable quarterly on the same dates at a floating rate, in each case when, as and if declared by the Citi Board of Directors.
- (8) Issued as depositary shares, each representing a 1/1,000th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable quarterly on February 15, May 15, August 15 and November 15 at a fixed rate until November 15, 2023, thereafter payable quarterly on the same dates at a floating rate, in each case when, as and if declared by the Citi Board of Directors.
- (9) Issued as depositary shares, each representing a 1/1,000th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable quarterly on February 12, May 12, August 12 and November 12 at a fixed rate, in each case when, as and if declared by the Citi Board of Directors.
- (10) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semi-annually on May 15 and November 15 at a fixed rate until May 15, 2024, thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.
- (11) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semi-annually on May 15 and November 15 at a fixed rate until, but excluding, November 15, 2019, and thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.
- (12) Issued as depositary shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semi-annually on March 27 and September 27 at a fixed rate until, but excluding, March 27, 2020, and thereafter payable quarterly on March 27, June 27, September 27 and December 27 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

- (13) Issued as depository shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semi-annually on May 15 and November 15 at a fixed rate until, but excluding, May 15, 2025, and thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.
- (14) Issued as depository shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semi-annually on February 15 and August 15 at a fixed rate until, but excluding, August 15, 2020, and thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.
- (15) Issued as depository shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semi-annually on May 15 and November 15 at a fixed rate until, but excluding, November 15, 2020, and thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.
- (16) Issued as depository shares, each representing a 1/1,000th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable quarterly on February 12, May 12, August 12 and November 12 at a fixed rate, in each case when, as and if declared by the Citi Board of Directors.
- (17) Issued as depository shares, each representing a 1/25th interest in a share of the corresponding series of non-cumulative perpetual preferred stock. Dividends are payable semi-annually on February 15 and August 15 at a fixed rate until August 15, 2026, thereafter payable quarterly on February 15, May 15, August 15 and November 15 at a floating rate, in each case when, as and if declared by the Citi Board of Directors.

During 2016, Citi distributed \$1,077 million in dividends on its outstanding preferred stock. Based on its preferred stock outstanding as of December 31, 2016, Citi estimates it will distribute preferred dividends of approximately \$1,213 million during 2017, in each case assuming such dividends are declared by the Citi Board of Directors.

21. SECURITIZATIONS AND VARIABLE INTEREST ENTITIES

Uses of Special Purpose Entities

A special purpose entity (SPE) is an entity designed to fulfill a specific limited need of the company that organized it. The principal uses of SPEs by Citi are to obtain liquidity and favorable capital treatment by securitizing certain financial assets, to assist clients in securitizing their financial assets and to create investment products for clients. SPEs may be organized in various legal forms, including trusts, partnerships or corporations. In a securitization, the company transferring assets to an SPE converts all (or a portion) of those assets into cash before they would have been realized in the normal course of business through the SPE's issuance of debt and equity instruments, certificates, commercial paper or other notes of indebtedness. These issuances are recorded on the balance sheet of the SPE, which may or may not be consolidated onto the balance sheet of the company that organized the SPE.

Investors usually have recourse only to the assets in the SPE, but may also benefit from other credit enhancements, such as a collateral account, a line of credit or a liquidity facility, such as a liquidity put option or asset purchase agreement. Because of these enhancements, the SPE issuances typically obtain a more favorable credit rating than the transferor could obtain for its own debt issuances. This results in less expensive financing costs than unsecured debt. The SPE may also enter into derivative contracts in order to convert the yield or currency of the underlying assets to match the needs of the SPE investors or to limit or change the credit risk of the SPE. Citigroup may be the provider of certain credit enhancements as well as the counterparty to any related derivative contracts.

Most of Citigroup's SPEs are variable interest entities (VIEs), as described below.

Variable Interest Entities

VIEs are entities that have either a total equity investment that is insufficient to permit the entity to finance its activities without additional subordinated financial support, or whose equity investors lack the characteristics of a controlling financial interest (i.e., ability to make significant decisions through voting rights or similar rights and a right to receive the expected residual returns of the entity or an obligation to absorb the expected losses of the entity). Investors that finance the VIE through debt or equity interests or other counterparties providing other forms of support, such as guarantees, certain fee arrangements or certain types of derivative contracts are variable interest holders in the entity.

The variable interest holder, if any, that has a controlling financial interest in a VIE is deemed to be the primary beneficiary and must consolidate the VIE. Citigroup would be deemed to have a controlling financial interest and be the primary beneficiary if it has both of the following characteristics:

- power to direct the activities of the VIE that most significantly impact the entity's economic performance; and
- an obligation to absorb losses of the entity that could potentially be significant to the VIE, or a right to receive benefits from the entity that could potentially be significant to the VIE.

The Company must evaluate each VIE to understand the purpose and design of the entity, the role the Company had in the entity's design and its involvement in the VIE's ongoing activities. The Company then must evaluate which activities most significantly impact the economic performance of the VIE and who has the power to direct such activities.

For those VIEs where the Company determines that it has the power to direct the activities that most significantly impact the VIE's economic performance, the Company must then evaluate its economic interests, if any, and determine whether it could absorb losses or receive benefits that could potentially be significant to the VIE. When evaluating whether the Company has an obligation to absorb losses that could potentially be significant, it considers the maximum exposure to such loss without consideration of probability. Such obligations could be in various forms, including, but not limited to, debt and equity investments, guarantees, liquidity agreements and certain derivative contracts.

In various other transactions, the Company may (i) act as a derivative counterparty (for example, interest rate swap, cross-currency swap, or purchaser of credit protection under a credit default swap or total return swap where the Company pays the total return on certain assets to the SPE); (ii) act as underwriter or placement agent; (iii) provide administrative, trustee or other services; or (iv) make a market in debt securities or other instruments issued by VIEs. The Company generally considers such involvement, by itself, not to be variable interests and thus not an indicator of power or potentially significant benefits or losses.

Citigroup's involvement with consolidated and unconsolidated VIEs with which the Company holds significant variable interests or has continuing involvement through servicing a majority of the assets in a VIE is presented below:

As of December 31, 2016									
Maximum exposure to loss in significant unconsolidated VIEs ⁽¹⁾									
Funded exposures ⁽²⁾ Unfunded exposures									
<i>In millions of dollars</i>	Total involvement with SPE assets	Consolidated VIE / SPE assets	Significant unconsolidated VIE assets ⁽³⁾	Debt investments	Equity investments	Funding commitments	Guarantees and derivatives	Total	
Credit card securitizations	\$ 50,171	\$ 50,171	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Mortgage securitizations ⁽⁴⁾									
U.S. agency-sponsored	214,458	—	214,458	3,852	—	—	78	3,930	
Non-agency-sponsored	15,965	1,092	14,873	312	35	—	1	348	
Citi-administered asset-backed commercial paper conduits (ABCP)	19,693	19,693	—	—	—	—	—	—	
Collateralized loan obligations (CLOs)	18,886	—	18,886	5,128	—	—	62	5,190	
Asset-based financing	53,168	733	52,435	16,553	475	4,915	—	21,943	
Municipal securities tender option bond trusts (TOBs)	7,070	2,843	4,227	40	—	2,842	—	2,882	
Municipal investments	17,679	14	17,665	2,441	3,578	2,580	—	8,599	
Client intermediation	515	371	144	49	—	—	3	52	
Investment funds	2,788	767	2,021	32	120	27	3	182	
Other	1,429	607	822	116	11	58	43	228	
Total⁽⁵⁾	\$ 401,822	\$ 76,291	\$ 325,531	\$ 28,523	\$ 4,219	\$ 10,422	\$ 190	\$ 43,354	

As of December 31, 2015									
Maximum exposure to loss in significant unconsolidated VIEs ⁽¹⁾									
Funded exposures ⁽²⁾ Unfunded exposures									
<i>In millions of dollars</i>	Total involvement with SPE assets	Consolidated VIE / SPE assets	Significant unconsolidated VIE assets ⁽³⁾	Debt investments	Equity investments	Funding commitments	Guarantees and derivatives	Total	
Credit card securitizations	\$ 54,916	\$ 54,916	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Mortgage securitizations ⁽⁴⁾									
U.S. agency-sponsored	217,291	—	217,291	3,571	—	—	95	3,666	
Non-agency-sponsored	13,036	1,586	11,450	527	—	—	1	528	
Citi-administered asset-backed commercial paper conduits (ABCP)	21,280	21,280	—	—	—	—	—	—	
Collateralized loan obligations (CLOs)	16,719	—	16,719	3,150	—	—	86	3,236	
Asset-based financing	58,862	1,364	57,498	21,270	269	3,616	—	25,155	
Municipal securities tender option bond trusts (TOBs)	8,572	3,830	4,742	2	—	3,100	—	3,102	
Municipal investments	20,290	44	20,246	2,196	2,487	2,335	—	7,018	
Client intermediation	434	335	99	49	—	—	—	49	
Investment funds	1,730	842	888	13	138	102	—	253	
Other	4,915	597	4,318	292	554	—	52	898	
Total⁽⁵⁾	\$ 418,045	\$ 84,794	\$ 333,251	\$ 31,070	\$ 3,448	\$ 9,153	\$ 234	\$ 43,905	

Note: Certain adjustments have been made to the December 31, 2015 information to conform to the current period's presentation.

- (1) The definition of maximum exposure to loss is included in the text that follows this table.
- (2) Included on Citigroup's December 31, 2016 and 2015 Consolidated Balance Sheet.
- (3) A significant unconsolidated VIE is an entity where the Company has any variable interest or continuing involvement considered to be significant, regardless of the likelihood of loss.
- (4) Citigroup mortgage securitizations also include agency and non-agency (private-label) re-securitization activities. These SPEs are not consolidated. See "Re-securitizations" below for further discussion.
- (5) Citi's total involvement with Citicorp SPE assets was \$384.7 billion and \$383.2 billion as of December 31, 2016 and 2015, respectively, with the remainder related to Citi Holdings.

The previous tables do not include:

- certain venture capital investments made by some of the Company's private equity subsidiaries, as the Company accounts for these investments in accordance with the Investment Company Audit Guide (codified in ASC 946);
- certain investment funds for which the Company provides investment management services and personal estate trusts for which the Company provides administrative, trustee and/or investment management services;
- certain VIEs structured by third parties where the Company holds securities in inventory, as these investments are made on arm's-length terms;
- certain positions in mortgage-backed and asset-backed securities held by the Company, which are classified as *Trading account assets* or *Investments*, where the Company has no other involvement with the related securitization entity deemed to be significant (for more information on these positions, see Notes 24 and 13 to the Consolidated Financial Statements);
- certain representations and warranties exposures in legacy ICG-sponsored mortgage-backed and asset-backed securitizations, where the Company has no variable interest or continuing involvement as servicer. The outstanding balance of mortgage loans securitized during 2005 to 2008 where the Company has no variable interest or continuing involvement as servicer was approximately \$10 billion and \$12 billion at December 31, 2016 and 2015, respectively;
- certain representations and warranties exposures in Citigroup residential mortgage securitizations, where the original mortgage loan balances are no longer outstanding; and
- VIEs such as trust preferred securities trusts used in connection with the Company's funding activities. The Company does not have a variable interest in these trusts.

The asset balances for consolidated VIEs represent the carrying amounts of the assets consolidated by the Company. The carrying amount may represent the amortized cost or the current fair value of the assets depending on the legal form of the asset (e.g., loan or security) and the Company's standard accounting policies for the asset type and line of business.

The asset balances for unconsolidated VIEs where the Company has significant involvement represent the most current information available to the Company. In most cases, the asset balances represent an amortized cost basis without regard to impairments, unless fair value information is readily available to the Company.

The maximum funded exposure represents the balance sheet carrying amount of the Company's investment in the VIE. It reflects the initial amount of cash invested in the VIE adjusted for any accrued interest and cash principal payments received. The carrying amount may also be adjusted for increases or declines in fair value or any impairment in value recognized in earnings. The maximum exposure of unfunded positions represents the remaining undrawn committed amount, including liquidity and credit facilities provided by the Company, or the notional amount of a derivative instrument considered to be a variable interest. In certain transactions, the Company has entered into derivative instruments or other arrangements that are not considered variable interests in the VIE (e.g., interest rate swaps, cross-currency swaps, or where the Company is the purchaser of credit protection under a credit default swap or total return swap where the Company pays the total return on certain assets to the SPE). Receivables under such arrangements are not included in the maximum exposure amounts.

Funding Commitments for Significant Unconsolidated VIEs—Liquidity Facilities and Loan Commitments

The following table presents the notional amount of liquidity facilities and loan commitments that are classified as funding commitments in the VIE tables above:

<i>In millions of dollars</i>	December 31, 2016		December 31, 2015	
	Liquidity facilities	Loan / equity commitments	Liquidity facilities	Loan / equity commitments
Asset-based financing	\$ 5	\$ 4,910	\$ 5	\$ 3,611
Municipal securities tender option bond trusts (TOBs)	2,842	—	3,100	—
Municipal investments	—	2,580	—	2,335
Investment funds	—	27	—	102
Other	—	58	—	—
Total funding commitments	\$ 2,847	\$ 7,575	\$ 3,105	\$ 6,048

Consolidated VIEs

The Company engages in on-balance sheet securitizations, which are securitizations that do not qualify for sales treatment; thus, the assets remain on the Company's Consolidated Balance Sheet, and any proceeds received are recognized as secured liabilities. The consolidated VIEs represent hundreds of separate entities with which the Company is involved. In general, the third-party investors in the obligations of consolidated VIEs have legal recourse only to the assets of the respective VIEs and do not have such recourse to the Company, except where the Company has provided a guarantee to the investors or is the counterparty to

certain derivative transactions involving the VIE. Thus, the Company's maximum legal exposure to loss related to consolidated VIEs is significantly less than the carrying value of the consolidated VIE assets due to outstanding third-party financing. Intercompany assets and liabilities are excluded from Citi's Consolidated Balance Sheet. All VIE assets are restricted from being sold or pledged as collateral. The cash flows from these assets are the only source used to pay down the associated liabilities, which are non-recourse to the Company's general assets. See the Consolidated Balance Sheet for more information about these Consolidated VIE assets and liabilities.

Significant Interests in Unconsolidated VIEs—Balance Sheet Classification

The following table presents the carrying amounts and classification of significant variable interests in unconsolidated VIEs:

<i>In billions of dollars</i>	December 31, 2016	December 31, 2015
Cash	\$ 0.1	\$ 0.1
Trading account assets	8.0	6.2
Investments	4.4	3.0
Total loans, net of allowance	18.8	23.6
Other	1.5	1.7
Total assets	\$ 32.8	\$ 34.6

Credit Card Securitizations

The Company securitizes credit card receivables through trusts established to purchase the receivables. Citigroup transfers receivables into the trusts on a non-recourse basis. Credit card securitizations are revolving securitizations; as customers pay their credit card balances, the cash proceeds are used to purchase new receivables and replenish the receivables in the trust.

Substantially all of the Company's credit card securitization activity is through two trusts—Citibank Credit Card Master Trust (Master Trust) and the Citibank Omni Master Trust (Omni Trust), with the substantial majority through the Master Trust. These trusts are consolidated

entities because, as servicer, Citigroup has the power to direct the activities that most significantly impact the economic performance of the trusts, Citigroup holds a seller's interest and certain securities issued by the trusts, which could result in exposure to potentially significant losses or benefits from the trusts. Accordingly, the transferred credit card receivables remain on Citi's Consolidated Balance Sheet with no gain or loss recognized. The debt issued by the trusts to third parties is included on Citi's Consolidated Balance Sheet.

The Company utilizes securitizations as one of the sources of funding for its business in *North America*. The following table reflects amounts related to the Company's securitized credit card receivables:

<i>In billions of dollars</i>	December 31, 2016	December 31, 2015
Ownership interests in principal amount of trust credit card receivables		
Sold to investors via trust-issued securities	\$ 22.7	\$ 29.7
Retained by Citigroup as trust-issued securities	7.4	9.4
Retained by Citigroup via non-certificated interests	20.6	16.5
Total	\$ 50.7	\$ 55.6

The following table summarizes selected cash flow information related to Citigroup's credit card securitizations:

<i>In billions of dollars</i>	2016	2015	2014
Proceeds from new securitizations	\$ 3.3	\$ —	\$ 12.6
Pay down of maturing notes	(10.3)	(7.4)	(7.8)

Managed Loans

After securitization of credit card receivables, the Company continues to maintain credit card customer account relationships and provides servicing for receivables transferred to the trusts. As a result, the Company considers the securitized credit card receivables to be part of the business it manages. As Citigroup consolidates the credit card trusts, all managed securitized card receivables are on-balance sheet.

Funding, Liquidity Facilities and Subordinated Interests

As noted above, Citigroup securitizes credit card receivables through two securitization trusts—Master Trust and Omni Trust. The liabilities of the trusts are included in the Consolidated Balance Sheet, excluding those retained by Citigroup.

The Master Trust issues fixed- and floating-rate term notes. Some of the term notes may be issued to multi-seller commercial paper conduits. The weighted average maturity of the term notes issued by the Master Trust was 2.6 years as of December 31, 2016 and 2.4 years as of December 31, 2015.

Master Trust Liabilities (at Par Value)

<i>In billions of dollars</i>	Dec. 31, 2016	Dec. 31, 2015
Term notes issued to third parties	\$ 21.7	\$ 28.4
Term notes retained by Citigroup affiliates	5.5	7.5
Total Master Trust liabilities	\$ 27.2	\$ 35.9

The Omni Trust issues fixed- and floating-rate term notes, some of which are purchased by multi-seller commercial paper conduits. The weighted average maturity of the third-party term notes issued by the Omni Trust was 1.9 years as of December 31, 2016 and 0.9 years as of December 31, 2015.

Omni Trust Liabilities (at Par Value)

<i>In billions of dollars</i>	Dec. 31, 2016	Dec. 31, 2015
Term notes issued to third parties	\$ 1.0	\$ 1.3
Term notes retained by Citigroup affiliates	1.9	1.9
Total Omni Trust liabilities	\$ 2.9	\$ 3.2

Mortgage Securitizations

The Company provides a wide range of mortgage loan products to a diverse customer base. Once originated, the Company often securitizes these loans through the use of VIEs. These VIEs are funded through the issuance of trust certificates backed solely by the transferred assets. These certificates have the same life as the transferred assets. In addition to providing a source of liquidity and less expensive funding, securitizing these assets also reduces the Company's credit exposure to the borrowers. These mortgage loan securitizations are primarily non-recourse, thereby effectively transferring the risk of future credit losses to the purchasers of the securities issued by the trust. However, the Company's U.S. consumer mortgage business generally retains the servicing rights and in certain instances retains investment securities, interest-only strips and residual interests in future cash flows from the trusts and also provides servicing for a limited number of ICG securitizations.

The Company securitizes mortgage loans generally through either a government-sponsored agency, such as Ginnie Mae, Fannie Mae or Freddie Mac (U.S. agency-sponsored mortgages), or private-label (non-agency-sponsored mortgages) securitization. The Company is not the primary beneficiary of its U.S. agency-sponsored mortgage

securitizations because Citigroup does not have the power to direct the activities of the VIE that most significantly impact the entity's economic performance. Therefore, Citi does not consolidate these U.S. agency-sponsored mortgage securitizations. Substantially all of the Consumer loans sold or securitized through non-consolidated trusts by Citigroup are U.S. prime residential mortgage loans. Retained interests in non-consolidated mortgage securitization trusts are classified as *Trading account assets*, except for MSRs which are included in *Mortgage servicing rights* on Citigroup's Consolidated Balance Sheet.

The Company does not consolidate certain non-agency-sponsored mortgage securitizations because Citi is either not the servicer with the power to direct the significant activities of the entity or Citi is the servicer, but the servicing relationship is deemed to be a fiduciary relationship; therefore, Citi is not deemed to be the primary beneficiary of the entity.

In certain instances, the Company has (i) the power to direct the activities and (ii) the obligation to either absorb losses or the right to receive benefits that could be potentially significant to its non-agency-sponsored mortgage securitizations and, therefore, is the primary beneficiary and, thus, consolidates the VIE.

The following table summarizes selected cash flow information related to Citigroup mortgage securitizations:

	2016		2015		2014	
	U.S. agency-sponsored mortgages	Non-agency-sponsored mortgages	U.S. agency-sponsored mortgages	Non-agency-sponsored mortgages	U.S. agency-sponsored mortgages	Non-agency-sponsored mortgages
<i>In billions of dollars</i>						
Proceeds from new securitizations ⁽¹⁾	\$ 41.3	\$ 11.8	\$ 35.0	\$ 12.1	\$ 27.8	\$ 11.8
Contractual servicing fees received	0.4	—	0.5	—	0.6	—
Cash flows received on retained interests and other net cash flows	0.1	—	0.1	—	0.1	—

(1) The proceeds from new securitizations in 2016 and 2015 include \$0.5 billion and \$0.7 billion, respectively, related to personal loan securitizations.

Agency and non-agency securitization gains for the year ended December 31, 2016 were \$105 million and \$107 million, respectively.

Agency and non-agency securitization gains for the year ended December 31, 2015 were \$149 million and \$41 million, respectively, and \$214 million and \$53 million, respectively, for the year ended December 31, 2014.

Key assumptions used in measuring the fair value of retained interests at the date of sale or securitization of mortgage receivables were as follows:

	December 31, 2016		
	U.S. agency-sponsored mortgages	Non-agency-sponsored mortgages ⁽¹⁾	
		Senior interests	Subordinated interests
Discount rate	0.8% to 13.7%	—	—
Weighted average discount rate	9.9%	—	—
Constant prepayment rate	3.8% to 30.9%	—	—
Weighted average constant prepayment rate	11.1%	—	—
Anticipated net credit losses ⁽²⁾	NM	—	—
Weighted average anticipated net credit losses	NM	—	—
Weighted average life	0.5 to 17.5 years	—	—

Note: Citi held no retained interests in non-agency-sponsored mortgages securitized during 2016.

	December 31, 2015		
	Non-agency-sponsored mortgages ⁽¹⁾		
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Discount rate	0.0% to 11.4%	2.0% to 3.2%	2.9% to 12.1%
Weighted average discount rate	6.8%	2.9%	5.2%
Constant prepayment rate	5.7% to 34.9%	—	2.8% to 8.0%
Weighted average constant prepayment rate	11.8%	—	3.5%
Anticipated net credit losses ⁽²⁾	NM	40.0%	38.1% to 92.0%
Weighted average anticipated net credit losses	NM	40.0%	70.6%
Weighted average life	3.5 to 13.8 years	2.5 to 9.8 years	8.9 to 12.9 years

(1) Disclosure of non-agency-sponsored mortgages as senior and subordinated interests is indicative of the interests' position in the capital structure of the securitization.

(2) Anticipated net credit losses represent estimated loss severity associated with defaulted mortgage loans underlying the mortgage securitizations disclosed above. Anticipated net credit losses, in this instance, do not represent total credit losses incurred to date, nor do they represent credit losses expected on retained interests in mortgage securitizations.

NM Anticipated net credit losses are not meaningful due to U.S. agency guarantees.

The interests retained by the Company range from highly rated and/or senior in the capital structure to unrated and/or residual interests.

The key assumptions used to value retained interests, and the sensitivity of the fair value to adverse changes of 10% and 20% in each of the key assumptions, are set forth in the tables

below. The negative effect of each change is calculated independently, holding all other assumptions constant. Because the key assumptions may not be independent, the net effect of simultaneous adverse changes in the key assumptions may be less than the sum of the individual effects shown below.

	December 31, 2016		
	Non-agency-sponsored mortgages ⁽¹⁾		
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Discount rate	0.7% to 28.2%	0.0% to 8.1%	5.1% to 26.4%
Weighted average discount rate	9.0%	2.1%	13.1%
Constant prepayment rate	6.8% to 22.8%	4.2% to 14.7%	0.5% to 37.5%
Weighted average constant prepayment rate	10.2%	11.0%	10.8%
Anticipated net credit losses ⁽²⁾	NM	0.5% to 85.6%	8.0% to 63.7%
Weighted average anticipated net credit losses	NM	31.4%	48.3%
Weighted average life	0.2 to 28.8 years	5.0 to 8.5 years	1.2 to 12.1 years

	December 31, 2015		
	Non-agency-sponsored mortgages ⁽¹⁾		
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Discount rate	0.0% to 27.0%	1.6% to 67.6%	2.0% to 24.9%
Weighted average discount rate	4.9%	7.6%	8.4%
Constant prepayment rate	5.7% to 27.8%	4.2% to 100.0%	0.5% to 20.8%
Weighted average constant prepayment rate	12.3%	14.0%	7.5%
Anticipated net credit losses ⁽²⁾	NM	0.2% to 89.1%	3.8% to 92.0%
Weighted average anticipated net credit losses	NM	48.9%	54.4%
Weighted average life	1.3 to 21.0 years	0.3 to 18.1 years	0.9 to 19.0 years

Note: Citi Holdings held no subordinated interests in mortgage securitizations as of December 31, 2016 and 2015.

(1) Disclosure of non-agency-sponsored mortgages as senior and subordinated interests is indicative of the interests' position in the capital structure of the securitization.

(2) Anticipated net credit losses represent estimated loss severity associated with defaulted mortgage loans underlying the mortgage securitizations disclosed above. Anticipated net credit losses, in this instance, do not represent total credit losses incurred to date, nor do they represent credit losses expected on retained interests in mortgage securitizations.

NM Anticipated net credit losses are not meaningful due to U.S. agency guarantees.

<i>In millions of dollars</i>	December 31, 2016		
	U.S. agency- sponsored mortgages	Non-agency-sponsored mortgages ⁽¹⁾	
		Senior interests	Subordinated interests
Carrying value of retained interests	\$ 2,258	\$ 26	\$ 161
Discount rates			
Adverse change of 10%	\$ (71)	\$ (7)	\$ (8)
Adverse change of 20%	(138)	(14)	(16)
Constant prepayment rate			
Adverse change of 10%	(80)	(2)	(4)
Adverse change of 20%	(160)	(3)	(8)
Anticipated net credit losses			
Adverse change of 10%	NM	(7)	(1)
Adverse change of 20%	NM	(14)	(2)

<i>In millions of dollars</i>	December 31, 2015		
	U.S. agency- sponsored mortgages	Non-agency-sponsored mortgages ⁽¹⁾	
		Senior interests	Subordinated interests
Carrying value of retained interests	\$ 3,546	\$ 179	\$ 533
Discount rates			
Adverse change of 10%	\$ (79)	\$ (8)	\$ (25)
Adverse change of 20%	(155)	(15)	(49)
Constant prepayment rate			
Adverse change of 10%	(111)	(3)	(9)
Adverse change of 20%	(213)	(6)	(18)
Anticipated net credit losses			
Adverse change of 10%	NM	(6)	(7)
Adverse change of 20%	NM	(11)	(14)

Note: There were no subordinated interests in mortgage securitizations in Citi Holdings as of December 31, 2016 and 2015.

(1) Disclosure of non-agency-sponsored mortgages as senior and subordinated interests is indicative of the interests' position in the capital structure of the securitization.

NM Anticipated net credit losses are not meaningful due to U.S. agency guarantees.

Mortgage Servicing Rights

In connection with the securitization of mortgage loans, the Company's U.S. consumer mortgage business generally retains the servicing rights, which entitle the Company to a future stream of cash flows based on the outstanding principal balances of the loans and the contractual servicing fee. Failure to service the loans in accordance with contractual requirements may lead to a termination of the servicing rights and the loss of future servicing fees.

These transactions create an intangible asset referred to as mortgage servicing rights (MSRs), which are recorded at fair value on Citi's Consolidated Balance Sheet. The fair value of Citi's capitalized MSRs was \$1.6 billion and \$1.8 billion at December 31, 2016 and 2015, respectively. The MSRs correspond to principal loan balances of \$168 billion and \$198 billion as of December 31, 2016 and 2015, respectively. The following table summarizes the changes in capitalized MSRs:

<i>In millions of dollars</i>	2016	2015
Balance, beginning of year	\$ 1,781	\$ 1,845
Originations	152	214
Changes in fair value of MSRs due to changes in inputs and assumptions	(36)	110
Other changes ⁽¹⁾	(313)	(350)
Sale of MSRs ⁽²⁾	(20)	(38)
Balance, as of December 31	\$ 1,564	\$ 1,781

(1) Represents changes due to customer payments and passage of time.

(2) Amount includes sales of credit challenged MSRs for which Citi paid the new servicer.

The fair value of the MSR is primarily affected by changes in prepayments of mortgages that result from shifts in mortgage interest rates. Specifically, higher interest rates tend to lead to declining prepayments, which causes the fair value of the MSR to increase. In managing this risk, the Company economically hedges a significant portion of the value of its MSR through the use of interest rate derivative contracts, forward purchase and sale commitments of mortgage-backed securities and purchased securities all classified as *Trading account assets*. The Company receives fees during the course of servicing previously securitized mortgages. The amounts of these fees were as follows:

<i>In millions of dollars</i>	2016	2015	2014
Servicing fees	\$ 484	\$ 552	\$ 638
Late fees	14	16	25
Ancillary fees	17	31	56
Total MSR fees	\$ 515	\$ 599	\$ 719

In the Consolidated Statement of Income these fees are primarily classified as *Commissions and fees*, and changes in MSR fair values are classified as *Other revenue*.

In January 2017, Citi signed agreements to effectively exit its U.S. mortgage servicing operations by the end of 2018 and intensify its focus on loan originations. For additional information on these transactions, see Note 29 to the Consolidated Financial Statements.

Re-securitizations

The Company engages in re-securitization transactions in which debt securities are transferred to a VIE in exchange for new beneficial interests. Citi did not transfer non-agency (private-label) securities to re-securitization entities during the year ended December 31, 2016. During the year ended December 31, 2015, Citi transferred non-agency (private-label) securities with an original par value of \$885 million to re-securitization entities. These securities are backed by either residential or commercial mortgages and are often structured on behalf of clients.

As of December 31, 2016, the fair value of Citi-retained interests in private-label re-securitization transactions structured by Citi totaled approximately \$126 million (all related to re-securitization transactions prior to 2016), which has been recorded in *Trading account assets*. Of this amount, substantially all was related to subordinated beneficial interests. As of December 31, 2015, the fair value of Citi-retained interests in private-label re-securitization transactions structured by Citi totaled approximately \$428 million (including \$132 million related to re-securitization transactions executed in 2015). Of this amount, approximately \$18 million was related to senior beneficial interests and approximately \$410 million was related to subordinated beneficial interests. The original par value of private-label re-securitization transactions in which Citi holds a retained interest as of December 31, 2016 and 2015 was approximately \$1.3 billion and \$3.7 billion, respectively.

The Company also re-securitizes U.S. government-agency guaranteed mortgage-backed (agency) securities. During the years ended December 31, 2016 and 2015, Citi transferred agency securities with a fair value of approximately \$23.9

billion and \$17.8 billion, respectively, to re-securitization entities.

As of December 31, 2016, the fair value of Citi-retained interests in agency re-securitization transactions structured by Citi totaled approximately \$2.3 billion (including \$741 million related to re-securitization transactions executed in 2016) compared to \$1.8 billion as of December 31, 2015 (including \$1.5 billion related to re-securitization transactions executed in 2015), which is recorded in *Trading account assets*. The original fair value of agency re-securitization transactions in which Citi holds a retained interest as of December 31, 2016 and 2015 was approximately \$71.8 billion and \$65.0 billion, respectively.

As of December 31, 2016 and 2015, the Company did not consolidate any private-label or agency re-securitization entities.

Citi-Administered Asset-Backed Commercial Paper Conduits

The Company is active in the asset-backed commercial paper conduit business as administrator of several multi-seller commercial paper conduits and also as a service provider to single-seller and other commercial paper conduits sponsored by third parties.

Citi's multi-seller commercial paper conduits are designed to provide the Company's clients access to low-cost funding in the commercial paper markets. The conduits purchase assets from or provide financing facilities to clients and are funded by issuing commercial paper to third-party investors. The conduits generally do not purchase assets originated by the Company. The funding of the conduits is facilitated by the liquidity support and credit enhancements provided by the Company.

As administrator to Citi's conduits, the Company is generally responsible for selecting and structuring assets purchased or financed by the conduits, making decisions regarding the funding of the conduits, including determining the tenor and other features of the commercial paper issued, monitoring the quality and performance of the conduits' assets, and facilitating the operations and cash flows of the conduits. In return, the Company earns structuring fees from customers for individual transactions and earns an administration fee from the conduit, which is equal to the income from the client program and liquidity fees of the conduit after payment of conduit expenses. This administration fee is fairly stable, since most risks and rewards of the underlying assets are passed back to the clients. Once the asset pricing is negotiated, most ongoing income, costs and fees are relatively stable as a percentage of the conduit's size.

The conduits administered by the Company do not generally invest in liquid securities that are formally rated by third parties. The assets are privately negotiated and structured transactions that are generally designed to be held by the conduit, rather than actively traded and sold. The yield earned by the conduit on each asset is generally tied to the rate on the commercial paper issued by the conduit, thus passing interest rate risk to the client. Each asset purchased by the conduit is structured with transaction-specific credit enhancement features provided by the third-party client seller, including over collateralization, cash and excess spread collateral accounts, direct recourse or third-party guarantees. These

credit enhancements are sized with the objective of approximating a credit rating of A or above, based on the Company's internal risk ratings. At December 31, 2016 and 2015, the conduits had approximately \$19.7 billion and \$21.3 billion of purchased assets outstanding, respectively, and had incremental funding commitments with clients of approximately \$12.8 billion and \$11.6 billion, respectively.

Substantially all of the funding of the conduits is in the form of short-term commercial paper. At December 31, 2016 and 2015, the weighted average remaining lives of the commercial paper issued by the conduits were approximately 55 and 56 days, respectively.

The primary credit enhancement provided to the conduit investors is in the form of transaction-specific credit enhancements described above. In addition to the transaction-specific credit enhancements, the conduits, other than the government guaranteed loan conduit, have obtained a letter of credit from the Company, which is equal to at least 8% to 10% of the conduit's assets with a minimum of \$200 million. The letters of credit provided by the Company to the conduits total approximately \$1.8 billion as of December 31, 2016 and 2015. The net result across multi-seller conduits administered by the Company, other than the government guaranteed loan conduit, is that, in the event defaulted assets exceed the transaction-specific credit enhancements described above, any losses in each conduit are allocated first to the Company and then the commercial paper investors.

The Company also provides the conduits with two forms of liquidity agreements that are used to provide funding to the conduits in the event of a market disruption, among other events. Each asset of the conduits is supported by a transaction-specific liquidity facility in the form of an asset purchase agreement (APA). Under the APA, the Company has generally agreed to purchase non-defaulted eligible receivables from the conduit at par. The APA is not designed to provide credit support to the conduit, as it generally does not permit the purchase of defaulted or impaired assets. Any funding under the APA will likely subject the underlying conduit clients to increased interest costs. In addition, the Company provides the conduits with program-wide liquidity in the form of short-term lending commitments. Under these commitments, the Company has agreed to lend to the conduits in the event of a short-term disruption in the commercial paper market, subject to specified conditions. The Company receives fees for providing both types of liquidity agreements and considers these fees to be on fair market terms.

Finally, the Company is one of several named dealers in the commercial paper issued by the conduits and earns a market-based fee for providing such services. Along with third-party dealers, the Company makes a market in the commercial paper and may from time to time fund commercial paper pending sale to a third party. On specific dates with less liquidity in the market, the Company may hold in inventory commercial paper issued by conduits administered by the Company, as well as conduits administered by third parties. Separately, in the normal course of business, the Company purchases commercial paper, including commercial paper issued by the Company's conduits. At December 31, 2016 and 2015, the Company owned \$9.7 billion and \$11.4 billion, respectively, of the commercial paper issued by its

administered conduits. The Company's purchases were not driven by market illiquidity and, other than the amounts required to be held pursuant to credit risk retention rules, the Company is not obligated under any agreement to purchase the commercial paper issued by the conduits.

The asset-backed commercial paper conduits are consolidated by the Company. The Company has determined that, through its roles as administrator and liquidity provider, it has the power to direct the activities that most significantly impact the entities' economic performance. These powers include its ability to structure and approve the assets purchased by the conduits, its ongoing surveillance and credit mitigation activities, its ability to sell or repurchase assets out of the conduits, and its liability management. In addition, as a result of all the Company's involvement described above, it was concluded that the Company has an economic interest that could potentially be significant. However, the assets and liabilities of the conduits are separate and apart from those of Citigroup. No assets of any conduit are available to satisfy the creditors of Citigroup or any of its other subsidiaries.

Collateralized Loan Obligations

A collateralized loan obligation (CLO) is a VIE that purchases a portfolio of assets consisting primarily of non-investment grade corporate loans. CLOs issue multiple tranches of debt and equity to investors to fund the asset purchases and pay upfront expenses associated with forming the CLO. A third-party asset manager is contracted by the CLO to purchase the underlying assets from the open market and monitor the credit risk associated with those assets. Over the term of a CLO, the asset manager directs purchases and sales of assets in a manner consistent with the CLO's asset management agreement and indenture. In general, the CLO asset manager will have the power to direct the activities of the entity that most significantly impact the economic performance of the CLO. Investors in a CLO, through their ownership of debt and/or equity in the CLO, can also direct certain activities of the CLO, including removing the CLO asset manager under limited circumstances, optionally redeeming the notes, voting on amendments to the CLO's operating documents and other activities. A CLO has a finite life, typically 12 years.

Citi serves as a structuring and placement agent with respect to the CLOs. Typically, the debt and equity of the CLOs are sold to third-party investors. On occasion, certain Citi entities may purchase some portion of a CLO's liabilities for investment purposes. In addition, Citi may purchase, typically in the secondary market, certain securities issued by the CLOs to support its market making activities.

The Company does not generally have the power to direct the activities of the entity that most significantly impact the economic performance of the CLOs, as this power is generally held by a third-party asset manager of the CLO. As such, those CLOs are not consolidated.

Key Assumptions and Retained Interests

The key assumptions used to value retained interests in CLOs, and the sensitivity of the fair value to adverse changes of 10% and 20% are set forth in the tables below:

	Dec. 31, 2016	Dec. 31, 2015
Discount rate	1.3% to 1.7%	1.4% to 49.6%

<i>In millions of dollars</i>	Dec. 31, 2016	Dec. 31, 2015
Carrying value of retained interests	\$ 4,261	\$ 2,299
Discount rates		
Adverse change of 10%	\$ (30)	\$ (5)
Adverse change of 20%	(62)	(10)

Asset-Based Financing

The Company provides loans and other forms of financing to VIEs that hold assets. Those loans are subject to the same credit approvals as all other loans originated or purchased by the Company. Financings in the form of debt securities or derivatives are, in most circumstances, reported in *Trading account assets* and accounted for at fair value through earnings. The Company generally does not have the power to direct the activities that most significantly impact these VIEs' economic performance; thus, it does not consolidate them.

The primary types of Citi's asset-based financings, total assets of the unconsolidated VIEs with significant involvement, and Citi's maximum exposure to loss are shown below. For Citi to realize the maximum loss, the VIE (borrower) would have to default with no recovery from the assets held by the VIE.

	December 31, 2016	
<i>In millions of dollars</i>	Total unconsolidated VIE assets	Maximum exposure to unconsolidated VIEs
Type		
Commercial and other real estate	\$ 8,784	\$ 2,368
Corporate loans	4,051	2,684
Hedge funds and equities	370	54
Airplanes, ships and other assets	39,230	16,837
Total	\$ 52,435	\$ 21,943

	December 31, 2015	
<i>In millions of dollars</i>	Total unconsolidated VIE assets	Maximum exposure to unconsolidated VIEs
Type		
Commercial and other real estate	\$ 17,459	\$ 6,528
Corporate loans	1,274	1,871
Hedge funds and equities	385	55
Airplanes, ships and other assets	38,380	16,701
Total	\$ 57,498	\$ 25,155

The following table summarizes selected cash flow information related to asset-based financings:

<i>In billions of dollars</i>	2016	2015	2014
Proceeds from new securitizations	\$ —	\$ —	\$ 0.5
Cash flows received on retained interests and other net cash flows	—	—	0.3

There were no gains recognized on the securitizations of asset-based financings for the years ended December 31, 2016, 2015 and 2014.

Municipal Securities Tender Option Bond (TOB) Trusts

Municipal TOB trusts may hold fixed- or floating-rate, taxable or tax-exempt securities issued by state and local governments and municipalities. TOB trusts are typically structured as single-issuer entities whose assets are purchased from either the Company or from other investors in the municipal securities market. TOB trusts finance the purchase of their municipal assets by issuing two classes of certificates: long-dated, floating rate certificates ("Floaters") that are puttable pursuant to a liquidity facility and residual interest certificates ("Residuals"). The Floaters are purchased by third-party investors, typically tax-exempt money market funds. The Residuals are purchased by the original owner of the municipal securities that are being financed.

From the Company's perspective, there are two types of TOB trusts: customer TOB trusts and non-customer TOB trusts. Customer TOB trusts are those trusts utilized by customers of the Company to finance their municipal securities investments. The Residuals issued by these trusts are purchased by the customer being financed. Non-customer TOB trusts are trusts that are used by the Company to finance its own municipal securities investments; the Residuals issued by non-customer TOB trusts are purchased by the Company.

With respect to both customer and non-customer TOB trusts, the Company may provide remarketing agent services. If Floaters are optionally tendered and the Company, in its role as remarketing agent, is unable to find a new investor to purchase the optionally tendered Floaters within a specified period of time, the Company may, but is not obligated to, purchase the tendered Floaters into its own inventory. The level of the Company's inventory of such Floaters fluctuates.

For certain customer TOB trusts, the Company may also serve as a voluntary advance provider. In this capacity, the Company may, but is not obligated to, make loan advances to customer TOB trusts to purchase optionally tendered Floaters that have not otherwise been successfully remarketed to new investors. Such loans are secured by pledged Floaters. As of December 31, 2016, the Company had no outstanding voluntary advances to customer TOB trusts.

For certain non-customer trusts, the Company also provides credit enhancement. Approximately \$82 million of the municipal bonds owned by non-customer TOB trusts were subject to a credit guarantee provided by the Company at both December 31, 2016 and 2015.

The Company also provides liquidity services to many customer and non-customer trusts. If a trust is unwound early due to an event other than a credit event on the underlying municipal bonds, the underlying municipal bonds are sold out

of the Trust and bond sale proceeds are used to redeem the outstanding Trust certificates. If this results in a shortfall between the bond sale proceeds and the redemption price of the tendered Floaters, the Company, pursuant to the liquidity agreement, would be obligated to make a payment to the trust to satisfy that shortfall. For certain customer TOB trusts, the Company has also executed a reimbursement agreement with the holder of the Residual, pursuant to which the Residual holder is obligated to reimburse the Company for any payment the Company makes under the liquidity arrangement. These reimbursement agreements may be subject to daily margining based on changes in the market value of the underlying municipal bonds. In cases where a third party provides liquidity to a non-customer TOB trust, a similar reimbursement arrangement may be executed, whereby the Company (or a consolidated subsidiary of the Company), as Residual holder, would absorb any losses incurred by the liquidity provider.

For certain other non-customer TOB trusts, the Company serves as tender option provider. The tender option provider arrangement allows Floater holders to put their interests directly to the Company at any time, subject to the requisite notice period requirements, at a price of par.

At December 31, 2016 and 2015, liquidity agreements provided with respect to customer TOB trusts totaled \$2.9 billion and \$3.1 billion, respectively, of which \$2.1 billion and \$2.2 billion, respectively, were offset by reimbursement agreements. For the remaining exposure related to TOB transactions, where the Residual owned by the customer was at least 25% of the bond value at the inception of the transaction, no reimbursement agreement was executed.

The Company considers both customer and non-customer TOB trusts to be VIEs. Customer TOB trusts are not consolidated by the Company, as the power to direct the activities that most significantly impact the trust's economic performance rests with the customer Residual holder, which may unilaterally cause the sale of the trust's bonds.

Non-customer TOB trusts generally are consolidated because the Company holds the Residual interest, and thus has the unilateral power to cause the sale of the trust's bonds.

The Company also provides other liquidity agreements or letters of credit to customer-sponsored municipal investment funds, which are not variable interest entities, and municipality-related issuers that totaled \$7.4 billion and \$8.1 billion as of December 31, 2016 and 2015, respectively. These liquidity agreements and letters of credit are offset by reimbursement agreements with various term-out provisions.

Municipal Investments

Municipal investment transactions include debt and equity interests in partnerships that finance the construction and rehabilitation of low-income housing, facilitate lending in new or underserved markets, or finance the construction or operation of renewable municipal energy facilities. The Company generally invests in these partnerships as a limited partner and earns a return primarily through the receipt of tax credits and grants earned from the investments made by the partnership. The Company may also provide construction loans or permanent loans for the development or operation of real estate properties held by partnerships. These entities are generally considered VIEs. The power to direct the activities of these entities is typically held by the general partner. Accordingly, these entities are not consolidated by the Company.

Client Intermediation

Client intermediation transactions represent a range of transactions designed to provide investors with specified returns based on the returns of an underlying security, referenced asset or index. These transactions include credit-linked notes and equity-linked notes. In these transactions, the VIE typically obtains exposure to the underlying security, referenced asset or index through a derivative instrument, such as a total-return swap or a credit-default swap. In turn, the VIE issues notes to investors that pay a return based on the specified underlying security, referenced asset or index. The VIE invests the proceeds in a financial asset or a guaranteed insurance contract that serves as collateral for the derivative contract over the term of the transaction. The Company's involvement in these transactions includes being the counterparty to the VIE's derivative instruments and investing in a portion of the notes issued by the VIE. In certain transactions, the investor's maximum risk of loss is limited, and the Company absorbs risk of loss above a specified level. The Company does not have the power to direct the activities of the VIEs that most significantly impact their economic performance, and thus it does not consolidate them.

The Company's maximum risk of loss in these transactions is defined as the amount invested in notes issued by the VIE and the notional amount of any risk of loss absorbed by the Company through a separate instrument issued by the VIE. The derivative instrument held by the Company may generate a receivable from the VIE (for example, where the Company purchases credit protection from the VIE in connection with the VIE's issuance of a credit-linked note), which is collateralized by the assets owned by the VIE. These derivative instruments are not considered variable interests, and any associated receivables are not included in the calculation of maximum exposure to the VIE.

The proceeds from new securitizations related to the Company's client intermediation transactions for the years ended December 31, 2016 and 2015 totaled approximately \$2.3 billion and \$2.0 billion, respectively.

Investment Funds

The Company is the investment manager for certain investment funds and retirement funds that invest in various asset classes including private equity, hedge funds, real estate, fixed income and infrastructure. The Company earns a management fee, which is a percentage of capital under management, and may earn performance fees. In addition, for some of these funds the Company has an ownership interest in the investment funds. The Company has also established a number of investment funds as opportunities for qualified employees to invest in private equity investments. The Company acts as investment manager to these funds and may provide employees with financing on both recourse and non-recourse bases for a portion of the employees' investment commitments.

Prior to January 1, 2016, the Company determined that a majority of the investment entities managed by Citigroup were provided a deferral from the requirements of ASC 810, because they met the criteria in ASU No. 2010-10, *Consolidation (Topic 810): Amendments for Certain Investment Funds*. As part of the amended guidance under ASU 2015-02, *Consolidation (Topic 810): Amendments to the Consolidation Analysis*, effective January 1, 2016, these entities were evaluated and the Company determined that these entities continue to meet the definition of a VIE because the limited partners in the fund do not have the ability to remove the Company as investment manager. The Company is considered the primary beneficiary and consolidates those VIE entities where it has both the power to direct the activities and a potentially significant variable interest.

22. DERIVATIVES ACTIVITIES

In the ordinary course of business, Citigroup enters into various types of derivative transactions. These derivative transactions include:

- *Futures and forward contracts*, which are commitments to buy or sell at a future date a financial instrument, commodity or currency at a contracted price and may be settled in cash or through delivery of an item readily convertible to cash.
- *Swap contracts*, which are commitments to settle in cash at a future date or dates that may range from a few days to a number of years, based on differentials between specified indices or financial instruments, as applied to a notional principal amount.
- *Option contracts*, which give the purchaser, for a premium, the right, but not the obligation, to buy or sell within a specified time a financial instrument, commodity or currency at a contracted price that may also be settled in cash, based on differentials between specified indices or prices.

Swaps, forwards and some option contracts are over-the-counter (OTC) derivatives that are bilaterally negotiated with counterparties and settled with those counterparties, except for swap contracts that are novated and "cleared" through central counterparties (CCPs). Futures contracts and other option contracts are standardized contracts that are traded on an exchange with a CCP as the counterparty from the inception of the transaction. Citigroup enters into derivative contracts relating to interest rate, foreign currency, commodity and other market/credit risks for the following reasons:

- *Trading Purposes*: Citigroup trades derivatives as an active market maker. Citigroup offers its customers derivatives in connection with their risk management actions to transfer, modify or reduce their interest rate, foreign exchange and other market/credit risks or for their own trading purposes. Citigroup also manages its derivative risk positions through offsetting trade activities, controls focused on price verification and daily reporting of positions to senior managers.
- *Hedging*: Citigroup uses derivatives in connection with its own risk management activities to hedge certain risks or reposition the risk profile of the Company. Hedging may be accomplished by applying hedge accounting in accordance with ASC 815, *Derivatives and Hedging*, or by an economic hedge. For example, Citigroup issues fixed-rate long-term debt and then enters into a receive-fixed, pay-variable-rate interest rate swap with the same tenor and notional amount to synthetically convert the interest payments to a net variable-rate basis. This strategy is the most common form of an interest rate hedge, as it minimizes net interest cost in certain yield curve environments. Derivatives are also used to manage market risks inherent in specific groups of on-balance sheet assets and liabilities, including AFS securities, commodities and borrowings, as well as other interest-sensitive assets and liabilities. In addition, foreign-

exchange contracts are used to hedge non-U.S.-dollar-denominated debt, foreign-currency-denominated AFS securities and net investment exposures.

Derivatives may expose Citigroup to market, credit or liquidity risks in excess of the amounts recorded on the Consolidated Balance Sheet. Market risk on a derivative product is the exposure created by potential fluctuations in interest rates, market prices, foreign exchange rates and other factors and is a function of the type of product, the volume of transactions, the tenor and terms of the agreement and the underlying volatility. Credit risk is the exposure to loss in the event of nonperformance by the other party to satisfy a derivative liability where the value of any collateral held by Citi is not adequate to cover such losses. The recognition in earnings of unrealized gains on derivative transactions is subject to management's assessment of the probability of counterparty default. Liquidity risk is the potential exposure that arises when the size of a derivative position may affect the ability to monetize the position in a reasonable period of time and at a reasonable cost in periods of high volatility and financial stress.

Derivative transactions are customarily documented under industry standard master netting agreements that provide that following an event of default, the non-defaulting party may promptly terminate all transactions between the parties and determine the net amount due to be paid to, or by, the defaulting party. Events of default include (i) failure to make a payment on a derivatives transaction that remains uncured following applicable notice and grace periods, (ii) breach of agreement that remains uncured after applicable notice and grace periods, (iii) breach of a representation, (iv) cross default, either to third-party debt or to other derivative transactions entered into between the parties, or, in some cases, their affiliates, (v) the occurrence of a merger or consolidation which results in a party's becoming a materially weaker credit, and (vi) the cessation or repudiation of any applicable guarantee or other credit support document. Obligations under master netting agreements are often secured by collateral posted under an industry standard credit support annex to the master netting agreement. An event of default may also occur under a credit support annex if a party fails to make a collateral delivery that remains uncured following applicable notice and grace periods.

The netting and collateral rights incorporated in the master netting agreements are considered to be legally enforceable if a supportive legal opinion has been obtained from counsel of recognized standing that provides the requisite level of certainty regarding enforceability and that the exercise of rights by the non-defaulting party to terminate and close-out transactions on a net basis under these agreements will not be stayed or avoided under applicable law upon an event of default including bankruptcy, insolvency or similar proceeding.

A legal opinion may not be sought for certain jurisdictions where local law is silent or unclear as to the enforceability of such rights or where adverse case law or conflicting regulation may cast doubt on the enforceability of such rights. In some jurisdictions and for some counterparty types, the insolvency

law may not provide the requisite level of certainty. For example, this may be the case for certain sovereigns, municipalities, central banks and U.S. pension plans.

Exposure to credit risk on derivatives is affected by market volatility, which may impair the ability of counterparties to satisfy their obligations to the Company. Credit limits are established and closely monitored for customers engaged in derivatives transactions. Citi considers the level of legal certainty regarding enforceability of its offsetting rights under master netting agreements and credit support annexes to be an important factor in its risk management process. Specifically, Citi generally transacts much lower volumes of derivatives under master netting agreements where Citi does not have the requisite level of legal certainty regarding enforceability, because such derivatives consume greater amounts of single counterparty credit limits than those executed under enforceable master netting agreements.

Cash collateral and security collateral in the form of G10 government debt securities is often posted by a party to a master netting agreement to secure the net open exposure of the other party; the receiving party is free to commingle/rehypothecate such collateral in the ordinary course of its business. Nonstandard collateral such as corporate bonds, municipal bonds, U.S. agency securities and/or MBS may also be pledged as collateral for derivative transactions. Security collateral posted to open and maintain a master netting agreement with a counterparty, in the form of cash and/or securities, may from time to time be segregated in an account at a third-party custodian pursuant to a tri-party account control agreement.

Information pertaining to Citigroup's derivative activities, based on notional amounts, is presented in the table below. Derivative notional amounts are reference amounts from which contractual payments are derived and do not represent a complete and accurate measure of Citi's exposure to derivative transactions. Rather, Citi's derivative exposure arises primarily from market fluctuations (i.e., market risk), counterparty failure (i.e., credit risk) and/or periods of high volatility or financial stress (i.e., liquidity risk), as well as any market valuation adjustments that may be required on the

transactions. Moreover, notional amounts do not reflect the netting of offsetting trades. For example, if Citi enters into a receive-fixed interest rate swap with \$100 million notional, and offsets this risk with an identical but opposite pay-fixed position with a different counterparty, \$200 million in derivative notionals is reported, although these offsetting positions may result in de minimis overall market risk. Aggregate derivative notional amounts can fluctuate from period to period in the normal course of business based on Citi's market share, levels of client activity and other factors.

Derivative Notionals

In millions of dollars	Hedging instruments under ASC 815 ⁽¹⁾⁽²⁾		Other derivative instruments			
	December 31, 2016	December 31, 2015	Trading derivatives		Management hedges ⁽³⁾	
			December 31, 2016	December 31, 2015	December 31, 2016	December 31, 2015
Interest rate contracts						
Swaps	\$ 151,331	\$ 166,576	\$ 19,145,250	\$ 22,208,794	\$ 47,324	\$ 28,969
Futures and forwards	97	—	6,864,276	6,868,340	30,834	38,421
Written options	—	—	2,921,070	3,033,617	4,759	2,606
Purchased options	—	—	2,768,528	2,887,605	7,320	4,575
Total interest rate contract notionals	\$ 151,428	\$ 166,576	\$ 31,699,124	\$ 34,998,356	\$ 90,237	\$ 74,571
Foreign exchange contracts						
Swaps	\$ 19,042	\$ 23,007	\$ 5,492,145	\$ 4,765,687	\$ 22,676	\$ 23,960
Futures, forwards and spot	56,964	72,124	3,251,132	2,563,649	3,419	3,034
Written options	—	448	1,194,325	1,125,664	—	—
Purchased options	—	819	1,215,961	1,131,816	—	—
Total foreign exchange contract notionals	\$ 76,006	\$ 96,398	\$ 11,153,563	\$ 9,586,816	\$ 26,095	\$ 26,994
Equity contracts						
Swaps	\$ —	\$ —	\$ 192,366	\$ 180,963	\$ —	\$ —
Futures and forwards	—	—	37,557	33,735	—	—
Written options	—	—	304,579	298,876	—	—
Purchased options	—	—	266,070	265,062	—	—
Total equity contract notionals	\$ —	\$ —	\$ 800,572	\$ 778,636	\$ —	\$ —
Commodity and other contracts						
Swaps	\$ —	\$ —	\$ 70,774	\$ 70,561	\$ —	\$ —
Futures and forwards	182	789	142,530	106,474	—	—
Written options	—	—	74,627	72,648	—	—
Purchased options	—	—	69,629	66,051	—	—
Total commodity and other contract notionals	\$ 182	\$ 789	\$ 357,560	\$ 315,734	\$ —	\$ —
Credit derivatives⁽⁴⁾						
Protection sold	\$ —	\$ —	\$ 859,420	\$ 950,922	\$ —	\$ —
Protection purchased	—	—	883,003	981,586	19,470	23,628
Total credit derivatives	\$ —	\$ —	\$ 1,742,423	\$ 1,932,508	\$ 19,470	\$ 23,628
Total derivative notionals	\$ 227,616	\$ 263,763	\$ 45,753,242	\$ 47,612,050	\$ 135,802	\$ 125,193

- (1) The notional amounts presented in this table do not include hedge accounting relationships under ASC 815 where Citigroup is hedging the foreign currency risk of a net investment in a foreign operation by issuing a foreign-currency-denominated debt instrument. The notional amount of such debt was \$1,825 million and \$2,102 million at December 31, 2016 and December 31, 2015, respectively.
- (2) Derivatives in hedge accounting relationships accounted for under ASC 815 are recorded in either *Other assets/Other liabilities* or *Trading account assets/Trading account liabilities* on the Consolidated Balance Sheet.
- (3) Management hedges represent derivative instruments used to mitigate certain economic risks, but for which hedge accounting is not applied. These derivatives are recorded in either *Other assets/Other liabilities* or *Trading account assets/Trading account liabilities* on the Consolidated Balance Sheet.
- (4) Credit derivatives are arrangements designed to allow one party (protection buyer) to transfer the credit risk of a "reference asset" to another party (protection seller). These arrangements allow a protection seller to assume the credit risk associated with the reference asset without directly purchasing that asset. The

Company enters into credit derivative positions for purposes such as risk management, yield enhancement, reduction of credit concentrations and diversification of overall risk.

The following tables present the gross and net fair values of the Company's derivative transactions and the related offsetting amounts as of December 31, 2016 and December 31, 2015. Gross positive fair values are offset against gross negative fair values by counterparty pursuant to enforceable master netting agreements. Under ASC 815-10-45, payables and receivables in respect of cash collateral received from or paid to a given counterparty pursuant to a credit support annex are included in the offsetting amount if a legal opinion supporting the enforceability of netting and collateral rights has been obtained. GAAP does not permit similar offsetting for security collateral. The tables also present amounts that are not permitted to be offset, such as security collateral or cash collateral posted at third-party custodians, but which would be eligible for offsetting to the extent an event of default occurred and a legal opinion supporting enforceability of the netting and collateral rights has been obtained.

Derivative Mark-to-Market (MTM) Receivables/Payables

<i>In millions of dollars at December 31, 2016</i>	Derivatives classified in trading account assets / liabilities ⁽¹⁾⁽²⁾⁽³⁾		Derivatives classified in Other assets / liabilities ⁽²⁾⁽³⁾	
	Assets	Liabilities	Assets	Liabilities
Derivatives instruments designated as ASC 815 hedges				
Over-the-counter	\$ 716	\$ 171	\$ 1,927	\$ 22
Cleared	3,530	2,154	47	82
Interest rate contracts	\$ 4,246	\$ 2,325	\$ 1,974	\$ 104
Over-the-counter	\$ 2,494	\$ 393	\$ 747	\$ 645
Foreign exchange contracts	\$ 2,494	\$ 393	\$ 747	\$ 645
Total derivative instruments designated as ASC 815 hedges	\$ 6,740	\$ 2,718	\$ 2,721	\$ 749
Derivatives instruments not designated as ASC 815 hedges				
Over-the-counter	\$ 244,072	\$ 221,534	\$ 225	\$ 5
Cleared	120,920	130,855	240	349
Exchange traded	87	47	—	—
Interest rate contracts	\$ 365,079	\$ 352,436	\$ 465	\$ 354
Over-the-counter	\$ 182,659	\$ 186,867	\$ —	\$ 60
Cleared	482	470	—	—
Exchange traded	27	31	—	—
Foreign exchange contracts	\$ 183,168	\$ 187,368	\$ —	\$ 60
Over-the-counter	\$ 15,625	\$ 19,119	\$ —	\$ —
Cleared	1	21	—	—
Exchange traded	8,484	7,376	—	—
Equity contracts	\$ 24,110	\$ 26,516	\$ —	\$ —
Over-the-counter	\$ 13,046	\$ 14,234	\$ —	\$ —
Exchange traded	719	798	—	—
Commodity and other contracts	\$ 13,765	\$ 15,032	\$ —	\$ —
Over-the-counter	\$ 19,033	\$ 19,563	\$ 159	\$ 78
Cleared	5,582	5,874	47	310
Credit derivatives⁽⁴⁾	\$ 24,615	\$ 25,437	\$ 206	\$ 388
Total derivatives instruments not designated as ASC 815 hedges	\$ 610,737	\$ 606,789	\$ 671	\$ 802
Total derivatives	\$ 617,477	\$ 609,507	\$ 3,392	\$ 1,551
Cash collateral paid/received ⁽⁵⁾⁽⁶⁾	\$ 11,188	\$ 15,731	\$ 8	\$ 1
Less: Netting agreements ⁽⁷⁾	(519,000)	(519,000)	—	—
Less: Netting cash collateral received/paid ⁽⁸⁾	(45,912)	(49,811)	(1,345)	(53)
Net receivables/payables included on the consolidated balance sheet⁽⁹⁾	\$ 63,753	\$ 56,427	\$ 2,055	\$ 1,499
Additional amounts subject to an enforceable master netting agreement, but not offset on the Consolidated Balance Sheet				
Less: Cash collateral received/paid	\$ (819)	\$ (19)	\$ —	\$ —
Less: Non-cash collateral received/paid	(11,767)	(5,883)	(530)	—
Total net receivables/payables⁽⁹⁾	\$ 51,167	\$ 50,525	\$ 1,525	\$ 1,499

(1) The trading derivatives fair values are presented in Note 24 to the Consolidated Financial Statements.

(2) Derivative mark-to-market receivables/payables related to management hedges are recorded in either *Other assets/Other liabilities* or *Trading account assets/Trading account liabilities*.

(3) Over-the-counter (OTC) derivatives are derivatives executed and settled bilaterally with counterparties without the use of an organized exchange or central clearing house. Cleared derivatives include derivatives executed bilaterally with a counterparty in the OTC market, but then novated to a central clearing house, whereby the central clearing house becomes the counterparty to both of the original counterparties. Exchange traded derivatives include derivatives executed directly on an organized exchange that provides pre-trade price transparency.

(4) The credit derivatives trading assets comprise \$8,871 million related to protection purchased and \$15,744 million related to protection sold as of December 31, 2016. The credit derivatives trading liabilities comprise \$16,722 million related to protection purchased and \$8,715 million related to protection sold as of December 31, 2016.

(5) For the trading account assets/liabilities, reflects the net amount of the \$60,999 million and \$61,643 million of gross cash collateral paid and received, respectively. Of the gross cash collateral paid, \$49,811 million was used to offset trading derivative liabilities and, of the gross cash collateral received, \$45,912 million was used to offset trading derivative assets.

- (6) For cash collateral paid with respect to non-trading derivative assets, reflects the net amount of \$61 million of gross cash collateral paid, of which \$53 million is netted against non-trading derivative positions within *Other liabilities*. For cash collateral received with respect to non-trading derivative liabilities, reflects the net amount of \$1,346 million of gross cash collateral received, of which \$1,345 million is netted against OTC non-trading derivative positions within *Other assets*.
- (7) Represents the netting of derivative receivable and payable balances with the same counterparty under enforceable netting agreements. Approximately \$383 billion, \$128 billion and \$8 billion of the netting against trading account asset/liability balances is attributable to each of the OTC, cleared and exchange-traded derivatives, respectively.
- (8) Represents the netting of cash collateral paid and received by counterparty under enforceable credit support agreements. Substantially all cash collateral received and paid is netted against OTC derivative assets and liabilities, respectively.
- (9) The net receivables/payables include approximately \$7 billion of derivative asset and \$9 billion of derivative liability fair values not subject to enforceable master netting agreements, respectively.

In millions of dollars at December 31, 2015

	Derivatives classified in trading account assets / liabilities ⁽¹⁾⁽²⁾⁽³⁾		Derivatives classified in Other assets / liabilities ⁽²⁾⁽³⁾	
	Assets	Liabilities	Assets	Liabilities
Derivatives instruments designated as ASC 815 hedges				
Over-the-counter	\$ 262	\$ 105	\$ 2,328	\$ 106
Cleared	4,607	1,471	5	—
Interest rate contracts	\$ 4,869	\$ 1,576	\$ 2,333	\$ 106
Over-the-counter	\$ 2,688	\$ 364	\$ 95	\$ 677
Foreign exchange contracts	\$ 2,688	\$ 364	\$ 95	\$ 677
Total derivative instruments designated as ASC 815 hedges	\$ 7,557	\$ 1,940	\$ 2,428	\$ 783
Derivatives instruments not designated as ASC 815 hedges				
Over-the-counter	\$ 289,124	\$ 267,761	\$ 182	\$ 12
Cleared	120,848	126,532	244	216
Exchange traded	53	35	—	—
Interest rate contracts	\$ 410,025	\$ 394,328	\$ 426	\$ 228
Over-the-counter	\$ 126,474	\$ 133,361	\$ —	\$ 66
Cleared	134	152	—	—
Exchange traded	21	36	—	—
Foreign exchange contracts	\$ 126,629	\$ 133,549	\$ —	\$ 66
Over-the-counter	\$ 14,560	\$ 20,107	\$ —	\$ —
Cleared	28	3	—	—
Exchange traded	7,297	6,406	—	—
Equity contracts	\$ 21,885	\$ 26,516	\$ —	\$ —
Over-the-counter	\$ 16,794	\$ 18,641	\$ —	\$ —
Exchange traded	1,216	1,912	—	—
Commodity and other contracts	\$ 18,010	\$ 20,553	\$ —	\$ —
Over-the-counter	\$ 31,072	\$ 30,608	\$ 711	\$ 245
Cleared	3,803	3,560	131	318
Credit derivatives⁽⁴⁾	\$ 34,875	\$ 34,168	\$ 842	\$ 563
Total derivatives instruments not designated as ASC 815 hedges	\$ 611,424	\$ 609,114	\$ 1,268	\$ 857
Total derivatives	\$ 618,981	\$ 611,054	\$ 3,696	\$ 1,640
Cash collateral paid/received ⁽⁵⁾⁽⁶⁾	\$ 4,911	\$ 13,628	\$ 8	\$ 37
Less: Netting agreements ⁽⁷⁾	(524,481)	(524,481)	—	—
Less: Netting cash collateral received/paid ⁽⁸⁾	(43,227)	(42,609)	(1,949)	(53)
Net receivables/payables included on the Consolidated Balance Sheet⁽⁹⁾	\$ 56,184	\$ 57,592	\$ 1,755	\$ 1,624
Additional amounts subject to an enforceable master netting agreement, but not offset on the Consolidated Balance Sheet				
Less: Cash collateral received/paid	\$ (779)	\$ (2)	\$ —	\$ —
Less: Non-cash collateral received/paid	(9,855)	(5,131)	(270)	—
Total net receivables/payables⁽⁹⁾	\$ 45,550	\$ 52,459	\$ 1,485	\$ 1,624

(1) The trading derivatives fair values are presented in Note 24 to the Consolidated Financial Statements.

(2) Derivative mark-to-market receivables/payables related to management hedges are recorded in either *Other assets/Other liabilities* or *Trading account assets/Trading account liabilities*.

(3) Over-the-counter (OTC) derivatives include derivatives executed and settled bilaterally with counterparties without the use of an organized exchange or central clearing house. Cleared derivatives include derivatives executed bilaterally with a counterparty in the OTC market, but then novated to a central clearing house,

whereby the central clearing house becomes the counterparty to both of the original counterparties. Exchange traded derivatives include derivatives executed directly on an organized exchange that provides pre-trade price transparency.

- (4) The credit derivatives trading assets comprise \$17,957 million related to protection purchased and \$16,918 million related to protection sold as of December 31, 2015. The credit derivatives trading liabilities comprise \$16,968 million related to protection purchased and \$17,200 million related to protection sold as of December 31, 2015.
- (5) For the trading account assets/liabilities, reflects the net amount of the \$47,520 million and \$56,855 million of gross cash collateral paid and received, respectively. Of the gross cash collateral paid, \$42,609 million was used to offset derivative liabilities and, of the gross cash collateral received, \$43,227 million was used to offset derivative assets.
- (6) For cash collateral paid with respect to non-trading derivative assets, reflects the net amount of \$61 million of the gross cash collateral paid, of which \$53 million is netted against non-trading derivative positions within *Other liabilities*. For cash collateral received with respect to non-trading derivative liabilities, reflects the net amount of \$1,986 million of gross cash collateral received of which \$1,949 million is netted against non-trading derivative positions within *Other assets*.
- (7) Represents the netting of derivative receivable and payable balances with the same counterparty under enforceable netting agreements. Approximately \$391 billion, \$126 billion and \$7 billion of the netting against trading account asset/liability balances is attributable to each of the OTC, cleared and exchange-traded derivatives, respectively.
- (8) Represents the netting of cash collateral paid and received by counterparty under enforceable credit support agreements. Substantially all cash collateral received and paid is netted against OTC derivative assets and liabilities, respectively.
- (9) The net receivables/payables include approximately \$10 billion of derivative asset and \$10 billion of liability fair values not subject to enforceable master netting agreements.

For the years ended December 31, 2016, 2015 and 2014, the amounts recognized in *Principal transactions* in the Consolidated Statement of Income related to derivatives not designated in a qualifying hedging relationship, as well as the underlying non-derivative instruments, are presented in Note 6 to the Consolidated Financial Statements. Citigroup presents this disclosure by business classification, showing derivative gains and losses related to its trading activities together with gains and losses related to non-derivative instruments within the same trading portfolios, as this represents the way these portfolios are risk managed.

The amounts recognized in *Other revenue* in the Consolidated Statement of Income related to derivatives not designated in a qualifying hedging relationship are shown below. The table below does not include any offsetting gains/losses on the economically hedged items to the extent such amounts are also recorded in *Other revenue*.

<i>In millions of dollars</i>	Gains (losses) included in <i>Other revenue</i>		
	2016	2015	2014
Interest rate contracts	\$ (81)	\$ 117	\$ (227)
Foreign exchange	12	(39)	14
Credit derivatives	(1,009)	476	(150)
Total Citigroup	\$ (1,078)	\$ 554	\$ (363)

Accounting for Derivative Hedging

Citigroup accounts for its hedging activities in accordance with ASC 815, *Derivatives and Hedging*. As a general rule, hedge accounting is permitted where the Company is exposed to a particular risk, such as interest rate or foreign exchange risk, that causes changes in the fair value of an asset or liability or variability in the expected future cash flows of an existing asset, liability or a forecasted transaction that may affect earnings.

Derivative contracts hedging the risks associated with changes in fair value are referred to as fair value hedges, while contracts hedging the variability of expected future cash flows are cash flow hedges. Hedges that utilize derivatives or debt instruments to manage the foreign exchange risk associated with equity investments in non-U.S.-dollar-functional-currency foreign subsidiaries (net investment in a foreign operation) are net investment hedges.

To qualify as an accounting hedge under the hedge accounting rules (versus an economic hedge where hedge accounting is not applied), a hedging relationship must be highly effective in offsetting the risk designated as being hedged. The hedge relationship must be formally documented at inception, detailing the particular risk management objective and strategy for the hedge. This includes the item and risk(s) being hedged, the hedging instrument being used and how effectiveness will be assessed. The effectiveness of these hedging relationships is evaluated at hedge inception and on an ongoing basis both on a retrospective and prospective basis, typically using quantitative measures of correlation, with hedge ineffectiveness measured and recorded in current earnings. Hedge effectiveness assessment methodologies are performed in a similar manner for similar hedges, and are used consistently throughout the hedging relationships. The assessment of effectiveness may exclude changes in the value of the hedged item that are unrelated to the risks being hedged and the changes in fair value of the derivative associated with time value. These excluded items are recognized in current earnings for the hedging derivative, while changes in the value of a hedged item that are not related to the hedged risk are not recorded.

Discontinued Hedge Accounting

A hedging instrument must be highly effective in accomplishing the hedge objective of offsetting either changes in the fair value or cash flows of the hedged item for the risk being hedged. Management may voluntarily de-designate an accounting hedge at any time, but if a hedge relationship is not highly effective, it no longer qualifies for hedge accounting and must be de-designated. Subsequent changes in the fair value of the derivative are recognized in *Other revenue* or *Principal transactions*, similar to trading derivatives, with no offset recorded related to the hedged item.

For fair value hedges, any changes in the fair value of the hedged item remain as part of the basis of the asset or liability and are ultimately realized as an element of the yield on the item. For cash flow hedges, changes in fair value of the end-user derivative remain in *Accumulated other comprehensive income (loss)* (AOCI) and are included in the earnings of future periods when the forecasted hedged cash flows impact earnings. However, if it becomes probable that some or all of the hedged forecasted transactions will not occur, any amounts

that remain in AOCI related to these transactions must be immediately reflected in *Other revenue*.

The foregoing criteria are applied on a decentralized basis, consistent with the level at which market risk is managed, but are subject to various limits and controls. The underlying asset, liability or forecasted transaction may be an individual item or a portfolio of similar items.

Fair Value Hedges

Hedging of Benchmark Interest Rate Risk

Citigroup's fair value hedges are primarily hedges of fixed-rate long-term debt or assets, such as available-for-sale securities.

Citigroup hedges exposure to changes in the fair value of outstanding fixed-rate issued debt. These hedges are designated as fair value hedges of the benchmark interest rate risk associated with the currency of the hedged liability. The fixed cash flows of the hedged items are typically converted to benchmark variable-rate cash flows by entering into receive-fixed, pay-variable interest rate swaps. By designating an interest rate swap contract as a hedging instrument and electing to apply ASC 815 fair value hedge accounting, the carrying value of the debt is adjusted to reflect the impact of changes in the benchmark interest rate, with such changes in value recorded in *Other revenue*. The related interest rate swap is recorded on the balance sheet at fair value, with changes in fair value also reflected in *Other revenue*. These amounts are expected to, and generally do, offset. Any net amount, representing hedge ineffectiveness, is automatically reflected in current earnings. These fair value hedge relationships use either regression or dollar-offset ratio analysis to assess whether the hedging relationships are highly effective at inception and on an ongoing basis.

Citigroup also hedges its exposure to changes in the fair value of fixed-rate assets due to changes in benchmark interest rates, including available-for-sale debt securities and loans. The hedging instruments are typically receive-variable, pay-fixed interest rate swaps. These fair value hedging relationships use either regression or dollar-offset ratio analysis to assess whether the hedging relationships are highly effective at inception and on an ongoing basis.

Hedging of Foreign Exchange Risk

Citigroup hedges the change in fair value attributable to foreign exchange rate movements in available-for-sale securities that are denominated in currencies other than the functional currency of the entity holding the securities, which may be within or outside the U.S. The hedging instrument is generally a forward foreign exchange contract. In this hedge, the portion of the change in the fair value of the hedged available-for-sale security attributable to foreign exchange risk (i.e., spot rates) is reported in earnings, and not AOCI—which offsets the change in the fair value of the forward contract that is also reflected in earnings. Citigroup considers the premium associated with forward contracts (i.e., the differential between spot and contractual forward rates) as the cost of hedging; this amount is excluded from the assessment of hedge effectiveness and reflected directly in earnings over the life of the hedge. The dollar-offset method is used to assess hedge effectiveness. Since that assessment is based on changes in fair value attributable to changes in spot rates on both the available-for-sale securities and the forward contracts for the portion of the relationship hedged, the amount of hedge ineffectiveness is not significant.

Hedging of Commodity Price Risk

Citigroup hedges the change in fair value attributable to spot price movements in physical commodities inventory. The hedging instrument is a futures contract to sell the underlying commodity. In this hedge, the change in the value of the hedged inventory is reflected in earnings, which offsets the change in the fair value of the futures contract that is also reflected in earnings. Although the change in the fair value of the hedging instrument recorded in earnings includes changes in forward rates, Citigroup excludes the differential between the spot and the contractual forward rates under the futures contract from the assessment of hedge effectiveness. Since the assessment is based on changes in fair value attributable to change in spot prices on both the physical commodity and the futures contract, the amount of hedge ineffectiveness is not significant.

The following table summarizes the gains (losses) on the Company's fair value hedges:

<i>In millions of dollars</i>	Gains (losses) on fair value hedges⁽¹⁾		
	Year ended December 31,		
	2016	2015	2014
Gain (loss) on the derivatives in designated and qualifying fair value hedges			
Interest rate contracts	\$ (753)	\$ (847)	\$ 1,546
Foreign exchange contracts	(1,415)	1,315	1,367
Commodity contracts	182	41	(221)
Total gain (loss) on the derivatives in designated and qualifying fair value hedges	\$ (1,986)	\$ 509	\$ 2,692
Gain (loss) on the hedged item in designated and qualifying fair value hedges			
Interest rate hedges	\$ 668	\$ 792	\$ (1,496)
Foreign exchange hedges	1,573	(1,258)	(1,422)
Commodity hedges	(210)	(35)	250
Total gain (loss) on the hedged item in designated and qualifying fair value hedges	\$ 2,031	\$ (501)	\$ (2,668)
Hedge ineffectiveness recognized in earnings on designated and qualifying fair value hedges			
Interest rate hedges	\$ (84)	\$ (47)	\$ 53
Foreign exchange hedges	4	(23)	(16)
Total hedge ineffectiveness recognized in earnings on designated and qualifying fair value hedges	\$ (80)	\$ (70)	\$ 37
Net gain (loss) excluded from assessment of the effectiveness of fair value hedges			
Interest rate contracts	\$ (1)	\$ (8)	\$ (3)
Foreign exchange contracts ⁽²⁾	154	80	(39)
Commodity hedges ⁽²⁾	(28)	6	29
Total net gain (loss) excluded from assessment of the effectiveness of fair value hedges	\$ 125	\$ 78	\$ (13)

(1) Amounts are included in *Other revenue* on the Consolidated Statement of Income. The accrued interest income on fair value hedges is recorded in *Net interest revenue* and is excluded from this table.

(2) Amounts relate to the premium associated with forward contracts (differential between spot and contractual forward rates). These amounts are excluded from the assessment of hedge effectiveness and are reflected directly in earnings.

Cash Flow Hedges

Hedging of Benchmark Interest Rate Risk

Citigroup hedges the variability of forecasted cash flows associated with floating-rate assets/liabilities and other forecasted transactions. Variable cash flows from those liabilities are synthetically converted to fixed-rate cash flows by entering into receive-variable, pay-fixed interest rate swaps and receive-variable, pay-fixed forward-starting interest rate swaps. Variable cash flows associated with certain assets are synthetically converted to fixed-rate cash flows by entering into receive-fixed, pay-variable interest rate swaps. These cash flow hedging relationships use either regression analysis or dollar-offset ratio analysis to assess whether the hedging relationships are highly effective at inception and on an ongoing basis. When the variable interest rates associated with hedged items do not qualify as benchmark interest rates, Citigroup designates the risk being hedged as the risk of overall variability in the hedged cash flows. Because efforts are made to match the terms of the derivatives to those of the hedged forecasted cash flows as closely as possible, the amount of hedge ineffectiveness is not significant.

For cash flow hedges in which derivatives hedge the variability of forecasted cash flows related to recognized assets, liabilities or forecasted transactions, the accounting treatment depends on the effectiveness of the hedge. To the extent these derivatives are effective in offsetting the variability of the forecasted hedged cash flows, the effective portion of the changes in the derivatives' fair values will not

be included in current earnings, but will be reported in AOCI. These changes in fair value will be included in the earnings of future periods when the hedged cash flows impact earnings. To the extent these derivatives are not fully effective, changes in their fair values are immediately included in *Other revenue*. Citigroup's cash flow hedges primarily include hedges of floating-rate assets or liabilities which may include loans and securities purchased under agreements to resell, as well as forecasted transactions.

Hedging of Foreign Exchange Risk

Citigroup locks in the functional currency equivalent cash flows of long-term debt and short-term borrowings that are denominated in currencies other than the functional currency of the issuing entity. Depending on risk management objectives, these types of hedges are designated either as cash flow hedges of foreign exchange risk only or cash flow hedges of both foreign exchange risk and interest rate risk, and the hedging instruments are foreign exchange cross-currency swaps and forward contracts. These cash flow hedge relationships use dollar-offset ratio analysis to determine whether the hedging relationships are highly effective at inception and on an ongoing basis.

The amount of hedge ineffectiveness on the cash flow hedges recognized in earnings for the years ended December 31, 2016, 2015 and 2014 is not significant. The pretax change in AOCI from cash flow hedges is presented below:

<i>In millions of dollars</i>	Year ended December 31,		
	2016	2015	2014
Effective portion of cash flow hedges included in AOCI			
Interest rate contracts	\$ (219)	\$ 357	\$ 299
Foreign exchange contracts	69	(220)	(167)
Credit derivatives	—	—	2
Total effective portion of cash flow hedges included in AOCI	\$ (150)	\$ 137	\$ 134
Effective portion of cash flow hedges reclassified from AOCI to earnings			
Interest rate contracts	\$ (140)	\$ (186)	\$ (260)
Foreign exchange contracts	(93)	(146)	(149)
Total effective portion of cash flow hedges reclassified from AOCI to earnings⁽¹⁾	\$ (233)	\$ (332)	\$ (409)

(1) Included primarily in *Other revenue* and *Net interest revenue* on the Consolidated Income Statement.

For cash flow hedges, the changes in the fair value of the hedging derivative remain in AOCI on the Consolidated Balance Sheet and will be included in the earnings of future periods to offset the variability of the hedged cash flows when such cash flows affect earnings. The net gain associated with cash flow hedges expected to be reclassified from AOCI within 12 months of December 31, 2016 is approximately \$0.1 billion. The maximum length of time over which forecasted cash flows are hedged is 10 years.

The after-tax impact of cash flow hedges on AOCI is shown in Note 19 to the Consolidated Financial Statements.

Net Investment Hedges

Consistent with ASC 830-20, *Foreign Currency Matters—Foreign Currency Transactions*, ASC 815 allows the hedging of the foreign currency risk of a net investment in a foreign operation. Citigroup uses foreign currency forwards, cross-currency swaps, options and foreign-currency-denominated debt instruments to manage the foreign exchange risk associated with Citigroup's equity investments in several non-U.S.-dollar-functional-currency foreign subsidiaries. Citigroup records the change in the carrying amount of these investments in the *Foreign currency translation adjustment* account within AOCI. Simultaneously, the effective portion of the hedge of this exposure is also recorded in the *Foreign currency translation adjustment* account and any ineffective portion is immediately recorded in earnings.

For derivatives designated as net investment hedges, Citigroup follows the forward-rate method outlined in ASC 815-35-35. According to that method, all changes in fair value, including changes related to the forward-rate component of the foreign currency forward contracts and the time value of foreign currency options, are recorded in the *Foreign currency translation adjustment* account within AOCI.

For foreign-currency-denominated debt instruments that are designated as hedges of net investments, the translation gain or loss that is recorded in the *Foreign currency translation adjustment* account is based on the spot exchange rate between the functional currency of the respective subsidiary and the U.S. dollar, which is the functional currency of Citigroup. To the extent the notional amount of the hedging instrument exactly matches the hedged net investment and the underlying exchange rate of the derivative hedging instrument relates to the exchange rate between the functional currency of the net investment and Citigroup's functional currency (or, in the case of a non-derivative debt instrument, such instrument is denominated in the functional currency of the net investment), no ineffectiveness is recorded in earnings.

The pretax gain (loss) recorded in the *Foreign currency translation adjustment* account within AOCI, related to the effective portion of the net investment hedges, is \$(220) million, \$2,475 million and \$2,890 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Economic Hedges

Citigroup often uses economic hedges when hedge accounting would be too complex or operationally burdensome. End-user derivatives that are economic hedges are carried at fair value, with changes in value included in either *Principal transactions* or *Other revenue*.

For asset/liability management hedging, fixed-rate long-term debt is recorded at amortized cost under GAAP.

For other hedges that either do not meet the ASC 815 hedging criteria or for which management decides not to apply ASC 815 hedge accounting, the derivative is recorded at fair value on the balance sheet with the associated changes in fair value recorded in earnings, while the debt continues to be carried at amortized cost. Therefore, current earnings are affected by the interest rate shifts and other factors that cause a change in the swap's value, but for which no offsetting change in value is recorded on the debt.

Citigroup may alternatively elect to account for the debt at fair value under the fair value option. Once the irrevocable election is made upon issuance of the debt, the full change in fair value of the debt is reported in earnings. The changes in fair value of the related interest rate swap are also reflected in earnings, which provides a natural offset to the debt's fair value change. To the extent the two amounts differ because the full change in the fair value of the debt includes risks not offset by the interest rate swap, the difference is automatically captured in current earnings.

Additional economic hedges include hedges of the credit risk component of commercial loans and loan commitments. Citigroup periodically evaluates its hedging strategies in other areas and may designate either an accounting hedge or an economic hedge after considering the relative costs and benefits. Economic hedges are also employed when the hedged item itself is marked to market through current earnings, such as hedges of commitments to originate one- to four-family mortgage loans to be held for sale and MSR's.

Credit Derivatives

Citi is a market maker and trades a range of credit derivatives. Through these contracts, Citi either purchases or writes protection on either a single name or a portfolio of reference credits. Citi also uses credit derivatives to help mitigate credit risk in its corporate and consumer loan portfolios and other cash positions and to facilitate client transactions.

Citi monitors its counterparty credit risk in credit derivative contracts. As of December 31, 2016 and December 31, 2015, approximately 97% and 98%, respectively, of the gross receivables are from counterparties with which Citi maintains collateral agreements. A majority of Citi's top 15 counterparties (by receivable balance owed to Citi) are banks, financial institutions or other dealers. Contracts with these counterparties do not include ratings-based termination events. However, counterparty ratings downgrades may have an incremental effect by lowering the threshold at which Citi may call for additional collateral.

The range of credit derivatives entered into includes credit default swaps, total return swaps, credit options and credit-linked notes.

A credit default swap is a contract in which, for a fee, a protection seller agrees to reimburse a protection buyer for any losses that occur due to a predefined credit event on a reference entity. These credit events are defined by the terms of the derivative contract and the reference credit and are generally limited to the market standard of failure to pay on indebtedness and bankruptcy of the reference credit and, in a more limited range of transactions, debt restructuring. Credit derivative transactions that reference emerging market entities also typically include additional credit events to cover the acceleration of indebtedness and the risk of repudiation or a payment moratorium. In certain transactions, protection may be provided on a portfolio of reference entities or asset-backed securities. If there is no credit event, as defined by the specific derivative contract, then the protection seller makes no payments to the protection buyer and receives only the contractually specified fee. However, if a credit event occurs

as defined in the specific derivative contract sold, the protection seller will be required to make a payment to the protection buyer. Under certain contracts, the seller of protection may not be required to make a payment until a specified amount of losses has occurred with respect to the portfolio and/or may only be required to pay for losses up to a specified amount.

A total return swap typically transfers the total economic performance of a reference asset, which includes all associated cash flows, as well as capital appreciation or depreciation. The protection buyer receives a floating rate of interest and any depreciation on the reference asset from the protection seller and, in return, the protection seller receives the cash flows associated with the reference asset plus any appreciation. Thus, according to the total return swap agreement, the protection seller will be obligated to make a payment any time the floating interest rate payment plus any depreciation of the reference asset exceeds the cash flows associated with the underlying asset. A total return swap may terminate upon a default of the reference asset or a credit event with respect to the reference entity subject to the provisions of the related total return swap agreement between the protection seller and the protection buyer.

A credit option is a credit derivative that allows investors to trade or hedge changes in the credit quality of a reference entity. For example, in a credit spread option, the option writer assumes the obligation to purchase or sell credit protection on the reference entity at a specified “strike” spread level. The option purchaser buys the right to sell credit default protection on the reference entity to, or purchase it from, the option writer at the strike spread level. The payments on credit spread options depend either on a particular credit spread or the price of the underlying credit-sensitive asset or other reference entity. The options usually terminate if a credit event occurs with respect to the underlying reference entity.

A credit-linked note is a form of credit derivative structured as a debt security with an embedded credit default swap. The purchaser of the note effectively provides credit protection to the issuer by agreeing to receive a return that could be negatively affected by credit events on the underlying reference credit. If the reference entity defaults, the note may be cash settled or physically settled by delivery of a debt security of the reference entity. Thus, the maximum amount of the note purchaser’s exposure is the amount paid for the credit-linked note.

The following tables summarize the key characteristics of Citi's credit derivatives portfolio by counterparty and derivative form:

<i>In millions of dollars at December 31, 2016</i>	Fair values		Notionals	
	Receivable ⁽¹⁾	Payable ⁽²⁾	Protection purchased	Protection sold
By industry/counterparty				
Banks	\$ 11,895	\$ 10,930	\$ 407,992	\$ 414,720
Broker-dealers	3,536	3,952	115,013	119,810
Non-financial	82	99	4,014	2,061
Insurance and other financial institutions	9,308	10,844	375,454	322,829
Total by industry/counterparty	\$ 24,821	\$ 25,825	\$ 902,473	\$ 859,420
By instrument				
Credit default swaps and options	\$ 24,502	\$ 24,631	\$ 883,719	\$ 852,900
Total return swaps and other	319	1,194	18,754	6,520
Total by instrument	\$ 24,821	\$ 25,825	\$ 902,473	\$ 859,420
By rating				
Investment grade	\$ 9,605	\$ 9,995	\$ 675,138	\$ 648,247
Non-investment grade	15,216	15,830	227,335	211,173
Total by rating	\$ 24,821	\$ 25,825	\$ 902,473	\$ 859,420
By maturity				
Within 1 year	\$ 4,113	\$ 4,841	\$ 293,059	\$ 287,262
From 1 to 5 years	17,735	17,986	551,155	523,371
After 5 years	2,973	2,998	58,259	48,787
Total by maturity	\$ 24,821	\$ 25,825	\$ 902,473	\$ 859,420

(1) The fair value amount receivable is composed of \$9,077 million under protection purchased and \$15,744 million under protection sold.

(2) The fair value amount payable is composed of \$17,110 million under protection purchased and \$8,715 million under protection sold.

<i>In millions of dollars at December 31, 2015</i>	Fair values		Notionals	
	Receivable ⁽¹⁾	Payable ⁽²⁾	Protection purchased	Protection sold
By industry/counterparty				
Banks	\$ 18,377	\$ 16,988	\$ 513,335	\$ 508,459
Broker-dealers	5,895	6,697	155,195	152,604
Non-financial	128	123	3,969	2,087
Insurance and other financial institutions	11,317	10,923	332,715	287,772
Total by industry/counterparty	\$ 35,717	\$ 34,731	\$ 1,005,214	\$ 950,922
By instrument				
Credit default swaps and options	\$ 34,849	\$ 34,158	\$ 981,999	\$ 940,650
Total return swaps and other	868	573	23,215	10,272
Total by instrument	\$ 35,717	\$ 34,731	\$ 1,005,214	\$ 950,922
By rating				
Investment grade	\$ 12,694	\$ 13,142	\$ 764,040	\$ 720,521
Non-investment grade	23,023	21,589	241,174	230,401
Total by rating	\$ 35,717	\$ 34,731	\$ 1,005,214	\$ 950,922
By maturity				
Within 1 year	\$ 3,871	\$ 3,559	\$ 265,632	\$ 254,225
From 1 to 5 years	27,991	27,488	669,834	639,460
After 5 years	3,855	3,684	69,748	57,237
Total by maturity	\$ 35,717	\$ 34,731	\$ 1,005,214	\$ 950,922

- (1) The fair value amount receivable is composed of \$18,799 million under protection purchased and \$16,918 million under protection sold.
- (2) The fair value amount payable is composed of \$17,531 million under protection purchased and \$17,200 million under protection sold.

Fair values included in the above tables are prior to application of any netting agreements and cash collateral. For notional amounts, Citi generally has a mismatch between the total notional amounts of protection purchased and sold, and it may hold the reference assets directly, rather than entering into offsetting credit derivative contracts as and when desired. The open risk exposures from credit derivative contracts are largely matched after certain cash positions in reference assets are considered and after notional amounts are adjusted, either to a duration-based equivalent basis or to reflect the level of subordination in tranching structures. The ratings of the credit derivatives portfolio presented in the tables and used to evaluate payment/performance risk are based on the assigned internal or external ratings of the reference asset or entity. Where external ratings are used, investment-grade ratings are considered to be 'Baa/BBB' and above, while anything below is considered non-investment grade. Citi's internal ratings are in line with the related external rating system.

Citigroup evaluates the payment/performance risk of the credit derivatives for which it stands as a protection seller based on the credit rating assigned to the underlying reference credit. Credit derivatives written on an underlying non-investment grade reference credit represent greater payment risk to the Company. The non-investment grade category in the table above also includes credit derivatives where the underlying reference entity has been downgraded subsequent to the inception of the derivative.

The maximum potential amount of future payments under credit derivative contracts presented in the table above is based on the notional value of the derivatives. The Company believes that the notional amount for credit protection sold is not representative of the actual loss exposure based on historical experience. This amount has not been reduced by the value of the reference assets and the related cash flows. In accordance with most credit derivative contracts, should a credit event occur, the Company usually is liable for the difference between the protection sold and the value of the reference assets. Furthermore, the notional amount for credit protection sold has not been reduced for any cash collateral paid to a given counterparty, as such payments would be calculated after netting all derivative exposures, including any credit derivatives with that counterparty in accordance with a related master netting agreement. Due to such netting processes, determining the amount of collateral that corresponds to credit derivative exposures alone is not possible. The Company actively monitors open credit-risk exposures and manages this exposure by using a variety of strategies, including purchased credit derivatives, cash collateral or direct holdings of the referenced assets. This risk mitigation activity is not captured in the table above.

Credit-Risk-Related Contingent Features in Derivatives

Certain derivative instruments contain provisions that require the Company to either post additional collateral or immediately settle any outstanding liability balances upon the occurrence of a specified event related to the credit risk of the Company. These events, which are defined by the existing derivative contracts, are primarily downgrades in the credit ratings of the Company and its affiliates. The fair value (excluding CVA) of all derivative instruments with credit-risk-related contingent features that were in a net liability position at both December 31, 2016 and December 31, 2015 was \$26 billion and \$22 billion, respectively. The Company posted \$26 billion and \$19 billion as collateral for this exposure in the normal course of business as of December 31, 2016 and December 31, 2015, respectively.

A downgrade could trigger additional collateral or cash settlement requirements for the Company and certain affiliates. In the event that Citigroup and Citibank were downgraded a single notch by all three major rating agencies as of December 31, 2016, the Company could be required to post an additional \$1.5 billion as either collateral or settlement of the derivative transactions. Additionally, the Company could be required to segregate with third-party custodians collateral previously received from existing derivative counterparties in the amount of \$0.1 billion upon the single notch downgrade, resulting in aggregate cash obligations and collateral requirements of approximately \$1.6 billion.

Derivatives Accompanied by Financial Asset Transfers

The Company executes total return swaps which provide it with synthetic exposure to substantially all of the economic return of the securities or other financial assets referenced in the contract. In certain cases, the derivative transaction is accompanied by the Company's transfer of the referenced financial asset to the derivative counterparty, most typically in response to the derivative counterparty's desire to hedge, in whole or in part, its synthetic exposure under the derivative contract by holding the referenced asset in funded form. In certain jurisdictions these transactions qualify as sales, resulting in derecognition of the securities transferred (see Note 1 to the Consolidated Financial Statements for further discussion of the related sale conditions for transfers of financial assets). For a significant portion of the transactions, the Company has also executed another total return swap where the Company passes on substantially all of the economic return of the referenced securities to a different third party seeking the exposure. In those cases, the Company is not exposed, on a net basis, to changes in the economic return of the referenced securities.

These transactions generally involve the transfer of the Company's liquid government bonds, convertible bonds, or publicly traded corporate equity securities from the trading portfolio and are executed with third-party financial institutions. The accompanying derivatives are typically total

return swaps. The derivatives are cash settled and subject to ongoing margin requirements.

When the conditions for sale accounting are met, the Company reports the transfer of the referenced financial asset as a sale and separately reports the accompanying derivative transaction. These transactions generally do not result in a gain or loss on the sale of the security, because the transferred security was held at fair value in the Company's trading portfolio. For transfers of financial assets accounted for by the Company as a sale, where the Company has retained substantially all of the economic exposure to the transferred asset through a total return swap executed in contemplation of the initial sale with the same counterparty and still outstanding as of December 31, 2016 and December 31, 2015, both the asset carrying amounts derecognized and gross cash proceeds received as of the date of derecognition were \$1.0 billion. At December 31, 2016, the fair value of these previously derecognized assets was \$1.0 billion and the fair value of the total return swaps was \$32 million recorded as gross derivative assets and \$23 million recorded as gross derivative liabilities. At December 31, 2015, the fair value of these previously derecognized assets was \$1 billion and the fair value of the total return swaps was \$7 million recorded as gross derivative assets and \$35 million recorded as gross derivative liabilities. The balances for the total return swaps are on a gross basis, before the application of counterparty and cash collateral netting, and are included primarily as equity derivatives in the tabular disclosures in this Note.

23. CONCENTRATIONS OF CREDIT RISK

Concentrations of credit risk exist when changes in economic, industry or geographic factors similarly affect groups of counterparties whose aggregate credit exposure is material in relation to Citigroup's total credit exposure. Although Citigroup's portfolio of financial instruments is broadly diversified along industry, product, and geographic lines, material transactions are completed with other financial institutions, particularly in the securities trading, derivatives and foreign exchange businesses.

In connection with the Company's efforts to maintain a diversified portfolio, the Company limits its exposure to any one geographic region, country or individual creditor and monitors this exposure on a continuous basis. At December 31, 2016, Citigroup's most significant concentration of credit risk was with the U.S. government and its agencies. The Company's exposure, which primarily results from trading assets and investments issued by the U.S. government and its agencies, amounted to \$228.5 billion and \$223.0 billion at December 31, 2016 and 2015, respectively. The German and Japan governments and their agencies, which are rated investment grade by both Moody's and S&P, were the next largest exposures. The Company's exposure to Germany amounted to \$27.6 billion and \$17.7 billion at December 31, 2016 and 2015, respectively, and was composed of investment securities, loans and trading assets. The Company's exposure to Japan amounted to \$27.3 billion and \$18.8 billion at December 31, 2016 and 2015, respectively, and was composed of investment securities, loans and trading assets.

The Company's exposure to states and municipalities amounted to \$30.7 billion and \$29.3 billion at December 31, 2016 and 2015, respectively, and was composed of trading assets, investment securities, derivatives and lending activities.

24. FAIR VALUE MEASUREMENT

ASC 820-10 *Fair Value Measurement*, defines fair value, establishes a consistent framework for measuring fair value and requires disclosures about fair value measurements. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Among other things, the standard requires the Company to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value.

Under ASC 820-10, the probability of default of a counterparty is factored into the valuation of derivative and other positions as well as the impact of Citigroup's own credit risk on derivatives and other liabilities measured at fair value.

Fair Value Hierarchy

ASC 820-10 specifies a hierarchy of inputs based on whether the inputs are observable or unobservable. Observable inputs are developed using market data and reflect market participant assumptions, while unobservable inputs reflect the Company's market assumptions. These two types of inputs have created the following fair value hierarchy:

- Level 1: Quoted prices for *identical* instruments in active markets.
- Level 2: Quoted prices for *similar* instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs and significant value drivers are *observable* in active markets.
- Level 3: Valuations derived from valuation techniques in which one or more significant inputs or significant value drivers are *unobservable*.

As required under the fair value hierarchy, the Company considers relevant and observable market inputs in its valuations where possible. The frequency of transactions, the size of the bid-ask spread and the amount of adjustment necessary when comparing similar transactions are all factors in determining the liquidity of markets and the relevance of observed prices in those markets.

The Company's policy with respect to transfers between levels of the fair value hierarchy is to recognize transfers into and out of each level as of the end of the reporting period.

Determination of Fair Value

For assets and liabilities carried at fair value, the Company measures fair value using the procedures set out below, irrespective of whether the assets and liabilities are measured at fair value as a result of an election or whether they are required to be measured at fair value.

When available, the Company uses quoted market prices to determine fair value and classifies such items as Level 1. In some cases where a market price is available, the

Company will make use of acceptable practical expedients (such as matrix pricing) to calculate fair value, in which case the items are classified as Level 2.

The Company may also apply a price-based methodology, which utilizes, where available, quoted prices or other market information obtained from recent trading activity in positions with the same or similar characteristics to the position being valued. The market activity and the amount of the bid-ask spread are among the factors considered in determining the liquidity of markets and the observability of prices from those markets. If relevant and observable prices are available, those valuations may be classified as Level 2. When less liquidity exists for a security or loan, a quoted price is stale, a significant adjustment to the price of a similar security is necessary to reflect differences in the terms of the actual security or loan being valued, or prices from independent sources are insufficient to corroborate the valuation, the "price" inputs are considered unobservable and the fair value measurements are classified as Level 3.

If quoted market prices are not available, fair value is based upon internally developed valuation techniques that use, where possible, current market-based parameters, such as interest rates, currency rates and option volatilities. Items valued using such internally generated valuation techniques are classified according to the lowest level input or value driver that is significant to the valuation. Thus, an item may be classified as Level 3 even though there may be some significant inputs that are readily observable.

Fair value estimates from internal valuation techniques are verified, where possible, to prices obtained from independent vendors or brokers. Vendors' and brokers' valuations may be based on a variety of inputs ranging from observed prices to proprietary valuation models.

The following section describes the valuation methodologies used by the Company to measure various financial instruments at fair value, including an indication of the level in the fair value hierarchy in which each instrument is generally classified. Where appropriate, the description includes details of the valuation models, the key inputs to those models and any significant assumptions.

Market Valuation Adjustments

Generally, the unit of account for a financial instrument is the individual financial instrument. The Company applies market valuation adjustments that are consistent with the unit of account, which does not include adjustment due to the size of the Company's position, except as follows. ASC 820-10 permits an exception, through an accounting policy election, to measure the fair value of a portfolio of financial assets and financial liabilities on the basis of the net open risk position when certain criteria are met. Citi has elected to measure certain portfolios of financial instruments, such as derivatives, that meet those criteria on the basis of the net open risk position. The Company applies market valuation adjustments, including adjustments to account for the size of the net open risk position, consistent with market participant assumptions and in accordance with the unit of account.

Liquidity adjustments are applied to items in Level 2 or Level 3 of the fair-value hierarchy in an effort to ensure that the fair value reflects the price at which the net open risk position could be liquidated. The liquidity adjustment is based on the bid/offer spread for an instrument. When Citi has elected to measure certain portfolios of financial investments, such as derivatives, on the basis of the net open risk position, the liquidity adjustment may be adjusted to take into account the size of the position.

Credit valuation adjustments (CVA) and funding valuation adjustments (FVA) are applied to over-the-counter (OTC) derivative instruments in which the base valuation generally discounts expected cash flows using the relevant base interest rate curve for the currency of the derivative (e.g., LIBOR for uncollateralized U.S.-dollar derivatives). As not all counterparties have the same credit risk as that implied by the relevant base curve, a CVA is necessary to incorporate the market view of both counterparty credit risk and Citi's own credit risk in the valuation. FVA reflects a market funding risk premium inherent in the uncollateralized portion of derivative portfolios and in collateralized derivatives where the terms of the agreement do not permit the reuse of the collateral received.

Citi's CVA and FVA methodology consists of two steps.

- First, the exposure profile for each counterparty is determined using the terms of all individual derivative positions and a Monte Carlo simulation or other quantitative analysis to generate a series of expected cash flows at future points in time. The calculation of this exposure profile considers the effect of credit risk mitigants and sources of funding, including pledged cash or other collateral and any legal right of offset that exists with a counterparty through arrangements such as netting agreements. Individual derivative contracts that are subject to an enforceable master netting agreement with a counterparty are aggregated as a netting set for this purpose, since it is those aggregate net cash flows that are subject to nonperformance risk. This process identifies specific, point-in-time future cash flows that are subject to nonperformance risk and unsecured funding, rather than using the current recognized net asset or liability as a basis to measure the CVA and FVA.
- Second, for CVA, market-based views of default probabilities derived from observed credit spreads in the credit default swap (CDS) market are applied to the expected future cash flows determined in step one. Citi's own-credit CVA is determined using Citi-specific CDS spreads for the relevant tenor. Generally, counterparty CVA is determined using CDS spread indices for each credit rating and tenor. For certain identified netting sets where individual analysis is practicable (e.g., exposures to counterparties with liquid CDSs), counterparty-specific CDS spreads are used. For FVA, a term structure of future liquidity spreads is applied to the expected future funding requirement.

The CVA and FVA are designed to incorporate a market view of the credit and funding risk, respectively, inherent in

the derivative portfolio. However, most unsecured derivative instruments are negotiated bilateral contracts and are not commonly transferred to third parties. Derivative instruments are normally settled contractually or, if terminated early, are terminated at a value negotiated bilaterally between the counterparties. Thus, the CVA and FVA may not be realized upon a settlement or termination in the normal course of business. In addition, all or a portion of these adjustments may be reversed or otherwise adjusted in future periods in the event of changes in the credit or funding risk associated with the derivative instruments.

The table below summarizes the CVA and FVA applied to the fair value of derivative instruments at December 31, 2016 and 2015:

<i>In millions of dollars</i>	Credit and funding valuation adjustments contra-liability (contra-asset)	
	December 31, 2016	December 31, 2015
	Counterparty CVA	\$ (1,488)
Asset FVA	(536)	(584)
Citigroup (own-credit) CVA	459	471
Liability FVA	62	106
Total CVA—derivative instruments⁽¹⁾	\$ (1,503)	\$ (1,477)

(1) FVA is included with CVA for presentation purposes.

The table below summarizes pretax gains (losses) related to changes in CVA on derivative instruments, net of hedges, FVA on derivatives and debt valuation adjustments (DVA) on Citi's own fair value option (FVO) liabilities for the years indicated:

<i>In millions of dollars</i>	Credit/funding/debt valuation adjustments gain (loss)		
	2016	2015	2014
Counterparty CVA	\$ 157	\$ (115)	\$ (43)
Asset FVA	47	(66)	(518)
Own-credit CVA	17	(28)	(65)
Liability FVA	(44)	97	19
Total CVA—derivative instruments	\$ 177	\$ (112)	\$ (607)
DVA related to own FVO liabilities ⁽¹⁾	\$ (538)	\$ 367	\$ 217
Total CVA and DVA⁽²⁾	\$ (361)	\$ 255	\$ (390)

(1) Effective January 1, 2016, Citigroup early adopted on a prospective basis only the provisions of ASU No. 2016-01, *Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities*, related to the presentation of DVA on fair value option liabilities. Accordingly, beginning in the first quarter 2016, the portion of the change in fair value of these liabilities related to changes in Citigroup's own credit spreads (DVA) is reflected as a component of AOCI; previously these amounts were recognized in Citigroup's revenues and net income. DVA amounts in AOCI will be recognized in revenue and net income if realized upon the settlement of the related liability

(2) FVA is included with CVA for presentation purposes.

Valuation Process for Fair Value Measurements

Price verification procedures and related internal control procedures are governed by the Citigroup *Pricing and Price Verification Policy and Standards*, which is jointly owned by Finance and Risk Management.

For fair value measurements of substantially all assets and liabilities held by the Company, individual business units are responsible for valuing the trading account assets and liabilities, and Product Control within Finance performs independent price verification procedures to evaluate those fair value measurements. Product Control is independent of the individual business units and reports to the Global Head of Product Control. It has authority over the valuation of financial assets and liabilities. Fair value measurements of assets and liabilities are determined using various techniques, including, but not limited to, discounted cash flows and internal models, such as option and correlation models.

Based on the observability of inputs used, Product Control classifies the inventory as Level 1, Level 2 or Level 3 of the fair value hierarchy. When a position involves one or more significant inputs that are not directly observable, price verification procedures are performed that may include reviewing relevant historical data, analyzing profit and loss, valuing each component of a structured trade individually, and benchmarking, among others.

Reports of inventory that is classified within Level 3 of the fair value hierarchy are distributed to senior management in Finance, Risk and the business. This inventory is also discussed in Risk Committees and in monthly meetings with senior trading management. As deemed necessary, reports may go to the Audit Committee of the Board of Directors or to the full Board of Directors. Whenever an adjustment is needed to bring the price of an asset or liability to its exit price, Product Control reports it to management along with other price verification results.

In addition, the pricing models used in measuring fair value are governed by an independent control framework. Although the models are developed and tested by the individual business units, they are independently validated by the Model Validation Group within Risk Management and reviewed by Finance with respect to their impact on the price verification procedures. The purpose of this independent control framework is to assess model risk arising from models' theoretical soundness, calibration techniques where needed, and the appropriateness of the model for a specific product in a defined market. To ensure their continued applicability, models are independently reviewed annually. In addition, Risk Management approves and maintains a list of products permitted to be valued under each approved model for a given business.

Securities Purchased Under Agreements to Resell and Securities Sold Under Agreements to Repurchase

No quoted prices exist for these instruments, so fair value is determined using a discounted cash-flow technique. Cash flows are estimated based on the terms of the contract, taking into account any embedded derivative or other features. These cash flows are discounted using interest rates appropriate to the maturity of the instrument as well as the nature of the underlying collateral. Generally, when such instruments are recorded at fair value, they are classified within Level 2 of the fair value hierarchy, as the inputs used in the valuation are readily observable. However, certain long-dated positions are classified within Level 3 of the fair value hierarchy.

Trading Account Assets and Liabilities—Trading Securities and Trading Loans

When available, the Company uses quoted market prices in active markets to determine the fair value of trading securities; such items are classified as Level 1 of the fair value hierarchy. Examples include government securities and exchange-traded equity securities.

For bonds and secondary market loans traded over the counter, the Company generally determines fair value utilizing valuation techniques, including discounted cash flows, price-based and internal models, such as Black-Scholes and Monte Carlo simulation. Fair value estimates from these internal valuation techniques are verified, where possible, to prices obtained from independent sources, including third-party vendors. Vendors compile prices from various sources and may apply matrix pricing for similar bonds or loans where no price is observable. A price-based methodology utilizes, where available, quoted prices or other market information obtained from recent trading activity of assets with similar characteristics to the bond or loan being valued. The yields used in discounted cash flow models are derived from the same price information. Trading securities and loans priced using such methods are generally classified as Level 2. However, when less liquidity exists for a security or loan, a quoted price is stale, a significant adjustment to the price of a similar security or loan is necessary to reflect differences in the terms of the actual security or loan being valued, or prices from independent sources are insufficient to corroborate valuation, a loan or security is generally classified as Level 3. The price input used in a price-based methodology may be zero for a security, such as a subprime CDO, that is not receiving any principal or interest and is currently written down to zero.

When the Company's principal market for a portfolio of loans is the securitization market, the Company uses the securitization price to determine the fair value of the portfolio. The securitization price is determined from the assumed proceeds of a hypothetical securitization in the current market, adjusted for transformation costs (i.e., direct costs other than transaction costs) and securitization uncertainties such as market conditions and liquidity. As a result of the severe reduction in the level of activity in certain securitization markets since the second half of 2007, observable securitization prices for certain directly

comparable portfolios of loans have not been readily available. Therefore, such portfolios of loans are generally classified as Level 3 of the fair value hierarchy. However, for other loan securitization markets, such as commercial real estate loans, price verification of the hypothetical securitizations has been possible, since these markets have remained active. Accordingly, this loan portfolio is classified as Level 2 of the fair value hierarchy.

For most of the lending and structured direct subprime exposures, fair value is determined utilizing observable transactions where available, other market data for similar assets in markets that are not active and other internal valuation techniques. The valuation of certain asset-backed security (ABS) CDO positions utilizes prices based on the underlying assets of the ABS CDO.

Trading Account Assets and Liabilities—Derivatives

Exchange-traded derivatives, measured at fair value using quoted (i.e., exchange) prices in active markets, where available, are classified as Level 1 of the fair value hierarchy.

Derivatives without a quoted price in an active market and derivatives executed over the counter are valued using internal valuation techniques. These derivative instruments are classified as either Level 2 or Level 3 depending upon the observability of the significant inputs to the model.

The valuation techniques and inputs depend on the type of derivative and the nature of the underlying instrument. The principal techniques used to value these instruments are discounted cash flows and internal models, including Black-Scholes and Monte Carlo simulation.

The key inputs depend upon the type of derivative and the nature of the underlying instrument and include interest rate yield curves, foreign exchange rates, volatilities and correlation. The Company uses overnight indexed swap (OIS) curves as fair value measurement inputs for the valuation of certain collateralized derivatives. Citi uses the relevant benchmark curve for the currency of the derivative (e.g., the London Interbank Offered Rate for U.S. dollar derivatives) as the discount rate for uncollateralized derivatives.

As referenced above, during the third quarter of 2015, Citi incorporated FVA into the fair value measurements due to what it believes to be an industry migration toward incorporating the market's view of funding risk premium in OTC derivatives. The charge incurred in connection with the implementation of FVA was reflected in *Principal transactions* as a change in accounting estimate. Citi's FVA methodology leverages the existing CVA methodology to estimate a funding exposure profile. The calculation of this exposure profile considers collateral agreements where the terms do not permit the Company to reuse the collateral received, including where counterparties post collateral to third-party custodians.

Investments

The investments category includes available-for-sale debt and marketable equity securities whose fair values are generally determined by utilizing similar procedures described for trading securities above or, in some cases, using vendor pricing as the primary source.

Also included in investments are nonpublic investments in private equity and real estate entities. Determining the fair value of nonpublic securities involves a significant degree of management judgment, as no quoted prices exist and such securities are generally thinly traded. In addition, there may be transfer restrictions on private equity securities. The Company's process for determining the fair value of such securities utilizes commonly accepted valuation techniques, including comparables analysis. In determining the fair value of nonpublic securities, the Company also considers events such as a proposed sale of the investee company, initial public offerings, equity issuances or other observable transactions.

Private equity securities are generally classified as Level 3 of the fair value hierarchy.

In addition, the Company holds investments in certain alternative investment funds that calculate NAV per share, including hedge funds, private equity funds and real estate funds. Investments in funds are generally classified as non-marketable equity securities carried at fair value. The fair values of these investments are estimated using the NAV per share of the Company's ownership interest in the funds where it is not probable that the investment will be realized at a price other than the NAV. Consistent with the provisions of ASU No. 2015-07 these investments have not been categorized within the fair value hierarchy and are not included in the tables below. See Note 13 to the Consolidated Financial Statements for additional information.

Short-Term Borrowings and Long-Term Debt

Where fair value accounting has been elected, the fair value of non-structured liabilities is determined by utilizing internal models using the appropriate discount rate for the applicable maturity. Such instruments are generally classified as Level 2 of the fair value hierarchy when all significant inputs are readily observable.

The Company determines the fair value of hybrid financial instruments, including structured liabilities, using the appropriate derivative valuation methodology (described above in "Trading Account Assets and Liabilities—Derivatives") given the nature of the embedded risk profile. Such instruments are classified as Level 2 or Level 3 depending on the observability of significant inputs to the model.

Items Measured at Fair Value on a Recurring Basis

The following tables present for each of the fair value hierarchy levels the Company's assets and liabilities that are measured at fair value on a recurring basis at December 31, 2016 and December 31, 2015. The Company may hedge positions that have been classified in the Level 3 category with other financial instruments (hedging instruments) that may be

classified as Level 3, but also with financial instruments classified as Level 1 or Level 2 of the fair value hierarchy. The effects of these hedges are presented gross in the following tables:

Fair Value Levels

<i>In millions of dollars at December 31, 2016</i>	Level 1 ⁽¹⁾	Level 2 ⁽¹⁾	Level 3	Gross inventory	Netting ⁽²⁾	Net balance
Assets						
Federal funds sold and securities borrowed or purchased under agreements to resell	\$ —	\$ 172,394	\$ 1,496	\$ 173,890	\$ (40,686)	\$ 133,204
Trading non-derivative assets						
Trading mortgage-backed securities						
U.S. government-sponsored agency guaranteed	—	22,718	176	22,894	—	22,894
Residential	—	291	399	690	—	690
Commercial	—	1,000	206	1,206	—	1,206
Total trading mortgage-backed securities	\$ —	\$ 24,009	\$ 781	\$ 24,790	\$ —	\$ 24,790
U.S. Treasury and federal agency securities	\$ 17,756	\$ 3,423	\$ 1	\$ 21,180	\$ —	\$ 21,180
State and municipal	—	3,780	296	4,076	—	4,076
Foreign government	36,852	12,804	40	49,696	—	49,696
Corporate	424	14,199	324	14,947	—	14,947
Equity securities	45,331	4,985	127	50,443	—	50,443
Asset-backed securities	—	892	1,868	2,760	—	2,760
Other trading assets⁽³⁾	2	9,464	2,814	12,280	—	12,280
Total trading non-derivative assets	\$ 100,365	\$ 73,556	\$ 6,251	\$ 180,172	\$ —	\$ 180,172
Trading derivatives						
Interest rate contracts	\$ 105	\$ 366,995	\$ 2,225	\$ 369,325		
Foreign exchange contracts	53	184,776	833	185,662		
Equity contracts	2,306	21,209	595	24,110		
Commodity contracts	261	12,999	505	13,765		
Credit derivatives	—	23,021	1,594	24,615		
Total trading derivatives	\$ 2,725	\$ 609,000	\$ 5,752	\$ 617,477		
Cash collateral paid⁽⁴⁾				\$ 11,188		
Netting agreements					\$ (519,000)	
Netting of cash collateral received					(45,912)	
Total trading derivatives	\$ 2,725	\$ 609,000	\$ 5,752	\$ 628,665	\$ (564,912)	\$ 63,753
Investments						
Mortgage-backed securities						
U.S. government-sponsored agency guaranteed	\$ —	\$ 38,304	\$ 101	\$ 38,405	\$ —	\$ 38,405
Residential	—	3,860	50	3,910	—	3,910
Commercial	—	358	—	358	—	358
Total investment mortgage-backed securities	\$ —	\$ 42,522	\$ 151	\$ 42,673	\$ —	\$ 42,673
U.S. Treasury and federal agency securities	\$ 112,916	\$ 10,753	\$ 2	\$ 123,671	\$ —	\$ 123,671
State and municipal	—	8,909	1,211	10,120	—	10,120
Foreign government	54,028	43,934	186	98,148	—	98,148
Corporate	3,215	13,598	311	17,124	—	17,124
Equity securities	336	46	9	391	—	391
Asset-backed securities	—	6,134	660	6,794	—	6,794
Other debt securities	—	503	—	503	—	503
Non-marketable equity securities⁽⁵⁾	—	35	1,331	1,366	—	1,366
Total investments	\$ 170,495	\$ 126,434	\$ 3,861	\$ 300,790	\$ —	\$ 300,790

<i>In millions of dollars at December 31, 2016</i>	Level 1 ⁽¹⁾	Level 2 ⁽¹⁾	Level 3	Gross inventory	Netting ⁽²⁾	Net balance
Loans	\$ —	\$ 2,918	\$ 568	\$ 3,486	\$ —	\$ 3,486
Mortgage servicing rights	—	—	1,564	1,564	—	1,564
Non-trading derivatives and other financial assets measured on a recurring basis, gross	\$ 9,300	\$ 7,732	\$ 34	\$ 17,066		
Cash collateral paid⁽⁶⁾				8		
Netting of cash collateral received					\$ (1,345)	
Non-trading derivatives and other financial assets measured on a recurring basis	\$ 9,300	\$ 7,732	\$ 34	\$ 17,074	\$ (1,345)	\$ 15,729
Total assets	\$ 282,885	\$ 992,034	\$ 19,526	\$ 1,305,641	\$ (606,943)	\$ 698,698
Total as a percentage of gross assets⁽⁷⁾	21.9%	76.6%	1.5%			
Liabilities						
Interest-bearing deposits	\$ —	\$ 919	\$ 293	\$ 1,212	\$ —	\$ 1,212
Federal funds purchased and securities loaned or sold under agreements to repurchase	—	73,500	849	74,349	(40,686)	33,663
Trading account liabilities						
Securities sold, not yet purchased	\$ 73,782	\$ 5,831	\$ 1,177	\$ 80,790	\$ —	\$ 80,790
Other trading liabilities	—	1,827	1	1,828	—	1,828
Total trading liabilities	\$ 73,782	\$ 7,658	\$ 1,178	\$ 82,618	\$ —	\$ 82,618
Trading derivatives						
Interest rate contracts	\$ 107	\$ 351,766	\$ 2,888	\$ 354,761		
Foreign exchange contracts	13	187,328	420	187,761		
Equity contracts	2,245	22,119	2,152	26,516		
Commodity contracts	196	12,386	2,450	15,032		
Credit derivatives	—	22,842	2,595	25,437		
Total trading derivatives	\$ 2,561	\$ 596,441	\$ 10,505	\$ 609,507		
Cash collateral received⁽⁸⁾				\$ 15,731		
Netting agreements					\$ (519,000)	
Netting of cash collateral paid					(49,811)	
Total trading derivatives	\$ 2,561	\$ 596,441	\$ 10,505	\$ 625,238	\$ (568,811)	\$ 56,427
Short-term borrowings	\$ —	\$ 2,658	\$ 42	\$ 2,700	\$ —	\$ 2,700
Long-term debt	—	16,510	9,744	26,254	—	26,254
Non-trading derivatives and other financial liabilities measured on a recurring basis, gross	\$ —	\$ 1,544	\$ 8	\$ 1,552		
Cash collateral received⁽⁹⁾				1		
Netting of cash collateral paid					\$ (53)	
Total non-trading derivatives and other financial liabilities measured on a recurring basis	\$ —	\$ 1,544	\$ 8	\$ 1,553	\$ (53)	\$ 1,500
Total liabilities	\$ 76,343	\$ 699,230	\$ 22,619	\$ 813,924	\$ (609,550)	\$ 204,374
Total as a percentage of gross liabilities⁽⁷⁾	9.6%	87.6%	2.8%			

(1) In 2016, the Company transferred assets of approximately \$2.6 billion from Level 1 to Level 2, respectively, primarily related to foreign government securities and equity securities not traded in active markets. In 2016, the Company transferred assets of approximately \$4.0 billion from Level 2 to Level 1, respectively, primarily related to foreign government bonds and equity securities traded with sufficient frequency to constitute a liquid market. In 2016, the Company transferred liabilities of approximately \$0.4 billion from Level 2 to Level 1. In 2016, the Company transferred liabilities of approximately \$0.3 billion from Level 1 to Level 2.

(2) Represents netting of (i) the amounts due under securities purchased under agreements to resell and the amounts owed under securities sold under agreements to repurchase; and (ii) derivative exposures covered by a qualifying master netting agreement and cash collateral offsetting.

(3) Includes positions related to investments in unallocated precious metals, as discussed in Note 25 to the Consolidated Financial Statements. Also includes physical commodities accounted for at the lower of cost or fair value and unfunded credit products.

(4) Reflects the net amount of \$60,999 million of gross cash collateral paid, of which \$49,811 million was used to offset trading derivative liabilities.

(5) Amounts exclude \$0.4 billion investments measured at Net Asset Value (NAV) in accordance with ASU No. 2015-07, *Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent)*.

(6) Reflects the net amount of \$61 million of gross cash collateral paid, of which \$53 million was used to offset non-trading derivative liabilities.

(7) Because the amount of the cash collateral paid/received has not been allocated to the Level 1, 2 and 3 subtotals, these percentages are calculated based on total assets and liabilities measured at fair value on a recurring basis, excluding the cash collateral paid/received on derivatives.

(8) Reflects the net amount of \$61,643 million of gross cash collateral received, of which \$45,912 million was used to offset trading derivative assets.

(9) Reflects the net amount of \$1,346 million of gross cash collateral received, of which \$1,345 million was used to offset non-trading derivatives.

Fair Value Levels

<i>In millions of dollars at December 31, 2015</i>	Level 1 ⁽¹⁾	Level 2 ⁽¹⁾	Level 3	Gross inventory	Netting ⁽²⁾	Net balance
Assets						
Federal funds sold and securities borrowed or purchased under agreements to resell	\$ —	\$ 177,538	\$ 1,337	\$ 178,875	\$ (40,911)	\$137,964
Trading non-derivative assets						
Trading mortgage-backed securities						
U.S. government-sponsored agency guaranteed	—	24,023	744	24,767	—	24,767
Residential	—	1,059	1,326	2,385	—	2,385
Commercial	—	2,338	517	2,855	—	2,855
Total trading mortgage-backed securities	\$ —	\$ 27,420	\$ 2,587	\$ 30,007	\$ —	\$ 30,007
U.S. Treasury and federal agency securities	\$ 14,208	\$ 3,587	\$ 1	\$ 17,796	\$ —	\$ 17,796
State and municipal	—	2,345	351	2,696	—	2,696
Foreign government	35,715	20,555	197	56,467	—	56,467
Corporate	302	13,901	376	14,579	—	14,579
Equity securities	41,688	2,382	3,684	47,754	—	47,754
Asset-backed securities	—	1,217	2,739	3,956	—	3,956
Other trading assets⁽⁹⁾	—	9,293	2,483	11,776	—	11,776
Total trading non-derivative assets	\$ 91,913	\$ 80,700	\$ 12,418	\$ 185,031	\$ —	\$185,031
Trading derivatives						
Interest rate contracts	\$ 9	\$ 412,802	\$ 2,083	\$ 414,894		
Foreign exchange contracts	5	128,189	1,123	129,317		
Equity contracts	2,422	17,866	1,597	21,885		
Commodity contracts	204	16,706	1,100	18,010		
Credit derivatives	—	31,082	3,793	34,875		
Total trading derivatives	\$ 2,640	\$ 606,645	\$ 9,696	\$ 618,981		
Cash collateral paid⁽³⁾				\$ 4,911		
Netting agreements					\$ (524,481)	
Netting of cash collateral received					(43,227)	
Total trading derivatives	\$ 2,640	\$ 606,645	\$ 9,696	\$ 623,892	\$ (567,708)	\$ 56,184
Investments						
Mortgage-backed securities						
U.S. government-sponsored agency guaranteed	\$ —	\$ 39,575	\$ 139	\$ 39,714	\$ —	\$ 39,714
Residential	—	5,982	4	5,986	—	5,986
Commercial	—	569	2	571	—	571
Total investment mortgage-backed securities	\$ —	\$ 46,126	\$ 145	\$ 46,271	\$ —	\$ 46,271
U.S. Treasury and federal agency securities	\$ 111,536	\$ 11,375	\$ 4	\$ 122,915	\$ —	\$122,915
State and municipal	—	9,267	2,192	11,459	—	11,459
Foreign government	42,073	46,341	260	88,674	—	88,674
Corporate	3,605	15,122	603	19,330	—	19,330
Equity securities	430	71	124	625	—	625
Asset-backed securities	—	8,578	596	9,174	—	9,174
Other debt securities	—	688	—	688	—	688
Non-marketable equity securities⁽⁴⁾	—	58	1,135	1,193	—	1,193
Total investments	\$ 157,644	\$ 137,626	\$ 5,059	\$ 300,329	\$ —	\$300,329

<i>In millions of dollars at December 31, 2015</i>	Level 1 ⁽¹⁾	Level 2 ⁽¹⁾	Level 3	Gross inventory	Netting ⁽²⁾	Net balance
Loans	\$ —	\$ 2,839	\$ 2,166	\$ 5,005	\$ —	\$ 5,005
Mortgage servicing rights	—	—	1,781	1,781	—	1,781
Non-trading derivatives and other financial assets measured on a recurring basis, gross	\$ 8,741	\$ 7,882	\$ 180	\$ 16,803		
Cash collateral paid⁽⁵⁾				8		
Netting of cash collateral received					\$ (1,949)	
Non-trading derivatives and other financial assets measured on a recurring basis	\$ 8,741	\$ 7,882	\$ 180	\$ 16,811	\$ (1,949)	\$ 14,862
Total assets	\$ 260,938	\$ 1,013,230	\$ 32,637	\$ 1,311,724	\$ (610,568)	\$ 701,156
Total as a percentage of gross assets⁽⁶⁾	20.0%	77.5%	2.5%			
Liabilities						
Interest-bearing deposits	\$ —	\$ 1,156	\$ 434	\$ 1,590	\$ —	\$ 1,590
Federal funds purchased and securities loaned or sold under agreements to repurchase	—	76,507	1,247	77,754	(40,911)	36,843
Trading account liabilities						
Securities sold, not yet purchased	48,452	9,176	199	57,827	—	57,827
Other trading liabilities	—	2,093	—	2,093	—	2,093
Total trading liabilities	\$ 48,452	\$ 11,269	\$ 199	\$ 59,920	\$ —	\$ 59,920
Trading account derivatives						
Interest rate contracts	\$ 5	\$ 393,321	\$ 2,578	\$ 395,904		
Foreign exchange contracts	6	133,404	503	133,913		
Equity contracts	2,244	21,875	2,397	26,516		
Commodity contracts	263	17,329	2,961	20,553		
Credit derivatives	—	30,682	3,486	34,168		
Total trading derivatives	\$ 2,518	\$ 596,611	\$ 11,925	\$ 611,054		
Cash collateral received⁽⁷⁾				\$ 13,628		
Netting agreements					\$ (524,481)	
Netting of cash collateral paid					(42,609)	
Total trading derivatives	\$ 2,518	\$ 596,611	\$ 11,925	\$ 624,682	\$ (567,090)	\$ 57,592
Short-term borrowings	\$ —	\$ 1,198	\$ 9	\$ 1,207	\$ —	\$ 1,207
Long-term debt	—	17,750	7,543	25,293	—	25,293
Non-trading derivatives and other financial liabilities measured on a recurring basis, gross	\$ —	\$ 1,626	\$ 14	\$ 1,640		
Cash collateral received⁽⁸⁾				37		
Netting of cash collateral paid					\$ (53)	
Non-trading derivatives and other financial liabilities measured on a recurring basis	\$ —	\$ 1,626	\$ 14	\$ 1,677	\$ (53)	\$ 1,624
Total liabilities	\$ 50,970	\$ 706,117	\$ 21,371	\$ 792,123	\$ (608,054)	\$ 184,069
Total as a percentage of gross liabilities⁽⁶⁾	6.5%	90.7%	2.7%			

- (1) In 2015, the Company transferred assets of approximately \$3.3 billion from Level 1 to Level 2, respectively, primarily related to foreign government securities and equity securities not traded in active markets. In 2015, the Company transferred assets of approximately \$4.4 billion from Level 2 to Level 1, respectively, primarily related to foreign government bonds and equity securities traded with sufficient frequency to constitute a liquid market. In 2015, the Company transferred liabilities of approximately \$0.6 billion from Level 2 to Level 1. In 2015, the Company transferred liabilities of approximately \$0.4 billion from Level 1 to Level 2.
- (2) Represents netting of (i) the amounts due under securities purchased under agreements to resell and the amounts owed under securities sold under agreements to repurchase; and (ii) derivative exposures covered by a qualifying master netting agreement and cash collateral offsetting.
- (3) Reflects the net amount of \$47,520 million of gross cash collateral paid, of which \$42,609 million was used to offset trading derivative liabilities.
- (4) Amounts exclude \$0.9 billion investments measured at Net Asset Value (NAV) in accordance with ASU No. 2015-07, *Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent)*.
- (5) Reflects the net amount of \$61 million of gross cash collateral paid, of which \$53 million was used to offset non-trading derivative liabilities.
- (6) Because the amount of the cash collateral paid/received has not been allocated to the Level 1, 2 and 3 subtotals, these percentages are calculated based on total assets and liabilities measured at fair value on a recurring basis, excluding the cash collateral paid/received on derivatives.
- (7) Reflects the net amount of \$56,855 million of gross cash collateral received, of which \$43,227 million was used to offset trading derivative assets.
- (8) Reflects the net amount of \$1,986 million of gross cash collateral received, of which \$1,949 million was used to offset non-trading derivative assets.
- (9) Includes positions related to investments in unallocated precious metals, as discussed in Note 25 to the Consolidated Financial Statements. Also includes physical commodities accounted for at the lower of cost or fair value and unfunded credit products.

Changes in Level 3 Fair Value Category

The following tables present the changes in the Level 3 fair value category for the years ended December 31, 2016 and 2015. The gains and losses presented below include changes in the fair value related to both observable and unobservable inputs.

The Company often hedges positions with offsetting positions that are classified in a different level. For example, the gains and losses for assets and liabilities in the Level 3

category presented in the tables below do not reflect the effect of offsetting losses and gains on hedging instruments that may be classified in the Level 1 and Level 2 categories. In addition, the Company hedges items classified in the Level 3 category with instruments also classified in Level 3 of the fair value hierarchy. The hedged items and related hedges are presented gross in the following tables:

Level 3 Fair Value Rollforward

<i>In millions of dollars</i>	Dec. 31, 2015	Net realized/unrealized gains (losses) included in		Transfers		Purchases	Issuances	Sales	Settlements	Dec. 31, 2016	Unrealized gains (losses) still held ⁽³⁾
		Principal transactions	Other ⁽¹⁾⁽²⁾	into Level 3	out of Level 3						
Assets											
Federal funds sold and securities borrowed or purchased under agreements to resell	\$ 1,337	\$ (20)	\$ —	\$ —	\$ (28)	\$ 758	\$ —	\$ —	\$ (551)	\$ 1,496	\$ (16)
Trading non-derivative assets											
Trading mortgage-backed securities											
U.S. government-sponsored agency guaranteed	744	6	—	510	(1,087)	941	—	(961)	23	176	(7)
Residential	1,326	104	—	189	(162)	324	—	(1,376)	(6)	399	26
Commercial	517	(1)	—	193	(234)	759	—	(1,028)	—	206	(27)
Total trading mortgage-backed securities	\$ 2,587	\$ 109	\$ —	\$ 892	\$ (1,483)	\$ 2,024	\$ —	\$ (3,365)	\$ 17	\$ 781	\$ (8)
U.S. Treasury and federal agency securities	\$ 1	\$ —	\$ —	\$ 2	\$ —	\$ —	\$ —	\$ (2)	\$ —	\$ 1	\$ —
State and municipal	351	23	—	195	(256)	322	—	(339)	—	296	(88)
Foreign government	197	(9)	—	21	(49)	115	—	(235)	—	40	(16)
Corporate	376	330	—	171	(132)	867	—	(1,295)	7	324	69
Equity securities	3,684	(527)	—	279	(4,057)	955	(11)	(196)	—	127	(457)
Asset-backed securities	2,739	53	—	205	(360)	2,199	—	(2,965)	(3)	1,868	(46)
Other trading assets	2,483	(58)	—	2,070	(2,708)	2,894	19	(1,838)	(48)	2,814	(101)
Total trading non-derivative assets	\$ 12,418	\$ (79)	\$ —	\$ 3,835	\$ (9,045)	\$ 9,376	\$ 8	\$ (10,235)	\$ (27)	\$ 6,251	\$ (647)
Trading derivatives, net⁽⁴⁾											
Interest rate contracts	\$ (495)	\$ (146)	\$ —	\$ 301	\$ (239)	\$ 163	\$ (18)	\$ (142)	\$ (87)	\$ (663)	\$ 26
Foreign exchange contracts	620	(276)	—	75	(106)	200	—	(181)	81	413	23
Equity contracts	(800)	(89)	—	63	(772)	92	38	(128)	39	(1,557)	(33)
Commodity contracts	(1,861)	(352)	—	(425)	(39)	357	—	(347)	722	(1,945)	(164)
Credit derivatives	307	(1,970)	—	8	(29)	37	—	(34)	680	(1,001)	(1,854)
Total trading derivatives, net⁽⁴⁾	\$ (2,229)	\$ (2,833)	\$ —	\$ 22	\$ (1,185)	\$ 849	\$ 20	\$ (832)	\$ 1,435	\$ (4,753)	\$ (2,002)

In millions of dollars	Dec. 31, 2015	Net realized/unrealized gains (losses) included in		Transfers		Purchases	Issuances	Sales	Settlements	Dec. 31, 2016	Unrealized gains (losses) still held ⁽³⁾	
		Principal transactions	Other ⁽¹⁾⁽²⁾	into Level 3	out of Level 3							
Investments												
Mortgage-backed securities												
U.S. government-sponsored agency guaranteed	\$ 139	\$ —	\$ (26)	\$ 25	\$ (72)	\$ 45	\$ —	\$ (9)	\$ (1)	\$ 101	\$ 54	
Residential	4	—	3	49	—	26	—	(32)	—	50	2	
Commercial	2	—	(1)	6	(7)	—	—	—	—	—	—	
Total investment mortgage-backed securities	\$ 145	\$ —	\$ (24)	\$ 80	\$ (79)	\$ 71	\$ —	\$ (41)	\$ (1)	\$ 151	\$ 56	
U.S. Treasury and federal agency securities												
U.S. Treasury and federal agency securities	\$ 4	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ (2)	\$ —	\$ 2	\$ —	
State and municipal	2,192	—	39	467	(1,598)	351	—	(240)	—	1,211	23	
Foreign government	260	—	10	38	(39)	259	—	(339)	(3)	186	(104)	
Corporate	603	—	77	11	(240)	693	—	(468)	(365)	311	—	
Equity securities	124	—	10	5	(5)	1	—	(131)	5	9	—	
Asset-backed securities	596	—	(92)	7	(61)	435	—	(306)	81	660	(102)	
Other debt securities	—	—	—	10	—	6	—	(16)	—	—	—	
Non-marketable equity securities	1,135	—	79	336	(32)	26	—	(14)	(199)	1,331	18	
Total investments	\$ 5,059	\$ —	\$ 99	\$ 954	\$ (2,054)	\$ 1,842	\$ —	\$ (1,557)	\$ (482)	\$ 3,861	\$ (109)	
Loans												
Loans	\$ 2,166	\$ —	\$ (61)	\$ 89	\$ (1,074)	\$ 708	\$ 219	\$ (813)	\$ (666)	\$ 568	\$ 26	
Mortgage servicing rights	1,781	—	(36)	—	—	—	152	(20)	(313)	1,564	(21)	
Other financial assets measured on a recurring basis	180	—	80	55	(47)	1	236	(133)	(338)	34	39	
Liabilities												
Interest-bearing deposits	\$ 434	\$ —	\$ 43	\$ 322	\$ (309)	\$ —	\$ 5	\$ —	\$ (116)	\$ 293	\$ 46	
Federal funds purchased and securities loaned or sold under agreements to repurchase	1,247	(6)	—	—	(150)	—	—	27	(281)	849	(12)	
Trading account liabilities												
Securities sold, not yet purchased	199	17	—	1,185	(109)	(70)	(41)	367	(337)	1,177	(43)	
Other trading liabilities	—	—	—	1	—	—	—	—	—	1	—	
Short-term borrowings	9	(16)	—	19	(37)	—	87	—	(52)	42	—	
Long-term debt	7,543	(282)	—	3,792	(4,350)	—	4,845	(3)	(2,365)	9,744	(419)	
Other financial liabilities measured on a recurring basis	14	—	(11)	2	(12)	(8)	12	—	(11)	8	(13)	

- (1) Changes in fair value for available-for-sale investments are recorded in AOCI, unless related to other-than-temporary impairment, while gains and losses from sales are recorded in *Realized gains (losses) from sales of investments* on the Consolidated Statement of Income.
- (2) Unrealized gains (losses) on MSR are recorded in *Other revenue* on the Consolidated Statement of Income.
- (3) Represents the amount of total gains or losses for the period, included in earnings (and AOCI for changes in fair value of available-for-sale investments), attributable to the change in fair value relating to assets and liabilities classified as Level 3 that are still held at December 31, 2016.
- (4) Total Level 3 trading derivative assets and liabilities have been netted in these tables for presentation purposes only.

<i>In millions of dollars</i>	Dec. 31, 2014	Net realized/unrealized gains (losses) included in		Transfers		Purchases	Issuances	Sales	Settlements	Dec. 31, 2015	Unrealized gains (losses) still held ⁽³⁾
		Principal transactions	Other ⁽¹⁾⁽²⁾	into Level 3	out of Level 3						
Assets											
Federal funds sold and securities borrowed or purchased under agreements to resell	\$ 3,398	\$ (147)	\$ —	\$ 279	\$ (2,856)	\$ 784	\$ —	\$ —	\$ (121)	\$ 1,337	\$ (5)
Trading non-derivative assets											
Trading mortgage-backed securities											
U.S. government-sponsored agency guaranteed	1,085	24	—	872	(1,277)	796	—	(756)	—	744	(4)
Residential	2,680	254	—	370	(480)	1,574	—	(3,072)	—	1,326	(101)
Commercial	440	18	—	252	(157)	697	—	(733)	—	517	(7)
Total trading mortgage-backed securities	\$ 4,205	\$ 296	\$ —	\$ 1,494	\$ (1,914)	\$ 3,067	\$ —	\$ (4,561)	\$ —	\$ 2,587	\$ (112)
U.S. Treasury and federal agency securities	\$ —	\$ —	\$ —	\$ 2	\$ (1)	\$ 1	\$ —	\$ (1)	\$ —	\$ 1	\$ —
State and municipal	241	—	—	67	(35)	183	—	(105)	—	351	(7)
Foreign government	206	(10)	—	53	(100)	271	—	(169)	(54)	197	6
Corporate	820	111	—	186	(288)	802	—	(1,244)	(11)	376	(29)
Equity securities	2,219	547	—	344	(371)	1,377	—	(432)	—	3,684	464
Asset-backed securities	3,294	141	—	663	(282)	4,426	—	(5,503)	—	2,739	(174)
Other trading assets	4,372	180	—	968	(3,290)	2,504	51	(2,110)	(192)	2,483	(45)
Total trading non-derivative assets	\$ 15,357	\$ 1,265	\$ —	\$ 3,777	\$ (6,281)	\$ 12,631	\$ 51	\$ (14,125)	\$ (257)	\$ 12,418	\$ 103
Trading derivatives, net⁽⁴⁾											
Interest rate contracts	\$ (211)	\$ (492)	\$ —	\$ (124)	\$ 15	\$ 24	\$ —	\$ 141	\$ 152	\$ (495)	\$ 553
Foreign exchange contracts	778	(245)	—	(11)	27	393	—	(381)	59	620	(12)
Equity contracts	(863)	148	—	(126)	66	496	—	(334)	(187)	(800)	41
Commodity contracts	(1,622)	(753)	—	214	(28)	—	—	—	328	(1,861)	(257)
Credit derivatives	(743)	555	—	9	61	1	—	(3)	427	307	442
Total trading derivatives, net⁽⁴⁾	\$ (2,661)	\$ (787)	\$ —	\$ (38)	\$ 141	\$ 914	\$ —	\$ (577)	\$ 779	\$ (2,229)	\$ 767
Investments											
Mortgage-backed securities											
U.S. government-sponsored agency guaranteed	\$ 38	\$ —	\$ 29	\$ 171	\$ (118)	\$ 62	\$ —	\$ (43)	\$ —	\$ 139	\$ (2)
Residential	8	—	(1)	4	—	11	—	(18)	—	4	—
Commercial	1	—	—	4	(3)	—	—	—	—	2	—
Total investment mortgage-backed securities	\$ 47	\$ —	\$ 28	\$ 179	\$ (121)	\$ 73	\$ —	\$ (61)	\$ —	\$ 145	\$ (2)
U.S. Treasury and federal agency securities	\$ 6	\$ —	\$ —	\$ —	\$ —	\$ 6	\$ —	\$ (8)	\$ —	\$ 4	\$ —
State and municipal	2,180	—	(23)	834	(721)	842	—	(671)	(249)	2,192	9
Foreign government	678	—	45	(5)	(270)	601	—	(519)	(270)	260	(1)
Corporate	672	—	(7)	15	(52)	144	—	(134)	(35)	603	(4)
Equity securities	681	—	(22)	12	(14)	7	—	(540)	—	124	(120)
Asset-backed securities	549	—	(17)	45	(58)	202	—	(125)	—	596	14
Other debt securities	—	—	—	—	—	10	—	(10)	—	—	—
Non-marketable equity securities	1,460	—	(50)	76	6	5	—	(58)	(304)	1,135	26
Total investments	\$ 6,273	\$ —	\$ (46)	\$ 1,156	\$ (1,230)	\$ 1,890	\$ —	\$ (2,126)	\$ (858)	\$ 5,059	\$ (78)

In millions of dollars	Dec. 31, 2014	Net realized/unrealized gains (losses) included in		Transfers		Purchases	Issuances	Sales	Settlements	Dec. 31, 2015	Unrealized gains (losses) still held ⁽³⁾
		Principal transactions	Other ⁽¹⁾⁽²⁾	into Level 3	out of Level 3						
Loans	\$ 3,108	\$ —	\$ (303)	\$ 689	\$ (805)	\$ 1,190	\$ 461	\$ (807)	\$ (1,367)	\$ 2,166	\$ 24
Mortgage servicing rights	1,845	—	110	—	—	—	214	(38)	(350)	1,781	(390)
Other financial assets measured on a recurring basis	78	—	100	201	(66)	6	208	(85)	(262)	180	582
Liabilities											
Interest-bearing deposits	\$ 486	\$ —	\$ 10	\$ 1	\$ (1)	\$ —	\$ 36	\$ —	\$ (78)	\$ 434	\$ (154)
Federal funds purchased and securities loaned or sold under agreements to repurchase	1,043	(23)	—	—	—	—	—	302	(121)	1,247	134
Trading account liabilities											
Securities sold, not yet purchased	424	88	—	311	(231)	—	—	385	(602)	199	(25)
Other trading liabilities	—	—	—	—	—	—	—	—	—	—	—
Short-term borrowings	344	11	—	23	(30)	—	1	—	(318)	9	(4)
Long-term debt	7,290	539	—	2,903	(3,958)	—	3,407	—	(1,560)	7,543	(347)
Other financial liabilities measured on a recurring basis	7	—	(11)	10	(4)	(5)	5	2	(12)	14	(4)

- (1) Changes in fair value of available-for-sale investments are recorded in AOCI, unless related to other-than-temporary impairment, while gains and losses from sales are recorded in *Realized gains (losses) from sales of investments* on the Consolidated Statement of Income.
- (2) Unrealized gains (losses) on MSRs are recorded in *Other revenue* on the Consolidated Statement of Income.
- (3) Represents the amount of total gains or losses for the period, included in earnings (and AOCI for changes in fair value of available-for-sale investments), attributable to the change in fair value relating to assets and liabilities classified as Level 3 that are still held at December 31, 2015.
- (4) Total Level 3 derivative assets and liabilities have been netted in these tables for presentation purposes only.

Level 3 Fair Value Rollforward

The following were the significant Level 3 transfers for the period December 31, 2015 to December 31, 2016:

- Transfers of Equity securities of \$4.0 billion from Level 3 to Level 2 included \$3.2 billion of non-marketable equity securities and \$0.5 billion of related partial economic hedging derivatives for which the portfolio valuation measurement exception under ASC 820-35-18D has been applied. After application of the portfolio exception, the Company considers these items to be one valuation unit and measures the fair value of the net open risk position primarily based on recent market transactions where these instruments are traded concurrently. Because the derivatives offset the significant unobservable exposure within the non-marketable equity securities, there were no remaining unobservable inputs deemed to be significant.
- Transfers of U.S. government-sponsored agency guaranteed MBS in *Trading account assets* of \$0.5 billion from Level 2 to Level 3, and of \$1.1 billion from Level 3 to Level 2 primarily related to Agency Guaranteed MBS securities for which there were changes in volume of market quotations.
- Transfers of other trading assets of \$2.1 billion from Level 2 to Level 3, and of \$2.7 billion from Level 3 to Level 2 primarily related to trading loans for which there were changes in volume of market quotations.
- Transfers of *Long-term debt* of \$3.8 billion from Level 2 to Level 3, and of \$4.4 billion from Level 3 to Level 2, mainly related to structured debt, reflecting changes in the significance of unobservable inputs as well as certain

underlying market inputs becoming less or more observable.

The following were the significant Level 3 transfers for the period December 31, 2014 to December 31, 2015:

- Transfers of *Federal funds sold and securities borrowed or purchased under agreements to resell* of \$2.9 billion from Level 3 to Level 2 related to shortening of the remaining tenor of certain reverse repos. There is more transparency and observability for repo curves used in the valuation of structured reverse repos with tenors up to five years; thus, these positions are generally classified as Level 2.
- Transfers of U.S. government-sponsored agency guaranteed MBS in *Trading account assets* of \$0.9 billion from Level 2 to Level 3, and of \$1.3 billion from Level 3 to Level 2 primarily related to changes in observability due to market trading activity.
- Transfers of other trading assets of \$1.0 billion from Level 2 to Level 3, and of \$3.3 billion from Level 3 to Level 2 primarily related to trading loans for which there were changes in volume of and transparency into market quotations.
- Transfers of *Long-term debt* of \$2.9 billion from Level 2 to Level 3, and of \$4.0 billion from Level 3 to Level 2, mainly related to structured debt, reflecting certain unobservable inputs becoming less significant and certain underlying market inputs being more observable.

Valuation Techniques and Inputs for Level 3 Fair Value Measurements

The Company's Level 3 inventory consists of both cash instruments and derivatives of varying complexity. The valuation methodologies used to measure the fair value of these positions include discounted cash flow analysis, internal models and comparative analysis. A position is classified within Level 3 of the fair value hierarchy when at least one input is unobservable and is considered significant to its valuation. The specific reason an input is deemed unobservable varies. For example, at least one significant input to the pricing model is not observable in the market, at

least one significant input has been adjusted to make it more representative of the position being valued, or the price quote available does not reflect sufficient trading activities.

The following tables present the valuation techniques covering the majority of Level 3 inventory and the most significant unobservable inputs used in Level 3 fair value measurements. Differences between this table and amounts presented in the Level 3 Fair Value Rollforward table represent individually immaterial items that have been measured using a variety of valuation techniques other than those listed.

Valuation Techniques and Inputs for Level 3 Fair Value Measurements

<i>As of December 31, 2016</i>	Fair value⁽¹⁾ <i>(in millions)</i>	Methodology	Input	Low⁽²⁾⁽³⁾	High⁽²⁾⁽³⁾	Weighted average⁽⁴⁾
Assets						
Federal funds sold and securities borrowed or purchased under agreements to resell	\$ 1,496	Model-based	IR log-normal volatility	12.86 %	75.50 %	61.73 %
			Interest rate	(0.51)%	5.76 %	2.80 %
Mortgage-backed securities	\$ 509	Price-based	Price	\$ 5.50	\$ 113.48	\$ 61.74
	368	Yield analysis	Yield	1.90 %	14.54 %	4.34 %
State and municipal, foreign government, corporate and other debt securities	\$ 3,308	Price-based	Price	\$ 15.00	\$ 103.60	\$ 89.93
	1,513	Cash flow	Credit spread	35 bps	600 bps	230 bps
Equity securities⁽⁵⁾	\$ 69	Model-based	Price	\$ 0.48	\$ 104.00	\$ 22.19
	58	Price-based				
Asset-backed securities	\$ 2,454	Price-based	Price	\$ 4.00	\$ 100.00	\$ 71.51
Non-marketable equity	\$ 726	Price-based	Discount to price	— %	90.00 %	13.36 %
	565	Comparables analysis	EBITDA multiples	6.80x	10.10x	8.62x
			Price-to-book ratio	0.32 %	1.03 %	0.87 %
			Price	\$ —	\$ 113.23	\$ 54.40
Derivatives—gross⁽⁶⁾						
Interest rate contracts (gross)	\$ 4,897	Model-based	IR log-normal volatility	1.00 %	93.97 %	62.72 %
			Mean reversion	1.00 %	20.00 %	10.50 %
Foreign exchange contracts (gross)	\$ 1,110	Model-based	Foreign exchange (FX) volatility	1.39 %	26.85 %	15.18 %
	134	Cash flow	Interest rate	(0.85)%	(0.49)%	(0.84)%
			Credit spread	4 bps	657 bps	266 bps
			IR-IR correlation	40.00 %	50.00 %	41.27 %
			IR-FX correlation	16.41 %	60.00 %	49.52 %
Equity contracts (gross) ⁽⁷⁾	\$ 2,701	Model-based	Equity volatility	3.00 %	97.78 %	29.52 %
			Forward Price	69.05 %	144.61 %	94.28 %
			Equity-FX correlation	(60.70)%	28.20 %	(26.28)%
			Equity-IR correlation	(35.00)%	41.00 %	(15.65)%
			Yield Volatility	3.55 %	14.77 %	9.29 %
			Equity-equity correlation	(87.70)%	96.50 %	67.45 %
Commodity contracts (gross)	\$ 2,955	Model-based	Forward price	35.74 %	235.35 %	119.99 %
			Commodity volatility	2.00 %	32.19 %	17.07 %
			Commodity correlation	(41.61)%	90.42 %	52.85 %

<i>As of December 31, 2016</i>	Fair value ⁽¹⁾ <i>(in millions)</i>	Methodology	Input	Low ⁽²⁾⁽³⁾	High ⁽²⁾⁽³⁾	Weighted average ⁽⁴⁾		
Credit derivatives (gross)	\$ 2,786	Model-based	Recovery rate	20.00 %	75.00 %	39.75 %		
			1,403	Price-based	Credit correlation	5.00 %	90.00 %	34.27 %
					Upfront Points	6.00 %	99.90 %	72.89 %
					Price	\$ 1.00	\$ 167.00	\$ 77.35
					Credit spread	3 bps	1,515 bps	256 bps
Nontrading derivatives and other financial assets and liabilities measured on a recurring basis (gross) ⁽⁶⁾	\$ 42	Model-based	Recovery rate	40.00 %	40.00 %	40.00 %		
					Redemption rate	3.92 %	99.58 %	74.69 %
					Upfront Points	16.00 %	20.50 %	18.78 %
Loans	\$ 258	Price-based	Price	\$31.55	\$105.74	\$56.46		
		221	Yield Analysis	Yield	2.75 %	20.00 %	11.09 %	
	79	Model-based						
Mortgage servicing rights	\$ 1,473	Cash flow	Yield	4.20 %	20.56 %	9.32 %		
					WAL	3.53 years	7.24 years	5.83 years
Liabilities								
Interest-bearing deposits	\$ 293	Model-based	Mean Reversion	1.00 %	20.00 %	10.50 %		
					Forward price	98.79 %	104.07 %	100.19 %
Federal funds purchased and securities loaned or sold under agreements to repurchase	\$ 849	Model-based	Interest rate	0.62 %	2.19 %	1.99 %		
Trading account liabilities								
Securities sold, not yet purchased	\$ 1,056	Model-based	IR Normal Volatility	12.86 %	75.50 %	61.73 %		
Short-term borrowings and long-term debt	\$ 9,774	Model-based	Mean reversion	1.00 %	20.00 %	10.50 %		
					Commodity Correlation	(41.61)%	90.42 %	52.85 %
					Commodity Volatility	2.00 %	32.19 %	17.07 %
					Forward price	69.05 %	235.35 %	103.28 %

<i>As of December 31, 2015</i>	Fair value ⁽¹⁾ <i>(in millions)</i>	Methodology	Input	Low ⁽²⁾⁽³⁾	High ⁽²⁾⁽³⁾	Weighted average ⁽⁴⁾	
Assets							
Federal funds sold and securities borrowed or purchased under agreements to resell	\$ 1,337	Model-based	IR log-normal volatility	29.02 %	137.02 %	37.90 %	
					Interest rate	— %	2.03 %
Mortgage-backed securities	\$ 1,287	Price-based	Price	\$ 3.45	\$ 109.21	\$ 78.25	
	1,377	Yield analysis	Yield	0.50 %	14.07 %	4.83 %	
State and municipal, foreign government, corporate and other debt securities	\$ 3,761	Price-based	Price	\$ —	\$ 217.00	\$ 79.41	
	1,719	Cash flow	Credit spread	20 bps	600 bps	251 bps	
Equity securities ⁽⁵⁾	\$ 3,499	Model-based	WAL	1.5 years	1.5 years	1.5 years	
					Redemption rate	41.21 %	41.21 %
Asset-backed securities	\$ 3,075	Price-based	Price	\$ 5.55	\$ 100.21	\$ 71.57	
Non-marketable equity	\$ 633	Comparables analysis	EBITDA multiples	6.80x	10.80x	9.05x	
		473	Price-based	Discount to price	— %	90.00 %	10.89 %
				Price-to-book ratio	0.19x	1.09x	0.60x
			Price	\$ —	\$ 132.78	\$ 46.66	
Derivatives—gross⁽⁶⁾							
Interest rate contracts (gross)	\$ 4,553	Model-based	IR log-normal volatility	17.41 %	137.02 %	37.60 %	
					Mean reversion	(5.52) %	20.00 %

<i>As of December 31, 2015</i>	Fair value ⁽¹⁾ (in millions)	Methodology	Input	Low ⁽²⁾⁽³⁾	High ⁽²⁾⁽³⁾	Weighted average ⁽⁴⁾	
Foreign exchange contracts (gross)	\$ 1,326	Model-based	Foreign exchange (FX) volatility	0.38 %	25.73 %	11.63 %	
			Cash flow	Interest rate	7.50 %	7.50 %	7.50 %
			Forward price	1.48 %	138.09 %	56.80 %	
			Credit spread	3 bps	515 bps	235 bps	
			IR-IR correlation	(51.00)%	77.94 %	32.91 %	
			IR-FX correlation	(20.30)%	60.00 %	48.85 %	
Equity contracts (gross) ⁽⁷⁾	\$ 3,976	Model-based	Equity volatility	11.87 %	49.57 %	27.33 %	
			Equity-FX correlation	(88.17)%	65.00 %	(21.09)%	
			Equity forward	82.72 %	100.53 %	95.20 %	
			Equity-equity correlation	(80.54)%	100.00 %	49.54 %	
Commodity contracts (gross)	\$ 4,061	Model-based	Forward price	35.09 %	299.32 %	112.98 %	
			Commodity volatility	5.00 %	83.00 %	24.00 %	
			Commodity correlation	(57.00)%	91.00 %	30.00 %	
Credit derivatives (gross)	\$ 5,849	Model-based	Recovery rate	1.00 %	75.00 %	32.49 %	
			Price-based	Credit correlation	5.00 %	90.00 %	43.48 %
				Price	\$ 0.33	\$ 101.00	\$ 61.52
				Credit spread	1 bps	967 bps	133 bps
			Upfront points	7.00 %	99.92 %	66.75 %	
Nontrading derivatives and other financial assets and liabilities measured on a recurring basis	\$ 194	Model-based	Recovery rate	7.00 %	40.00 %	10.72 %	
			Redemption rate	27.00 %	99.50 %	74.80 %	
			Interest rate	5.26 %	5.28 %	5.27 %	
Loans	\$ 750	Price-based	Yield	1.50 %	4.50 %	2.52 %	
			Model-based	Price	\$ —	\$ 106.98	\$ 40.69
				Cash flow	Credit spread	29 bps	500 bps
Mortgage servicing rights	\$ 1,690	Cash flow	Yield	— %	23.32 %	6.83 %	
			WAL	3.38 years	7.48 years	5.50 years	
Liabilities							
Interest-bearing deposits	\$ 434	Model-based	Equity-IR correlation	23.00 %	39.00 %	34.51 %	
			Forward price	35.09 %	299.32 %	112.72 %	
			Commodity correlation	(57.00)%	91.00 %	30.00 %	
			Commodity volatility	5.00 %	83.00 %	24.00 %	
Federal funds purchased and securities loaned or sold under agreements to repurchase	\$ 1,245	Model-based	Interest rate	1.27 %	2.02 %	1.92 %	
Trading account liabilities							
Securities sold, not yet purchased	\$ 152	Price-based	Price	\$ —	\$ 217.00	\$ 87.78	
Short-term borrowings and long-term debt	\$ 7,004	Model-based	Mean reversion	(5.52)%	20.00 %	7.80 %	
			Equity volatility	9.55 %	42.56 %	22.26 %	
			Equity forward	82.72 %	100.80 %	94.48 %	
			Equity-equity correlation	(80.54)%	100.00 %	49.16 %	
			Forward price	35.09 %	299.32 %	106.32 %	
			Equity-FX correlation	(88.20)%	56.85 %	(31.76)%	

(1) The fair value amounts presented in these tables represent the primary valuation technique or techniques for each class of assets or liabilities.

(2) Some inputs are shown as zero due to rounding.

(3) When the low and high inputs are the same, there is either a constant input applied to all positions, or the methodology involving the input applies to only one large position.

(4) Weighted averages are calculated based on the fair values of the instruments.

(5) For equity securities, the price and fund NAV inputs are expressed on an absolute basis, not as a percentage of the notional amount.

(6) Both trading and nontrading account derivatives—assets and liabilities—are presented on a gross absolute value basis.

(7) Includes hybrid products.

Sensitivity to Unobservable Inputs and Interrelationships between Unobservable Inputs

The impact of key unobservable inputs on the Level 3 fair value measurements may not be independent of one another. In addition, the amount and direction of the impact on a fair value measurement for a given change in an unobservable input depends on the nature of the instrument as well as whether the Company holds the instrument as an asset or a liability. For certain instruments, the pricing, hedging and risk management are sensitive to the correlation between various inputs rather than on the analysis and aggregation of the individual inputs.

The following section describes the sensitivities and interrelationships of the most significant unobservable inputs used by the Company in Level 3 fair value measurements.

Correlation

Correlation is a measure of the extent to which two or more variables change in relation to each other. A variety of correlation-related assumptions are required for a wide range of instruments, including equity and credit baskets, foreign-exchange options, CDOs backed by loans or bonds, mortgages, subprime mortgages and many other instruments. For almost all of these instruments, correlations are not observable in the market and must be calculated using historical information. Estimating correlation can be especially difficult where it may vary over time. Calculating correlation information from market data requires significant assumptions regarding the informational efficiency of the market (for example, swaption markets). Changes in correlation levels can have a major impact, favorable or unfavorable, on the value of an instrument, depending on its nature. A change in the default correlation of the fair value of the underlying bonds comprising a CDO structure would affect the fair value of the senior tranche. For example, an increase in the default correlation of the underlying bonds would reduce the fair value of the senior tranche, because highly correlated instruments produce larger losses in the event of default and a part of these losses would become attributable to the senior tranche. That same change in default correlation would have a different impact on junior tranches of the same structure.

Volatility

Volatility represents the speed and severity of market price changes and is a key factor in pricing options. Typically, instruments can become more expensive if volatility increases. For example, as an index becomes more volatile, the cost to Citi of maintaining a given level of exposure increases because more frequent rebalancing of the portfolio is required. Volatility generally depends on the tenor of the underlying instrument and the strike price or level defined in the contract. Volatilities for certain combinations of tenor and strike are not observable. The general relationship between changes in the value of a portfolio to changes in volatility also depends on changes in interest rates and the level of the underlying index. Generally, long option positions (assets) benefit from increases in volatility, whereas short option positions (liabilities) will suffer losses. Some instruments are more sensitive to changes in volatility than others. For example, an

at-the-money option would experience a larger percentage change in its fair value than a deep-in-the-money option. In addition, the fair value of an option with more than one underlying security (for example, an option on a basket of bonds) depends on the volatility of the individual underlying securities as well as their correlations.

Yield

In some circumstances, the yield of an instrument is not observable in the market and must be estimated from historical data or from yields of similar securities. This estimated yield may need to be adjusted to capture the characteristics of the security being valued. In other situations, the estimated yield may not represent sufficient market liquidity and must be adjusted as well. Whenever the amount of the adjustment is significant to the value of the security, the fair value measurement is classified as Level 3.

Adjusted yield is generally used to discount the projected future principal and interest cash flows on instruments, such as asset-backed securities. Adjusted yield is impacted by changes in the interest rate environment and relevant credit spreads.

Prepayment

Voluntary unscheduled payments (prepayments) change the future cash flows for the investor and thereby change the fair value of the security. The effect of prepayments is more pronounced for residential mortgage-backed securities. An increase in prepayments—in speed or magnitude—generally creates losses for the holder of these securities. Prepayment is generally negatively correlated with delinquency and interest rate. A combination of low prepayment and high delinquencies amplify each input's negative impact on mortgage securities' valuation. As prepayment speeds change, the weighted average life of the security changes, which impacts the valuation either positively or negatively, depending upon the nature of the security and the direction of the change in the weighted average life.

Recovery

Recovery is the proportion of the total outstanding balance of a bond or loan that is expected to be collected in a liquidation scenario. For many credit securities (such as asset-backed securities), there is no directly observable market input for recovery, but indications of recovery levels are available from pricing services. The assumed recovery of a security may differ from its actual recovery that will be observable in the future. The recovery rate impacts the valuation of credit securities. Generally, an increase in the recovery rate assumption increases the fair value of the security. An increase in loss severity, the inverse of the recovery rate, reduces the amount of principal available for distribution and, as a result, decreases the fair value of the security.

Credit Spread

Credit spread is a component of the security representing its credit quality. Credit spread reflects the market perception of changes in prepayment, delinquency and recovery rates, therefore capturing the impact of other variables on the fair value. Changes in credit spread affect the fair value of

securities differently depending on the characteristics and maturity profile of the security. For example, credit spread is a more significant driver of the fair value measurement of a high yield bond as compared to an investment grade bond. Generally, the credit spread for an investment grade bond is also more observable and less volatile than its high yield counterpart.

Qualitative Discussion of the Ranges of Significant Unobservable Inputs

The following section describes the ranges of the most significant unobservable inputs used by the Company in Level 3 fair value measurements. The level of aggregation and the diversity of instruments held by the Company lead to a wide range of unobservable inputs that may not be evenly distributed across the Level 3 inventory.

Correlation

There are many different types of correlation inputs, including credit correlation, cross-asset correlation (such as equity-interest rate correlation), and same-asset correlation (such as interest rate-interest rate correlation). Correlation inputs are generally used to value hybrid and exotic instruments. Generally, same-asset correlation inputs have a narrower range than cross-asset correlation inputs. However, due to the complex and unique nature of these instruments, the ranges for correlation inputs can vary widely across portfolios.

Volatility

Similar to correlation, asset-specific volatility inputs vary widely by asset type. For example, ranges for foreign exchange volatility are generally lower and narrower than equity volatility. Equity volatilities are wider due to the nature of the equities market and the terms of certain exotic instruments. For most instruments, the interest rate volatility input is on the lower end of the range; however, for certain structured or exotic instruments (such as market-linked deposits or exotic interest rate derivatives), the range is much wider.

Yield

Ranges for the yield inputs vary significantly depending upon the type of security. For example, securities that typically have lower yields, such as municipal bonds, will fall on the lower end of the range, while more illiquid securities or securities with lower credit quality, such as certain residual tranche asset-backed securities, will have much higher yield inputs.

Credit Spread

Credit spread is relevant primarily for fixed income and credit instruments; however, the ranges for the credit spread input can vary across instruments. For example, certain fixed income instruments, such as certificates of deposit, typically have lower credit spreads, whereas certain derivative instruments with high-risk counterparties are typically subject to higher credit spreads when they are uncollateralized or have a longer tenor. Other instruments, such as credit default swaps, also have credit spreads that vary with the attributes of the

underlying obligor. Stronger companies have tighter credit spreads, and weaker companies have wider credit spreads.

Price

The price input is a significant unobservable input for certain fixed income instruments. For these instruments, the price input is expressed as a percentage of the notional amount, with a price of \$100 meaning that the instrument is valued at par. For most of these instruments, the price varies between zero to \$100, or slightly above \$100. Relatively illiquid assets that have experienced significant losses since issuance, such as certain asset-backed securities, are at the lower end of the range, whereas most investment grade corporate bonds will fall in the middle to the higher end of the range. For certain structured debt instruments with embedded derivatives, the price input may be above \$100 to reflect the embedded features of the instrument (for example, a step-up coupon or a conversion option).

The price input is also a significant unobservable input for certain equity securities; however, the range of price inputs varies depending on the nature of the position, the number of shares outstanding and other factors.

Mean Reversion

A number of financial instruments require an estimate of the rate at which the interest rate reverts to its long-term average. Changes in this estimate can significantly affect the fair value of these instruments. However, sometimes there are insufficient external market data to calibrate this parameter, especially when pricing more complex instruments. The level of mean reversion affects the correlation between short- and long-term interest rates. The fair values of more complex instruments, such as Bermudan swaptions (options with multiple exercise dates) and constant maturity spread options or structured debts with these embedded features, are more sensitive to the changes in this correlation as compared to less complex instruments, such as caps and floors.

Items Measured at Fair Value on a Nonrecurring Basis

Certain assets and liabilities are measured at fair value on a nonrecurring basis and therefore are not included in the tables above. These include assets measured at cost that have been written down to fair value during the periods as a result of an impairment. In addition, these assets include loans held-for-sale and other real estate owned that are measured at the lower of cost or market.

The following table presents the carrying amounts of all assets that were still held for which a nonrecurring fair value measurement was recorded:

<i>In millions of dollars</i>	Fair value	Level 2	Level 3
December 31, 2016			
Loans held-for-sale	\$ 5,802	\$ 3,389	\$ 2,413
Other real estate owned	75	15	60
Loans ⁽¹⁾	1,376	586	790
Total assets at fair value on a nonrecurring basis	\$ 7,253	\$ 3,990	\$ 3,263

<i>In millions of dollars</i>	Fair value	Level 2	Level 3
December 31, 2015			
Loans held-for-sale	\$ 10,326	\$ 6,752	\$ 3,574
Other real estate owned	107	15	92
Loans ⁽¹⁾	1,173	836	337
Total assets at fair value on a nonrecurring basis	\$ 11,606	\$ 7,603	\$ 4,003

(1) Represents impaired loans held for investment whose carrying amount is based on the fair value of the underlying collateral, primarily real estate secured loans.

The fair value of loans held-for-sale is determined where possible using quoted secondary-market prices. If no such quoted price exists, the fair value of a loan is determined using quoted prices for a similar asset or assets, adjusted for the specific attributes of that loan. Fair value for the other real estate owned is based on appraisals. For loans whose carrying amount is based on the fair value of the underlying collateral, the fair values depend on the type of collateral. Fair value of the collateral is typically estimated based on quoted market prices if available, appraisals or other internal valuation techniques.

Where the fair value of the related collateral is based on an unadjusted appraised value, the loan is generally classified as Level 2. Where significant adjustments are made to the appraised value, the loan is classified as Level 3. Additionally, for corporate loans, appraisals of the collateral are often based on sales of similar assets; however, because the prices of similar assets require significant adjustments to reflect the unique features of the underlying collateral, these fair value measurements are generally classified as Level 3.

Valuation Techniques and Inputs for Level 3 Nonrecurring Fair Value Measurements

The following tables present the valuation techniques covering the majority of Level 3 nonrecurring fair value measurements and the most significant unobservable inputs used in those measurements:

<i>As of December 31, 2016</i>	Fair value ⁽¹⁾ <i>(in millions)</i>	Methodology	Input	Low ⁽²⁾	High	Weighted average ⁽³⁾
Loans held-for-sale	\$ 2,413	Price-based	Price	\$ —	\$ 100.00	\$ 93.08
Other real estate owned	\$ 59	Price-based	Discount to price ⁽⁴⁾	0.34%	13.00%	3.10%
			Price	\$ 64.65	\$ 74.39	\$ 66.21
Loans⁽⁵⁾	\$ 431	Cashflow	Price	\$ 3.25	\$ 105.00	\$ 59.61
	197	Recovery Analysis	Forward Price	\$ 2.90	\$ 210.00	\$ 156.78
	135	Price-based	Discount to price ⁽⁴⁾	0.25%	13.00%	8.34%
			Appraised Value	\$ 25.80	\$ 26,400,000	\$ 6,462,735

<i>As of December 31, 2015</i>	Fair value ⁽¹⁾ <i>(in millions)</i>	Methodology	Input	Low ⁽²⁾	High	Weighted average ⁽³⁾
Loans held-for-sale	\$ 3,486	Price-based	Price	\$ —	\$ 100.00	\$ 81.05
Other real estate owned	90	Price-based	Discount to price ⁽⁴⁾	0.34%	13.00%	2.86%
	2		Appraised value	\$ —	\$ 8,518,230	\$ 3,813,045
Loans⁽⁵⁾	\$ 157	Recovery analysis	Recovery rate	11.79%	60.00%	23.49%
	87	Price-based	Discount to price ⁽⁴⁾	13.00%	34.00%	7.99%

(1) The fair value amounts presented in this table represent the primary valuation technique or techniques for each class of assets or liabilities.

(2) Some inputs are shown as zero due to rounding.

(3) Weighted averages are calculated based on the fair values of the instruments.

(4) Represents loans held for investment whose carrying amounts are based on the fair value of the underlying collateral.

(5) Includes estimated costs to sell.

Nonrecurring Fair Value Changes

The following table presents total nonrecurring fair value measurements for the period, included in earnings, attributable to the change in fair value relating to assets that were still held:

<i>In millions of dollars</i>	Year ended December 31, 2016
Loans held-for-sale	\$ (2)
Other real estate owned	(5)
Loans ⁽¹⁾	(105)
Total nonrecurring fair value gains (losses)	\$ (112)

<i>In millions of dollars</i>	Year ended December 31, 2015
Loans held-for-sale	\$ (79)
Other real estate owned	(17)
Loans ⁽¹⁾	(142)
Total nonrecurring fair value gains (losses)	\$ (238)

(1) Represents loans held for investment whose carrying amount is based on the fair value of the underlying collateral, primarily real estate loans.

Estimated Fair Value of Financial Instruments Not Carried at Fair Value

The table below presents the carrying value and fair value of Citigroup's financial instruments that are not carried at fair value. The table below therefore excludes items measured at fair value on a recurring basis presented in the tables above.

The disclosure also excludes leases, affiliate investments, pension and benefit obligations, certain insurance contracts and tax-related items. Also, as required, the disclosure excludes the effect of taxes, any premium or discount that could result from offering for sale at one time the entire holdings of a particular instrument, excess fair value associated with deposits with no fixed maturity, and other expenses that would be incurred in a market transaction. In addition, the table excludes the values of non-financial assets and liabilities, as well as a wide range of franchise, relationship and intangible values, which are integral to a full assessment of Citigroup's financial position and the value of its net assets.

The fair value represents management's best estimates based on a range of methodologies and assumptions. The

carrying value of short-term financial instruments not accounted for at fair value, as well as receivables and payables arising in the ordinary course of business, approximates fair value because of the relatively short period of time between their origination and expected realization. Quoted market prices are used when available for investments and for liabilities, such as long-term debt not carried at fair value. For loans not accounted for at fair value, cash flows are discounted at quoted secondary market rates or estimated market rates if available. Otherwise, sales of comparable loan portfolios or current market origination rates for loans with similar terms and risk characteristics are used. Expected credit losses are either embedded in the estimated future cash flows or incorporated as an adjustment to the discount rate used. The value of collateral is also considered. For liabilities such as long-term debt not accounted for at fair value and without quoted market prices, market borrowing rates of interest are used to discount contractual cash flows.

<i>In billions of dollars</i>	December 31, 2016		Estimated fair value		
	Carrying value	Estimated fair value	Level 1	Level 2	Level 3
Assets					
Investments	\$ 52.1	\$ 52.4	\$ 0.8	\$ 48.6	\$ 3.0
Federal funds sold and securities borrowed or purchased under agreements to resell	103.6	103.6	—	98.5	5.1
Loans ⁽¹⁾⁽²⁾	607.0	604.5	—	7.0	597.5
Other financial assets ⁽²⁾⁽³⁾	212.9	212.9	8.2	153.6	51.1
Liabilities					
Deposits	\$ 928.2	\$ 927.6	\$ —	\$ 789.7	\$ 137.9
Federal funds purchased and securities loaned or sold under agreements to repurchase	108.2	108.2	—	107.8	0.4
Long-term debt ⁽⁴⁾	179.9	185.5	—	156.5	29.0
Other financial liabilities ⁽⁵⁾	112.2	112.2	—	15.1	97.1

<i>In billions of dollars</i>	December 31, 2015		Estimated fair value		
	Carrying value	Estimated fair value	Level 1	Level 2	Level 3
Assets					
Investments	\$ 41.7	\$ 42.7	\$ 3.5	\$ 36.4	\$ 2.8
Federal funds sold and securities borrowed or purchased under agreements to resell	81.7	81.7	—	77.4	4.3
Loans ⁽¹⁾⁽²⁾	597.5	599.4	—	6.0	593.4
Other financial assets ⁽²⁾⁽³⁾	186.5	186.5	6.9	126.2	53.4
Liabilities					
Deposits	\$ 906.3	\$ 896.7	\$ —	\$ 749.4	\$ 147.3
Federal funds purchased and securities loaned or sold under agreements to repurchase	109.7	109.7	—	109.4	0.3
Long-term debt ⁽⁴⁾	176.0	180.8	—	153.8	27.0
Other financial liabilities ⁽⁵⁾	97.6	97.6	—	18.0	79.6

(1) The carrying value of loans is net of the *Allowance for loan losses* of \$12.1 billion for December 31, 2016 and \$12.6 billion for December 31, 2015. In addition, the carrying values exclude \$1.9 billion and \$2.4 billion of lease finance receivables at December 31, 2016 and December 31, 2015, respectively.

- (2) Includes items measured at fair value on a nonrecurring basis.
- (3) Includes cash and due from banks, deposits with banks, brokerage receivables, reinsurance recoverable and other financial instruments included in *Other assets* on the Consolidated Balance Sheet, for all of which the carrying value is a reasonable estimate of fair value.
- (4) The carrying value includes long-term debt balances under qualifying fair value hedges.
- (5) Includes brokerage payables, short-term borrowings (carried at cost) and other financial instruments included in *Other liabilities* on the Consolidated Balance Sheet, for all of which the carrying value is a reasonable estimate of fair value.

Fair values vary from period to period based on changes in a wide range of factors, including interest rates, credit quality and market perceptions of value, and as existing assets and liabilities run off and new transactions are entered into. The estimated fair values of loans reflect changes in credit status since the loans were made, changes in interest rates in the case of fixed-rate loans, and premium values at origination of certain loans.

The estimated fair values of the Company's corporate unfunded lending commitments at December 31, 2016 and December 31, 2015 were liabilities of \$5.2 billion and \$7.0 billion, respectively, substantially all of which are classified as Level 3. The Company does not estimate the fair values of consumer unfunded lending commitments, which are generally cancelable by providing notice to the borrower.

25. FAIR VALUE ELECTIONS

Citi may elect to report most financial instruments and certain other items at fair value on an instrument-by-instrument basis with changes in fair value reported in earnings, other than DVA (see below). The election is made upon the initial recognition of an eligible financial asset, financial liability or firm commitment or when certain specified reconsideration events occur. The fair value election may not be revoked once an election is made. The changes in fair value are recorded in

current earnings, other than DVA, which from January 1, 2016 is reported in AOCI. Additional discussion regarding the applicable areas in which fair value elections were made is presented in Note 24 to the Consolidated Financial Statements.

The Company has elected fair value accounting for its mortgage servicing rights. See Note 21 to the Consolidated Financial Statements for further discussions regarding the accounting and reporting of MSRs.

The following table presents the changes in fair value of those items for which the fair value option has been elected:

<i>In millions of dollars</i>	Changes in fair value gains (losses) for the years ended December 31,	
	2016	2015
Assets		
Federal funds sold and securities borrowed or purchased under agreements to resell selected portfolios of securities purchased under agreements to resell and securities borrowed	\$ (89)	\$ (153)
Trading account assets	404	(305)
Investments	(25)	57
Loans		
Certain corporate loans ⁽¹⁾	40	(192)
Certain consumer loans ⁽¹⁾	—	3
Total loans	\$ 40	\$ (189)
Other assets		
MSRs	\$ (36)	\$ 104
Certain mortgage loans held for sale ⁽²⁾	284	331
Other assets	376	—
Total other assets	\$ 624	\$ 435
Total assets	\$ 954	\$ (155)
Liabilities		
Interest-bearing deposits	\$ (50)	\$ (94)
Federal funds purchased and securities loaned or sold under agreements to repurchase selected portfolios of securities sold under agreements to repurchase and securities loaned	45	3
Trading account liabilities	105	(60)
Short-term borrowings	(61)	(59)
Long-term debt	(935)	343
Total liabilities	\$ (896)	\$ 133

(1) Includes mortgage loans held by mortgage loan securitization VIEs consolidated upon the adoption of ASC 810, *Consolidation* (SFAS 167), on January 1, 2010.

(2) Includes gains (losses) associated with interest rate lock-commitments for those loans that have been originated and elected under the fair value option.

Own Debt Valuation Adjustments (DVA)

Own debt valuation adjustments are recognized on Citi's liabilities for which the fair value option has been elected using Citi's credit spreads observed in the bond market. Among other variables, the fair value of liabilities for which the fair value option has been elected (other than non-recourse and similar liabilities) is impacted by the narrowing or widening of Citi's credit spreads. The estimated change in the fair value of these liabilities due to such changes in Citi's own credit spread (or instrument-specific credit risk) was a loss of \$538 million and a gain of \$367 million for the years ended December 31, 2016 and 2015, respectively. Changes in fair value resulting from changes in instrument-specific credit risk were estimated by incorporating Citi's current credit spreads observable in the bond market into the relevant valuation technique used to value each liability as described above. Effective January 1, 2016, changes in fair value of fair value option liabilities related to changes in Citi's own credit spreads (DVA) are reflected as a component of AOCI; previously these amounts were recognized in Citi's *Revenues* and *Net income* along with all other changes in fair value. See Note 1 to the Consolidated Financial Statements for additional information.

The Fair Value Option for Financial Assets and Financial Liabilities

Selected Portfolios of Securities Purchased Under Agreements to Resell, Securities Borrowed, Securities Sold Under Agreements to Repurchase, Securities Loaned and Certain Non-Collateralized Short-Term Borrowings

Citi elected the fair value option for certain portfolios of fixed-income securities purchased under agreements to resell and fixed-income securities sold under agreements to repurchase, securities borrowed, securities loaned, and certain non-collateralized short-term borrowings held primarily by broker-dealer entities in the United States, United Kingdom and Japan. In each case, the election was made because the related interest-rate risk is managed on a portfolio basis, primarily with offsetting derivative instruments that are accounted for at fair value through earnings.

The following table provides information about certain credit products carried at fair value:

<i>In millions of dollars</i>	December 31, 2016		December 31, 2015	
	Trading assets	Loans	Trading assets	Loans
Carrying amount reported on the Consolidated Balance Sheet	\$ 9,824	\$ 3,486	\$ 9,314	\$ 5,005
Aggregate unpaid principal balance in excess of fair value	758	18	980	280
Balance of non-accrual loans or loans more than 90 days past due	—	1	5	2
Aggregate unpaid principal balance in excess of fair value for non-accrual loans or loans more than 90 days past due	—	1	13	1

In addition to the amounts reported above, \$1,828 million and \$2,113 million of unfunded commitments related to certain credit products selected for fair value accounting were outstanding as of December 31, 2016 and 2015, respectively.

Changes in fair value for transactions in these portfolios are recorded in *Principal transactions*. The related interest revenue and interest expense are measured based on the contractual rates specified in the transactions and are reported as interest revenue and expense in the Consolidated Statement of Income.

Certain Loans and Other Credit Products

Citi has also elected the fair value option for certain other originated and purchased loans, including certain unfunded loan products, such as guarantees and letters of credit, executed by Citi's lending and trading businesses. None of these credit products are highly leveraged financing commitments. Significant groups of transactions include loans and unfunded loan products that are expected to be either sold or securitized in the near term, or transactions where the economic risks are hedged with derivative instruments, such as purchased credit default swaps or total return swaps where Citi pays the total return on the underlying loans to a third party. Citi has elected the fair value option to mitigate accounting mismatches in cases where hedge accounting is complex and to achieve operational simplifications. Fair value was not elected for most lending transactions across Citi.

Changes in the fair value of funded and unfunded credit products are classified in *Principal transactions* in Citi's Consolidated Statement of Income. Related interest revenue is measured based on the contractual interest rates and reported as *Interest revenue* on *Trading account assets* or loan interest depending on the balance sheet classifications of the credit products. The changes in fair value for the years ended

December 31, 2016 and 2015 due to instrument-specific credit risk totaled to a gain of \$76 million and a loss of \$221 million, respectively.

Certain Investments in Unallocated Precious Metals

Citi invests in unallocated precious metals accounts (gold, silver, platinum and palladium) as part of its commodity and foreign currency trading activities or to economically hedge certain exposures from issuing structured liabilities. Under ASC 815, the investment is bifurcated into a debt host contract and a commodity forward derivative instrument. Citi elects the fair value option for the debt host contract, and reports the debt host contract within *Trading account assets* on Citi's Consolidated Balance Sheet. The total carrying amount of debt host contracts across unallocated precious metals accounts was approximately \$0.6 billion and \$0.6 billion at December 31, 2016 and 2015, respectively. The amounts are expected to fluctuate based on trading activity in future periods.

As part of its commodity and foreign currency trading activities, Citi trades unallocated precious metals investments and executes forward purchase (and forward sale) derivative contracts with trading counterparties. When Citi sells an unallocated precious metals investment, Citi's receivable from its depository bank is repaid and Citi derecognizes its investment in the unallocated precious metal. The forward purchase (or sale) contract with the trading counterparty indexed to unallocated precious metals is accounted for as a derivative, at fair value through earnings. As of December 31, 2016, there were approximately \$17.2 billion and \$12.4 billion notional amounts of such forward purchase and forward sale derivative contracts outstanding, respectively.

Certain Investments in Private Equity and Real Estate Ventures and Certain Equity Method and Other Investments

Citi invests in private equity and real estate ventures for the purpose of earning investment returns and for capital appreciation. Citi has elected the fair value option for certain of these ventures, because such investments are considered similar to many private equity or hedge fund activities in Citi's investment companies, which are reported at fair value. The fair value option brings consistency in the accounting and evaluation of these investments. All investments (debt and equity) in such private equity and real estate entities are accounted for at fair value. These investments are classified as *Investments* on Citi's Consolidated Balance Sheet.

Changes in the fair values of these investments are classified in *Other revenue* in Citi's Consolidated Statement of Income.

Citi also elects the fair value option for certain non-marketable equity securities whose risk is managed with derivative instruments that are accounted for at fair value through earnings. These securities are classified as *Trading account assets* on Citi's Consolidated Balance Sheet. Changes in the fair value of these securities and the related derivative instruments are recorded in *Principal transactions*.

Certain Mortgage Loans Held for Sale (HFS)

Citi has elected the fair value option for certain purchased and originated prime fixed-rate and conforming adjustable-rate first mortgage loans HFS. These loans are intended for sale or securitization and are hedged with derivative instruments. Citi has elected the fair value option to mitigate accounting mismatches in cases where hedge accounting is complex and to achieve operational simplifications.

The following table provides information about certain mortgage loans HFS carried at fair value:

<i>In millions of dollars</i>	December 31, 2016	December 31, 2015
Carrying amount reported on the Consolidated Balance Sheet	\$ 915	\$ 745
Aggregate fair value in excess of unpaid principal balance	8	20
Balance of non-accrual loans or loans more than 90 days past due	—	—
Aggregate unpaid principal balance in excess of fair value for non-accrual loans or loans more than 90 days past due	—	—

The changes in the fair values of these mortgage loans are reported in *Other revenue* in Citi's Consolidated Statement of Income. There was no net change in fair value during the years ended December 31, 2016 and 2015 due to instrument-specific credit risk. Related interest income continues to be measured based on the contractual interest rates and reported as *Interest revenue* in the Consolidated Statement of Income.

Certain Structured Liabilities

Citi has elected the fair value option for certain structured liabilities whose performance is linked to structured interest rates, inflation, currency, equity, referenced credit or commodity risks. Citi elected the fair value option, because these exposures are considered to be trading-related positions and, therefore, are managed on a fair value basis. These positions will continue to be classified as debt, deposits or derivatives (*Trading account liabilities*) on Citi's Consolidated Balance Sheet according to their legal form.

The following table provides information about the carrying value of structured notes, disaggregated by type of embedded derivative instrument:

<i>In billions of dollars</i>	December 31, 2016	December 31, 2015
Interest rate linked	\$ 10.6	\$ 9.6
Foreign exchange linked	0.2	0.3
Equity linked	12.3	9.9
Commodity linked	0.3	1.4
Credit linked	0.9	1.6
Total	\$ 24.3	\$ 22.8

Prior to 2016, the total change in the fair value of these structured liabilities was reported in *Principal transactions* in Citi's Consolidated Statement of Income. Beginning in the first quarter of 2016, the portion of the changes in fair value attributable to changes in Citi's own credit spreads (DVA) are reflected as a component of AOCI while all other changes in fair value will continue to be reported in *Principal transactions*. Changes in the fair value of these structured liabilities include accrued interest, which is also included in the change in fair value reported in *Principal transactions*.

Certain Non-Structured Liabilities

Citi has elected the fair value option for certain non-structured liabilities with fixed and floating interest rates. Citi has elected the fair value option where the interest-rate risk of such liabilities may be economically hedged with derivative contracts or the proceeds are used to purchase financial assets

that will also be accounted for at fair value through earnings. The elections have been made to mitigate accounting mismatches and to achieve operational simplifications. These positions are reported in *Short-term borrowings* and *Long-term debt* on Citi's Consolidated Balance Sheet. Prior to 2016, the total change in the fair value of these non-structured liabilities was reported in *Principal transactions* in Citi's Consolidated Statement of Income. Beginning in the first quarter of 2016, the portion of the changes in fair value attributable to changes in Citi's own credit spreads (DVA) are reflected as a component of AOCI while all other changes in fair value will continue to be reported in *Principal transactions*.

Interest expense on non-structured liabilities is measured based on the contractual interest rates and reported as *Interest expense* in the Consolidated Statement of Income.

The following table provides information about long-term debt carried at fair value:

<i>In millions of dollars</i>	December 31, 2016	December 31, 2015
Carrying amount reported on the Consolidated Balance Sheet	\$ 26,254	\$ 25,293
Aggregate unpaid principal balance in excess of (less than) fair value	(128)	1,569

The following table provides information about short-term borrowings carried at fair value:

<i>In millions of dollars</i>	December 31, 2016	December 31, 2015
Carrying amount reported on the Consolidated Balance Sheet	\$ 2,700	\$ 1,207
Aggregate unpaid principal balance in excess of (less than) fair value	(61)	130

26. PLEDGED ASSETS, COLLATERAL, GUARANTEES AND COMMITMENTS

Pledged Assets

In connection with Citi's financing and trading activities, Citi has pledged assets to collateralize its obligations under repurchase agreements, secured financing agreements, secured liabilities of consolidated VIEs and other borrowings. The approximate carrying values of the significant components of pledged assets recognized on Citi's Consolidated Balance Sheet included:

<i>In millions of dollars</i>	2016	2015
Investment securities	\$ 161,914	\$ 210,604
Loans	231,833	203,568
Trading account assets	84,371	88,463
Total	\$ 478,118	\$ 502,635

In addition, included in *Cash and due from banks* at December 31, 2016 and 2015 were \$6.8 billion and \$5.0 billion, respectively, of cash segregated under federal and other brokerage regulations or deposited with clearing organizations.

Collateral

At December 31, 2016 and 2015, the approximate fair value of collateral received by Citi that may be resold or repledged, excluding the impact of allowable netting, was \$378.1 billion and \$347.5 billion, respectively. This collateral was received in connection with resale agreements, securities borrowings and loans, derivative transactions and margined broker loans.

At December 31, 2016 and 2015, a substantial portion of the collateral received by Citi had been sold or repledged in connection with repurchase agreements, securities sold, not yet purchased, securities borrowings and loans, pledges to clearing organizations, segregation requirements under securities laws and regulations, derivative transactions and bank loans.

In addition, at December 31, 2016 and 2015, Citi had pledged \$388 billion and \$396 billion, respectively, of

collateral that may not be sold or repledged by the secured parties.

Lease Commitments

Rental expense (principally for offices and computer equipment) was \$1.1 billion, \$1.3 billion and \$1.4 billion for the years ended December 31, 2016, 2015 and 2014, respectively.

Future minimum annual rentals under non-cancelable leases, net of sublease income, are as follows:

<i>In millions of dollars</i>	
2017	\$ 1,151
2018	1,006
2019	854
2020	679
2021	531
Thereafter	2,655
Total	\$ 6,876

Guarantees

Citi provides a variety of guarantees and indemnifications to its customers to enhance their credit standing and enable them to complete a wide variety of business transactions. For certain contracts meeting the definition of a guarantee, the guarantor must recognize, at inception, a liability for the fair value of the obligation undertaken in issuing the guarantee.

In addition, the guarantor must disclose the maximum potential amount of future payments that the guarantor could be required to make under the guarantee, if there were a total default by the guaranteed parties. The determination of the maximum potential future payments is based on the notional amount of the guarantees without consideration of possible recoveries under recourse provisions or from collateral held or pledged. As such, Citi believes such amounts bear no relationship to the anticipated losses, if any, on these guarantees.

The following tables present information about Citi's guarantees:

<i>In billions of dollars at December 31, 2016 except carrying value in millions</i>	Maximum potential amount of future payments			Carrying value <i>(in millions of dollars)</i>
	Expire within 1 year	Expire after 1 year	Total amount outstanding	
Financial standby letters of credit	\$ 26.0	\$ 67.1	\$ 93.1	\$ 141
Performance guarantees	7.5	3.6	11.1	19
Derivative instruments considered to be guarantees	32.2	84.6	116.8	747
Loans sold with recourse	—	0.2	0.2	13
Securities lending indemnifications ⁽¹⁾	80.3	—	80.3	—
Credit card merchant processing ⁽¹⁾⁽²⁾	86.4	—	86.4	—
Credit card arrangements with partners	—	1.5	1.5	206
Custody indemnifications and other	—	45.4	45.4	58
Total	\$ 232.4	\$ 202.4	\$ 434.8	\$ 1,184

In billions of dollars at December 31, 2015 except carrying value in millions	Maximum potential amount of future payments			Carrying value (in millions of dollars)
	Expire within 1 year	Expire after 1 year	Total amount outstanding	
Financial standby letters of credit	\$ 23.8	\$ 73.0	\$ 96.8	\$ 152
Performance guarantees	7.4	4.1	11.5	23
Derivative instruments considered to be guarantees	3.6	74.9	78.5	1,779
Loans sold with recourse	—	0.2	0.2	17
Securities lending indemnifications ⁽¹⁾	79.0	—	79.0	—
Credit card merchant processing ⁽¹⁾⁽²⁾	84.2	—	84.2	—
Custody indemnifications and other	—	51.7	51.7	56
Total	\$ 198.0	\$ 203.9	\$ 401.9	\$ 2,027

- (1) The carrying values of securities lending indemnifications and credit card merchant processing were not material for either period presented, as the probability of potential liabilities arising from these guarantees is minimal.
- (2) At December 31, 2016 and December 31, 2015, this maximum potential exposure was estimated to be \$86 billion and \$84 billion, respectively. However, Citi believes that the maximum exposure is not representative of the actual potential loss exposure based on its historical experience. This contingent liability is unlikely to arise, as most products and services are delivered when purchased and amounts are refunded when items are returned to merchants.

Financial Standby Letters of Credit

Citi issues standby letters of credit, which substitute its own credit for that of the borrower. If a letter of credit is drawn down, the borrower is obligated to repay Citi. Standby letters of credit protect a third party from defaults on contractual obligations. Financial standby letters of credit include (i) guarantees of payment of insurance premiums and reinsurance risks that support industrial revenue bond underwriting; (ii) settlement of payment obligations to clearing houses, including futures and over-the-counter derivatives clearing (see further discussion below); (iii) support options and purchases of securities in lieu of escrow deposit accounts; and (iv) letters of credit that backstop loans, credit facilities, promissory notes and trade acceptances.

Performance Guarantees

Performance guarantees and letters of credit are issued to guarantee a customer's tender bid on a construction or systems-installation project or to guarantee completion of such projects in accordance with contract terms. They are also issued to support a customer's obligation to supply specified products, commodities, or maintenance or warranty services to a third party.

Derivative Instruments Considered to Be Guarantees

Derivatives are financial instruments whose cash flows are based on a notional amount and an underlying instrument, reference credit or index, where there is little or no initial investment, and whose terms require or permit net settlement. For a discussion of Citi's derivatives activities, see Note 22 to the Consolidated Financial Statements.

Derivative instruments considered to be guarantees include only those instruments that require Citi to make payments to the counterparty based on changes in an underlying instrument that is related to an asset, a liability or an equity security held by the guaranteed party. More specifically, derivative instruments considered to be guarantees include certain over-the-counter written put

options where the counterparty is not a bank, hedge fund or broker-dealer (such counterparties are considered to be dealers in these markets and may, therefore, not hold the underlying instruments). Credit derivatives sold by Citi are excluded from the tables above as they are disclosed separately in Note 22 to the Consolidated Financial Statements. In instances where Citi's maximum potential future payment is unlimited, the notional amount of the contract is disclosed.

Loans Sold with Recourse

Loans sold with recourse represent Citi's obligations to reimburse the buyers for loan losses under certain circumstances. Recourse refers to the clause in a sales agreement under which a seller/lender will fully reimburse the buyer/investor for any losses resulting from the purchased loans. This may be accomplished by the seller taking back any loans that become delinquent.

In addition to the amounts shown in the tables above, Citi has recorded a repurchase reserve for its potential repurchases or make-whole liability regarding residential mortgage representation and warranty claims related to its whole loan sales to the U.S. government-sponsored enterprises (GSEs) and, to a lesser extent, private investors. The repurchase reserve was approximately \$107 million and \$152 million at December 31, 2016 and 2015, respectively, and these amounts are included in *Other liabilities* on the Consolidated Balance Sheet.

Securities Lending Indemnifications

Owners of securities frequently lend those securities for a fee to other parties who may sell them short or deliver them to another party to satisfy some other obligation. Banks may administer such securities lending programs for their clients. Securities lending indemnifications are issued by the bank to guarantee that a securities lending customer will be made whole in the event that the security borrower does not return

the security subject to the lending agreement and collateral held is insufficient to cover the market value of the security.

Credit Card Merchant Processing

Credit card merchant processing guarantees represent the Company's indirect obligations in connection with (i) providing transaction processing services to various merchants with respect to its private-label cards; and (ii) potential liability for bank card transaction processing services. The nature of the liability in either case arises as a result of a billing dispute between a merchant and a cardholder that is ultimately resolved in the cardholder's favor. The merchant is liable to refund the amount to the cardholder. In general, if the credit card processing company is unable to collect this amount from the merchant, the credit card processing company bears the loss for the amount of the credit or refund paid to the cardholder.

With regard to (i) above, Citi has the primary contingent liability with respect to its portfolio of private-label merchants. The risk of loss is mitigated as the cash flows between Citi and the merchant are settled on a net basis, and Citi has the right to offset any payments with cash flows otherwise due to the merchant. To further mitigate this risk, Citi may delay settlement, require a merchant to make an escrow deposit, include event triggers to provide Citi with more financial and operational control in the event of the financial deterioration of the merchant or require various credit enhancements (including letters of credit and bank guarantees). In the unlikely event that a private-label merchant is unable to deliver products, services or a refund to its private-label cardholders, Citi is contingently liable to credit or refund cardholders.

With regard to (ii) above, Citi has a potential liability for bank card transactions where Citi provides the transaction processing services as well as those where a third party provides the services and Citi acts as a secondary guarantor, should that processor fail to perform.

Citi's maximum potential contingent liability related to both bank card and private-label merchant processing services is estimated to be the total volume of credit card transactions that meet the requirements to be valid charge-back transactions at any given time. At December 31, 2016 and 2015, this maximum potential exposure was estimated to be \$86 billion and \$84 billion, respectively.

However, Citi believes that the maximum exposure is not representative of the actual potential loss exposure based on its historical experience. This contingent liability is unlikely to arise, as most products and services are delivered when purchased and amounts are refunded when items are returned to merchants. Citi assesses the probability and amount of its contingent liability related to merchant processing based on the financial strength of the primary guarantor, the extent and nature of unresolved charge-backs and its historical loss experience. At December 31, 2016 and 2015, the losses incurred and the carrying amounts of Citi's contingent obligations related to merchant processing activities were immaterial.

Credit Card Arrangements with Partners

Citi, in certain of its credit card partner arrangements, provides guarantees to the partner regarding the volume of certain customer originations during the term of the agreement. To the extent such origination targets are not met, the guarantees serve to compensate the partner for certain payments that otherwise would have been generated in connection with such originations.

Custody Indemnifications

Custody indemnifications are issued to guarantee that custody clients will be made whole in the event that a third-party subcustodian or depository institution fails to safeguard clients' assets.

Other Guarantees and Indemnifications

Credit Card Protection Programs

Citi, through its credit card businesses, provides various cardholder protection programs on several of its card products, including programs that provide insurance coverage for rental cars, coverage for certain losses associated with purchased products, price protection for certain purchases and protection for lost luggage. These guarantees are not included in the table, since the total outstanding amount of the guarantees and Citi's maximum exposure to loss cannot be quantified. The protection is limited to certain types of purchases and losses, and it is not possible to quantify the purchases that would qualify for these benefits at any given time. Citi assesses the probability and amount of its potential liability related to these programs based on the extent and nature of its historical loss experience. At December 31, 2016 and 2015, the actual and estimated losses incurred and the carrying value of Citi's obligations related to these programs were immaterial.

Other Representation and Warranty Indemnifications

In the normal course of business, Citi provides standard representations and warranties to counterparties in contracts in connection with numerous transactions and also provides indemnifications, including indemnifications that protect the counterparties to the contracts in the event that additional taxes are owed, due either to a change in the tax law or an adverse interpretation of the tax law. Counterparties to these transactions provide Citi with comparable indemnifications. While such representations, warranties and indemnifications are essential components of many contractual relationships, they do not represent the underlying business purpose for the transactions. The indemnification clauses are often standard contractual terms related to Citi's own performance under the terms of a contract and are entered into in the normal course of business based on an assessment that the risk of loss is remote. Often these clauses are intended to ensure that terms of a contract are met at inception. No compensation is received for these standard representations and warranties, and it is not possible to determine their fair value because they rarely, if ever, result in a payment. In many cases, there are no stated or notional amounts included in the indemnification clauses, and the contingencies

potentially triggering the obligation to indemnify have not occurred and are not expected to occur. As a result, these indemnifications are not included in the tables above.

Value-Transfer Networks

Citi is a member of, or shareholder in, hundreds of value-transfer networks (VTNs) (payment, clearing and settlement systems as well as exchanges) around the world. As a condition of membership, many of these VTNs require that members stand ready to pay a pro rata share of the losses incurred by the organization due to another member's default on its obligations. Citi's potential obligations may be limited to its membership interests in the VTNs, contributions to the VTN's funds, or, in limited cases, the obligation may be unlimited. The maximum exposure cannot be estimated as this would require an assessment of future claims that have not yet occurred. Citi believes the risk of loss is remote given historical experience with the VTNs. Accordingly, Citi's participation in VTNs is not reported in the guarantees tables above, and there are no amounts reflected on the Consolidated Balance Sheet as of December 31, 2016 or 2015 for potential obligations that could arise from Citi's involvement with VTN associations.

Long-Term Care Insurance Indemnification

In connection with the 2005 sale of certain insurance and annuity subsidiaries to MetLife Inc. (MetLife), the Company provided an indemnification for policyholder claims and other liabilities relating to a book of long-term care (LTC) business (for the entire term of the LTC policies) that is fully reinsured by subsidiaries of Genworth Financial Inc. (Genworth). In turn, Genworth has offsetting reinsurance agreements with MetLife and the Union Fidelity Life Insurance Company (UFLIC), a subsidiary of the General Electric Company. Genworth has funded two trusts with securities whose fair value (approximately \$7.0 billion at December 31, 2016, compared to \$6.3 billion at December 31, 2015) is designed to cover Genworth's statutory liabilities for the LTC policies. The trusts serve as collateral for Genworth's reinsurance obligations related to the MetLife LTC policies and MetLife Insurance Company USA is the sole beneficiary of the trusts. The assets in these trusts are evaluated and adjusted periodically to ensure that the fair value of the assets continues to cover the estimated statutory liabilities related to the LTC policies, as those statutory liabilities change over time.

If Genworth fails to perform under the reinsurance agreement for any reason, including insolvency, and the assets in the two trusts are insufficient or unavailable to MetLife, then Citi must reimburse MetLife for any losses actually incurred in connection with the LTC policies. Since both events would have to occur before Citi would become responsible for any payment to MetLife pursuant to its indemnification obligation, and the likelihood of such events occurring is currently not probable, there is no liability reflected in the Consolidated Balance Sheet as of December 31, 2016 and 2015 related to this indemnification. Citi continues to closely monitor its potential exposure under this indemnification obligation.

In the fourth quarter of 2016, MetLife announced it was pursuing spinning off the entity involved in the long-term care reinsurance obligations as part of a broader separation of its retail and group/corporate insurance operations. Separately, Genworth announced that it had agreed to be purchased by China Oceanwide Holdings Co., Ltd, subject to a series of conditions and regulatory approvals. Citi is monitoring these developments.

Futures and Over-the-Counter Derivatives Clearing

Citi provides clearing services on central clearing counterparties (CCPs) for clients that need to clear exchange-traded and over-the-counter (OTC) derivatives contracts. Based on all relevant facts and circumstances, Citi has concluded that it acts as an agent for accounting purposes in its role as clearing member for these client transactions. As such, Citi does not reflect the underlying exchange-traded or OTC derivatives contracts in its Consolidated Financial Statements. See Note 22 for a discussion of Citi's derivatives activities that are reflected in its Consolidated Financial Statements.

As a clearing member, Citi collects and remits cash and securities collateral (margin) between its clients and the respective CCP. In certain circumstances, Citi collects a higher amount of cash (or securities) from its clients than it needs to remit to the CCPs. This excess cash is then held at depository institutions such as banks or carry brokers.

There are two types of margin: initial margin and variation margin. Where Citi obtains benefits from or controls cash initial margin (e.g., retains an interest spread), cash initial margin collected from clients and remitted to the CCP or depository institutions is reflected within *Brokerage payables* (payables to customers) and *Brokerage receivables* (receivables from brokers, dealers and clearing organizations) or *Cash and due from banks* respectively.

However, for exchange-traded and OTC-cleared derivatives contracts where Citi does not obtain benefits from or control the client cash balances, the client cash initial margin collected from clients and remitted to the CCP or depository institutions is not reflected on Citi's Consolidated Balance Sheet. These conditions are met when Citi has contractually agreed with the client that (i) Citi will pass through to the client all interest paid by the CCP or depository institutions on the cash initial margin; (ii) Citi will not utilize its right as a clearing member to transform cash margin into other assets; (iii) Citi does not guarantee and is not liable to the client for the performance of the CCP or the depository institution and (iv) the client cash balances are legally isolated from Citi's bankruptcy estate. The total amount of cash initial margin collected and remitted in this manner was approximately \$9.4 billion and \$4.3 billion as of December 31, 2016 and 2015, respectively.

Variation margin due from clients to the respective CCP, or from the CCP to clients, reflects changes in the value of the client's derivative contracts for each trading day. As a clearing member, Citi is exposed to the risk of non-performance by clients (e.g., failure of a client to post variation margin to the CCP for negative changes in the value of the client's derivative contracts). In the event of

non-performance by a client, Citi would move to close out the client's positions. The CCP would typically utilize initial margin posted by the client and held by the CCP, with any remaining shortfalls required to be paid by Citi as clearing member. Citi generally holds incremental cash or securities margin posted by the client, which would typically be expected to be sufficient to mitigate Citi's credit risk in the event the client fails to perform.

As required by ASC 860-30-25-5, securities collateral posted by clients is not recognized on Citi's Consolidated Balance Sheet.

Carrying Value—Guarantees and Indemnifications

At December 31, 2016 and 2015, the total carrying amounts of the liabilities related to the guarantees and indemnifications included in the tables above amounted to approximately \$1.2 billion and \$2.0 billion, respectively. The carrying value of financial and performance guarantees is included in *Other liabilities*. For loans sold with recourse, the carrying value of the liability is included in *Other liabilities*.

Collateral

Cash collateral available to Citi to reimburse losses realized under these guarantees and indemnifications amounted to \$45 billion and \$52 billion at December 31, 2016 and 2015, respectively. Securities and other marketable assets held as collateral amounted to \$38 billion and \$33 billion at December 31, 2016 and 2015, respectively. The majority of collateral is held to reimburse losses realized under securities lending indemnifications. Additionally, letters of credit in favor of Citi held as collateral amounted to \$5.4 billion and \$4.2 billion at December 31, 2016 and 2015, respectively. Other property may also be available to Citi to cover losses under certain guarantees and indemnifications; however, the value of such property has not been determined.

Performance Risk

Citi evaluates the performance risk of its guarantees based on the assigned referenced counterparty internal or external ratings. Where external ratings are used, investment-grade ratings are considered to be Baa/BBB and above, while anything below is considered non-investment grade. Citi's internal ratings are in line with the related external rating system. On certain underlying referenced assets or entities, ratings are not available. Such referenced assets are included in the "not rated" category. The maximum potential amount of the future payments related to the outstanding guarantees is determined to be the notional amount of these contracts, which is the par amount of the assets guaranteed.

Presented in the tables below are the maximum potential amounts of future payments that are classified based upon internal and external credit ratings. As previously mentioned, the determination of the maximum potential future payments is based on the notional amount of the guarantees without consideration of possible recoveries under recourse provisions or from collateral held or pledged. As such, Citi believes such amounts bear no relationship to the anticipated losses, if any, on these guarantees.

Maximum potential amount of future payments

	Investment grade	Non-investment grade	Not rated	Total
<i>In billions of dollars at December 31, 2016</i>				
Financial standby letters of credit	\$ 66.8	\$ 13.4	\$ 12.9	\$ 93.1
Performance guarantees	6.3	4.0	0.8	11.1
Derivative instruments deemed to be guarantees	—	—	116.8	116.8
Loans sold with recourse	—	—	0.2	0.2
Securities lending indemnifications	—	—	80.3	80.3
Credit card merchant processing	—	—	86.4	86.4
Credit card arrangements with partners	—	—	1.5	1.5
Custody indemnifications and other	45.3	0.1	—	45.4
Total	\$ 118.4	\$ 17.5	\$ 298.9	\$ 434.8

Maximum potential amount of future payments

<i>In billions of dollars at December 31, 2015</i>	Investment grade	Non- investment grade	Not rated	Total
Financial standby letters of credit	\$ 69.2	\$ 15.4	\$ 12.2	\$ 96.8
Performance guarantees	6.6	4.1	0.8	11.5
Derivative instruments deemed to be guarantees	—	—	78.5	78.5
Loans sold with recourse	—	—	0.2	0.2
Securities lending indemnifications	—	—	79.0	79.0
Credit card merchant processing	—	—	84.2	84.2
Custody indemnifications and other	51.6	0.1	—	51.7
Total	\$ 127.4	\$ 19.6	\$ 254.9	\$ 401.9

Credit Commitments and Lines of Credit

The table below summarizes Citigroup's credit commitments:

<i>In millions of dollars</i>	U.S.	Outside of U.S.	December 31, 2016	December 31, 2015
Commercial and similar letters of credit	\$ 1,103	\$ 4,633	\$ 5,736	\$ 6,102
One- to four-family residential mortgages	1,166	1,672	2,838	3,196
Revolving open-end loans secured by one- to four-family residential properties	11,912	1,493	13,405	14,726
Commercial real estate, construction and land development	9,281	1,500	10,781	10,522
Credit card lines	569,747	94,588	664,335	573,057
Commercial and other consumer loan commitments	166,433	93,501	259,934	271,076
Other commitments and contingencies	2,387	8,880	11,267	9,982
Total	\$ 762,029	\$ 206,267	\$ 968,296	\$ 888,661

The majority of unused commitments are contingent upon customers maintaining specific credit standards.

Commercial commitments generally have floating interest rates and fixed expiration dates and may require payment of fees. Such fees (net of certain direct costs) are deferred and, upon exercise of the commitment, amortized over the life of the loan or, if exercise is deemed remote, amortized over the commitment period.

Commercial and Similar Letters of Credit

A commercial letter of credit is an instrument by which Citigroup substitutes its credit for that of a customer to enable the customer to finance the purchase of goods or to incur other commitments. Citigroup issues a letter on behalf of its client to a supplier and agrees to pay the supplier upon presentation of documentary evidence that the supplier has performed in accordance with the terms of the letter of credit. When a letter of credit is drawn, the customer is then required to reimburse Citigroup.

One- to Four-Family Residential Mortgages

A one- to four-family residential mortgage commitment is a written confirmation from Citigroup to a seller of a property that the bank will advance the specified sums enabling the buyer to complete the purchase.

Revolving Open-End Loans Secured by One- to Four-Family Residential Properties

Revolving open-end loans secured by one- to four-family residential properties are essentially home equity lines of credit. A home equity line of credit is a loan secured by a primary residence or second home to the extent of the excess of fair market value over the debt outstanding for the first mortgage.

Commercial Real Estate, Construction and Land Development

Commercial real estate, construction and land development include unused portions of commitments to extend credit for the purpose of financing commercial and multifamily residential properties as well as land development projects.

Both secured-by-real-estate and unsecured commitments are included in this line, as well as undistributed loan proceeds, where there is an obligation to advance for construction progress payments. However, this line only includes those extensions of credit that, once funded, will be classified as *Total loans, net* on the Consolidated Balance Sheet.

Credit Card Lines

Citigroup provides credit to customers by issuing credit cards. The credit card lines are cancelable by providing notice to the cardholder or without such notice as permitted by local law.

Commercial and Other Consumer Loan Commitments

Commercial and other consumer loan commitments include overdraft and liquidity facilities as well as commercial commitments to make or purchase loans, purchase third-party receivables, provide note issuance or revolving underwriting facilities and invest in the form of equity.

Other Commitments and Contingencies

Other commitments and contingencies include committed or unsettled regular-way reverse repurchase agreements and all other transactions related to commitments and contingencies not reported on the lines above.

27. CONTINGENCIES

Accounting and Disclosure Framework

ASC 450 governs the disclosure and recognition of loss contingencies, including potential losses from litigation and regulatory matters. ASC 450 defines a “loss contingency” as “an existing condition, situation, or set of circumstances involving uncertainty as to possible loss to an entity that will ultimately be resolved when one or more future events occur or fail to occur.” It imposes different requirements for the recognition and disclosure of loss contingencies based on the likelihood of occurrence of the contingent future event or events. It distinguishes among degrees of likelihood using the following three terms: “probable,” meaning that “the future event or events are likely to occur”; “remote,” meaning that “the chance of the future event or events occurring is slight”; and “reasonably possible,” meaning that “the chance of the future event or events occurring is more than remote but less than likely.” These three terms are used below as defined in ASC 450.

Accruals. ASC 450 requires accrual for a loss contingency when it is “probable that one or more future events will occur confirming the fact of loss” and “the amount of the loss can be reasonably estimated.” In accordance with ASC 450, Citigroup establishes accruals for contingencies, including the litigation and regulatory matters disclosed herein, when Citigroup believes it is probable that a loss has been incurred and the amount of the loss can be reasonably estimated. When the reasonable estimate of the loss is within a range of amounts, the minimum amount of the range is accrued, unless some higher amount within the range is a better estimate than any other amount within the range. Once established, accruals are adjusted from time to time, as appropriate, in light of additional information. The amount of loss ultimately incurred in relation to those matters may be substantially higher or lower than the amounts accrued for those matters.

Disclosure. ASC 450 requires disclosure of a loss contingency if “there is at least a reasonable possibility that a loss or an additional loss may have been incurred” and there is no accrual for the loss because the conditions described above are not met or an exposure to loss exists in excess of the amount accrued. In accordance with ASC 450, if Citigroup has not accrued for a matter because Citigroup believes that a loss is reasonably possible but not probable, or that a loss is probable but not reasonably estimable, and the matter thus does not meet the criteria for accrual, and the reasonably possible loss is material, it discloses the loss contingency. In addition, Citigroup discloses matters for which it has accrued if it believes a reasonably possible exposure to material loss exists in excess of the amount accrued. In accordance with ASC 450, Citigroup’s disclosure includes an estimate of the reasonably possible loss or range of loss for those matters as to which an estimate can be made. ASC 450 does not require disclosure of an estimate of the reasonably possible loss or range of loss where an estimate cannot be made. Neither accrual nor disclosure is required for losses that are deemed remote.

Litigation and Regulatory Contingencies

Overview. In addition to the matters described below, in the ordinary course of business, Citigroup, its affiliates and subsidiaries, and current and former officers, directors and employees (for purposes of this section, sometimes collectively referred to as Citigroup and Related Parties) routinely are named as defendants in, or as parties to, various legal actions and proceedings. Certain of these actions and proceedings assert claims or seek relief in connection with alleged violations of consumer protection, fair lending, securities, banking, antifraud, antitrust, anti-money laundering, employment and other statutory and common laws. Certain of these actual or threatened legal actions and proceedings include claims for substantial or indeterminate compensatory or punitive damages, or for injunctive relief, and in some instances seek recovery on a class-wide basis.

In the ordinary course of business, Citigroup and Related Parties also are subject to governmental and regulatory examinations, information-gathering requests, investigations and proceedings (both formal and informal), certain of which may result in adverse judgments, settlements, fines, penalties, restitution, disgorgement, injunctions or other relief. In addition, certain affiliates and subsidiaries of Citigroup are banks, registered broker-dealers, futures commission merchants, investment advisers or other regulated entities and, in those capacities, are subject to regulation by various U.S., state and foreign securities, banking, commodity futures, consumer protection and other regulators. In connection with formal and informal inquiries by these regulators, Citigroup and such affiliates and subsidiaries receive numerous requests, subpoenas and orders seeking documents, testimony and other information in connection with various aspects of their regulated activities. From time to time Citigroup and Related Parties also receive grand jury subpoenas and other requests for information or assistance, formal or informal, from federal or state law enforcement agencies including, among others, various United States Attorneys’ Offices, the Asset Forfeiture and Money Laundering Section and other divisions of the Department of Justice, the Financial Crimes Enforcement Network of the United States Department of the Treasury, and the Federal Bureau of Investigation relating to Citigroup and its customers.

Because of the global scope of Citigroup’s operations, and its presence in countries around the world, Citigroup and Related Parties are subject to litigation and governmental and regulatory examinations, information-gathering requests, and investigations and proceedings (both formal and informal) in multiple jurisdictions with legal and regulatory regimes that may differ substantially, and present substantially different risks, from those Citigroup and Related Parties are subject to in the United States. In some instances Citigroup and Related Parties may be involved in proceedings involving the same subject matter in multiple jurisdictions, which may result in overlapping, cumulative or inconsistent outcomes.

Citigroup seeks to resolve all litigation and regulatory matters in the manner management believes is in the best interests of Citigroup and its shareholders, and contests liability, allegations of wrongdoing and, where applicable, the

amount of damages or scope of any penalties or other relief sought as appropriate in each pending matter.

Inherent Uncertainty of the Matters Disclosed. Certain of the matters disclosed below involve claims for substantial or indeterminate damages. The claims asserted in these matters typically are broad, often spanning a multi-year period and sometimes a wide range of business activities, and the plaintiffs' or claimants' alleged damages frequently are not quantified or factually supported in the complaint or statement of claim. Other matters relate to regulatory investigations or proceedings, as to which there may be no objective basis for quantifying the range of potential fine, penalty, or other remedy. As a result, Citigroup is often unable to estimate the loss in such matters, even if it believes that a loss is probable or reasonably possible, until developments in the case or investigation have yielded additional information sufficient to support a quantitative assessment of the range of reasonably possible loss. Such developments may include, among other things, discovery from adverse parties or third parties, rulings by the court on key issues, analysis by retained experts, and engagement in settlement negotiations. Depending on a range of factors, such as the complexity of the facts, the novelty of the legal theories, the pace of discovery, the court's scheduling order, the timing of court decisions, and the adverse party's willingness to negotiate in good faith toward a resolution, it may be months or years after the filing of a case or commencement of an investigation before an estimate of the range of reasonably possible loss can be made.

Matters as to Which an Estimate Can Be Made. For some of the matters disclosed below, Citigroup is currently able to estimate a reasonably possible loss or range of loss in excess of amounts accrued (if any). For some of the matters included within this estimation, an accrual has been made because a loss is believed to be both probable and reasonably estimable, but an exposure to loss exists in excess of the amount accrued. In these cases, the estimate reflects the reasonably possible range of loss in excess of the accrued amount. For other matters included within this estimation, no accrual has been made because a loss, although estimable, is believed to be reasonably possible, but not probable; in these cases the estimate reflects the reasonably possible loss or range of loss. As of December 31, 2016, Citigroup estimates that the reasonably possible unaccrued loss for these matters ranges up to approximately \$3.0 billion in the aggregate.

These estimates are based on currently available information. As available information changes, the matters for which Citigroup is able to estimate will change, and the estimates themselves will change. In addition, while many estimates presented in financial statements and other financial disclosures involve significant judgment and may be subject to significant uncertainty, estimates of the range of reasonably possible loss arising from litigation and regulatory proceedings are subject to particular uncertainties. For example, at the time of making an estimate, (i) Citigroup may have only preliminary, incomplete, or inaccurate information about the facts underlying the claim; (ii) its assumptions about the future rulings of the court or other tribunal on significant issues, or the behavior and incentives of adverse parties or regulators, may prove to be wrong; and (iii) the outcomes it is

attempting to predict are often not amenable to the use of statistical or other quantitative analytical tools. In addition, from time to time an outcome may occur that Citigroup had not accounted for in its estimate because it had deemed such an outcome to be remote. For all these reasons, the amount of loss in excess of accruals ultimately incurred for the matters as to which an estimate has been made could be substantially higher or lower than the range of loss included in the estimate.

Matters as to Which an Estimate Cannot Be Made. For other matters disclosed below, Citigroup is not currently able to estimate the reasonably possible loss or range of loss. Many of these matters remain in very preliminary stages (even in some cases where a substantial period of time has passed since the commencement of the matter), with few or no substantive legal decisions by the court or tribunal defining the scope of the claims, the class (if any), or the potentially available damages, and fact discovery is still in progress or has not yet begun. In many of these matters, Citigroup has not yet answered the complaint or statement of claim or asserted its defenses, nor has it engaged in any negotiations with the adverse party (whether a regulator or a private party). For all these reasons, Citigroup cannot at this time estimate the reasonably possible loss or range of loss, if any, for these matters.

Opinion of Management as to Eventual Outcome. Subject to the foregoing, it is the opinion of Citigroup's management, based on current knowledge and after taking into account its current legal accruals, that the eventual outcome of all matters described in this Note would not be likely to have a material adverse effect on the consolidated financial condition of Citigroup. Nonetheless, given the substantial or indeterminate amounts sought in certain of these matters, and the inherent unpredictability of such matters, an adverse outcome in certain of these matters could, from time to time, have a material adverse effect on Citigroup's consolidated results of operations or cash flows in particular quarterly or annual periods.

Commodities Financing Contracts

Beginning in May 2014, Citigroup became aware of reports of potential fraud relating to the financing of physical metal stored at the Qingdao and Penglai ports in China. Citibank and Citigroup Global Markets Limited (CGML) had financing contracts with Mercuria Energy Trading Pte. Ltd collateralized by physical metal stored at these ports, with the agreements providing that Mercuria would repurchase the inventory at a specified date in the future. On July 22, 2014, Citibank and CGML commenced proceedings in the High Court in London to enforce their rights under the relevant agreements in relation to approximately \$285 million in financing.

In December 2016, the Citigroup affiliates reached a resolution on this matter with Mercuria. Accordingly, steps have been taken to withdraw the proceedings in London, as well as related initiatives in Chinese courts. Additional information concerning this action is publicly available in court filings under the claim reference: Mercuria Energy Trading PTE Ltd & Another Citibank, N.A. & Another, Claim No. 2014 Folio 709, Appeal Nos. 2015/2407 (Citigroup) and 2015/2395 (Mercuria).

Credit Crisis-Related Litigation and Other Matters

Citigroup and Related Parties were named as defendants in numerous legal actions and other proceedings asserting claims for damages and related relief for losses arising from the global financial credit crisis that began in 2007. Such matters included, among other types of proceedings, claims asserted by (i) individual investors and purported classes of investors in Citigroup's common and preferred stock and debt, alleging violations of the federal securities laws, foreign laws, state securities and fraud law, and the Employee Retirement Income Security Act (ERISA); and (ii) individual investors and purported classes of investors in securities and other investments underwritten or issued by Citigroup, collateralized debt obligations (CDOs), mortgage-backed securities (MBS), investment funds, and other structured or leveraged instruments, which suffered losses as a result of the credit crisis.

In addition to these litigations and arbitrations, Citigroup continues to cooperate fully in response to subpoenas and requests for information from the Securities and Exchange Commission (SEC), the Office of the Special Inspector General for the Troubled Asset Relief Program, bank regulators, and other government authorities, in connection with various inquiries concerning Citigroup's business activities. These business activities include, but are not limited to, Citigroup's sponsorship, packaging, issuance, trading, servicing and underwriting of CDOs and MBS.

Mortgage-Related Litigation and Other Matters

Securities Actions: Beginning in November 2007, Citigroup and Related Parties were named as defendants in a variety of class and individual securities actions filed by investors in Citigroup's equity and debt securities in state and federal courts relating to the Company's disclosures regarding its exposure to subprime-related assets. These actions asserted a wide range of claims, including claims under the federal securities laws, foreign securities laws, ERISA, and state law. All of these matters have now been dismissed or settled.

Beginning in November 2007, certain Citigroup affiliates also were named as defendants arising out of their activities as underwriters of securities in actions brought by investors in securities issued by public companies adversely affected by the credit crisis. Most of these matters have been dismissed or settled. As a general matter, issuers indemnify underwriters in connection with such claims, but in certain of these matters Citigroup affiliates are not being indemnified or may in the future cease to be indemnified because of the financial condition of the issuer.

Mortgage-Backed Securities and CDO Investor Actions: Beginning in July 2010, Citigroup and Related Parties were named as defendants in complaints filed by purchasers of MBS and CDOs sold or underwritten by Citigroup. The complaints generally assert that defendants made material misrepresentations and omissions about the credit quality of the assets underlying the securities or the manner in which those assets were selected, and typically assert claims under Section 11 of the Securities Act of 1933, state blue sky laws, and/or common-law misrepresentation-based causes of action.

The majority of these matters have been resolved through settlement or otherwise. As of December 31, 2016, the aggregate original purchase amount of the purchases at issue in the pending litigation was approximately \$191 million, and the aggregate original purchase amount of the purchases covered by the remaining tolling (extension) agreement with an investor threatening litigation was approximately \$500 million. Additional information concerning the remaining pending litigation is publicly available in court filings under the docket number 13-1729-II (Tenn. Ch. Ct.) (McCoy, C.).

Mortgage-Backed Security Repurchase Claims: Various parties to MBS securitizations and other interested parties have asserted that certain Citigroup affiliates breached representations and warranties made in connection with mortgage loans sold into securitization trusts (private-label securitizations). Typically, these claims are based on allegations that securitized mortgages were not underwritten in accordance with the applicable underwriting standards. Citigroup also has received numerous inquiries, demands for loan files, and requests to toll (extend) the applicable statutes of limitation for representation and warranty claims relating to its private-label securitizations. These inquiries, demands and requests have been made by trustees of securitization trusts and others.

To date, trustees have filed six actions against Citigroup seeking to enforce certain of these contractual repurchase claims that were excluded from a previously disclosed settlement in connection with four private-label securitizations. Three of these actions were dismissed with prejudice in January 2016. Citigroup has reached an agreement with the directing certificate holder for one of the remaining actions, and the trustee is considering whether to accept the settlement. The other two remaining actions are in various stages of discovery. In the aggregate, plaintiffs are asserting repurchase claims in the three remaining actions as to approximately 2,900 loans that were securitized into these three securitizations, as well as any other loans that are later found to have breached representations and warranties. Additional information concerning these actions is publicly available in court filings under the docket numbers 13 Civ. 2843 (S.D.N.Y.) (Daniels, J.), 13 Civ. 6989 (S.D.N.Y.) (Daniels, J.), 653816/2013 (N.Y. Sup. Ct.) (Kornreich, J.), 653919/2014 (N.Y. Sup. Ct.), 653929/2014 (N.Y. Sup. Ct.), and 653930/2014 (N.Y. Sup. Ct.).

Mortgage-Backed Securities Trustee Actions: On June 18, 2014, a group of investors in 48 RMBS trusts for which Citibank served or currently serves as trustee filed a complaint in New York State Supreme Court in BLACKROCK ALLOCATION TARGET SHARES: SERIES S. PORTFOLIO, ET AL. v. CITIBANK, N.A. The complaint, like those filed against other RMBS trustees, alleges that Citibank failed to pursue contractual remedies against securitization sponsors and servicers. This action was withdrawn without prejudice, effective December 17, 2014.

On November 24, 2014, largely the same group of investors filed an action in the United States District Court for the Southern District of New York, captioned FIXED INCOME SHARES: SERIES M ET AL. v. CITIBANK N.A., alleging similar claims relating to 27 MBS trusts for which

Citibank allegedly served or currently serves as trustee. On September 8, 2015, the United States District Court for the Southern District of New York dismissed all claims as to 24 of the 27 trusts and allowed certain of the claims to proceed as to the other three trusts. On September 7, 2016, plaintiffs filed a stipulation of voluntary dismissal of their claims with respect to two of the three remaining trusts, leaving one trust at issue. Additional information concerning this action is publicly available in court filings under the docket number 14-cv-9373 (S.D.N.Y.) (Furman, J.).

On November 24, 2015, largely the same group of investors filed another action in the New York State Supreme Court, captioned FIXED INCOME SHARES: SERIES M, ET AL. v. CITIBANK N.A., related to the 24 trusts dismissed from the federal court action and one additional trust, asserting claims similar to the original complaint filed in state court. On June 22, 2016, the court dismissed plaintiffs' complaint. Plaintiffs filed an amended complaint on August 5, 2016. Additional information concerning this action is publicly available in court filings under the docket number 653891/2015 (N.Y. Sup. Ct.) (Ramos, J.).

On August 19, 2015, the Federal Deposit Insurance Corporation as receiver for a financial institution filed a civil action against Citibank in the United States District Court for the Southern District of New York, captioned FEDERAL DEPOSIT INSURANCE CORPORATION AS RECEIVER FOR GUARANTY BANK v. CITIBANK N.A. The complaint concerns one RMBS trust for which Citibank formerly served as trustee, and alleges that Citibank failed to pursue contractual remedies against the sponsor and servicers of that trust. On September 30, 2016, the court granted Citibank's motion to dismiss on the grounds that the FDIC lacked standing to pursue its claims. On October 14, 2016, the FDIC filed a motion for reconsideration or relief from judgment from the court's dismissal order. Additional information concerning this action is publicly available in court filings under the docket number 15-cv-6574 (S.D.N.Y.) (Carter, J.).

Counterparty and Investor Actions

In 2010, Abu Dhabi Investment Authority (ADIA) commenced an arbitration (ADIA I) against Citigroup and Related Parties before the International Center for Dispute Resolution (ICDR), alleging statutory and common law claims in connection with its \$7.5 billion investment in Citigroup in December 2007. ADIA sought rescission of the investment agreement or, in the alternative, more than \$4 billion in damages. On October 14, 2011, the arbitration panel issued a final award and statement of reasons finding in favor of Citigroup on all claims asserted by ADIA, and that award was confirmed in court. Additional information concerning this action is publicly available in court filings under the docket numbers 12 Civ. 283 (S.D.N.Y.) (Daniels, J.), 13-1068-cv (2d Cir.), and 13-1500 (U.S.).

On August 20, 2013, ADIA commenced a second arbitration (ADIA II) against Citigroup before the ICDR, alleging common law claims arising out of the same investment at issue in ADIA I, seeking more than \$2 billion in damages or rescission of one of the investment agreement's ancillary agreements. This arbitration was resolved on

December 14, 2016, when the arbitration panel issued a final decision.

Lehman Brothers Bankruptcy Proceedings

On February 8, 2012, Citibank and certain Citigroup affiliates were named as defendants in an adversary proceeding asserting objections to proofs of claim totaling approximately \$2.6 billion filed by Citibank and those affiliates, and claims under federal bankruptcy and state law to recover \$2 billion deposited by Lehman Brothers Holdings Inc. (LBHI) with Citibank against which Citibank asserts a right of setoff. Plaintiffs have filed various amended complaints asserting additional claims and factual allegations, and amending certain previously asserted claims, and have dismissed, with prejudice, their claim to avoid a \$500 million transfer and an amendment to a guarantee in favor of Citibank. A trial has been scheduled for April 2017. Additional information concerning this action is publicly available in court filings under the docket numbers 12-01044 and 08-13555 (Bankr. S.D.N.Y.) (Chapman, J.).

Tribune Company Bankruptcy

Certain Citigroup affiliates have been named as defendants in adversary proceedings related to the Chapter 11 cases of Tribune Company (Tribune) filed in the United States Bankruptcy Court for the District of Delaware, asserting claims arising out of the approximately \$11 billion leveraged buyout of Tribune in 2007. On August 2, 2013, the Litigation Trustee, as successor plaintiff to the Official Committee of Unsecured Creditors, filed a fifth amended complaint in the adversary proceeding KIRSCHNER v. FITZSIMONS, ET AL. The complaint seeks to avoid and recover as actual fraudulent transfers the transfers of Tribune stock that occurred as a part of the leveraged buyout. Several Citigroup affiliates are named as "Shareholder Defendants" and are alleged to have tendered Tribune stock to Tribune as a part of the buyout.

Several Citigroup affiliates are named as defendants in certain actions brought by Tribune noteholders, also seeking to recover the transfers of Tribune stock that occurred as a part of the leveraged buyout, as alleged state-law constructive fraudulent conveyances. The noteholders' claims were previously dismissed and the United States Court of Appeals for the Second Circuit affirmed the dismissal on appeal. The noteholders' petition to the United States Supreme Court for a writ of certiorari is pending.

In the FITZSIMONS action, on January 6, 2017, the United States District Court for the Southern District of New York dismissed the actual fraudulent transfer claim against the shareholder defendants, including several Citigroup affiliates. Additional information concerning these actions is publicly available in court filings under the docket numbers 08-13141 (Bankr. D. Del.) (Carey, J.), 11 MD 02296 (S.D.N.Y.) (Sullivan, J.), 12 MC 2296 (S.D.N.Y.) (Sullivan, J.), 13-3992, 13-3875, 13-4196 (2d Cir.) and 16-317 (U.S.).

Depository Receipts Conversion Litigation

Citigroup, Citibank and CGMI were sued by a purported class of persons or entities who, from January 2000 to the present, are or were holders of depository receipts for which Citi

served as the depository bank and converted foreign-currency dividends or other distributions into U.S. dollars. Plaintiffs allege, among other things, that Citibank breached its deposit agreements by charging a spread for such conversions. Citi's motion to dismiss was granted in part and denied in part on August 15, 2016, and only the breach of contract claim against Citibank remains. Plaintiffs are seeking disgorgement of Citi's profits, as well as compensatory, consequential and general damages. Additional information concerning this action is publicly available in court filings under the docket number 15 Civ. 9185 (S.D.N.Y.) (McMahon, C.).

Foreign Exchange Matters

Regulatory Actions: Government and regulatory agencies in the U.S. and in other jurisdictions are conducting investigations or making inquiries regarding Citigroup's foreign exchange business. Citigroup is fully cooperating with these and related investigations and inquiries.

Antitrust and Other Litigation: Numerous foreign exchange dealers, including Citigroup and Citibank, are named as defendants in putative class actions that are proceeding on a consolidated basis in the United States District Court for the Southern District of New York under the caption IN RE FOREIGN EXCHANGE BENCHMARK RATES ANTITRUST LITIGATION. The plaintiffs allege that they suffered losses as a result of the defendants' alleged manipulation of, and collusion with respect to, the foreign exchange market. The plaintiffs allege violations of the Commodity Exchange Act, the Sherman Act, and/or the Clayton Act, and seek compensatory damages, treble damages and declaratory and injunctive relief.

On December 15, 2015, the court entered an order preliminarily approving a proposed settlement between the Citi defendants and classes of plaintiffs who traded foreign exchange instruments in the spot market and on exchanges. The proposed settlement provides for the Citi defendants to receive a release in exchange for a payment of approximately \$400 million. On December 20, 2016, the court approved the notice of settlements and preliminarily approved the plan of distribution. The final approval hearing is scheduled for October 18, 2017. Additional information concerning these actions is publicly available in court filings under the consolidated lead docket number: 13 Civ. 7789 (S.D.N.Y.) (Schofield, J.).

On May 21, 2015, an action captioned NYPL v. JPMORGAN CHASE & CO., ET AL. was brought in the United States District Court for the Northern District of California against Citigroup, as well as numerous other foreign exchange dealers for possible consolidation with IN RE FOREIGN EXCHANGE BENCHMARK RATES ANTITRUST LITIGATION. On January 22, 2016, plaintiffs in NYPL v. JPMORGAN CHASE & CO., ET AL. filed a second amended class action complaint in the United States District Court for the Southern District of New York naming Citibank and Citicorp as defendants, in addition to Citigroup and numerous other foreign exchange dealers. The plaintiffs seek to represent a putative class of "consumers and businesses in the United States who directly purchased supracompetitive foreign currency exchange rates" from

defendants for their end use, and are seeking compensatory damages, treble damages and declaratory and injunctive relief.

On September 2, 2016, Citigroup and Related Parties, along with other defendant banks, moved to dismiss the second amended complaint. Additional information concerning this action is publicly available in court filings under the docket numbers 15 Civ. 2290 (N.D. Cal.) (Chhabria, J.) and 15 Civ. 9300 (S.D.N.Y.) (Schofield, J.).

On June 3, 2015, an action captioned ALLEN v. BANK OF AMERICA CORPORATION, ET AL. was brought in the United States District Court for the Southern District of New York against Citigroup, as well as numerous other foreign exchange dealers. The plaintiffs seek to represent a putative class of participants, beneficiaries, and named fiduciaries of qualified Employee Retirement Income Security Act (ERISA) plans for whom a defendant provided foreign exchange transactional services or authorized or permitted foreign exchange transactional services involving a plan's assets in connection with its exercise of authority or control regarding an ERISA plan. The plaintiffs allege violations of ERISA, and seek compensatory damages, restitution, disgorgement and declaratory and injunctive relief.

On April 6, 2016, the plaintiffs filed a second amended class action complaint against numerous foreign exchange dealers, including Citigroup and Citibank. On April 15, 2016, the settling defendants in IN RE FOREIGN EXCHANGE BENCHMARK RATES ANTITRUST LITIGATION moved to enjoin the ALLEN action pending final settlement approval in IN RE FOREIGN EXCHANGE BENCHMARK RATES ANTITRUST LITIGATION. On June 1, 2016, the court granted the motion in part as to claims based on collusive conduct and directed plaintiffs to file a separate pleading for claims based exclusively on non-collusive conduct. The plaintiffs filed a third amended complaint on July 15, 2016.

On September 20, 2016, the plaintiffs and settling defendants in IN RE FOREIGN EXCHANGE BENCHMARK RATES ANTITRUST LITIGATION filed a joint stipulation dismissing plaintiffs' claims with prejudice. On October 20, 2016, the ALLEN plaintiffs appealed the lower court's dismissal of claims against settling defendants in IN RE FOREIGN EXCHANGE BENCHMARK RATES ANTITRUST LITIGATION to the United States Court of Appeals for the Second Circuit, after having also appealed dismissal as to other defendants. The Second Circuit has consolidated the two appeals. Additional information concerning this action is publicly available in court filings under the docket numbers 13 Civ. 7789 (S.D.N.Y.) (Schofield, J.); 15 Civ. 4285 (S.D.N.Y.) (Schofield, J.); 16-3327 (2d Cir.); and 16-3571 (2d Cir.).

On September 16, 2015, an action captioned NEGRETE v. CITIBANK, N.A. was filed in the United States District Court for the Southern District of New York. Plaintiffs allege that Citibank engaged in conduct in connection with plaintiffs' foreign exchange trading that caused them losses. Plaintiffs assert claims for fraud, breach of contract, and negligence, and seek compensatory damages, punitive damages and injunctive relief. On June 20, 2016, plaintiffs filed an amended complaint. Citibank has moved to dismiss the amended complaint, and plaintiffs have cross-moved for partial

summary judgment. Additional information concerning this action is publicly available in court filings under the docket number 15 Civ. 7250 (S.D.N.Y.) (Sweet, J.).

On September 26, 2016, investors in exchange-traded funds (ETFs) commenced a suit captioned *BAKER ET AL. v. BANK OF AMERICA CORPORATION ET AL.* in the United States District Court for the Southern District of New York against Citigroup, Citibank, Citicorp and CGMI, as well as various other banks. The complaint asserts claims under the Sherman Act, New York state antitrust law, and California state antitrust law and unfair competition law, based on alleged foreign exchange market collusion affecting ETF investments. The plaintiffs seek to certify nationwide, California and New York classes, and request damages and injunctive relief under the relevant statutes, including treble damages. Additional information concerning this action is publicly available in court filings under the docket number 16 civ.7512 (S.D.N.Y.) (Schofield, J.).

In September 2015, putative class actions captioned *BÉLAND v. ROYAL BANK OF CANADA, ET AL.* and *STAINES v. ROYAL BANK OF CANADA, ET AL.* were filed in the Quebec Superior Court of Justice and the Ontario Superior Court of Justice, respectively, against Citigroup and Related Parties, as well as numerous other foreign exchange dealers. Plaintiffs allege that defendants conspired to fix the prices and supply of currency purchased in the foreign exchange market, and that this manipulation caused investors to pay inflated rates for currency and/or to receive deflated rates for currency. Plaintiffs assert claims under the Canadian Competition Act and the Quebec Civil Code and/or for civil conspiracy, unjust enrichment and waiver of tort. Plaintiffs seek compensatory and punitive damages, or disgorgement, on behalf of putative classes of all persons in Quebec or in Canada who entered into a foreign exchange instrument or participated in a fund or investment vehicle that entered into a foreign exchange instrument between January 1, 2003 and December 31, 2013. Citigroup and Related Parties have agreed to settle these actions for CAD 21 million. On December 14, 2016, the court preliminarily approved the settlement. A final approval hearing is scheduled for April 13, 2017. Additional information concerning these actions is publicly available in court filings under the docket numbers 200-06-000189-152 (C.S.Q. Quebec) and CV-15-536174 (Ont. S.C.J.).

Derivative Actions and Related Proceedings: On March 30, 2016, a derivative action captioned *OKLAHOMA FIREFIGHTERS PENSION & RETIREMENT SYSTEM, ET AL. v. CORBAT, ET AL.* was filed in the Delaware Chancery Court on behalf of Citigroup (as nominal defendant) against certain of Citigroup's present and former directors and officers. Plaintiffs assert claims for breach of fiduciary duty and waste of corporate assets in connection with defendants' alleged failure to exercise appropriate oversight and management of Bank Secrecy Act and anti-money laundering laws and regulations and related consent decrees concerning Citigroup subsidiaries, Citibanamex and Banamex USA (BUSA), as well as defendants' alleged failures to implement adequate internal controls and exercise adequate oversight with respect to Citigroup subsidiaries' participation in foreign

exchange markets and credit card practices. On August 15, 2016, plaintiffs filed an amended version of the supplemental complaint. On November 14, 2016, the defendants moved to dismiss the amended supplemental complaint. Additional information concerning this action is publicly available in court filings under the docket number C.A. No. 12151-VCG (Del. Ch.) (Glasscock, Ch.).

Interest Rate Swaps Matters

Antitrust and Other Litigation: Beginning in November 2015, numerous interest rate swap (IRS) market participants, including Citigroup, Citibank, CGMI and CGML, were named as defendants in a number of industry-wide putative class actions. These actions have been consolidated in the United States District Court for the Southern District of New York under the caption *IN RE INTEREST RATE SWAPS ANTITRUST LITIGATION*. Plaintiffs in these actions allege that defendants colluded to prevent the development of exchange-like trading for IRS, thereby causing the putative classes to suffer losses in connection with their IRS transactions. Plaintiffs assert federal antitrust claims and claims for unjust enrichment. Also consolidated under the same caption are two individual actions filed by swap execution facilities, asserting federal and state antitrust claims as well as claims for unjust enrichment and tortious interference with business relations. Plaintiffs in all of these actions seek treble damages, fees, costs and injunctive relief. Additional information concerning these actions is publicly available in court filings under the docket number 16-MD-2704 (S.D.N.Y.) (Engelmayer, J.).

Regulatory Actions: The Commodity Futures Trading Commission is conducting an investigation into the trading and clearing of interest rate swaps by investment banks. Citigroup is cooperating with the investigation.

Interchange Fee Litigation

Beginning in 2005, several putative class actions were filed against Citigroup and Related Parties, together with Visa, MasterCard and other banks and their affiliates, in various federal district courts and consolidated with other related individual cases in a multi-district litigation proceeding in the United States District Court for the Eastern District of New York (Interchange MDL). This proceeding is captioned *IN RE PAYMENT CARD INTERCHANGE FEE AND MERCHANT DISCOUNT ANTITRUST LITIGATION*.

The plaintiffs, merchants that accept Visa- and MasterCard-branded payment cards as well as membership associations that claim to represent certain groups of merchants, allege, among other things, that defendants have engaged in conspiracies to set the price of interchange and merchant discount fees on credit and debit card transactions and to restrain trade through various Visa and MasterCard rules governing merchant conduct, all in violation of Section 1 of the Sherman Act and certain California statutes. Supplemental complaints also have been filed against defendants in the putative class actions alleging that Visa's and MasterCard's respective initial public offerings were anticompetitive and violated Section 7 of the Clayton Act, and

that MasterCard's initial public offering constituted a fraudulent conveyance.

On January 14, 2014, the district court entered a final judgment approving the terms of a class settlement providing for, among other things, a total payment to the class of \$6.05 billion; a rebate to merchants participating in the damages class settlement of 10 basis points on interchange collected for a period of eight months by the Visa and MasterCard networks; and changes to certain network rules. Various objectors appealed from the final class settlement approval order to the United States Court of Appeals for the Second Circuit.

On June 30, 2016, the Court of Appeals reversed the district court's approval of the class settlement and remanded for further proceedings. On November 23, 2016, counsel for the class plaintiffs that entered the now-vacated settlement filed a petition for certiorari review by the United States Supreme Court relating to the Second Circuit's decision. Additional information concerning these consolidated actions and the appeal is publicly available in court filings under the docket numbers MDL 05-1720 (E.D.N.Y.) (Brodie, J.), 12-4671 (2d Cir.) and 16-710 (U.S. Supreme Court).

In addition, following the district court's approval of the class settlement, and during the pendency of appeals from that approval, numerous merchants, including large national merchants, requested exclusion from the portion of the now-vacated settlement involving a settlement class certified with respect to damages claims for past conduct, and some of those opting out filed complaints against Visa, MasterCard, and in some instances one or more issuing banks. One of these suits, 7-ELEVEN, INC., ET AL. v. VISA INC., ET AL., brought on behalf of numerous individual merchants, names Citigroup as a defendant. Additional information concerning these actions is publicly available in court filings under the docket number MDL 05-1720 (E.D.N.Y.) (Brodie, J.).

Interbank Offered Rates-Related Litigation and Other Matters

Regulatory Actions: A consortium of state attorneys general is conducting an investigation regarding submissions made by panel banks to bodies that publish various interbank offered rates and other benchmark rates. As members of a number of such panels, Citigroup subsidiaries have received requests for information and documents. Citigroup is cooperating with the investigation and is responding to the requests.

Antitrust and Other Litigation: Citigroup and Citibank, along with other U.S. Dollar (USD) LIBOR panel banks, are defendants in a multi-district litigation (MDL) proceeding before the United States District Court for the Southern District of New York captioned IN RE LIBOR-BASED FINANCIAL INSTRUMENTS ANTITRUST LITIGATION (the LIBOR MDL). Consolidated amended complaints were filed on behalf of two separate putative classes of plaintiffs: (i) over-the-counter (OTC) purchasers of derivative instruments tied to USD LIBOR; and (ii) purchasers of exchange-traded derivative instruments tied to USD LIBOR. Each of these putative classes alleges that the panel bank defendants conspired to suppress USD LIBOR: (i) OTC purchasers assert claims under the Sherman Act and for unjust enrichment and

breach of the implied covenant of good faith and fair dealing; and (ii) purchasers of exchange-traded derivative instruments assert claims under the Commodity Exchange Act and the Sherman Act and for unjust enrichment. Several individual actions also were consolidated into the LIBOR MDL. The plaintiffs seek compensatory damages and restitution for losses caused by the alleged violations, as well as treble damages under the Sherman Act. The OTC purchasers and certain individual action plaintiffs also seek injunctive relief.

Additional actions have been consolidated in the LIBOR MDL proceeding, including (i) lawsuits filed by, or on behalf of putative classes of, community and other banks, savings and loans institutions, credit unions, municipalities and purchasers and holders of LIBOR-linked financial products; and (ii) lawsuits filed by putative classes of lenders and adjustable rate mortgage borrowers. The plaintiffs allege that defendant panel banks artificially suppressed USD LIBOR in violation of applicable law and seek compensatory and other damages.

Additional information relating to these actions is publicly available in court filings under the following docket numbers: 11 Civ. 2613; 11 Civ. 5450; 11 Civ. 4186; 12 Civ. 1205; 12 Civ. 5723; 12 Civ. 5822; 12 Civ. 6056; 12 Civ. 6693; 12 Civ. 7461; 13 Civ. 346; 13 Civ. 407; 13 Civ. 1016, 13 Civ. 1456, 13 Civ. 1700, 13 Civ. 2262, 13 Civ. 2297; 13 Civ. 4018; 13 Civ. 7720; 14 Civ. 146 (S.D.N.Y.) (Buchwald, J.); 12 Civ. 6294 (E.D.N.Y.) (Seybert, J.); 12 Civ. 6571 (N.D. Cal.) (Conti, J.); 12 Civ. 10903 (C.D. Cal.) (Snyder, J.); 13 Civ. 48 (S.D. Cal.) (Sammartino, J.); 13 Civ. 62 (C.D. Cal.) (Phillips, J.); 13 Civ. 106 (N.D. Cal.) (Beller, J.); 13 Civ. 108 (N.D. Cal.) (Ryu, J.); 13 Civ. 109 (N.D. Cal.) (Laporte, J.); 13 Civ. 122 (C.D. Cal.) (Bernal, J.); 13 Civ. 334, 13 Civ. 335 (S.D. Iowa) (Pratt, J.); 13 Civ. 342 (E.D. Va.) (Brinkema, J.); 13 Civ. 1466 (S.D. Cal.) (Lorenz, J.); 13 Civ. 1476 (E.D. Cal.) (Mueller, J.); 13 Civ. 2149 (S.D. Tex.) (Hoyt, J.); 13 Civ. 2244 (N.D. Cal.) (Hamilton, J.); 13 Civ. 2921 (N.D. Cal.) (Chesney, J.); 13 Civ. 2979 (N.D. Cal.) (Tigar, J.); 13 Civ. 4352 (E.D. Pa.) (Restrepo, J.); 13 Civ. 5278 (N.D. Cal.) (Vadas, J.); 15 Civ. 1334 (S.D.N.Y.) (Buchwald, J.); and 15 Civ. 2973 (S.D.N.Y.) (Buchwald, J.).

On May 23, 2016, the United States Court of Appeals for the Second Circuit reversed the district court's dismissal of antitrust claims in the action captioned IN RE LIBOR-BASED FINANCIAL INSTRUMENTS ANTITRUST LITIGATION and remanded to the district court the issue of antitrust standing—specifically whether plaintiffs are “efficient enforcers” of the antitrust laws. On December 20, 2016 the district court resolved the issue of antitrust standing, dismissing certain plaintiffs' actions on efficient enforcer grounds, and limiting the classes of OTC and exchange-traded derivative instruments purchasers. The district court also dismissed antitrust claims against Citigroup and Citibank brought by several individual plaintiffs outside of New York on personal jurisdiction grounds. Additional information concerning these actions is publicly available in court filings under the docket numbers 11 MD 2262 (S.D.N.Y.) (Buchwald, J.); 16-545 (U.S.).

Citigroup and Citibank, along with other USD LIBOR panel banks, also are named as defendants in an individual

action filed in the United States District Court for the Southern District of New York on February 13, 2013, captioned 7 WEST 57th STREET REALTY CO. v. CITIGROUP, INC., ET AL. The plaintiff alleges that the defendant panel banks manipulated USD LIBOR to keep it artificially high and that this manipulation affected the value of plaintiffs' OTC municipal bond portfolio in violation of federal and state antitrust laws and federal RICO law. The plaintiff seeks compensatory damages, treble damages where authorized by statute, and declaratory relief. On March 31, 2015, the United States District Court for the Southern District of New York dismissed this action. On June 1, 2015, the plaintiff moved for leave to file a second amended complaint. Additional information concerning this action is publicly available in court filings under the docket number 13 Civ. 981 (Gardephe, J.).

On August 13, 2015, plaintiffs in the class action SULLIVAN v. BARCLAYS PLC, ET AL. pending in the United States District Court for the Southern District of New York filed a fourth amended complaint naming Citigroup and Citibank as defendants. Plaintiffs claim to have suffered losses as a result of purported EURIBOR manipulation and assert claims under the Commodity Exchange Act, the Sherman Act and the federal RICO law, and for unjust enrichment. On February 21, 2017, the court granted in part and denied in part defendants' motion to dismiss. Additional information concerning this action is publicly available in court filings under the docket number 13 Civ. 2811 (S.D.N.Y.) (Castel, J.).

On July 1, 2016, a putative class action captioned FRONTPOINT ASIAN EVENT DRIVEN FUND, LTD. ET AL v. CITIBANK, N.A. ET AL. was filed in the United States District Court for the Southern District of New York against Citibank, Citigroup and various other banks. Plaintiffs assert claims for violation of the Sherman Act, Clayton Act and RICO Act, as well as state law claims for alleged manipulation of the Singapore Interbank Offered Rate and Singapore Swap Offer Rate. Additional information concerning this action is publicly available in court filings under the docket number 16 Civ. 5263 (S.D.N.Y.) (Hellerstein, J.).

Money Laundering Inquiries

Regulatory Actions: Citigroup and Related Parties, including Citigroup's indirect, wholly owned subsidiary Banamex USA (BUSA), a California state-chartered bank, have received grand jury subpoenas issued by the United States Attorney's Office for the District of Massachusetts concerning, among other issues, policies, procedures and activities related to compliance with Bank Secrecy Act (BSA) and anti-money laundering (AML) requirements under applicable federal laws and banking regulations. Citigroup and BUSA also have received inquiries and requests for information from other regulators, including the Financial Crimes Enforcement Network, concerning BSA- and AML-related issues. Citigroup is cooperating fully with these inquiries.

Citibank received a subpoena from the United States Attorney for the Eastern District of New York in connection with its investigation of alleged bribery, corruption and money laundering associated with the Federation Internationale de

Football Association (FIFA), and the potential involvement of financial institutions in that activity. The subpoena requested information relating to, among other things, banking relationships and transactions at Citibank and its affiliates associated with certain individuals and entities identified as having had involvement with the alleged corrupt conduct. Citi is cooperating with the authorities in this matter.

Derivative Actions and Related Proceedings: On September 22, 2015, a derivative action captioned FIREMAN'S RETIREMENT SYSTEM OF ST. LOUIS, ET AL. v. CORBAT, ET AL. was filed in the United States District Court for the Southern District of New York on behalf of Citigroup (as nominal defendant) against certain of Citigroup's and certain of its affiliates' present and former directors and officers. The plaintiffs asserted claims derivatively for violation of Section 14(a) of the Securities Exchange Act of 1934, breach of fiduciary duty, waste of corporate assets, and unjust enrichment in connection with the defendants' alleged failure to exercise appropriate oversight and management of BSA and AML laws and regulations and related consent decrees concerning Citigroup's subsidiaries, Citibanamex and BUSA. Due to the similarity of issues, plaintiffs voluntarily dismissed the action in favor of proceeding together with plaintiffs in the derivative action captioned OKLAHOMA FIREFIGHTERS PENSION & RETIREMENT SYSTEM, ET AL. v. CORBAT, ET AL. in the Delaware Chancery Court, described above. Additional information concerning these actions is publicly available in court filings under the docket numbers C.A. No. 12151-VCP (Del. Ch.) (Glasscock, Ch.) and 15 Civ. 7501 (S.D.N.Y.) (Furman, J.).

Oceanografia Fraud and Related Matters

Regulatory Actions: As a result of Citigroup's announcement in the first quarter of 2014 of a fraud discovered in a Petróleos Mexicanos (Pemex) supplier program involving Oceanografia SA de CV (OSA), a Mexican oil services company and a key supplier to Pemex, the SEC commenced a formal investigation and the U.S. Department of Justice requested information regarding Banamex's dealings with OSA. The SEC inquiry has included requests for documents and witness testimony. Citi continues to cooperate fully with these inquiries.

Other Litigation: On February 26, 2016, a complaint was filed against Citigroup in the United States District Court for the Southern District of Florida alleging that it conspired with Oceanografia, S.A. de C.V. (OSA) and others with respect to receivable financings and other financing arrangements related to OSA in a manner that injured bondholders and other creditors of OSA. The complaint asserts claims on behalf of 39 plaintiffs that are characterized in the complaint variously as trade creditors of, investors in, or lenders to OSA. Plaintiffs collectively claim to have lost \$1.1 billion as a result of OSA's bankruptcy. The complaint asserts claims under the federal civil Racketeer Influenced and Corrupt Organizations Act and seeks treble damages and other relief pursuant to that statute. The complaint also asserts claims for fraud and breach of fiduciary duty.

On August 23, 2016, plaintiffs filed an amended complaint adding common law claims for fraud, aiding and

abetting fraud, and conspiracy on behalf of all plaintiffs. Citigroup has moved to dismiss the amended complaint. Additional information concerning this action is publicly available in court filings under the docket number 16-20725 (S.D. Fla.) (Gayles, J.).

Parmalat Litigation and Related Matters

On July 29, 2004, Dr. Enrico Bondi, the Extraordinary Commissioner appointed under Italian law to oversee the administration of various Parmalat companies, filed a complaint in New Jersey state court against Citigroup and Related Parties alleging, among other things, that the defendants “facilitated” a number of frauds by Parmalat insiders. On October 20, 2008, following trial, a jury rendered a verdict in Citigroup’s favor on Parmalat’s claims and in favor of Citibank on three counterclaims, awarding Citi \$431 million. Parmalat has exhausted all appeals, and the judgment is now final. Additional information concerning this action is publicly available in court filings under the docket number A-2654-08T2 (N.J. Sup. Ct.). Citigroup has taken steps to enforce that judgment in the Italian courts. On August 29, 2014, the Court of Appeal of Bologna affirmed the decision in the full amount of \$431 million, plus interest, to be paid in Parmalat shares. Parmalat has appealed the judgment to the Italian Supreme Court.

On June 16, 2015, the Parmalat administrator refiled a prior claim in an Italian civil court in Milan claiming damages of €1.8 billion against Citigroup and Related Parties and other financial institutions. The next hearing in this proceeding is scheduled for May 30, 2017.

Referral Hiring Practices Investigations

Government and regulatory agencies in the U.S., including the SEC, are conducting investigations or making inquiries concerning compliance with the Foreign Corrupt Practices Act and other laws with respect to the hiring of candidates referred by or related to foreign government officials. Citigroup is cooperating with the investigations and inquiries.

Regulatory Review of Student Loan Servicing

Citibank is currently subject to regulatory investigation concerning certain student loan servicing practices. Citibank is cooperating with the investigation. Similar servicing practices have been the subject of an enforcement action against at least one other institution. In light of that action and the current regulatory focus on student loans, regulators may order that Citibank remediate customers and/or impose penalties or other relief.

Sovereign Securities Matters

Regulatory Actions: Government and regulatory agencies in the U.S. and in other jurisdictions are conducting investigations or making inquiries regarding Citigroup’s sales and trading activities in connection with sovereign securities. Citigroup is fully cooperating with these investigations and inquiries.

Antitrust and Other Litigation: Beginning in July 2015, CGMI and numerous other U.S. Treasury primary dealer banks, have been named as defendants in a number of

substantially similar putative class actions involving allegations that they colluded to manipulate U.S. Treasury securities markets. The actions are based upon the defendants’ roles as registered primary dealers of U.S. Treasury securities and assert claims of alleged collusion under the antitrust laws and manipulation under the Commodity Exchange Act and seek damages, including treble damages where authorized by statute, and injunctive relief. These actions were filed in the United States District Court for the Southern District of New York, the Northern District of Illinois, the Southern District of Alabama and the District of the Virgin Islands.

In December 2015, the cases were consolidated in the United States District Court for the Southern District of New York by the Judicial Panel on Multidistrict Litigation. Additional information relating to these actions is publicly available in court filings under the docket number: 15-MD-2673 (S.D.N.Y.) (Gardephe, J.).

Since May 2016, a number of substantially similar putative class action complaints have been filed against a number of financial institutions and traders related to the supranational, sub-sovereign, and agency (SSA) bond market. Citigroup, Citibank, CGMI and CGML are named as defendants in three of the complaints. The actions are based upon the defendants’ roles as market makers and traders of SSA bonds and assert claims of alleged collusion under the antitrust laws and unjust enrichment and seek damages, including treble damages where authorized by statute, and disgorgement. These actions were filed in the United States District Court for the Southern District of New York. Beginning in August 2016, the cases were consolidated in the United States District Court for the Southern District of New York. Additional information relating to these actions is publicly available in court filings under the docket number: 16-cv-03711 (S.D.N.Y.) (Ramos, J.).

Settlement Payments

Payments required in settlement agreements described above have been made or are covered by existing litigation accruals.

28. CONDENSED CONSOLIDATING FINANCIAL STATEMENTS

Citigroup amended its Registration Statement on Form S-3 on file with the SEC (File No. 33-192302) to add its wholly owned subsidiary, Citigroup Global Markets Holdings Inc. (CGMHI), as a co-registrant. Any securities issued by CGMHI under the Form S-3 will be fully and unconditionally guaranteed by Citigroup.

The following are the Condensed Consolidating Statements of Income and Comprehensive Income for the years ended December 31, 2016, 2015 and 2014, Condensed Consolidating Balance Sheet as of December 31, 2016 and 2015 and Condensed Consolidating Statement of Cash Flows for the years ended December 31, 2016, 2015 and 2014 for Citigroup Inc., the parent holding company (Citigroup parent company), CGMHI, other Citigroup subsidiaries and eliminations and total consolidating adjustments. "Other Citigroup subsidiaries and eliminations" includes all other subsidiaries of Citigroup, intercompany eliminations and income (loss) from discontinued operations. "Consolidating adjustments" includes Citigroup parent company elimination of distributed and undistributed income of subsidiaries and investment in subsidiaries.

These Condensed Consolidating Financial Statements have been prepared and presented in accordance with SEC Regulation S-X Rule 3-10, "Financial Statements of Guarantors and Issuers of Guaranteed Securities Registered or Being Registered."

These Condensed Consolidating Financial Statements schedules are presented for purposes of additional analysis, but should be considered in relation to the Consolidated Financial Statements of Citigroup taken as a whole.

Condensed Consolidating Statements of Income and Comprehensive Income

Year ended December 31, 2016

<i>In millions of dollars</i>	Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Revenues					
Dividends from subsidiaries	\$ 15,570	\$ —	\$ —	\$ (15,570)	\$ —
Interest revenue	7	4,586	53,022	—	57,615
Interest revenue—intercompany	3,008	545	(3,553)	—	—
Interest expense	4,419	1,429	6,663	—	12,511
Interest expense—intercompany	209	1,649	(1,858)	—	—
Net interest revenue	\$ (1,613)	\$ 2,053	\$ 44,664	\$ —	\$ 45,104
Commissions and fees	\$ —	\$ 4,305	\$ 6,216	\$ —	\$ 10,521
Commissions and fees—intercompany	(20)	246	(226)	—	—
Principal transactions	(1,025)	5,602	3,008	—	7,585
Principal transactions—intercompany	24	(2,868)	2,844	—	—
Other income	2,599	225	3,841	—	6,665
Other income—intercompany	(2,095)	105	1,990	—	—
Total non-interest revenues	\$ (517)	\$ 7,615	\$ 17,673	\$ —	\$ 24,771
Total revenues, net of interest expense	\$ 13,440	\$ 9,668	\$ 62,337	\$ (15,570)	\$ 69,875
Provisions for credit losses and for benefits and claims	\$ —	\$ —	\$ 6,982	\$ —	\$ 6,982
Operating expenses					
Compensation and benefits	\$ 22	\$ 4,719	\$ 16,229	\$ —	\$ 20,970
Compensation and benefits—intercompany	36	—	(36)	—	—
Other operating	482	1,635	18,329	—	20,446
Other operating—intercompany	217	1,138	(1,355)	—	—
Total operating expenses	\$ 757	\$ 7,492	\$ 33,167	\$ —	\$ 41,416
Equity in undistributed income of subsidiaries	871	—	—	(871)	—
Income (loss) from continuing operations before income taxes	13,554	2,176	22,188	(16,441)	21,477
Provision (benefit) for income taxes	(1,358)	746	7,056	—	6,444
Income (loss) from continuing operations	\$ 14,912	\$ 1,430	\$ 15,132	\$ (16,441)	\$ 15,033
Loss from discontinued operations, net of taxes	—	—	(58)	—	(58)
Net income (loss) before attribution of noncontrolling interests	\$ 14,912	\$ 1,430	\$ 15,074	\$ (16,441)	\$ 14,975
Noncontrolling interests	—	(13)	76	—	63
Net income (loss)	\$ 14,912	\$ 1,443	\$ 14,998	\$ (16,441)	\$ 14,912
Comprehensive income					
Other comprehensive income (loss)	\$ (3,022)	\$ (116)	\$ 4,867	\$ (4,751)	\$ (3,022)
Comprehensive income	\$ 11,890	\$ 1,327	\$ 19,865	\$ (21,192)	\$ 11,890

Condensed Consolidating Statements of Income and Comprehensive Income

Year ended December 31, 2015

<i>In millions of dollars</i>	Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Revenues					
Dividends from subsidiaries	\$ 13,500	\$ —	\$ —	\$ (13,500)	\$ —
Interest revenue	9	4,389	54,153	—	58,551
Interest revenue—intercompany	2,880	272	(3,152)	—	—
Interest expense	4,563	997	6,361	—	11,921
Interest expense—intercompany	(475)	1,295	(820)	—	—
Net interest revenue	\$ (1,199)	\$ 2,369	\$ 45,460	\$ —	\$ 46,630
Commissions and fees	\$ —	\$ 4,854	\$ 6,994	\$ —	\$ 11,848
Commissions and fees—intercompany	—	214	(214)	—	—
Principal transactions	1,012	10,365	(5,369)	—	6,008
Principal transactions—intercompany	(1,733)	(8,709)	10,442	—	—
Other income	3,294	426	8,148	—	11,868
Other income—intercompany	(3,054)	1,079	1,975	—	—
Total non-interest revenues	\$ (481)	\$ 8,229	\$ 21,976	\$ —	\$ 29,724
Total revenues, net of interest expense	\$ 11,820	\$ 10,598	\$ 67,436	\$ (13,500)	\$ 76,354
Provisions for credit losses and for benefits and claims	\$ —	\$ —	\$ 7,913	\$ —	\$ 7,913
Operating expenses					
Compensation and benefits	\$ (58)	\$ 5,003	\$ 16,824	\$ —	\$ 21,769
Compensation and benefits—intercompany	59	—	(59)	—	—
Other operating	271	1,948	19,627	—	21,846
Other operating—intercompany	247	1,164	(1,411)	—	—
Total operating expenses	\$ 519	\$ 8,115	\$ 34,981	\$ —	\$ 43,615
Equity in undistributed income of subsidiaries	4,601	—	—	(4,601)	—
Income (loss) from continuing operations before income taxes	15,902	2,483	24,542	(18,101)	24,826
Provision (benefit) for income taxes	(1,340)	537	8,243	—	7,440
Income (loss) from continuing operations	\$ 17,242	\$ 1,946	\$ 16,299	\$ (18,101)	\$ 17,386
Loss from discontinued operations, net of taxes	—	—	(54)	—	(54)
Net income (loss) before attribution of noncontrolling interests	\$ 17,242	\$ 1,946	\$ 16,245	\$ (18,101)	\$ 17,332
Noncontrolling interests	—	9	81	—	90
Net income (loss)	\$ 17,242	\$ 1,937	\$ 16,164	\$ (18,101)	\$ 17,242
Comprehensive income					
Other comprehensive income (loss)	\$ (6,128)	\$ (125)	\$ (6,367)	\$ 6,492	\$ (6,128)
Comprehensive income	\$ 11,114	\$ 1,812	\$ 9,797	\$ (11,609)	\$ 11,114

Condensed Consolidating Statements of Income and Comprehensive Income

Year ended December 31, 2014

<i>In millions of dollars</i>	Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Revenues					
Dividends from subsidiaries	\$ 8,900	\$ —	\$ —	\$ (8,900)	\$ —
Interest revenue	12	4,210	57,461	—	61,683
Interest revenue—intercompany	3,109	144	(3,253)	—	—
Interest expense	5,055	1,010	7,625	—	13,690
Interest expense—intercompany	(618)	1,258	(640)	—	—
Net interest revenue	\$ (1,316)	\$ 2,086	\$ 47,223	\$ —	\$ 47,993
Commissions and fees	\$ —	\$ 5,185	\$ 7,847	\$ —	\$ 13,032
Commissions and fees—intercompany	—	95	(95)	—	—
Principal transactions	13	(1,115)	7,800	—	6,698
Principal transactions—intercompany	(672)	3,822	(3,150)	—	—
Other income	1,037	425	8,034	—	9,496
Other income—intercompany	(131)	1,206	(1,075)	—	—
Total non-interest revenues	\$ 247	\$ 9,618	\$ 19,361	\$ —	\$ 29,226
Total revenues, net of interest expense	\$ 7,831	\$ 11,704	\$ 66,584	\$ (8,900)	\$ 77,219
Provisions for credit losses and for benefits and claims	\$ —	\$ —	\$ 7,467	\$ —	\$ 7,467
Operating expenses					
Compensation and benefits	\$ 158	\$ 5,156	\$ 18,645	\$ —	\$ 23,959
Compensation and benefits—intercompany	38	—	(38)	—	—
Other operating	1,572	6,082	23,438	—	31,092
Other operating—intercompany	212	1,651	(1,863)	—	—
Total operating expenses	\$ 1,980	\$ 12,889	\$ 40,182	\$ —	\$ 55,051
Equity in undistributed income of subsidiaries	816	—	—	(816)	—
Income (loss) from continuing operations before income taxes	6,667	(1,185)	18,935	(9,716)	14,701
Provision (benefit) for income taxes	(643)	600	7,240	—	7,197
Income (loss) from continuing operations	\$ 7,310	\$ (1,785)	\$ 11,695	\$ (9,716)	\$ 7,504
Loss from discontinued operations, net of taxes	—	—	(2)	—	(2)
Net income (loss) before attribution of noncontrolling interests	\$ 7,310	\$ (1,785)	\$ 11,693	\$ (9,716)	\$ 7,502
Noncontrolling interests	—	8	184	—	192
Net income (loss)	\$ 7,310	\$ (1,793)	\$ 11,509	\$ (9,716)	\$ 7,310
Comprehensive income					
Other comprehensive income (loss)	\$ (4,083)	\$ 194	\$ (4,760)	\$ 4,566	\$ (4,083)
Comprehensive income	\$ 3,227	\$ (1,599)	\$ 6,749	\$ (5,150)	\$ 3,227

Condensed Consolidating Balance Sheet

	December 31, 2016				
<i>In millions of dollars</i>	Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Assets					
Cash and due from banks	\$ —	\$ 870	\$ 22,173	\$ —	\$ 23,043
Cash and due from banks—intercompany	142	3,820	(3,962)	—	—
Federal funds sold and resale agreements	—	196,236	40,577	—	236,813
Federal funds sold and resale agreements—intercompany	—	12,270	(12,270)	—	—
Trading account assets	6	121,484	122,435	—	243,925
Trading account assets—intercompany	1,173	907	(2,080)	—	—
Investments	173	335	352,796	—	353,304
Loans, net of unearned income	—	575	623,794	—	624,369
Loans, net of unearned income—intercompany	—	—	—	—	—
Allowance for loan losses	—	—	(12,060)	—	(12,060)
Total loans, net	\$ —	\$ 575	\$ 611,734	\$ —	\$ 612,309
Advances to subsidiaries	\$ 143,154	\$ —	\$ (143,154)	\$ —	\$ —
Investments in subsidiaries	226,279	—	—	(226,279)	—
Other assets ⁽¹⁾	23,734	46,095	252,854	—	322,683
Other assets—intercompany	27,845	38,207	(66,052)	—	—
Total assets	\$ 422,506	\$ 420,799	\$ 1,175,051	\$ (226,279)	\$ 1,792,077
Liabilities and equity					
Deposits	\$ —	\$ —	\$ 929,406	\$ —	\$ 929,406
Deposits—intercompany	—	—	—	—	—
Federal funds purchased and securities loaned or sold	—	122,320	19,501	—	141,821
Federal funds purchased and securities loaned or sold—intercompany	—	25,417	(25,417)	—	—
Trading account liabilities	—	87,714	51,331	—	139,045
Trading account liabilities—intercompany	1,006	868	(1,874)	—	—
Short-term borrowings	—	1,356	29,345	—	30,701
Short-term borrowings—intercompany	—	35,596	(35,596)	—	—
Long-term debt	147,333	8,128	50,717	—	206,178
Long-term debt—intercompany	—	41,287	(41,287)	—	—
Advances from subsidiaries	41,258	—	(41,258)	—	—
Other liabilities	3,466	57,430	57,887	—	118,783
Other liabilities—intercompany	4,323	7,894	(12,217)	—	—
Stockholders' equity	225,120	32,789	194,513	(226,279)	226,143
Total liabilities and equity	\$ 422,506	\$ 420,799	\$ 1,175,051	\$ (226,279)	\$ 1,792,077

(1) *Other assets* for Citigroup parent company at December 31, 2016 included \$20.7 billion of placements to Citibank and its branches, of which \$6.8 billion had a remaining term of less than 30 days.

Condensed Consolidating Balance Sheet

December 31, 2015

<i>In millions of dollars</i>	Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Assets					
Cash and due from banks	\$ —	\$ 592	\$ 20,308	\$ —	\$ 20,900
Cash and due from banks—intercompany	124	1,403	(1,527)	—	—
Federal funds sold and resale agreements	—	178,178	41,497	—	219,675
Federal funds sold and resale agreements—intercompany	—	15,035	(15,035)	—	—
Trading account assets	—	124,731	116,484	—	241,215
Trading account assets—intercompany	1,032	1,765	(2,797)	—	—
Investments	484	402	342,069	—	342,955
Loans, net of unearned income	—	1,068	616,549	—	617,617
Loans, net of unearned income—intercompany	—	—	—	—	—
Allowance for loan losses	—	(3)	(12,623)	—	(12,626)
Total loans, net	\$ —	\$ 1,065	\$ 603,926	\$ —	\$ 604,991
Advances to subsidiaries	\$ 104,405	\$ —	\$ (104,405)	\$ —	\$ —
Investments in subsidiaries	221,362	—	—	(221,362)	—
Other assets ⁽¹⁾	25,819	36,860	238,795	—	301,474
Other assets—intercompany	58,199	30,737	(88,936)	—	—
Total assets	\$ 411,425	\$ 390,768	\$ 1,150,379	\$ (221,362)	\$ 1,731,210
Liabilities and equity					
Deposits	\$ —	\$ —	\$ 907,887	\$ —	\$ 907,887
Deposits—intercompany	—	—	—	—	—
Federal funds purchased and securities loaned or sold	—	122,459	24,037	—	146,496
Federal funds purchased and securities loaned or sold—intercompany	185	22,042	(22,227)	—	—
Trading account liabilities	—	62,386	55,126	—	117,512
Trading account liabilities—intercompany	1,036	2,045	(3,081)	—	—
Short-term borrowings	146	188	20,745	—	21,079
Short-term borrowings—intercompany	—	34,916	(34,916)	—	—
Long-term debt	141,914	2,530	56,831	—	201,275
Long-term debt—intercompany	—	51,171	(51,171)	—	—
Advances from subsidiaries	36,453	—	(36,453)	—	—
Other liabilities	3,560	55,482	54,827	—	113,869
Other liabilities—intercompany	6,274	10,967	(17,241)	—	—
Stockholders' equity	221,857	26,582	196,015	(221,362)	223,092
Total liabilities and equity	\$ 411,425	\$ 390,768	\$ 1,150,379	\$ (221,362)	\$ 1,731,210

(1) *Other assets* for Citigroup parent company at December 31, 2015 included \$42.7 billion of placements to Citibank and its branches, of which \$33.9 billion had a remaining term of less than 30 days.

Condensed Consolidating Statement of Cash Flows

	Year ended December 31, 2016				
<i>In millions of dollars</i>	Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Net cash provided by operating activities of continuing operations	\$ 12,777	\$ 20,662	\$ 20,493	\$ —	\$ 53,932
Cash flows from investing activities of continuing operations					
Purchases of investments	\$ —	\$ (4)	\$ (211,398)	\$ —	\$ (211,402)
Proceeds from sales of investments	3,024	—	129,159	—	132,183
Proceeds from maturities of investments	234	—	65,291	—	65,525
Change in deposits with banks	—	(3,643)	(21,668)	—	(25,311)
Change in loans	—	—	(39,761)	—	(39,761)
Proceeds from sales and securitizations of loans	—	—	18,140	—	18,140
Proceeds from significant disposals	—	—	265	—	265
Change in federal funds sold and resales	—	(15,293)	(1,845)	—	(17,138)
Changes in investments and advances—intercompany	(18,083)	(5,574)	23,657	—	—
Other investing activities	—	—	(2,089)	—	(2,089)
Net cash used in investing activities of continuing operations	\$ (14,825)	\$ (24,514)	\$ (40,249)	\$ —	\$ (79,588)
Cash flows from financing activities of continuing operations					
Dividends paid	\$ (2,287)	\$ —	\$ —	\$ —	\$ (2,287)
Issuance of preferred stock	2,498	—	—	—	2,498
Treasury stock acquired	(9,290)	—	—	—	(9,290)
Proceeds (repayments) from issuance of long-term debt, net	7,005	5,916	(4,575)	—	8,346
Proceeds (repayments) from issuance of long-term debt—intercompany, net	—	(9,453)	9,453	—	—
Change in deposits	—	—	24,394	—	24,394
Change in federal funds purchased and repos	—	3,236	(7,911)	—	(4,675)
Change in short-term borrowings	(164)	1,168	8,618	—	9,622
Net change in short-term borrowings and other advances—intercompany	4,620	680	(5,300)	—	—
Capital contributions from parent	—	5,000	(5,000)	—	—
Other financing activities	(316)	—	—	—	(316)
Net cash provided by financing activities of continuing operations	\$ 2,066	\$ 6,547	\$ 19,679	\$ —	\$ 28,292
Effect of exchange rate changes on cash and due from banks	\$ —	\$ —	\$ (493)	\$ —	\$ (493)
Change in cash and due from banks	\$ 18	\$ 2,695	\$ (570)	\$ —	\$ 2,143
Cash and due from banks at beginning of period	124	1,995	18,781	—	20,900
Cash and due from banks at end of period	\$ 142	\$ 4,690	\$ 18,211	\$ —	\$ 23,043
Supplemental disclosure of cash flow information for continuing operations					
Cash paid during the year for income taxes	\$ 351	\$ 92	\$ 3,916	\$ —	\$ 4,359
Cash paid during the year for interest	4,397	3,115	4,555	—	12,067
Non-cash investing activities					
Transfers to loans HFS from loans	—	—	13,900	—	13,900
Transfers to OREO and other repossessed assets	—	—	165	—	165

Condensed Consolidating Statement of Cash Flows

Year ended December 31, 2015

<i>In millions of dollars</i>	Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Net cash provided by (used in) operating activities of continuing operations	\$ 27,825	\$ 12,336	\$ (424)	\$ —	\$ 39,737
Cash flows from investing activities of continuing operations					
Purchases of investments	\$ —	\$ (4)	\$ (242,358)	\$ —	\$ (242,362)
Proceeds from sales of investments	—	53	141,417	—	141,470
Proceeds from maturities of investments	237	—	81,810	—	82,047
Change in deposits with banks	—	(8,414)	23,902	—	15,488
Change in loans	—	—	1,353	—	1,353
Proceeds from sales and securitizations of loans	—	—	9,610	—	9,610
Proceeds from significant disposals	—	—	5,932	—	5,932
Payments due to transfers of net liabilities associated with significant disposals	—	—	(18,929)	—	(18,929)
Change in federal funds sold and resales	—	8,037	14,858	—	22,895
Changes in investments and advances—intercompany	(35,548)	1,044	34,504	—	—
Other investing activities	3	(101)	(2,523)	—	(2,621)
Net cash provided by (used in) investing activities of continuing operations	\$ (35,308)	\$ 615	\$ 49,576	\$ —	\$ 14,883
Cash flows from financing activities of continuing operations					
Dividends paid	\$ (1,253)	\$ —	\$ —	\$ —	\$ (1,253)
Issuance of preferred stock	6,227	—	—	—	6,227
Treasury stock acquired	(5,452)	—	—	—	(5,452)
Proceeds (repayments) from issuance of long-term debt, net	127	(139)	(8,212)	—	(8,224)
Proceeds (repayments) from issuance of long-term debt—intercompany, net	—	12,557	(12,557)	—	—
Change in deposits	—	—	8,555	—	8,555
Change in federal funds purchased and repos	—	(27,442)	500	—	(26,942)
Change in short-term borrowings	(845)	(1,737)	(34,674)	—	(37,256)
Net change in short-term borrowings and other advances—intercompany	9,106	4,054	(13,160)	—	—
Capital contributions from parent	—	—	—	—	—
Other financing activities	(428)	—	—	—	(428)
Net cash provided by (used in) financing activities of continuing operations	\$ 7,482	\$ (12,707)	\$ (59,548)	\$ —	\$ (64,773)
Effect of exchange rate changes on cash and due from banks	\$ —	\$ —	\$ (1,055)	\$ —	\$ (1,055)
Change in cash and due from banks	\$ (1)	\$ 244	\$ (11,451)	\$ —	\$ (11,208)
Cash and due from banks at beginning of period	125	1,751	30,232	—	32,108
Cash and due from banks at end of period	\$ 124	\$ 1,995	\$ 18,781	\$ —	\$ 20,900
Supplemental disclosure of cash flow information for continuing operations					
Cash paid during the year for income taxes	\$ 111	\$ 175	\$ 4,692	\$ —	\$ 4,978
Cash paid during the year for interest	4,916	2,346	4,769	—	12,031

Non-cash investing activities										
Decrease in net loans associated with significant disposals reclassified to HFS	\$	—	\$	—	\$	(9,063)	\$	—	\$	(9,063)
Decrease in investments associated with significant disposals reclassified to HFS		—		—		(1,402)		—		(1,402)
Decrease in goodwill and intangible assets associated with significant disposals reclassified to HFS		—		—		(223)		—		(223)
Decrease in deposits with banks with significant disposals reclassified to HFS		—		—		(404)		—		(404)
Transfers to loans held-for-sale from loans		—		—		28,600		—		28,600
Transfers to OREO and other repossessed assets		—		—		276		—		276
Non-cash financing activities										
Decrease in long-term debt associated with significant disposals reclassified to HFS	\$	—	\$	—	\$	(4,673)	\$	—	\$	(4,673)

Condensed Consolidating Statements of Cash Flows

	Year ended December 31, 2014				
<i>In millions of dollars</i>	Citigroup parent company	CGMHI	Other Citigroup subsidiaries and eliminations	Consolidating adjustments	Citigroup consolidated
Net cash provided by (used in) operating activities of continuing operations	\$ 5,940	\$ (10,915)	\$ 51,318	\$ —	\$ 46,343
Cash flows from investing activities of continuing operations					
Purchases of investments	\$ —	\$ (188)	\$ (258,804)	\$ —	\$ (258,992)
Proceeds from sales of investments	41	42	135,741	—	135,824
Proceeds from maturities of investments	155	—	93,962	—	94,117
Change in deposits with banks	—	4,183	36,733	—	40,916
Change in loans	—	—	1,170	—	1,170
Proceeds from sales and securitizations of loans	—	—	4,752	—	4,752
Change in federal funds sold and resales	—	8,832	5,635	—	14,467
Proceeds from significant disposals	—	—	346	—	346
Payments due to transfers of net liabilities associated with significant disposals	—	—	(1,255)	—	(1,255)
Changes in investments and advances—intercompany	(7,986)	3,549	4,437	—	—
Other investing activities	5	(72)	(2,696)	—	(2,763)
Net cash provided by (used in) investing activities of continuing operations	\$ (7,785)	\$ 16,346	\$ 20,021	\$ —	\$ 28,582
Cash flows from financing activities of continuing operations					
Dividends paid	\$ (633)	\$ —	\$ —	\$ —	\$ (633)
Issuance of preferred stock	3,699	—	—	—	3,699
Redemption of preferred stock	—	—	—	—	—
Treasury stock acquired	(1,232)	—	—	—	(1,232)
Proceeds (repayments) from issuance of long-term debt, net	(3,636)	(634)	12,183	—	7,913
Proceeds (repayments) from issuance of long-term debt—intercompany, net	—	1,131	(1,131)	—	—
Change in deposits	—	—	(48,336)	—	(48,336)
Change in federal funds purchased and repos	—	(15,268)	(14,806)	—	(30,074)
Change in short-term borrowings	749	143	(1,991)	—	(1,099)
Net change in short-term borrowings and other advances—intercompany	3,297	1,212	(4,509)	—	—
Capital contributions from parent	—	8,500	(8,500)	—	—
Other financing activities	(507)	—	(1)	—	(508)
Net cash provided by (used in) financing activities of continuing operations	\$ 1,737	\$ (4,916)	\$ (67,091)	\$ —	\$ (70,270)
Effect of exchange rate changes on cash and due from banks	\$ —	\$ —	\$ (2,432)	\$ —	\$ (2,432)
Discontinued operations					
Net cash used in discontinued operations	\$ —	\$ —	\$ —	\$ —	\$ —
Change in cash and due from banks	\$ (108)	\$ 515	\$ 1,816	\$ —	\$ 2,223
Cash and due from banks at beginning of period	233	1,236	28,416	—	29,885
Cash and due from banks at end of period	\$ 125	\$ 1,751	\$ 30,232	\$ —	\$ 32,108
Supplemental disclosure of cash flow information for continuing operations					
Cash paid during the year for income taxes	\$ 235	\$ 353	\$ 4,044	\$ —	\$ 4,632
Cash paid during the year for interest	5,632	2,298	6,071	—	14,001

Non-cash investing activities										
Change in loans due to consolidation/deconsolidation of VIEs	\$	—	\$	—	\$	(374)	\$	—	\$	(374)
Transfers to loans held-for-sale from loans		—		—		15,100		—		15,100
Transfers to OREO and other repossessed assets		—		—		321		—		321
Non-cash financing activities										
Decrease in deposits associated with reclassifications to HFS	\$	—	\$	—	\$	(20,605)	\$	—	\$	(20,605)
Increase in short-term borrowings due to consolidation of VIEs		—		—		500		—		500
Decrease in long-term debt due to deconsolidation of VIEs		—		—		(864)		—		(864)

29. SUBSEQUENT EVENT

In January 2017, Citi signed agreements to effectively exit its U.S. mortgage servicing operations by the end of 2018 and intensify its focus on loan originations. Citi entered into an agreement to sell mortgage servicing rights and related servicing on approximately 780,000 Fannie Mae and Freddie Mac held loans with outstanding balances of approximately \$97 billion. In addition, Citi entered into a subservicing agreement for its remaining Citi-owned loans and certain other mortgage servicing rights. As part of the transactions, Citi will transfer certain employees along with the mortgage servicing rights. These transactions are expected to negatively impact Citi's pre-tax earnings by approximately \$400 million, including a loss on sale and certain related transaction costs, in the first quarter of 2017. When Citi completes the servicing rights sale to the buyer in 2017, Citi's mortgage servicing rights asset is expected to decline by approximately \$1 billion.

Citi's mortgage servicing operations and related mortgage servicing assets were not considered held-for-sale as of December 31, 2016. As of that date, there were no approved purchase agreements and negotiations were still underway.

As such, the assets and liabilities included in the sale were measured on a held and used basis, and no impairment was deemed to exist as of the balance sheet date.

30. SELECTED QUARTERLY FINANCIAL DATA (UNAUDITED)

<i>In millions of dollars, except per share amounts</i>	2016				2015			
	Fourth	Third	Second	First	Fourth	Third	Second	First
Revenues, net of interest expense	\$ 17,012	\$ 17,760	\$ 17,548	\$ 17,555	\$ 18,456	\$ 18,692	\$ 19,470	\$ 19,736
Operating expenses	10,120	10,404	10,369	10,523	11,134	10,669	10,928	10,884
Provisions for credit losses and for benefits and claims	1,792	1,736	1,409	2,045	2,514	1,836	1,648	1,915
Income from continuing operations before income taxes	\$ 5,100	\$ 5,620	\$ 5,770	\$ 4,987	\$ 4,808	\$ 6,187	\$ 6,894	\$ 6,937
Income taxes	1,509	1,733	1,723	1,479	1,403	1,881	2,036	2,120
Income from continuing operations	\$ 3,591	\$ 3,887	\$ 4,047	\$ 3,508	\$ 3,405	\$ 4,306	\$ 4,858	\$ 4,817
Income (loss) from discontinued operations, net of taxes	(3)	(30)	(23)	(2)	(45)	(10)	6	(5)
Net income before attribution of noncontrolling interests	\$ 3,588	\$ 3,857	\$ 4,024	\$ 3,506	\$ 3,360	\$ 4,296	\$ 4,864	\$ 4,812
Noncontrolling interests	15	17	26	5	25	5	18	42
Citigroup's net income	\$ 3,573	\$ 3,840	\$ 3,998	\$ 3,501	\$ 3,335	\$ 4,291	\$ 4,846	\$ 4,770
Earnings per share⁽¹⁾								
Basic								
Income from continuing operations	\$ 1.14	\$ 1.25	\$ 1.25	\$ 1.11	\$ 1.04	\$ 1.36	\$ 1.51	\$ 1.51
Net income	1.14	1.24	1.24	1.10	1.02	1.36	1.52	1.51
Diluted								
Income from continuing operations	1.14	1.25	1.25	1.11	1.03	1.36	1.51	1.51
Net income	1.14	1.24	1.24	1.10	1.02	1.35	1.51	1.51
Common stock price per share								
High	61.09	47.90	47.33	51.13	55.87	60.34	57.39	54.26
Low	47.03	40.78	38.48	34.98	49.88	49.00	51.52	46.95
Close	59.43	47.23	42.39	41.75	51.75	49.61	55.24	51.52
Dividends per share of common stock	0.16	0.16	0.05	0.05	0.05	0.05	0.05	0.01

This Note to the Consolidated Financial Statements is unaudited due to the Company's individual quarterly results not being subject to an audit.

(1) Due to averaging of shares, quarterly earnings per share may not sum to the totals reported for the full year.

[End of Consolidated Financial Statements and Notes to Consolidated Financial Statements]

FINANCIAL DATA SUPPLEMENT

RATIOS

	2016	2015	2014
Citigroup's net income to average assets	0.82%	0.95%	0.39%
Return on average common stockholders' equity ⁽¹⁾	6.6	8.1	3.4
Return on average total stockholders' equity ⁽²⁾	6.5	7.9	3.5
Total average equity to average assets ⁽³⁾	12.6	11.9	11.1
Dividend payout ratio ⁽⁴⁾	8.9	3.0	1.8

- (1) Based on Citigroup's net income less preferred stock dividends as a percentage of average common stockholders' equity.
- (2) Based on Citigroup's net income as a percentage of average total Citigroup stockholders' equity.
- (3) Based on average Citigroup stockholders' equity as a percentage of average assets.
- (4) Dividends declared per common share as a percentage of net income per diluted share.

AVERAGE DEPOSIT LIABILITIES IN OFFICES OUTSIDE THE U.S.⁽¹⁾

<i>In millions of dollars at year end except ratios</i>	2016		2015		2014	
	Average interest rate	Average balance	Average interest rate	Average balance	Average interest rate	Average balance
Banks	0.34%	\$ 36,983	0.44%	\$ 46,664	0.48%	\$ 61,705
Other demand deposits	0.49	278,745	0.48	249,498	0.58	229,880
Other time and savings deposits ⁽²⁾	1.16	189,049	1.19	198,733	1.08	243,630
Total	0.73%	\$ 504,777	0.76%	\$ 494,895	0.80%	\$ 535,215

- (1) Interest rates and amounts include the effects of risk management activities and also reflect the impact of the local interest rates prevailing in certain countries.
- (2) Primarily consists of certificates of deposit and other time deposits in denominations of \$100,000 or more.

MATURITY PROFILE OF TIME DEPOSITS IN U.S. OFFICES

<i>In millions of dollars at December 31, 2016</i>	Under 3 months	Over 3 to 6 months	Over 6 to 12 months	Over 12 months
Over \$100,000				
Certificates of deposit	\$ 9,589	\$ 8,870	\$ 823	\$ 1,075
Other time deposits	5,286	295	19	338
Over \$250,000				
Certificates of deposit	\$ 9,055	\$ 8,534	\$ 381	\$ 786
Other time deposits	5,234	271	4	338

SUPERVISION, REGULATION AND OTHER

SUPERVISION AND REGULATION

Citi is subject to regulation under U.S. federal and state laws, as well as applicable laws in the other jurisdictions in which it does business.

General

Citigroup is a registered bank holding company and financial holding company and is regulated and supervised by the Federal Reserve Board. Citigroup's nationally chartered subsidiary banks, including Citibank, are regulated and supervised by the Office of the Comptroller of the Currency (OCC) and its state-chartered depository institution by the relevant state's banking department and the Federal Deposit Insurance Corporation (FDIC). The FDIC also has examination authority for banking subsidiaries whose deposits it insures. Overseas branches of Citibank are regulated and supervised by the Federal Reserve Board and OCC and overseas subsidiary banks by the Federal Reserve Board. These overseas branches and subsidiary banks are also regulated and supervised by regulatory authorities in the host countries. In addition, the Consumer Financial Protection Bureau (CFPB) regulates consumer financial products and services. Citi is also subject to laws and regulations concerning the collection, use, sharing and disposition of certain customer, employee and other personal and confidential information, including those imposed by the Gramm-Leach-Bliley Act, the Fair Credit Reporting Act and the EU Data Protection Directive. For more information on U.S. and foreign regulation affecting or potentially affecting Citi and its subsidiaries, see "Risk Factors" above.

Other Bank and Bank Holding Company Regulation

Citi, including its banking subsidiaries, is subject to regulatory limitations, including requirements for banks to maintain reserves against deposits, requirements as to risk-based capital and leverage (see "Capital Resources" above and Note 18 to the Consolidated Financial Statements), restrictions on the types and amounts of loans that may be made and the interest that may be charged and limitations on investments that can be made and services that can be offered. The Federal Reserve Board may also expect Citi to commit resources to its subsidiary banks in certain circumstances. Citi is also subject to anti-money laundering and financial transparency laws, including standards for verifying client identification at account opening and obligations to monitor client transactions and report suspicious activities.

Securities and Commodities Regulation

Citi conducts securities underwriting, brokerage and dealing activities in the U.S. through Citigroup Global Markets Inc. (CGMI), its primary broker-dealer, and other broker-dealer subsidiaries, which are subject to regulations of the U.S. Securities and Exchange Commission (SEC), the Financial Industry Regulatory Authority and certain exchanges. Citi conducts similar securities activities outside the U.S., subject to local requirements, through various subsidiaries and affiliates, principally Citigroup Global Markets Limited in

London (CGML), which is regulated principally by the U.K. Financial Conduct Authority, and Citigroup Global Markets Japan Inc. in Tokyo, which is regulated principally by the Financial Services Agency of Japan.

Citi also has subsidiaries that are members of futures exchanges. In the U.S., CGMI is a member of the principal U.S. futures exchanges, and Citi has subsidiaries that are registered as futures commission merchants and commodity pool operators with the Commodity Futures Trading Commission (CFTC). Citibank, CGMI, Citigroup Energy Inc. and CGML, also are registered as swap dealers with the CFTC. CGMI is also subject to SEC and CFTC rules that specify uniform minimum net capital requirements. Compliance with these rules could limit those operations of CGMI that require the intensive use of capital and also limits the ability of broker-dealers to transfer large amounts of capital to parent companies and other affiliates. See also "Capital Resources" and Note 18 to the Consolidated Financial Statements for a further discussion of capital considerations of Citi's non-banking subsidiaries.

Transactions with Affiliates

Transactions between Citi's U.S. subsidiary depository institutions and their non-bank affiliates are regulated by the Federal Reserve Board, and are generally required to be on arm's-length terms. See also "Managing Global Risk—Liquidity Risk" above.

COMPETITION

The financial services industry is highly competitive. Citi's competitors include a variety of financial services and advisory companies. Citi competes for clients and capital (including deposits and funding in the short- and long-term debt markets) with some of these competitors globally and with others on a regional or product basis. Citi's competitive position depends on many factors, including, among others, the value of Citi's brand name, reputation, the types of clients and geographies served, the quality, range, performance, innovation and pricing of products and services, the effectiveness of and access to distribution channels, technology advances, customer service and convenience, effectiveness of transaction execution, interest rates and lending limits and regulatory constraints. Citi's ability to compete effectively also depends upon its ability to attract new employees and retain and motivate existing employees, while managing compensation and other costs. For additional information on competitive factors and uncertainties impacting Citi's businesses, see "Risk Factors—Operational Risks" above.

PROPERTIES

Citi's principal executive offices are currently located at 388 Greenwich Street in New York City and are owned and fully occupied by Citi. Citi also has additional office space at 601 Lexington Avenue in New York City and at 111 Wall Street in New York City under a lease of the entire building. Citibank leases a building in Long Island City, New York.

Citigroup Global Markets Holdings Inc.'s principal offices are located at 388 Greenwich Street and 390

Greenwich Street in New York City, which is also owned and fully occupied by Citi.

Citigroup's principal executive offices in *EMEA* are located at 25 and 33 Canada Square in London's Canary Wharf, with both buildings subject to long-term leases.

In *Asia*, Citi's principal executive offices are in leased premises located at Champion Tower in Hong Kong. Citi has significant leased premises, including in Singapore and Japan. Citi has major or full ownership interests in country headquarter locations in Shanghai, Seoul, Kuala Lumpur, Manila, Mumbai and Hong Kong.

Citi's principal executive offices in Mexico, which also serve as the headquarters of Citibanamex, are located in Mexico City. Citi's principal executive offices for *Latin America* (other than Mexico) are located in leased premises located in Miami.

Citi also owns or leases over 59 million square feet of real estate in 95 countries, consisting of over 8,200 properties.

Citi continues to evaluate its global real estate footprint and space requirements and may determine from time to time that certain of its premises are no longer necessary. There is no assurance that Citi will be able to dispose of any excess premises or that it will not incur charges in connection with such dispositions, which could be material to Citi's operating results in a given period.

Citi has developed programs for its properties to achieve long-term energy efficiency objectives and reduce its greenhouse gas emissions to lessen its impact on climate change. These activities could help to mitigate, but will not eliminate, Citi's potential risk from future climate change regulatory requirements.

For further information concerning leases, see Note 26 to the Consolidated Financial Statements.

DISCLOSURE PURSUANT TO SECTION 219 OF THE IRAN THREAT REDUCTION AND SYRIA HUMAN RIGHTS ACT

Pursuant to Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012 (Section 219), which added Section 13(r) to the Securities Exchange Act of 1934, as amended, Citi is required to disclose in its annual or quarterly reports, as applicable, whether it or any of its affiliates knowingly engaged in certain activities, transactions or dealings relating to Iran or with individuals or entities that are subject to sanctions under U.S. law. Disclosure is generally required even where the activities, transactions or dealings were conducted in compliance with applicable law. Citi has previously disclosed reportable activities pursuant to Section 219 for the second and third quarters of 2016 in its related quarterly reports on Form 10-Q. Citi had no reportable activities pursuant to Section 219 for the first and fourth quarters of 2016.

UNREGISTERED SALES OF EQUITY, PURCHASES OF EQUITY SECURITIES, DIVIDENDS

Unregistered Sales of Equity Securities

None.

Equity Security Repurchases

The following table summarizes Citi's equity security repurchases, which consisted entirely of common stock repurchases, during the three months ended December 31, 2016:

<i>In millions, except per share amounts</i>	Total shares purchased	Average price paid per share	Approximate dollar value of shares that may yet be purchased under the plan or programs
October 2016			
Open market repurchases ⁽¹⁾	19.4	\$ 49.18	\$ 5,150
Employee transactions ⁽²⁾	—	—	N/A
November 2016			
Open market repurchases ⁽¹⁾	27.9	52.85	5,425
Employee transactions ⁽²⁾	—	—	N/A
December 2016			
Open market repurchases ⁽¹⁾	31.3	59.34	3,569
Employee transactions ⁽²⁾	—	—	N/A
Amounts as of December 31, 2016	78.6	\$ 54.53	\$ 3,569

(1) Represents repurchases under the \$10.4 billion 2016 common stock repurchase program (2016 Repurchase Program) that was approved by Citigroup's Board of Directors and announced on June 29, 2016. The 2016 Repurchase Program includes the additional \$1.75 billion increase in the program that was approved by Citigroup's Board of Directors and announced on November 21, 2016. The 2016 Repurchase Program was part of the planned capital actions included by Citi in its 2016 Comprehensive Capital Analysis and Review (CCAR). Shares repurchased under the 2016 Repurchase Program were added to treasury stock.

(2) Consisted of shares added to treasury stock related to (i) certain activity on employee stock option program exercises where the employee delivers existing shares to cover the option exercise, or (ii) under Citi's employee restricted or deferred stock programs where shares are withheld to satisfy tax requirements.

N/A Not Applicable

Dividends

In addition to Board of Directors' approval, Citi's ability to pay common stock dividends substantially depends on regulatory approval, including an annual regulatory review of the results of the CCAR process required by the Federal Reserve Board and the supervisory stress tests required under the Dodd-Frank Act. For additional information regarding Citi's capital planning and stress testing, see "Capital Resources—Current Regulatory Capital Standards—Capital Planning and Stress Testing" and "Risk Factors—Strategic Risks" above. Any dividend on Citi's outstanding common stock would also need to be made in compliance with Citi's obligations to its outstanding preferred stock.

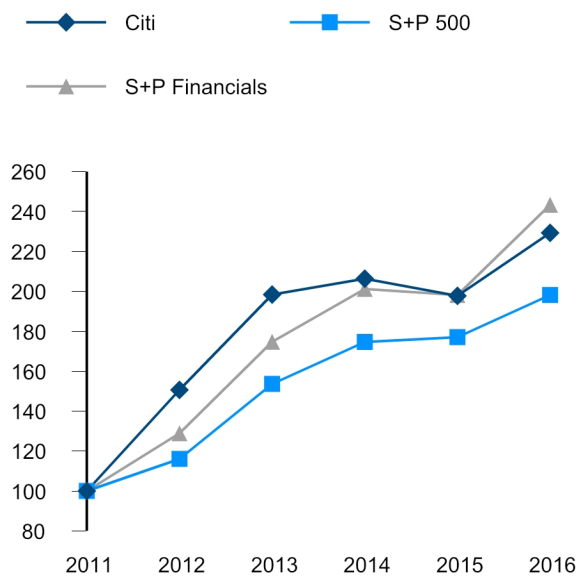
For information on the ability of Citigroup's subsidiary depository institutions to pay dividends, see Note 18 to the Consolidated Financial Statements.

PERFORMANCE GRAPH

Comparison of Five-Year Cumulative Total Return

The following graph and table compare the cumulative total return on Citi's common stock, which is listed on the NYSE under the ticker symbol "C" and held by 77,787 common stockholders of record as of January 31, 2017, with the cumulative total return of the S&P 500 Index and the S&P Financial Index over the five-year period through December 31, 2016. The graph and table assume that \$100 was invested on December 31, 2011 in Citi's common stock, the S&P 500 Index and the S&P Financial Index, and that all dividends were reinvested.

Comparison of Five-Year Cumulative Total Return For the years ended



DATE	CITI	S&P 500	S&P FINANCIALS
31-Dec-2011	100.0	100.0	100.0
31-Dec-2012	150.6	116.0	128.8
31-Dec-2013	198.5	153.6	174.7
31-Dec-2014	206.3	174.6	201.3
31-Dec-2015	197.8	177.0	198.2
31-Dec-2016	229.3	198.2	243.4

CORPORATE INFORMATION

CITIGROUP EXECUTIVE OFFICERS

Citigroup's executive officers as of February 24, 2017 are:

Name	Age	Position and office held
Francisco Aristeguieta	51	CEO, Asia Pacific
Stephen Bird	50	CEO, Global Consumer Banking
Don Callahan	60	Head of Operations and Technology
Michael L. Corbat	56	Chief Executive Officer
James C. Cowles	61	CEO, Europe, Middle East and Africa
Barbara Desoer	64	CEO, Citibank, N.A.
James A. Forese	54	President; CEO, Institutional Clients Group
Jane Fraser	49	CEO, Latin America
John C. Gerspach	63	Chief Financial Officer
Bradford Hu	53	Chief Risk Officer
William J. Mills	61	CEO, North America
J. Michael Murray	52	Head of Human Resources
Jeffrey R. Walsh	59	Controller and Chief Accounting Officer
Rohan Weerasinghe	66	General Counsel and Corporate Secretary

Each executive officer has held executive or management positions with Citigroup for at least five years, except that:

- Ms. Desoer joined Citibank, N.A. as Chief Operating Officer in October 2013 and assumed her current position in April 2014. Prior to joining Citi, Ms. Desoer had a 35-year career at Bank of America, where she was President, Bank of America Home Loans, a Global Technology & Operations Executive, and President, Consumer Products, among other roles.
- Mr. Weerasinghe joined Citi in June 2012. Prior to joining Citi, Mr. Weerasinghe was Senior Partner at Shearman & Sterling.

Code of Conduct, Code of Ethics

Citi has a Code of Conduct that maintains its commitment to the highest standards of conduct. The Code of Conduct is supplemented by a Code of Ethics for Financial Professionals (including accounting, controllers, financial reporting operations, financial planning and analysis, treasury, tax, strategy and M&A, investor relations and regional/product finance professionals and administrative staff) that applies worldwide. The Code of Ethics for Financial Professionals applies to Citi's principal executive officer, principal financial officer and principal accounting officer. Amendments and waivers, if any, to the Code of Ethics for Financial Professionals will be disclosed on Citi's website, www.citigroup.com.

Both the Code of Conduct and the Code of Ethics for Financial Professionals can be found on the Citi website by clicking on "About Us," and then "Corporate Governance." Citi's Corporate Governance Guidelines can also be found there, as well as the charters for the Audit Committee, the Ethics and Culture Committee, the Executive Committee, the Nomination, Governance and Public Affairs Committee, the Operations and Technology Committee, the Personnel and Compensation Committee and the Risk Management Committee of the Board. These materials are also available by writing to Citigroup Inc., Corporate Governance, 601 Lexington Avenue, 19th Floor, New York, New York 10022.

CITIGROUP BOARD OF DIRECTORS

Michael L. Corbat
Chief Executive Officer
Citigroup Inc.

Ellen M. Costello
Former President, CEO,
BMO Financial Corporation, and
U.S. Country Head, BMO Financial
Group

Duncan P. Hennes
Co-Founder and Partner of
Atrevida Partners, LLC

Peter Blair Henry
Dean, New York University
Stern School of Business

Franz B. Humer
Former Chairman
Roche Holding Ltd.

Renee J. James
Operating Executive
The Carlyle Group

Eugene M. McQuade
Former Chief Executive Officer,
Citibank, N.A. and
Former Vice Chairman
Citigroup Inc.

Michael E. O'Neill
Chairman
Citigroup Inc.

Gary M. Reiner
Operating Partner
General Atlantic LLC

Judith Rodin
President
Rockefeller Foundation

Anthony M. Santomero
Former President
Federal Reserve Bank of
Philadelphia

Joan E. Spero
Senior Research Scholar
Columbia University
School of International
and Public Affairs

Diana L. Taylor
Vice Chair
Solera Capital, LLC

William S. Thompson, Jr.
Former Chief Executive Officer
Pacific Investment
Management Company
(PIMCO)

James S. Turley
Former Chairman and CEO
Ernst & Young

Deborah C. Wright
Former Chairman, President and
Chief Executive Officer
Carver Bancorp Inc. and
Carver Federal Savings Bank

Ernesto Zedillo Ponce de Leon
Director, Center for the
Study of Globalization and
Professor in the Field
of International
Economics and Politics,
Yale University

Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on the 24th day of February, 2017.

Citigroup Inc.
(Registrant)

/s/ John C. Gerspach

John C. Gerspach
Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on the 24th day of February, 2017.

Citigroup's Principal Executive Officer and a Director:

/s/ Michael L. Corbat

Michael L. Corbat

Citigroup's Principal Financial Officer:

/s/ John C. Gerspach

John C. Gerspach

Citigroup's Principal Accounting Officer:

/s/ Jeffrey R. Walsh

Jeffrey R. Walsh

The Directors of Citigroup listed below executed a power of attorney appointing John C. Gerspach their attorney-in-fact, empowering him to sign this report on their behalf.

Ellen M. Costello

Duncan P. Hennes

Peter Blair Henry

Franz B. Humer

Renee J. James

Eugene M. McQuade

Michael E. O'Neill

Gary M. Reiner

Judith Rodin

Anthony M. Santomero

Joan E. Spero

Diana L. Taylor

William S. Thompson, Jr.

James S. Turley

Deborah C. Wright

Ernesto Zedillo Ponce de Leon

/s/ John C. Gerspach

John C. Gerspach

EXHIBIT INDEX

Exhibit Number	Description of Exhibit
3.01	Restated Certificate of Incorporation of the Company, as in effect on the date hereof, incorporated by reference to Exhibit 3.01 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2016 (File No. 1-9924).
3.02	By-Laws of the Company, as amended, as in effect on the date hereof, incorporated by reference to the Company's Current Report on Form 8-K filed October 22, 2015 (File No. 001-09924).
4.01	Form of Senior Indenture between the Company and The Bank of New York Mellon, as trustee, incorporated by reference to Exhibit 4.8 to the Company's Registration Statement on Form S-3 filed November 13, 2013 (File No. 333-192302).
4.02	First Supplemental Indenture, dated February 1, 2016, between the Company and The Bank of New York Mellon, as trustee, incorporated by reference to Exhibit 4.01 to the Company's Current Report on Form 8-K filed February 1, 2016 (File No. 001-09924).
4.03	Second Supplemental Indenture, dated December 29, 2016, between the Company and The Bank of New York Mellon, incorporated by reference to Exhibit 4.01 to the Company's Current Report on Form 8-K filed December 29, 2016 (File No. 001-09924).
4.04	Subordinated Debt Indenture, dated as of April 12, 2001, between the Company and The Bank of New York Mellon, as successor to JP Morgan Chase Bank (formerly Bank One Trust Company, N.A.), as trustee, incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-3 filed February 4, 2013 (No. 333-186425).
4.05	First Supplemental Indenture, dated as of August 2, 2004, between the Company and J.P. Morgan Trust Company, N.A. (formerly Bank One Trust Company, N.A.), as trustee, incorporated by reference to Exhibit 4.13 to the Company's Registration Statement on Form S-3/A filed August 31, 2004 (No. 333-117615).
4.06	Second Supplemental Indenture, dated as of May 18, 2016, between the Company and The Bank of New York Mellon, as trustee, incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed May 20, 2016 (File No. 001-09924).
4.07	Indenture, dated as of March 15, 1987, between Primerica Corporation, a New Jersey corporation, and The Bank of New York, as trustee, incorporated by reference to Exhibit 4.01 to the Company's Registration Statement on Form S-3 filed December 8, 1992 (No. 03355542).
4.08	First Supplemental Indenture, dated as of December 15, 1988, among Primerica Corporation, Primerica Holdings, Inc. and The Bank of New York, as trustee, incorporated by reference to Exhibit 4.02 to the Company's Registration Statement on Form S-3 filed December 8, 1992 (No. 03355542).
4.09	Second Supplemental Indenture, dated as of January 31, 1991, between Primerica Holdings, Inc. and The Bank of New York, as trustee, incorporated by reference to Exhibit 4.03 to the Company's Registration Statement on Form S-3 filed December 8, 1992 (No. 03355542).
4.10	Third Supplemental Indenture, dated as of December 9, 1992, among Primerica Holdings, Inc., Primerica Corporation and The Bank of New York, as trustee, incorporated by reference to Exhibit 5 to the Company's Form 8-A dated December 21, 1992, with respect to its 7 3/4% Notes Due June 15, 1999 (No. 001-09924).
4.11	Fourth Supplemental Indenture, dated as of November 2, 1998, between the Company and The Bank of New York, as trustee, incorporated by reference to Exhibit 4.01 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 1998 (No. 001-09924).

4.12		Fifth Supplemental Indenture, dated as of December 9, 2008, between the Company and The Bank of New York Mellon, as trustee, incorporated by reference to Exhibit 4.04 to the Company's Current Report on Form 8-K filed December 11, 2008 (No. 001-09924).
4.13		Sixth Supplemental Indenture, dated as of December 20, 2012, between the Company and The Bank of New York Mellon, as trustee, providing for the issuance of debt securities, incorporated by reference to Exhibit 4.5 to the Company's Current Report on Form 8-K filed December 21, 2012 (No. 001-09924).
4.14		Seventh Supplemental Indenture, dated as of May 18, 2016 between the Company and The Bank of New York Mellon, as trustee, incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed May 20, 2016 (No. 001-09924).
4.15		Senior Debt Indenture, dated as of June 1, 2005, among Citigroup Funding Inc., the Company and The Bank of New York Mellon, as successor trustee to JPMorgan Chase Bank, N.A., incorporated by reference to Exhibit 4(b) to the Company's Registration Statement on Form S-3 filed March 30, 2006 (No. 333-132370-01).
4.16		Second Supplemental Indenture, dated as of December 20, 2012, among Citigroup Funding Inc., the Company and The Bank of New York Mellon, as successor trustee to JPMorgan Chase Bank, N.A., incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed December 21, 2012 (No. 001-09924).
4.17		Indenture, dated as of July 23, 2004, between the Company and JPMorgan Chase Bank, as trustee, incorporated by reference to Exhibit 4.28 to the Company's Registration Statement on Form S-3 filed July 2, 2004 (No. 333-117615).
4.18		Warrant Agreement (relating to Warrants (expiring January 4, 2019)), dated as of January 25, 2011, between the Company and Computershare Inc. and Computershare Trust Company, N.A., as Warrant Agent, incorporated by reference to Exhibit 4.1 to the Company's Form 8-A filed January 26, 2011 (File No. 001-09924).
4.19		Specimen Warrant for 255,033,142 Warrants, incorporated by reference to Exhibit 4.2 to the Company's Form 8-A filed January 26, 2011 (File No. 001-09924).
4.20		Warrant Agreement (relating to Warrants (expiring October 28, 2018)), dated as of January 25, 2011, between the Company and Computershare Inc. and Computershare Trust Company, N.A., as Warrant Agent, incorporated by reference to Exhibit 4.1 to the Company's Form 8-A filed January 26, 2011 (File No. 001-09924).
4.21		Specimen Warrant for 210,084,034 Warrants, incorporated by reference to Exhibit 4.2 to the Company's Form 8-A filed January 26, 2011 (File No. 001-09924).
4.22		Form of Capital Securities Guarantee Agreement between the Company, as Guarantor, and The Bank of New York Mellon, as Guarantee Trustee, incorporated by reference to Exhibit 4.32 to the Company's Registration Statement on Form S-3 filed July 2, 2004 (File No. 333-117615).
4.23		Specimen Physical Common Stock Certificate of the Company, incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed May 9, 2011 (File No. 001-09924).
10.01*		Citi Discretionary Incentive and Retention Award Plan (as Amended and Restated Effective as of January 1, 2015), incorporated by reference to Exhibit 10.01 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014 (File No. 001-09924) (the "Company's 2014 10-K").
10.02.1*		Citigroup 1999 Stock Incentive Plan (as amended and restated effective January 1, 2009), incorporated by reference to Exhibit 10.15 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2008 (File No. 001-09924).
10.02.2*		Citigroup 2009 Stock Incentive Plan (as amended and restated effective April 24, 2013), incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed April 26, 2013 (File No. 001-09924).

10.02.3*	Citigroup 2014 Stock Incentive Plan (as amended and restated effective April 26, 2016), incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-8 filed on May 20, 2016 (File No. 333-211479).
10.03*	Citigroup Inc. Deferred Cash Award Plan (as Amended and Restated Effective as of January 1, 2015), incorporated by reference to Exhibit 10.03 to the Company's 2014 10-K.
10.04.1*	Form of Citigroup Inc. 2013 CAP/DCAP Agreement, incorporated by reference to Exhibit 10.01 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2012 (File No. 001-09924).
10.04.2*	Form of Citigroup Inc. 2014 CAP/DCAP Agreement, incorporated by reference to Exhibit 10.01 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2013 (File No. 001-09924).
10.04.3*	Form of Citigroup Inc. 2015 CAP/DCAP Agreement, incorporated by reference to Exhibit 10.01 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2014 (File No. 001-09924).
10.04.4*	Form of Citigroup Inc. 2016 CAP/DCAP Agreement, incorporated by reference to Exhibit 10.01 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2015 (File No. 001-09924).
10.05*	Form of Citigroup Executive Premium Price Option Agreement, incorporated by reference to Exhibit 99.2 to the Company's Current Report on Form 8-K filed January 21, 2009 (File No. 001-09924).
10.06*	The Amended and Restated 2011 Citigroup Executive Performance Plan (as amended and restated January 1, 2016), incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed April 29, 2016 (File No. 001-09924).
10.07.1*	Form of Citigroup Inc. Performance Share Unit Award Agreement (awards dated February 18, 2014), incorporated by reference to Exhibit 10.01 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2014 (File No. 001-09924).
10.07.2*	Form of Citigroup Inc. Performance Share Unit Award Agreement (awards dated February 18, 2015), incorporated by reference to Exhibit 10.01 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2015 (File No. 001-09924).
10.07.3*	Form of Citigroup Inc. Performance Share Unit Award Agreement (awards dated February 16, 2016 and in future years), incorporated by reference to Exhibit 10.01 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2016 (File No. 001-09924).
10.08*	Citigroup Management Committee Termination Notice and Non-Solicitation Policy, effective October 2, 2006, incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed October 6, 2006 (File No. 001-09924).
10.09.1*	Citicorp Deferred Compensation Plan, effective October 1995, incorporated by reference to Exhibit 10 to Citicorp's Registration Statement on Form S-8 filed February 15, 1996 (File No. 333-00983).
10.09.2*	Amendment to the Citicorp Deferred Compensation Plan, incorporated by reference to Exhibit 10.18.2 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1999 (File No. 001-09924) (the "Company's 1999 10-K").
10.09.3*	Amendment to the Citicorp Deferred Compensation Plan, effective as of September 28, 2001, incorporated by reference to Exhibit 10.17.3 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2001 (File No. 001-09924).
10.09.4*	Nonqualified Plan Amendment to the Citicorp Deferred Compensation Plan, adopted November 19, 2009, incorporated by reference to Exhibit 10.01.5 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2009 (File No. 001-09924) (the "Company's 2009 10-K").

10.10.1*	Supplemental ERISA Compensation Plan of Citibank, N.A. and Affiliates, as amended and restated (the “Citibank Supplemental ERISA Plan”), incorporated by reference to Exhibit 10.(G) to Citicorp’s Annual Report on Form 10-K for the fiscal year ended December 31, 1997 (File No. 001-05378).
10.10.2*	Amendment to the Citibank Supplemental ERISA Plan (the “1999 Amended Citibank Supplemental ERISA Plan”), incorporated by reference to Exhibit 10.21.2 to the Company’s 1999 10-K.
10.10.3*	Amendment to the 1999 Amended Citibank Supplemental ERISA Plan (the “2005 Amended Citibank Supplemental ERISA Plan”), incorporated by reference to Exhibit 10.04.1 to the Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2005 (File No. 001-09924).
10.10.4*	Amendment to the 2005 Amended Citibank Supplemental ERISA Plan, as amended January 1, 2009 (the “2009 Amended Citibank Supplemental ERISA Plan”), incorporated by reference to Exhibit 10.01.4 to the Company’s 2009 10-K.
10.10.5*	Nonqualified Plan Amendment to the 2009 Amended Citibank Supplemental ERISA Plan, approved November 19, 2009, incorporated by reference to Exhibit 10.01.5 to the Company’s 2009 10-K.
10.10.6*	Amendment No. 4 to the 2009 Amended Citibank Supplemental ERISA Plan, approved December 21, 2012, incorporated by reference to Exhibit 10.01.6 to the Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2012 (File No. 001-09924).
10.11*	Citigroup Inc. Omnibus Non-Qualified Plan Amendment effective as of June 2, 2014, incorporated by reference to Exhibit 10.01 to the Company’s Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2014 (File No. 001-09924).
10.12*	Letter Agreement, dated December 21, 2011, between Citigroup Inc. and Michael Corbat, incorporated by reference to Exhibit 10.1 to the Company’s Current Report on Form 8-K filed December 22, 2011 (File No. 001-09924).
10.13.1*	Citigroup Inc. Amended and Restated Compensation Plan for Non-Employee Directors (as of September 21, 2004), incorporated by reference to Exhibit 10.01 to the Company’s Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2005 (File No. 001-09924).
10.13.2*	Form of Citigroup Inc. Non-Employee Director Equity Award Agreement (pursuant to the Amended and Restated Compensation Plan for Non-Employee Directors), incorporated by reference to Exhibit 10.1 to the Company’s Current Report on Form 8-K filed January 14, 2005 (File No. 001-09924).
10.13.3*	Form of Citigroup Inc. Non-Employee Director Equity Award Agreement (effective November 1, 2006), incorporated by reference to Exhibit 10.05 to the Company’s Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2006 (File No. 001-09924).
10.14*	Citigroup Inc. Non-Employee Directors Compensation Plan (effective as of January 1, 2008), incorporated by reference to Exhibit 10.01 to the Company’s Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2007 (File No. 001-09924).
10.15.1*	Employment Agreement dated January 1, 2009, between the Citibank, N.A., Hong Kong Branch, and Stephen Bird, incorporated by reference to Exhibit 10.13 to the Company’s Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2016 (File No. 001-09924).
10.15.2*	Expatriate Localization to U.S. Memorandum, dated December 2, 2016, for Stephen Bird, incorporated by reference to Exhibit 10.1 to the Company’s Report on Form 8-K filed December 2, 2016 (File No. 001-09924).
12.01+	Calculation of Ratio of Income to Fixed Charges.

12.02+		Calculation of Ratio of Income to Fixed Charges Including Preferred Stock Dividends.
21.01+		Subsidiaries of the Company.
23.01+		Consent of KPMG LLP, Independent Registered Public Accounting Firm.
24.01+		Powers of Attorney.
31.01+		Certification of principal executive officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.02+		Certification of principal financial officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.01+		Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
99.01+		List of Securities Registered Pursuant to Section 12(b) of the Securities Exchange Act of 1934.
101.01+		Financial statements from the Annual Report on Form 10-K of the Company for the fiscal year ended December 31, 2016, filed February 24, 2017, formatted in XBRL: (i) the Consolidated Statement of Income, (ii) the Consolidated Balance Sheet, (iii) the Consolidated Statement of Changes in Equity, (iv) the Consolidated Statement of Cash Flows and (v) the Notes to Consolidated Financial Statements.

The total amount of securities authorized pursuant to any instrument defining rights of holders of long-term debt of the Company does not exceed 10% of the total assets of the Company and its consolidated subsidiaries. The Company will furnish copies of any such instrument to the SEC upon request.

Copies of any of the exhibits referred to above will be furnished at a cost of \$0.25 per page (although no charge will be made for the 2016 Annual Report on Form 10-K) to security holders who make a written request to Citigroup Inc., Corporate Governance, 601 Lexington Avenue, 19th Floor, New York, New York 10022.

* Denotes a management contract or compensatory plan or arrangement.

+ Filed herewith.