CITIGROUP INC
Form 10-Q
October 30, 2018

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-Q
QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF
THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended September 30, 2018
Commission file number 1-9924
Citigroup Inc.
(Exact name of registrant as specified in its charter)

Delaware	52-1568099
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
388 Greenwich Street, New York, NY	10013
(Address of principal executive offices)	(Zip code)

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

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 x No o
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes x No o
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and “emerging growth company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer x	Accelerated filer o	Non-accelerated filer o	Smaller reporting company o Emerging growth company o

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. Yes o
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes o No x
Number of shares of Citigroup Inc. common stock outstanding on September 30, 2018: 2,442,136,813

Available on the web at www.citigroup.com

CITIGROUP'S THIRD QUARTER 2018—FORM 10-Q

OVERVIEW

This Quarterly Report on Form 10-Q should be read in conjunction with Citigroup's Annual Report on Form 10-K for the year ended December 31, 2017 (2017 Annual Report on Form 10-K) and Citigroup's Quarterly Reports on Form 10-Q for the quarters ended March 31, 2018 (First Quarter of 2018 Form 10-Q) and June 30, 2018 (Second Quarter of 2018 Form 10-Q).
Additional information about Citigroup is available on Citi's website at www.citigroup.com. Citigroup's annual reports on Form 10-K, quarterly reports on Form 10-Q and 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 and disclosures to conform to the current period's presentation. For additional information on certain recent reclassifications, see Notes 1 and 3 to the Consolidated Financial Statements below and Notes 1 and 3 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.
Throughout this report, "Citigroup," "Citi" and "the Company" refer to Citigroup Inc. and its consolidated subsidiaries.

Citigroup is managed pursuant to two business segments: Global Consumer Banking and Institutional Clients Group, with the remaining operations in Corporate/Other.
The following are the four regions in which Citigroup operates. The regional results are fully reflected in the segment results above.

(1) Latin America GCB consists of Citi's consumer banking business in Mexico.
(2) Asia GCB includes the results of operations of GCB activities in certain EMEA countries for all periods presented.
(3) North America includes the U.S., Canada and Puerto Rico, Latin America includes Mexico and Asia includes Japan.

2

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

EXECUTIVE SUMMARY

Third Quarter of 2018—Solid Operating Results and Continued Momentum
As described further throughout this Executive Summary, Citi reported solid operating results in the third quarter of 2018, reflecting continued momentum across businesses and geographies, including in many of the areas where Citi has been making ongoing investments.
During the third quarter of 2018, Citi had solid revenue growth across treasury and trade solutions, fixed income markets, securities services and the private bank in the Institutional Clients Group (ICG) and in international Global Consumer Banking (GCB), with particular strength in Latin America GCB. Results in the current quarter and prior-year period also reflected the impact of gains on sale of businesses in ICG and Latin America GCB (see "Citigroup" below). During the quarter, Citi continued to demonstrate expense and credit discipline, resulting in positive operating leverage and an improvement in pretax earnings. Citi also had broad-based loan growth in GCB and ICG, as well as deposit growth.
In addition, Citi continued to return capital to its shareholders. In the quarter, Citi returned $6.4 billion in the form of common stock repurchases and dividends. Citi repurchased approximately 75 million common shares during the quarter and over 200 million over the last 12 months, resulting in an 8% reduction in outstanding common shares from the prior-year period. Despite the continued progress in returning capital to shareholders during the quarter, each of Citi's key regulatory capital metrics remained strong (see "Capital" below).
While global economic growth has continued and the macroeconomic environment remains largely positive, there continue to be various economic, political and other risks and uncertainties that could impact Citi's businesses and future results. For a discussion of the risks and uncertainties that could impact Citi's businesses, results of operations and financial condition during the remainder of 2018, see each respective business's results of operations and "Forward-Looking Statements" below, as well as each respective business's results of operations and the "Managing Global Risk" and "Risk Factors" sections in Citi's 2017 Annual Report on Form 10-K.

Third Quarter of 2018 Summary Results

Citigroup
Citigroup reported net income of $4.6 billion, or $1.73 per share, compared to net income of $4.1 billion, or $1.42 per share, in the prior-year period. The 12% increase in net income was primarily driven by a lower effective tax rate due to the impact of the Tax Cuts and Jobs Act (Tax Reform), and also reflected lower expenses and lower cost of credit. Earnings per share increased 22% due to the growth in net income and the 8% reduction in average shares outstanding driven by the common stock repurchases.

Citigroup revenues of $18.4 billion in the third quarter of 2018 were largely unchanged from the prior-year period, primarily reflecting the net impact of a gain on sale (approximately $580 million) of a fixed income analytics business in ICG in the prior-year period and a gain on sale (approximately $250 million) of an asset management business in Latin America GCB in the current quarter as well as the impact of foreign currency translation (which increased reported revenues in the prior-year period by $335 million). Excluding the gains on sale as well as the impact of foreign currency translation in U.S. dollars for reporting purposes (FX translation), revenues increased 4%, driven by growth in ICG (Citi's results of operations excluding the gains on sale as well as the impact of FX translation are non-GAAP financial measures).
Citigroup's end-of-period loans increased 3% to $675 billion versus the prior-year period. Excluding the impact of FX translation, Citigroup's end-of-period loans grew 4%, as 6% aggregate growth in GCB and ICG was partially offset by the continued wind-down of legacy assets in Corporate/Other. Citigroup's end-of-period deposits increased 4% to $1.0 trillion versus the prior-year period. Excluding the impact of FX translation, Citigroup's deposits increased 5%,

primarily driven by 8% growth in ICG deposits.

Expenses

Citigroup operating expenses of $10.3 billion decreased 1% versus the prior-year period, as the impact of higher volume-related expenses and ongoing investments was more than offset by efficiency savings and the wind-down of legacy assets. Year-over-year, GCB operating expenses were up 5% and ICG operating expenses increased 1%, while Corporate/Other operating expenses declined 44%, all versus the prior-year period.

Cost of Credit

Citi's total provisions for credit losses and for benefits and claims of $2.0 billion decreased 1% from the prior-year period. The decrease was primarily driven by lower net loan loss reserve builds in both Citi retail services and Citi-branded cards in North America GCB, partially offset by a net loan loss reserve build in ICG, driven by volume growth.

Net credit losses of $1.8 billion declined 1% versus the prior-year period. Consumer net credit losses of $1.7 billion were largely unchanged from the prior-year period. Corporate net credit losses decreased from $43 million in the prior-year period to $30 million.

For additional information on Citi's consumer and corporate credit costs and allowance for loan losses, see each respective business's results of operations and "Credit Risk" below.

Capital

Citigroup's Common Equity Tier 1 (CET1) Capital and Tier 1 Capital ratios, on a fully implemented basis, were 11.7% and 13.4% as of September 30, 2018, respectively, compared to

13.0% and 14.6% as of September 30, 2017, both based on the Basel III Standardized Approach for determining risk-weighted assets. The decline in regulatory capital ratios reflected the return of capital to common shareholders, the previously disclosed approximate $6 billion reduction in CET1 Capital in the fourth quarter of 2017 due to the impact of Tax Reform as well as an increase in risk-weighted assets, partially offset by net income. Citigroup's Supplementary Leverage ratio as of September 30, 2018, on a fully implemented basis, was 6.5%, compared to 7.1% as of September 30, 2017. For additional information on Citi's capital ratios and related components, including the impact of Tax Reform on its capital ratios, see "Capital Resources" below.

Global Consumer Banking

GCB net income of $1.6 billion increased 34%, driven primarily by lower cost of credit and a lower effective tax rate, as well as the gain on sale in Latin America GCB, partially offset by higher expenses. Operating expenses were $4.7 billion, up 5%, or 6% excluding the impact of FX translation, driven by the timing of investment spending versus the prior-year period.

GCB revenues of $8.7 billion increased 2% versus the prior-year period, and 3% excluding the impact of FX translation, driven primarily by strength in Latin America GCB as well as the gain on sale. North America GCB revenues decreased 1% to $5.1 billion, as higher revenues in Citi retail services were more than offset by lower revenues in Citi-branded cards and retail banking. Citi-branded cards revenues of $2.1 billion were down 3% versus the prior-year period, as growth in interest-earning balances was more than offset by the impact of the previously disclosed Hilton portfolio sale as well as previously disclosed partnership terms. Citi retail services revenues of $1.7 billion increased 2% versus the prior-year period, primarily reflecting organic loan growth and the benefit of the L.L.Bean portfolio acquisition, partially offset by higher partner payments. Retail banking revenues decreased 3% from the prior-year period to $1.3 billion. Excluding mortgage revenues, retail banking revenues of $1.2 billion were up 1% from the prior-year period, driven by continued growth in deposit margins and investments, largely offset by lower episodic transaction activity in commercial banking.

North America GCB average deposits of $180 billion decreased 2% year-over-year, primarily driven by a reduction in money market balances, as clients transferred money to investments. North America GCB average retail loans of $56 billion grew 1% year-over-year and assets under management of $64 billion grew 9%. Average Citi-branded card loans of $88 billion increased 3%, while Citi-branded card purchase sales of $87 billion increased 9% versus the prior-year period. Average Citi retail services loans of $49 billion increased 7% versus the prior-year period, while Citi retail services purchase sales of $22 billion were up 11%. For additional information on the results of operations of North America GCB for the third quarter of 2018, 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 in certain EMEA countries)) increased 8%, versus the prior-year period to $3.5 billion. Excluding the impact of FX translation, international GCB revenues increased 11% versus the prior-year period. On this basis, Latin America GCB revenues increased 26% versus the prior-year period, including the gain on sale. Excluding the gain on sale, Latin America GCB revenues increased 8%, driven by continued volume growth across commercial, mortgage and card loans as well as deposits. Asia GCB revenues increased 1%, as continued growth in deposit, cards and insurance revenues was largely offset by lower investment revenues due to weaker market sentiment. For additional information on the results of operations of Latin America GCB and Asia GCB for the third quarter of 2018, including the impact of FX translation, see "Global Consumer Banking—Latin America GCB" and "Global Consumer Banking—Asia GCB" below.

Year-over-year, international GCB average deposits of $127 billion increased 5%, average retail loans of $90 billion increased 4%, assets under management of $105 billion increased 8%, average card loans of $24 billion increased 2% and card purchase sales of $26 billion increased 7%, all excluding the impact of FX translation.

Institutional Clients Group

ICG net income of $3.1 billion increased 2%, driven primarily by the lower effective tax rate, which more than offset the lower revenues as well as the higher cost of credit and operating expenses. ICG operating expenses increased 1%

to $5.2 billion, driven by an increase in compensation costs, volume-related expenses and investments, partially offset by efficiency savings.

ICG revenues were $9.2 billion in the third quarter of 2018, down 2% from the prior-year period, as a 1% increase in Banking revenues was more than offset by a 5% decrease in Markets and securities services, reflecting the impact of the gain on sale in the prior-year period. Excluding the gain on sale in the prior-year period, revenues increased 4%, driven by growth in both Markets and securities services (up 8%) and Banking (up 1%). The increase in Banking revenues included the impact of $106 million of losses on loan hedges within corporate lending, compared to losses of $48 million in the prior-year period.

Banking revenues of $4.9 billion (excluding the impact of losses on loan hedges within corporate lending) increased 2%, driven by solid growth in treasury and trade solutions, private bank and corporate lending, partially offset by lower revenues in investment banking. Investment banking revenues of $1.2 billion decreased 8% versus the prior-year period, as growth in advisory was more than offset by a decline in both debt and equity underwriting, reflecting lower market activity. Advisory revenues increased 9% to $262 million, equity underwriting revenues decreased 17% to $259 million and debt underwriting revenues decreased 9% to $660 million, all versus the prior-year period.

Treasury and trade solutions revenues of $2.3 billion increased 4% versus the prior-year period, and 8% excluding the impact of FX translation, reflecting continued growth in

transaction volumes, loans and deposits. Private bank revenues increased 7% to $849 million versus the prior-year period, driven by growth in loans and investments, as well as improved deposit spreads. Corporate lending revenues were largely unchanged at $457 million. Excluding the impact of losses on loan hedges, corporate lending revenues increased 11% versus the prior-year period, primarily driven by loan growth and lower hedging costs.
Markets and securities services revenues of $4.5 billion decreased 5% from the prior-year period. Excluding the gain on sale, Markets and securities services increased 8%, driven by revenue growth in both fixed income and equity markets as well as securities services. Fixed income markets revenues of $3.2 billion increased 9% from the prior-year period, with contributions from both rates and currencies as well as spread products. Equity markets revenues of $792 million increased 1% from the prior-year period, as strength in prime finance and derivatives was largely offset by lower revenues in cash equities, reflecting a more challenging trading environment and lower commissions. Securities services revenues of $672 million increased 11%, and 15% excluding the impact of FX translation, driven by continued growth in client volumes and higher net interest revenue. For additional information on the results of operations of ICG for the third quarter of 2018, see "Institutional Clients Group" below.

Corporate/Other
Corporate/Other net loss was $67 million in the third quarter of 2018, compared to a net loss of $83 million in the prior-year period. Operating expenses of $459 million declined 44% from the prior-year period, largely reflecting the wind-down of legacy assets as well as lower infrastructure costs.
Corporate/Other revenues were $494 million, down 5% from the prior-year period, primarily reflecting the continued wind-down of legacy assets.
For additional information on the results of operations of Corporate/Other for the third quarter of 2018, see "Corporate/Other" below.

RESULTS OF OPERATIONS
SUMMARY OF SELECTED FINANCIAL DATA—PAGE 1
Citigroup Inc. and Consolidated Subsidiaries

	Third Quarter			Nine Months		
In millions of dollars, except per-share amounts and ratios	2018	2017	% Change	2018	2017	% Change
Net interest revenue	$11,802	$11,535	2 %	$34,639	$33,748	3 %
Non-interest revenue	6,587	6,884	(4)	21,091	21,192	—
Revenues, net of interest expense	$18,389	$18,419	— %	$55,730	$54,940	1 %
Operating expenses	10,311	10,417	(1)	31,948	31,900	—
Provisions for credit losses and for benefits and claims	1,974	1,999	(1)	5,643	5,378	5
Income from continuing operations before income taxes	$6,104	$6,003	2 %	$18,139	$17,662	3 %
Income taxes[(1)]	1,471	1,866	(21)	4,356	5,524	(21)
Income from continuing operations	$4,633	$4,137	12 %	$13,783	$12,138	14 %
Income (loss) from discontinued operations, net of taxes[(2)]	(8)	(5)	(60)	—	(2)	100
Net income before attribution of noncontrolling interests	$4,625	$4,132	12 %	$13,783	$12,136	14 %
Net income attributable to noncontrolling interests	3	(1)	NM	51	41	24
Citigroup's net income	$4,622	$4,133	12 %	$13,732	$12,095	14 %
Less:						
Preferred dividends—Basic	$270	$272	(1)%	$860	$893	(4)%
Dividends and undistributed earnings allocated to employee restricted and deferred shares that contain nonforfeitable rights to dividends, applicable to basic EPS	51	53	(4)	151	156	(3)
Income allocated to unrestricted common shareholders for basic and diluted EPS	$4,301	$3,808	13 %	$12,721	$11,046	15 %
Earnings per share						
Basic						
Income from continuing operations	$1.74	$1.42	23 %	$5.04	$4.05	24 %
Net income	1.73	1.42	22	5.04	4.05	24
Diluted						
Income from continuing operations	$1.74	$1.42	23 %	$5.04	$4.05	24 %
Net income	1.73	1.42	22	5.04	4.05	24
Dividends declared per common share	0.45	0.32	41	1.09	0.64	70

Table continues on the next page, including footnotes.

SUMMARY OF SELECTED FINANCIAL DATA—PAGE 2
Citigroup Inc. and Consolidated Subsidiaries

	Third Quarter			Nine Months		
In millions of dollars, except per-share amounts, ratios and direct staff	2018	2017	% Change	2018	2017	% Change
At September 30:						
Total assets	$1,925,165	$1,889,133	2 %			
Total deposits	1,005,176	964,038	4			
Long-term debt	235,270	232,673	1			
Citigroup common stockholders' equity[1]	177,969	208,381	(15)			
Total Citigroup stockholders' equity[1]	197,004	227,634	(13)			
Direct staff (in thousands)	206	213	(3)			
Performance metrics						
Return on average assets	0.95 %	0.87 %		0.96 %	0.87 %	
Return on average common stockholders' equity[1][3]	9.6	7.3		9.5	7.2	
Return on average total stockholders' equity[1][3]	9.2	7.2		9.2	7.1	
Efficiency ratio (total operating expenses/total revenues)	56.1	56.6		57.3	58.1	
Basel III ratios—full implementation[1][4]						
Common Equity Tier 1 Capital[5]	11.73 %	12.98 %				
Tier 1 Capital[5]	13.36	14.61				
Total Capital[5]	15.98	16.95				
Supplementary Leverage ratio	6.50	7.11				
Citigroup common stockholders' equity to assets[1]	9.24 %	11.03 %				
Total Citigroup stockholders' equity to assets[1]	10.23	12.05				
Dividend payout ratio[6]	26.0	22.5		21.6 %	15.8 %	
Total payout ratio[7]	147.0	164.6		98.1	96.5	
Book value per common share[1]	$72.88	$78.81	(8)%			
Tangible book value (TBV) per share[1][8]	61.91	68.55	(10)			

(1) The third quarter and nine months of 2018 reflect the impact of Tax Reform. For additional information on Tax Reform, including the impact on Citi's fourth quarter and full-year 2017 results, see Citi's 2017 Annual Report on Form 10-K.

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

(3) 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.

(4) Citi's risk-based capital and leverage ratios as of September 30, 2017 are non-GAAP financial measures, which reflect full implementation of regulatory capital adjustments and deductions prior to the effective date of January 1, 2018.

(5) Citi's reportable Common Equity Tier 1 (CET1) Capital and Tier 1 Capital ratios were the lower derived under the U.S. Basel III Standardized Approach and Citi's reportable Total Capital ratios were derived under the U.S. Basel III Advanced Approaches for both periods presented. This reflects the U.S. Basel III requirement to report the lower of risk-based capital ratios under both the Standardized Approach and Advanced Approaches in accordance with the Collins Amendment of the Dodd-Frank Act.

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

(7) Total common dividends declared plus common stock repurchases as a percentage of net income available to common shareholders. See "Consolidated Statement of Changes in Stockholders' Equity," Note 9 to the Consolidated Financial Statements and "Equity Security Repurchases" below for the component details.

(8)

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

NM Not meaningful

7

SEGMENT AND BUSINESS—INCOME (LOSS) AND REVENUES
CITIGROUP INCOME

In millions of dollars	Third Quarter 2018	Third Quarter 2017	% Change	Nine Months 2018	Nine Months 2017	% Change
Income from continuing operations						
Global Consumer Banking						
North America	$850	$642	32 %	$2,407	$1,913	26 %
Latin America	334	169	98	717	445	61
Asia[1]	383	359	7	1,116	938	19
Total	$1,567	$1,170	34 %	$4,240	$3,296	29 %
Institutional Clients Group						
North America	$870	$1,298	(33)%	$2,755	$3,463	(20)%
EMEA	972	753	29	3,072	2,401	28
Latin America	541	388	39	1,546	1,211	28
Asia	734	623	18	2,310	1,778	30
Total	$3,117	$3,062	2 %	$9,683	$8,853	9 %
Corporate/Other	(51)	(95)	46	(140)	(11)	NM
Income from continuing operations	$4,633	$4,137	12 %	$13,783	$12,138	14 %
Discontinued operations	$(8)	$(5)	(60)%	$—	$(2)	100 %
Net income attributable to noncontrolling interests	3	(1)	NM	51	41	24
Citigroup’s net income	$4,622	$4,133	12 %	$13,732	$12,095	14 %

(1) Asia GCB includes the results of operations of GCB activities in certain EMEA countries for all periods presented.
NM Not meaningful

CITIGROUP REVENUES

In millions of dollars	Third Quarter 2018	Third Quarter 2017	% Change	Nine Months 2018	Nine Months 2017	% Change
Global Consumer Banking						
North America	$5,129	$5,197	(1)%	$15,290	$15,088	1 %
Latin America	1,670	1,388	20	4,398	3,863	14
Asia[1]	1,855	1,885	(2)	5,649	5,438	4
Total	$8,654	$8,470	2 %	$25,337	$24,389	4 %
Institutional Clients Group						
North America	$3,329	$3,709	(10)%	$10,105	$10,877	(7)%
EMEA	2,927	2,703	8	9,137	8,438	8
Latin America	1,055	1,099	(4)	3,427	3,354	2
Asia	1,930	1,919	1	6,111	5,501	11
Total	$9,241	$9,430	(2)%	$28,780	$28,170	2 %
Corporate/Other	494	519	(5)	1,613	2,381	(32)
Total Citigroup net revenues	$18,389	$18,419	— %	$55,730	$54,940	1 %

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

8

SEGMENT BALANCE SHEET[(1)]

In millions of dollars	Global Consumer Banking	Institutional Clients Group	Corporate/Other and consolidating eliminations[(2)]	Citigroup parent company-issued long-term debt and stockholders' equity[(3)]	Total Citigroup consolidated
Assets					
Cash and deposits with banks	$ 10,034	$ 66,084	$ 123,168	$ —	$ 199,286
Federal funds sold and securities borrowed and purchased under agreements to resell	157	280,556	228	—	280,941
Trading account assets	754	249,904	6,844	—	257,502
Investments	1,271	108,942	235,300	—	345,513
Loans, net of unearned income and allowance for loan losses	299,493	347,050	16,030	—	662,573
Other assets	37,605	105,200	36,545	—	179,350
Net inter-segment liquid assets[(4)]	77,370	246,754	(324,124)	—	—
Total assets	$ 426,684	$ 1,404,490	$ 93,991	$ —	$ 1,925,165
Liabilities and equity					
Total deposits	$ 310,689	$ 684,623	$ 9,864	$ —	$ 1,005,176
Federal funds purchased and securities loaned and sold under agreements to repurchase	3,054	172,851	10	—	175,915
Trading account liabilities	141	147,115	396	—	147,652
Short-term borrowings	473	22,798	10,499	—	33,770
Long-term debt[(3)]	1,831	41,351	43,905	148,183	235,270
Other liabilities	19,613	94,913	14,993	—	129,519
Net inter-segment funding (lending)[(3)]	90,883	240,839	13,465	(345,187)	—
Total liabilities	$ 426,684	$ 1,404,490	$ 93,132	$ (197,004)	$ 1,727,302
Total stockholders' equity[(5)]	—	—	859	197,004	197,863
Total liabilities and equity	$ 426,684	$ 1,404,490	$ 93,991	$ —	$ 1,925,165

(1) The supplemental information presented in the table above reflects Citigroup's consolidated GAAP balance sheet by reporting segment as of September 30, 2018. 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 liquid assets (primarily consisting of cash, marketable equity securities, and available-for-sale debt securities) to the various businesses based on Liquidity Coverage Ratio (LCR) assumptions.

(5) Corporate/Other equity represents noncontrolling interests.

9

GLOBAL CONSUMER BANKING

Global Consumer Banking (GCB) consists of consumer banking businesses in North America, Latin America (consisting of Citi's consumer banking business in Mexico) and Asia. 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 and "Managing Global Risk—Consumer Credit" below). GCB is focused on its priority markets in the U.S., Mexico and Asia with 2,417 branches in 19 countries and jurisdictions as of September 30, 2018. At September 30, 2018, GCB had approximately $427 billion in assets and $311 billion in deposits.

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

	Third Quarter			Nine Months		
In millions of dollars except as otherwise noted	2018	2017	% Change	2018	2017	% Change
Net interest revenue	$7,236	$7,071	2 %	$21,235	$20,410	4 %
Non-interest revenue	1,418	1,399	1	4,102	3,979	3
Total revenues, net of interest expense	$8,654	$8,470	2 %	$25,337	$24,389	4 %
Total operating expenses	$4,661	$4,452	5 %	$13,997	$13,440	4 %
Net credit losses	$1,714	$1,704	1 %	$5,176	$4,922	5 %
Credit reserve build (release)	186	486	(62)	484	788	(39)
Provision (release) for unfunded lending commitments	6	(5)	NM	8	—	NM
Provision for benefits and claims	27	28	(4)	75	80	(6)
Provisions for credit losses and for benefits and claims (LLR & PBC)	$1,933	$2,213	(13)%	$5,743	$5,790	(1)%
Income from continuing operations before taxes	$2,060	$1,805	14 %	$5,597	$5,159	8 %
Income taxes	493	635	(22)	1,357	1,863	(27)
Income from continuing operations	$1,567	$1,170	34 %	$4,240	$3,296	29 %
Noncontrolling interests	1	2	(50)	4	7	(43)
Net income	$1,566	$1,168	34 %	$4,236	$3,289	29 %
Balance Sheet data (in billions of dollars)						
Total EOP assets	$427	$419	2 %			
Average assets	424	421	1	$421	$415	1 %
Return on average assets	1.47 %	1.10 %		1.35 %	1.06 %	
Efficiency ratio	54	53		55	55	
Average deposits	$307	$308	—	$307	$306	—
Net credit losses as a percentage of average loans	2.22 %	2.26 %		2.27 %	2.24 %	
Revenue by business						
Retail banking	$3,717	$3,521	6 %	$10,677	$10,024	7 %
Cards[(1)]	4,937	4,949	—	14,660	14,365	2
Total	$8,654	$8,470	2 %	$25,337	$24,389	4 %
Income from continuing operations by business						
Retail banking	$666	$546	22 %	$1,770	$1,298	36 %
Cards[(1)]	901	624	44	2,470	1,998	24
Total	$1,567	$1,170	34 %	$4,240	$3,296	29 %

Table continues on the next page, including footnotes.

Foreign currency (FX) translation impact						
Total revenue—as reported	$8,654	$8,470	2 %	$25,337	$24,389	4 %
Impact of FX translation[2]	—	(106)		—	(11)	
Total revenues—ex-FX[3]	$8,654	$8,364	3 %	$25,337	$24,378	4 %
Total operating expenses—as reported	$4,661	$4,452	5 %	$13,997	$13,440	4 %
Impact of FX translation[2]	—	(53)		—	15	
Total operating expenses—ex-FX[3]	$4,661	$4,399	6 %	$13,997	$13,455	4 %
Total provisions for LLR & PBC—as reported	$1,933	$2,213	(13)%	$5,743	$5,790	(1)%
Impact of FX translation[2]	—	(23)		—	(12)	
Total provisions for LLR & PBC—ex-FX[3]	$1,933	$2,190	(12)%	$5,743	$5,778	(1)%
Net income—as reported	$1,566	$1,168	34 %	$4,236	$3,289	29 %
Impact of FX translation[2]	—	(18)		—	(9)	
Net income—ex-FX[3]	$1,566	$1,150	36 %	$4,236	$3,280	29 %

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

(2) Reflects the impact of FX translation into U.S. dollars at the third quarter of 2018 and year-to-date 2018 average exchange rates for all periods presented.

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

NM Not meaningful

11

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, Best Buy and Macy's) within Citi retail services.

As of September 30, 2018, North America GCB's 692 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 September 30, 2018, North America GCB had approximately 9.0 million retail banking customer accounts, $56.3 billion in retail banking loans and $181.9 billion in deposits. In addition, North America GCB had approximately 120.2 million Citi-branded and Citi retail services credit card accounts with $137.8 billion in outstanding card loan balances, including the newly acquired $1.5 billion L.L.Bean portfolio.

	Third Quarter			Nine Months		
In millions of dollars, except as otherwise noted	2018	2017	% Change	2018	2017	% Change
Net interest revenue	$4,984	$4,825	3 %	$14,514	$14,074	3 %
Non-interest revenue	145	372	(61)	776	1,014	(23)
Total revenues, net of interest expense	$5,129	$5,197	(1)%	$15,290	$15,088	1 %
Total operating expenses	$2,668	$2,482	7 %	$7,979	$7,677	4 %
Net credit losses	$1,242	$1,239	— %	$3,816	$3,610	6 %
Credit reserve build (release)	116	463	(75)	354	716	(51)
Provision (release) for unfunded lending commitments	5	(3)	NM	3	6	(50)
Provision for benefits and claims	5	9	(44)	16	23	(30)
Provisions for credit losses and for benefits and claims	$1,368	$1,708	(20)%	$4,189	$4,355	(4)%
Income from continuing operations before taxes	$1,093	$1,007	9 %	$3,122	$3,056	2 %
Income taxes	243	365	(33)	715	1,143	(37)
Income from continuing operations	$850	$642	32 %	$2,407	$1,913	26 %
Noncontrolling interests	—	—	—	—	—	—
Net income	$850	$642	32 %	$2,407	$1,913	26 %
Balance Sheet data (in billions of dollars)						
Average assets	$249	$250	— %	$247	$246	— %
Return on average assets	1.35 %	1.02 %		1.30 %	1.04 %	
Efficiency ratio	52	48		52	51	
Average deposits	$180.2	$184.1	(2)	$180.3	$184.6	(2)
Net credit losses as a percentage of average loans	2.56 %	2.63 %		2.68 %	2.62 %	
Revenue by business						
Retail banking	$1,329	$1,366	(3)%	$3,984	$3,916	2 %
Citi-branded cards	2,108	2,178	(3)	6,402	6,353	1
Citi retail services	1,692	1,653	2	4,904	4,819	2
Total	$5,129	$5,197	(1)%	$15,290	$15,088	1 %
Income from continuing operations by business						
Retail banking	$131	$169	(22)%	$432	$371	16 %
Citi-branded cards	375	342	10	1,109	890	25
Citi retail services	344	131	NM	866	652	33
Total	$850	$642	32 %	$2,407	$1,913	26 %

NM Not meaningful

12

3Q18 vs. 3Q17
Net income increased 32%, due to lower cost of credit and a lower effective tax rate due to the impact of Tax Reform, partially offset by lower revenues and higher expenses.
Revenues decreased 1%, as higher revenues in Citi retail services were more than offset by lower revenues in Citi-branded cards and retail banking.
Retail banking revenues decreased 3%. Excluding mortgage revenues (decline of 28%), retail banking revenues were up 1%, driven by continued growth in deposit margins and investments, largely offset by lower episodic transaction activity in commercial banking as well as increasing
rate sensitivity. Average deposits decreased 2% year-over-year, primarily driven by a reduction in money market balances, as clients transferred money to investments. Assets under management were up 9%. The decline in mortgage revenues was driven by lower origination activity and higher cost of funds, reflecting the higher interest rate environment.
Cards revenues decreased 1%. In Citi-branded cards, revenues decreased 3%, as growth in interest-earning balances was more than offset by the impact of the Hilton portfolio sale as well as previously disclosed partnership terms that went into effect earlier in 2018. Average loans increased 3% and purchase sales increased 9%.
Citi retail services revenues increased 2%, primarily reflecting organic loan growth and the benefit of the L.L.Bean portfolio acquisition, partially offset by higher partner payments. Average loans increased 7% and purchase sales increased 11%.
Expenses increased 7%, driven by volume growth and
the timing of investment spending versus the prior-year period.
Provisions decreased 20% from the prior-year period, driven by a lower net loan loss reserve build. The net loan loss reserve build in the current quarter was $121 million, primarily due to volume growth in both cards portfolios. This compares to a build of $460 million in the prior-year period, which included $300 million related to an increase in net flow rates in the later delinquency buckets in Citi retail services and a slight increase in delinquencies for the Citi-branded cards portfolio.
Net credit losses were largely unchanged at $1.2 billion, driven by higher net credit losses in Citi-branded cards (up 5% to $644 million) and Citi retail services (up 5% to $566 million), offset by a $56 million decrease in retail banking, driven by episodic charge-offs in the commercial portfolio in the prior-year period. The increase in the cards net credit losses primarily reflected volume growth and seasoning in both portfolios.
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.
As part of its Citi retail services business, Citi issues co-brand and private label credit card products with Sears. As has been widely reported, on October 15, 2018, Sears filed for Chapter 11 bankruptcy protection that includes, among other things, plans to close additional stores. The impact to Citi retail services, including on revenues due to reduced new

account acquisitions or lower purchase sales, will depend, among other things, on the magnitude and timing of the Sears store closures. Citi retail services could also incur additional costs related to customer communications, including to support spending activity on the predominantly general-purpose MasterCard portfolio. Citi does not currently expect the Chapter 11 filing to have an immediate or ongoing material impact on its consolidated results. For additional information, see "Forward-Looking Statements" below and "Risk-Factors—Strategic Risks" in Citi's 2017 Annual Report on Form 10-K.
2018 YTD vs. 2017 YTD
Net income increased 26%, driven by higher revenues, a lower effective tax rate due to the impact of Tax Reform and lower cost of credit, partially offset by higher expenses.
Revenues increased 1%, reflecting higher revenues across retail banking, Citi retail services and Citi-branded cards.
Retail banking revenues increased 2%. Excluding mortgage revenues (decline of 24%), retail banking revenues increased 6%, driven by growth in deposit margins and investments. Cards revenues increased 1%. In Citi-branded cards, revenues increased 1% driven by the same factors described above, as well as the sale of the Hilton portfolio,

which resulted in a gain of approximately $150 million in the first quarter of 2018. This gain was largely offset by the loss of operating revenues from the portfolio. Citi retail services revenues increased 2%, driven by the same factors described above.

Expenses increased 4%, driven by the same factors described above, partially offset by efficiency savings.

Provisions decreased 4%. Net credit losses increased 6%, driven by volume growth and seasoning in both cards portfolios. This increase was more than offset by a 51% decline in the net loan loss reserve build, driven by the same factors described above.

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, one of Mexico's largest banks.

At September 30, 2018, Latin America GCB had 1,463 retail branches in Mexico, with approximately 29.1 million retail banking customer accounts, $21.0 billion in retail banking loans and $30.1 billion in deposits. In addition, the business had approximately 5.7 million Citi-branded card accounts with $5.8 billion in outstanding loan balances.

	Third Quarter			Nine Months		
In millions of dollars, except as otherwise noted	2018	2017	% Change	2018	2017	% Change
Net interest revenue	$1,042	$1,038	— %	$3,052	$2,853	7 %
Non-interest revenue[1]	628	350	79	1,346	1,010	33
Total revenues, net of interest expense	$1,670	$1,388	20 %	$4,398	$3,863	14 %
Total operating expenses	$828	$779	6 %	$2,369	$2,191	8 %
Net credit losses	$307	$295	4 %	$863	$825	5 %
Credit reserve build	31	44	(30)	106	106	—
Provision (release) for unfunded lending commitments	—	(1)	100	1	(2)	NM
Provision for benefits and claims	22	19	16	59	57	4
Provisions for credit losses and for benefits and claims (LLR & PBC)	$360	$357	1 %	$1,029	$986	4 %
Income from continuing operations before taxes	$482	$252	91 %	$1,000	$686	46 %
Income taxes	148	83	78	283	241	17
Income from continuing operations	$334	$169	98 %	$717	$445	61 %
Noncontrolling interests	—	1	(100)	—	4	(100)
Net income	$334	$168	99 %	$717	$441	63 %
Balance Sheet data (in billions of dollars)						
Average assets	$45	$47	(4)%	$44	$45	(2)%
Return on average assets	2.94 %	1.42 %		2.18 %	1.31 %	
Efficiency ratio	50	56		54	57	
Average deposits	$29.4	$28.8	2	$28.9	$27.3	6
Net credit losses as a percentage of average loans	4.63 %	4.37 %		4.44 %	4.39 %	
Revenue by business						
Retail banking	$1,265	$992	28 %	$3,230	$2,781	16 %
Citi-branded cards	405	396	2	1,168	1,082	8
Total	$1,670	$1,388	20 %	$4,398	$3,863	14 %
Income from continuing operations by business						
Retail banking	$279	$129	NM	$572	$310	85 %
Citi-branded cards	55	40	38 %	145	135	7
Total	$334	$169	98 %	$717	$445	61 %

FX translation impact						
Total revenues—as reported	$1,670	$1,388	20 %	$4,398	$3,863	14 %
Impact of FX translation(2)	—	(66)		—	(45)	
Total revenues—ex-FX(3)	$1,670	$1,322	26 %	$4,398	$3,818	15 %
Total operating expenses—as reported	$828	$779	6 %	$2,369	$2,191	8 %
Impact of FX translation(2)	—	(31)		—	(21)	
Total operating expenses—ex-FX(3)	$828	$748	11 %	$2,369	$2,170	9 %
Provisions for LLR & PBC—as reported	$360	$357	1 %	$1,029	$986	4 %
Impact of FX translation(2)	—	(17)		—	(12)	
Provisions for LLR & PBC—ex-FX(3)	$360	$340	6 %	$1,029	$974	6 %
Net income—as reported	$334	$168	99 %	$717	$441	63 %
Impact of FX translation(2)	—	(11)		—	(9)	
Net income—ex-FX(3)	$334	$157	NM	$717	$432	66 %

(1) Third quarter of 2018 includes an approximate $250 million gain on the sale of an asset management business. See Note 2 to the Consolidated Financial Statements.

(2) Reflects the impact of FX translation into U.S. dollars at the third quarter of 2018 and year-to-date 2018 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 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.

3Q18 vs. 3Q17

Net income increased $177 million to $334 million, reflecting higher revenues and a lower effective tax rate as a result of Tax Reform, partially offset by higher expenses and cost of credit.

Revenues increased 26%, including the gain on sale of an asset management business (approximately $250 million). For additional information, see Note 2 to the Consolidated Financial Statements. Excluding the gain on sale, revenues were up 8%, driven by increases in both retail banking and cards.

Retail banking revenues increased 34%. Excluding the gain on sale, retail banking revenues increased 8%, driven by continued growth across commercial and mortgage loans and deposits, as well as improved deposit spreads due to higher interest rates. Average loans grew 4%, average deposits grew 8% and assets under management grew 5%.

Cards revenues increased 7%, due to continued volume growth, reflecting higher purchase sales (up 14%) and full-rate revolving loans. Average cards loans grew 6%.

Expenses increased 11%, driven by volume growth, ongoing investment spending and higher repositioning charges, partially offset by efficiency savings.

Provisions increased 6%, as higher net credit losses were partially offset by a lower net loan loss reserve build. The net credit loss increase primarily reflected an episodic commercial charge-off that was fully offset by a related loan loss reserve release.

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.

2018 YTD vs. 2017 YTD

Year-to-date, Latin America GCB has experienced similar trends to those described above. Net income increased 66%, driven by the same factors described above.

Revenues increased 15%, including the gain on sale in the third quarter of 2018. Excluding the gain on sale, revenues increased 9%, reflecting higher revenues in both retail banking and cards. Retail banking revenues increased 8%, driven by the same factors described above. Cards revenues increased 9%, driven by the same factors described above.
Expenses increased 9%, driven by the same factors described above.
Provisions increased 6%, driven by higher net credit losses and a higher net loan loss reserve build, primarily due to volume growth and seasoning in cards. The increase in net credit losses also reflected the episodic commercial charge-off that was fully offset by a related loan loss reserve release.

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. During the third quarter of 2018, Asia GCB's most significant revenues in Asia were from Singapore, Hong Kong, Korea, India, Australia, Taiwan, Thailand, Philippines, Indonesia 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 Poland, Russia and the United Arab Emirates.

At September 30, 2018, on a combined basis, the businesses had 262 retail branches, approximately 15.9 million retail banking customer accounts, $69.5 billion in retail banking loans and $98.7 billion in deposits. In addition, the businesses had approximately 15.4 million Citi-branded card accounts with $18.6 billion in outstanding loan balances.

In millions of dollars, except as otherwise noted [1]	Third Quarter 2018	Third Quarter 2017	% Change	Nine Months 2018	Nine Months 2017	% Change
Net interest revenue	$1,210	$1,208	— %	$3,669	$3,483	5 %
Non-interest revenue	645	677	(5)	1,980	1,955	1
Total revenues, net of interest expense	$1,855	$1,885	(2)%	$5,649	$5,438	4 %
Total operating expenses	$1,165	$1,191	(2)%	$3,649	$3,572	2 %
Net credit losses	$165	$170	(3)%	$497	$487	2 %
Credit reserve build (release)	39	(21)	NM	24	(34)	NM
Provision (release) for unfunded lending commitments	1	(1)	NM	4	(4)	NM
Provisions for credit losses	$205	$148	39 %	$525	$449	17 %
Income from continuing operations before taxes	$485	$546	(11)%	$1,475	$1,417	4 %
Income taxes	102	187	(45)	359	479	(25)
Income from continuing operations	$383	$359	7 %	$1,116	$938	19 %
Noncontrolling interests	1	1	—	4	3	33
Net income	$382	$358	7 %	$1,112	$935	19 %
Balance Sheet data (in billions of dollars)						
Average assets	$130	$124	5 %	$130	$124	5 %
Return on average assets	1.17 %	1.15 %		1.14 %	1.01 %	
Efficiency ratio	63	63		65	66	
Average deposits	$97.6	$95.2	3	$98.1	$94.1	4
Net credit losses as a percentage of average loans	0.75 %	0.78 %		0.75 %	0.77 %	
Revenue by business						
Retail banking	$1,123	$1,163	(3)%	$3,463	$3,327	4 %
Citi-branded cards	732	722	1	2,186	2,111	4
Total	$1,855	$1,885	(2)%	$5,649	$5,438	4 %
Income from continuing operations by business						
Retail banking	$256	$248	3 %	$766	$617	24 %
Citi-branded cards	127	111	14	350	321	9
Total	$383	$359	7 %	$1,116	$938	19 %

FX translation impact						
Total revenues—as reported	$1,855	$1,885	(2)%	$5,649	$5,438	4 %
Impact of FX translation(2)	—	(40)		—	34	
Total revenues—ex-FX(3)	$1,855	$1,845	1 %	$5,649	$5,472	3 %
Total operating expenses—as reported	$1,165	$1,191	(2)%	$3,649	$3,572	2 %
Impact of FX translation(2)	—	(22)		—	36	
Total operating expenses—ex-FX(3)	$1,165	$1,169	— %	$3,649	$3,608	1 %
Provisions for loan losses—as reported	$205	$148	39 %	$525	$449	17 %
Impact of FX translation(2)	—	(6)		—	—	
Provisions for loan losses—ex-FX(3)	$205	$142	44 %	$525	$449	17 %
Net income—as reported	$382	$358	7 %	$1,112	$935	19 %
Impact of FX translation(2)	—	(7)		—	—	
Net income—ex-FX(3)	$382	$351	9 %	$1,112	$935	19 %

(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 third quarter of 2018 and year-to-date 2018 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.

3Q18 vs. 3Q17
Net income increased 9%, reflecting higher revenues and a lower effective tax rate as a result of Tax Reform, partially offset by higher cost of credit.
Revenues increased 1%, driven by higher cards revenues, partially offset by lower retail banking revenues.
Retail banking revenues decreased 2%, as continued growth in deposit and insurance revenues was more than offset by lower investment revenues due to weaker market sentiment. Investment sales decreased 22%, while assets under management grew 9% and average deposits increased 4%. Retail lending revenues declined 1%, as volume growth in personal and commercial loans was more than offset by lower mortgage revenues due to spread compression. Average loans grew 4%.
Cards revenues increased 4%, driven by continued growth in average loans (up 2%) and purchase sales (up 6%).
Expenses were largely unchanged, as volume-driven growth and ongoing investment spending were offset by efficiency savings.
Provisions increased 44%, primarily driven by a net loan loss reserve build compared to a net loan loss reserve release in the prior-year period. Overall credit quality continued to remain stable in the region.
For additional information on Asia GCB's retail banking, including commercial banking, and its Citi-branded cards portfolios, see "Credit Risk—Consumer Credit" below.

2018 YTD vs. 2017 YTD
Year-to-date, Asia GCB has experienced similar trends to
those described above. Net income increased 19%, due to higher revenues and the lower effective tax rate, partially offset by higher expenses and a higher cost of credit.

Revenues increased 3%, driven by continued momentum in retail banking and cards. Retail banking revenues increased 3%, driven by growth in deposits, partially offset by lower investment and mortgage revenues. Cards revenues were up 3%, driven by the same factors described above.

Expenses increased 1%, as volume-driven growth and ongoing investment spending were partially offset by efficiency savings.

Provisions were up 17%, primarily driven by a net loan loss reserve build compared to a release in the prior-year period and modestly higher net credit losses related to volume growth and seasoning.

INSTITUTIONAL CLIENTS GROUP

Institutional Clients Group (ICG) includes Banking and Markets and securities services (for additional information on these businesses, see “Citigroup Segments” above). 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 with transactional services and clearing, providing brokerage and investment banking services and other such activities. Such fees are recognized at the point in time when Citigroup’s performance under the terms of a contractual arrangement is completed, which is typically at the trade/execution date or closing of a transaction. Revenue generated from these activities is recorded in Commissions and fees and Investment banking. Revenue is also generated from assets under custody and administration, which is recognized as/when the associated promised service is satisfied, which normally occurs at the point in time the service is requested by the customer and provided by Citi. Revenue generated from these activities is primarily recorded in Administration and other fiduciary fees. For additional information on these various types of revenues, see Note 5 to the Consolidated Financial Statements.

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) debt securities, gains and losses on equity securities not held in trading accounts, and other non-recurring gains and losses. Interest income earned on assets held, less interest paid to customers on deposits and long- 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 98 countries and jurisdictions. At September 30, 2018, ICG had approximately $1.4 trillion of assets and $685 billion of deposits, while two of its businesses—securities services and issuer services—managed approximately $18.0 trillion of assets under custody compared to $17.1 trillion at the end of the prior-year period.

In millions of dollars, except as otherwise noted	Third Quarter 2018	Third Quarter 2017	% Change	Nine Months 2018	Nine Months 2017	% Change
Commissions and fees	$1,085	$1,100	(1)%	$3,425	$3,230	6 %
Administration and other fiduciary fees	686	688	—	2,093	1,997	5
Investment banking	1,029	1,163	(12)	3,260	3,516	(7)
Principal transactions	2,447	1,827	34	7,689	6,709	15
Other[(1)]	(18)	704	NM	554	951	(42)
Total non-interest revenue	$5,229	$5,482	(5)%	$17,021	$16,403	4 %
Net interest revenue (including dividends)	4,012	3,948	2	11,759	11,767	—
Total revenues, net of interest expense	$9,241	$9,430	(2)%	$28,780	$28,170	2 %
Total operating expenses	$5,191	$5,138	1 %	$16,152	$15,503	4 %
Net credit losses	$23	$44	(48)%	$127	$140	(9)%
Credit reserve build (release)	7	(38)	NM	(136)	(229)	41
Provision (release) for unfunded lending commitments	41	(170)	NM	64	(193)	NM
Provisions for credit losses	$71	$(164)	NM	$55	$(282)	NM
Income from continuing operations before taxes	$3,979	$4,456	(11)%	$12,573	$12,949	(3)%
Income taxes	862	1,394	(38)	2,890	4,096	(29)
Income from continuing operations	$3,117	$3,062	2 %	$9,683	$8,853	9 %
Noncontrolling interests	(6)	14	NM	21	47	(55)
Net income	$3,123	$3,048	2 %	$9,662	$8,806	10 %
EOP assets (in billions of dollars)	$1,404	$1,370	2 %			
Average assets (in billions of dollars)	1,402	1,369	2	$1,399	$1,349	4 %
Return on average assets	0.88 %	0.88 %		0.92 %	0.87 %	
Efficiency ratio	56	54		56	55	
Revenues by region						
North America	$3,329	$3,709	(10)%	$10,105	$10,877	(7)%
EMEA	2,927	2,703	8	9,137	8,438	8
Latin America	1,055	1,099	(4)	3,427	3,354	2
Asia	1,930	1,919	1	6,111	5,501	11
Total	$9,241	$9,430	(2)%	$28,780	$28,170	2 %
Income from continuing operations by region						
North America	$870	$1,298	(33)%	$2,755	$3,463	(20)%
EMEA	972	753	29	3,072	2,401	28
Latin America	541	388	39	1,546	1,211	28
Asia	734	623	18	2,310	1,778	30
Total	$3,117	$3,062	2 %	$9,683	$8,853	9 %
Average loans by region (in billions of dollars)						
North America	$166	$152	9 %	$164	$149	10 %
EMEA	82	71	15	80	68	18
Latin America	33	34	(3)	33	34	(3)
Asia	65	64	2	67	61	10
Total	$346	$321	8 %	$344	$312	10 %
EOP deposits by business (in billions of dollars)						
Treasury and trade solutions	$470	$428	10 %			
All other ICG businesses	215	212	1			
Total	$685	$640	7 %			

(1) Third quarter of 2017 includes an approximate $580 million gain on the sale of a fixed income analytics business.
NM Not meaningful

ICG Revenue Details—Excluding Gains (Losses) on Loan Hedges

In millions of dollars	Third Quarter 2018	Third Quarter 2017	% Change	Nine Months 2018	Nine Months 2017	% Change
Investment banking revenue details						
Advisory	$262	$240	9 %	$838	$807	4 %
Equity underwriting	259	311	(17)	810	870	(7)
Debt underwriting	660	729	(9)	2,085	2,400	(13)
Total investment banking	$1,181	$1,280	(8)%	$3,733	$4,077	(8)%
Treasury and trade solutions	2,283	2,185	4	6,887	6,399	8
Corporate lending—excluding gains (losses) on loan hedges[1]	563	506	11	1,673	1,425	17
Private bank	849	790	7	2,601	2,332	12
Total banking revenues (ex-gains (losses) on loan hedges)	$4,876	$4,761	2 %	$14,894	$14,233	5 %
Corporate lending—gains (losses) on loan hedges[1]	$(106)	$(48)	NM	$(60)	$(154)	61 %
Total banking revenues (including gains (losses) on loan hedges), net of interest expense	$4,770	$4,713	1 %	$14,834	$14,079	5 %
Fixed income markets	$3,199	$2,936	9 %	$9,693	$9,888	(2)%
Equity markets	792	785	1	2,759	2,312	19
Securities services	672	608	11	1,978	1,754	13
Other[2]	(192)	388	NM	(484)	137	NM
Total markets and securities services revenues, net of interest expense	$4,471	$4,717	(5)%	$13,946	$14,091	(1)%
Total revenues, net of interest expense	$9,241	$9,430	(2)%	$28,780	$28,170	2 %
Commissions and fees	$165	$171	(4)%	$523	$471	11 %
Principal transactions[3]	2,020	1,592	27	6,312	5,887	7
Other	84	130	(35)	388	464	(16)
Total non-interest revenue	$2,269	$1,893	20 %	$7,223	$6,822	6 %
Net interest revenue	930	1,043	(11)	2,470	3,066	(19)
Total fixed income markets	$3,199	$2,936	9 %	$9,693	$9,888	(2)%
Rates and currencies	$2,347	$2,189	7 %	$7,052	$6,973	1 %
Spread products/other fixed income	852	747	14	2,641	2,915	(9)
Total fixed income markets	$3,199	$2,936	9 %	$9,693	$9,888	(2)%
Commissions and fees	$284	$309	(8)%	$953	$958	(1)%
Principal transactions[3]	284	211	35	922	399	NM
Other	(3)	(5)	40	97	(2)	NM
Total non-interest revenue	$565	$515	10 %	$1,972	$1,355	46 %
Net interest revenue	227	270	(16)	787	957	(18)
Total equity markets	$792	$785	1 %	$2,759	$2,312	19 %

(1) Credit derivatives are used to economically hedge a portion of the corporate loan portfolio that includes both accrual loans and loans at fair value. Gains (losses) on loan hedges include the mark-to-market on the credit derivatives and the mark-to-market on the loans in the portfolio that are at fair value. The fixed premium costs of these hedges are netted against the corporate lending revenues to reflect the cost of credit protection. Citigroup's results of operations excluding the impact of gains (losses) on loan hedges are non-GAAP financial measures.

(2) Third quarter of 2017 includes an approximate $580 million gain on the sale of a fixed income analytics business.

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

NM Not meaningful

3Q18 vs. 3Q17
Net income increased 2%, driven primarily by a lower effective tax rate due to Tax Reform, which more than offset lower revenues, higher cost of credit and expenses.

- Revenues decreased 2%, as a 1% increase in Banking revenues was more than offset by a 5% decrease in Markets and securities services, reflecting the impact of

the approximate $580 million gain on sale of a fixed income analytics business in the prior-year period. Excluding the gain on sale in the prior-year period, revenues were up 4%, driven by higher revenues in both Banking and Markets and securities services. The increase in Banking revenues was driven by improved performance in treasury and trade solutions and the private bank, partially offset by a decline in investment banking. Excluding the gain on sale, Markets and securities services revenues increased 8%, driven by higher revenues in fixed income markets and securities services.

Within Banking:

- Investment banking revenues declined 8%, driven by a drop in market wallet across all major products. Advisory revenues increased 9%, reflecting strong performance in North America. Equity underwriting revenues decreased 17%, driven by lower market wallet as well as a decline in market share. Debt underwriting revenues decreased 9%, due to the decline in market wallet despite gaining market share.
- Treasury and trade solutions revenues increased 4%. Excluding the impact of FX translation, revenues increased 8%, reflecting strength in all regions. Revenue growth in the cash business was primarily driven by continued growth in deposit balances and improved deposit spreads, as well as higher transaction volumes from both new and existing clients. Trade revenues were largely unchanged, as loan growth was offset by the tightening of loan spreads and lower episodic fees. Average deposit balances increased 7% (8% excluding the impact of FX translation), with strong growth in deposits across all regions. Average loans increased 3% (4% excluding the impact of FX translation), driven by EMEA and Latin America.
- Corporate lending revenues of $457 million were largely unchanged. Excluding the losses on loan hedges, revenues increased 11%, driven by lower hedging cost and higher loan volumes. Average loans increased 8% versus the prior-year period.
- Private bank revenues increased 7%, driven by North America and EMEA, reflecting higher deposit spreads, an increase in loans and higher managed investments revenues due to strong client activity.

Within Markets and securities services:

- Fixed income markets revenues increased 9%, driven by higher revenues in EMEA and North America. The increase in revenues was largely due to higher non-interest revenue (an increase of 20%) in rates and

currencies as well as spread products and other fixed income, partially offset by lower net interest revenue, mainly reflecting a change in the mix of trading positions in support of client activity as well as higher funding costs, given the higher interest rate environment. The increase in non-interest revenues was driven by higher principal transaction revenues (increase of 27%), primarily in rates and currencies, reflecting higher client activity and facilitation gains. Rates and currencies revenues increased 7%, driven by higher G10 rates and G10 FX revenues in all regions, reflecting strength in corporate client activity, as well as benefiting from a continuation of volatility in the FX markets.
Spread products and other fixed income revenues increased 14%, primarily due to a comparison to a weak prior-year period, particularly in North America and EMEA.
- Equity markets revenues increased 1%, as growth in equity derivatives and prime finance was partially offset by lower cash equities revenues. Equity derivatives and prime finance revenues increased in EMEA, North America and Asia, driven by higher investor client activity and higher client balances. Cash equities revenues decreased across regions, reflecting a more challenging trading environment and lower commissions, as well as comparison to a strong

prior-year period. Principal transactions revenues increased 35%, partially offset by a decrease in net interest revenue, mainly reflecting a change in the mix of trading positions in support of client activity.

- Securities services revenues increased 11%. Excluding the impact of FX translation, revenues increased 15%, reflecting growth in all regions. The increase in revenues was driven by higher fee revenues, reflecting growth in both client volumes and assets under custody, as well as higher net interest revenue driven by higher deposit volume and higher interest rates.

Expenses increased 1%, driven by an increase in compensation costs, volume-related expenses and investments, partially offset by efficiency savings and a benefit from FX translation.

Provisions increased $235 million to $71 million, driven by higher provisions for unfunded lending commitments (up $211 million) and a higher net loan loss reserve build (up $45 million), partially offset by lower net credit losses (down $21 million). The increase in provisions was largely driven by volume-related reserve builds and an absence of a large release in the prior-year period.

2018 YTD vs. 2017 YTD
Net income increased 10%, primarily driven by higher revenues and a lower effective tax rate due to the impact of Tax Reform, partially offset by higher expenses and higher credit costs.

- Revenues increased 2%, driven by a 5% increase in Banking revenues, partially offset by a 1% decrease in Markets and securities services revenues. Excluding the gain on sale in the prior-year period, revenues increased 4%, reflecting higher revenues in both Banking (increase of 5%) and Markets and securities services (increase of 3%).

Within Banking:

- Investment banking revenues declined 8%, due to a decline in market wallet across all major products as well as a particularly strong performance in the prior-year period. Advisory revenues increased 4%, reflecting gains in wallet share despite a decline in the overall market wallet. Equity underwriting revenues declined 7%, driven by the decline in market wallet. Debt underwriting revenues declined 13%, driven by the decline in market wallet as well as a decline in wallet share.
- Treasury and trade solutions revenues increased 8%, reflecting growth across both net interest and fee income, driven by continued growth in deposit and loan volumes, improved deposit spreads and strong fee growth across most cash products.
- Corporate lending revenues increased 27%. Excluding the impact of losses on loan hedges, revenues increased 17%, driven by the same factors described above. Average loans increased 10% versus the prior-year period.
- Private bank revenues increased 12%, driven by strong client activity across all regions. The increase in revenues reflected higher deposit spreads, an increase in loans, higher managed investments revenues and increased capital markets activity.

Within Markets and securities services:

- Fixed income markets revenues decreased 2%, primarily due to lower revenues in North America, Asia and Latin America. Rates and currencies revenues increased 1%, driven by higher G10 FX revenues that benefited from the return of volatility in the FX markets, as well as strong corporate and investor client activity. This increase was partially offset by lower G10 rates revenues due to lower client activity, as well as a comparison to a strong prior-year period, primarily in EMEA. Spread products and other fixed income revenues decreased 9%, primarily in North America, largely due to lower investor client activity, reflecting the more challenging market environment and a comparison to a strong prior-year period.
- Equity markets revenues increased 19%, reflecting strength in Asia, North America and EMEA, due to growth in equity derivatives and prime finance, driven by a more favorable operating environment with higher market volatility and increased investor and corporate client activity, as well as higher client balances.
- Securities services revenues increased 13%, driven by the same factors described above.

Expenses increased 4%, driven by the same factors described above.
Provisions increased $337 million to $55 million, primarily due to volume-related reserve builds for both funded loans and unfunded lending commitments, and a lower loan loss reserve release as compared to the prior-year period.

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 and income taxes, as well as Corporate Treasury, certain North America legacy consumer loan portfolios, other legacy assets and discontinued operations (for additional information on Corporate/Other, see “Citigroup Segments” above). At September 30, 2018, Corporate/Other had $94 billion in assets, down $6 billion year-over-year.

In millions of dollars	Third Quarter 2018	Third Quarter 2017	% Change	Nine Months 2018	Nine Months 2017	% Change
Net interest revenue	$554	$516	7 %	$1,645	$1,571	5 %
Non-interest revenue	(60)	3	NM	(32)	810	NM
Total revenues, net of interest expense	$494	$519	(5)%	$1,613	$2,381	(32)%
Total operating expenses	$459	$827	(44)%	$1,799	$2,957	(39)%
Net credit losses	$19	$29	(34)%	$24	$134	(82)%
Credit reserve build (release)	(43)	(79)	46	(171)	(268)	36
Provision (release) for unfunded lending commitments	(5)	—	—	(6)	3	NM
Provision for benefits and claims	(1)	—	NM	(2)	1	NM
Provisions for credit losses and for benefits and claims	$(30)	$(50)	40 %	$(155)	$(130)	(19)%
Income (loss) from continuing operations before taxes	$65	$(258)	NM	$(31)	$(446)	93 %
Income taxes (benefits)	116	(163)	NM	109	(435)	NM
Income (loss) from continuing operations	$(51)	$(95)	46 %	$(140)	$(11)	NM
Income (loss) from discontinued operations, net of taxes	(8)	(5)	(60)	—	(2)	100 %
Net income (loss) before attribution of noncontrolling interests	$(59)	$(100)	41 %	$(140)	$(13)	NM
Noncontrolling interests	8	(17)	NM	26	(13)	NM
Net income (loss)	$(67)	$(83)	19 %	$(166)	$—	— %

NM Not meaningful

3Q18 vs. 3Q17

The net loss was $67 million, compared to a net loss of $83 million in the prior-year period. The lower net loss was largely driven by lower expenses, partially offset by higher taxes and a lower net loan loss reserve release.

Revenues decreased 5%, driven by the continued wind-down of legacy assets.

Expenses decreased 44%, primarily driven by the wind-down of legacy assets as well as lower infrastructure costs.

Provisions increased $20 million to a net benefit of $30 million, as lower net credit losses were more than offset by a lower net loan loss reserve release. The decline in net credit losses reflected the impact of ongoing divestiture activity, including the impact of the continued wind-down in the legacy North America mortgage portfolio.

2018 YTD vs. 2017 YTD

The net loss was $166 million, compared to $0 net income in the prior-year period, reflecting lower revenues and higher taxes, partially offset by lower expenses and a higher net benefit from credit.

Revenues decreased 32%, primarily driven by the same factors described above.

Expenses decreased 39%, driven by the same factors described above, as well as lower legal costs.

Provisions decreased $25 million to a net benefit of $155 million, driven by lower net credit losses, partially offset by a lower net loan loss reserve release. Net credit losses declined 82% to $24 million, driven by the same factors described above.

OFF-BALANCE SHEET ARRANGEMENTS

The table below shows where a discussion of Citi's various off-balance sheet arrangements in this Form 10-Q may be found. For additional information, see "Off-Balance Sheet Arrangements" and Notes 1, 21 and 26 to the Consolidated Financial Statements in Citigroup's 2017 Annual Report on Form 10-K.

Types of Off-Balance Sheet Arrangements	Disclosures in this Form 10-Q
Variable interests and other obligations, including contingent obligations, arising from variable interests in nonconsolidated VIEs	See Note 18 to the Consolidated Financial Statements.
Letters of credit, and lending and other commitments	See Note 22 to the Consolidated Financial Statements.
Guarantees	See Note 22 to the Consolidated Financial Statements.

24

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 the third quarter of 2018, Citi returned a total of $6.4 billion of capital to common shareholders in the form of share repurchases (approximately 75 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. Based on Citigroup's current regulatory capital requirements, as well as consideration of potential future changes to the U.S. Basel III rules, management currently believes that a targeted Common Equity Tier 1 Capital ratio of approximately 11.5% represents the amount necessary to prudently operate and invest in Citi's franchise, including when considering future growth plans, capital return projections and other factors that may impact Citi's businesses. However, management may revise Citigroup's targeted Common Equity Tier 1 Capital ratio in response to changing regulatory capital requirements as well as other relevant factors. For additional information regarding Citi's capital management, see "Capital Resources—Capital Management" in Citigroup's 2017 Annual Report on Form 10-K.

Stress Testing Component of Capital Planning

Citi is subject to an annual assessment by the Federal Reserve Board as to whether Citigroup 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) and Dodd-Frank Act Stress Testing (DFAST). For additional information regarding the stress testing component of capital planning, see "Forward-Looking Statements" below and "Capital Resources—Current Regulatory Capital Standards—Stress Testing Component of Capital Planning" and "Risk Factors—Strategic Risks"

in Citigroup's 2017 Annual Report on Form 10-K. For additional information regarding a recent proposed rulemaking and other potential changes in Citi's regulatory capital requirements and future CCAR processes, see "Regulatory Capital Standards Developments" in the First Quarter of 2018 Form 10-Q.

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. For additional information regarding the risk-based capital ratios, Tier 1 Leverage ratio and Supplementary Leverage ratio, see "Capital Resources—Current Regulatory Capital Standards" in Citigroup's 2017 Annual Report on Form 10-K.

GSIB Surcharge

The Federal Reserve Board also adopted a rule that imposes a risk-based capital surcharge upon U.S. GSIBs, including Citi. Citi's GSIB surcharge effective for 2018 remains unchanged from 2017 at 3.0%. For additional information regarding the identification of a GSIB and the methodology for annually determining the GSIB surcharge, see "Capital Resources—Current Regulatory Capital Standards—GSIB Surcharge" in Citigroup's 2017 Annual Report on

Form 10-K.

Transition Provisions

The U.S. Basel III rules contain several differing, largely multi-year transition provisions (i.e., “phase-ins” and “phase-outs”). 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 are entirely reflected in Citi’s regulatory capital ratios beginning January 1, 2018. Accordingly, commencing with the first quarter of 2018, Citi is presenting a single set of regulatory capital components and ratios, reflecting current regulatory capital standards in effect throughout 2018. Citi previously disclosed its Basel III risk-based capital and leverage ratios and related components reflecting Basel III Transition Arrangements with respect to regulatory capital adjustments and deductions, as well as Full Implementation, in Citi’s 2017 Annual Report on Form 10-K and Quarterly Reports on Form 10-Q; however, beginning January 1, 2018, that distinction is no longer relevant.

For additional information regarding the transition provisions under the U.S. Basel III rules, including with respect to the GSIB surcharge, see “Capital Resources—

Current Regulatory Capital Standards—Transition Provisions" in Citigroup's 2017 Annual Report on Form 10-K. For information regarding Citigroup's capital resources reflecting Basel III Transition Arrangements as of December 31, 2017, see "Capital Resources—Current Regulatory Capital Standards—Citigroup's Capital Resources Under Current Regulatory Standards" in Citigroup's 2017 Annual Report on Form 10-K.

Citigroup's Capital Resources

Citi is required to maintain stated minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios of 4.5%, 6.0% and 8.0%, respectively.

Citi's effective minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios during 2018, inclusive of the 75% phase-in of both the 2.5% Capital Conservation Buffer and the 3.0% GSIB surcharge (all of which is to be composed of Common Equity Tier 1 Capital), are 8.625%, 10.125% and 12.125%, respectively. Citi's effective minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios during 2017, inclusive of the 50% phase-in of both the 2.5% Capital Conservation Buffer and the 3.0% GSIB surcharge (all of which is to be composed of Common Equity Tier 1 Capital), were 7.25%, 8.75% and 10.75%, respectively.

Citi currently estimates that its effective minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratio requirements during 2019, inclusive of the 2.5% Capital Conservation Buffer and the Countercyclical Capital Buffer at its current level of 0%, as well as a 3.0% GSIB surcharge, may be 10.0%, 11.5% and 13.5%, 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 6.0%, a Total Capital ratio of at least 10.0%, and not be subject to a Federal Reserve Board directive to maintain higher capital levels.

Under the U.S. Basel III rules, Citi must comply with a 4.0% minimum Tier 1 Leverage ratio requirement. Effective January 1, 2018, Citi must also comply with an effective 5.0% minimum Supplementary Leverage ratio requirement.

The following tables set forth the capital tiers, total risk-weighted assets and underlying risk components, risk-based capital ratios, quarterly adjusted average total assets, Total Leverage Exposure and leverage ratios for Citi as of September 30, 2018 and December 31, 2017.

Citigroup Capital Components and Ratios

	September 30, 2018		December 31, 2017	
In millions of dollars, except ratios	Advanced Approaches	Standardized Approach	Advanced Approaches	Standardized Approach
Common Equity Tier 1 Capital	$140,428	$140,428	$142,822	$142,822
Tier 1 Capital	159,877	159,877	162,377	162,377
Total Capital (Tier 1 Capital + Tier 2 Capital)	184,623	196,808	187,877	199,989
Total Risk-Weighted Assets	1,155,188	1,196,923	1,152,644	1,155,099
Credit Risk	$769,942	$1,126,869	$767,102	$1,089,372
Market Risk	68,647	70,054	65,003	65,727
Operational Risk	316,599	—	320,539	—
Common Equity Tier 1 Capital ratio(1)(2)	12.16 %	11.73 %	12.39 %	12.36 %
Tier 1 Capital ratio(1)(2)	13.84	13.36	14.09	14.06
Total Capital ratio(1)(2)	15.98	16.44	16.30	17.31

In millions of dollars, except ratios	September 30, 2018	December 31, 2017
Quarterly Adjusted Average Total Assets(3)	$1,882,493	$1,868,326
Total Leverage Exposure(4)	2,459,993	2,432,491
Tier 1 Leverage ratio(2)	8.49 %	8.69 %
Supplementary Leverage ratio(2)	6.50	6.68

(1)

As of September 30, 2018 and December 31, 2017, Citi's reportable Common Equity Tier 1 Capital and Tier 1 Capital ratios were the lower derived under the Basel III Standardized Approach, whereas the reportable Total Capital ratio was the lower derived under the Basel III Advanced Approaches framework.

(2) Citi's risk-based capital and leverage ratios and related components as of December 31, 2017 are non-GAAP financial measures, which reflect full implementation of regulatory capital adjustments and deductions prior to the effective date of January 1, 2018.

(3) Tier 1 Leverage ratio denominator.

(4) Supplementary Leverage ratio denominator.

As indicated in the table above, Citigroup's risk-based capital ratios at September 30, 2018 were in excess of the stated and effective 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 September 30, 2018.

Common Equity Tier 1 Capital Ratio

Citi's Common Equity Tier 1 Capital ratio was 11.7% at September 30, 2018, compared to 12.1% at June 30, 2018 and 12.4% at December 31, 2017. The ratio decreased from the second quarter of 2018 primarily due to the return of $6.4 billion of capital to common shareholders, increases in credit and market risk-weighted assets, and adverse net movements in Accumulated other comprehensive income (AOCI), partially offset by quarterly net income of $4.6 billion. Citi's Common Equity Tier 1 Capital ratio declined from year-end 2017 primarily due to the return of $12.6 billion of capital to common shareholders, increases in credit and market risk-weighted assets, and adverse net movements in AOCI, partially offset by year-to-date net income of $13.7 billion.

Components of Citigroup Capital

In millions of dollars	September 30, 2018	December 31, 2017
Common Equity Tier 1 Capital		
Citigroup common stockholders' equity[1]	$ 178,153	$ 181,671
Add: Qualifying noncontrolling interests	148	153
Regulatory Capital Adjustments and Deductions:		
Less: Accumulated net unrealized losses on cash flow hedges, net of tax[2]	(1,095)	(698)
Less: Cumulative unrealized net loss related to changes in fair value of financial liabilities attributable to own creditworthiness, net of tax[3]	(503)	(721)
Less: Intangible assets:		
Goodwill, net of related DTLs[4]	21,891	22,052
Identifiable intangible assets other than MSRs, net of related DTLs	4,304	4,401
Less: Defined benefit pension plan net assets	931	896
Less: DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards[5]	12,345	13,072
Total Common Equity Tier 1 Capital (Standardized Approach and Advanced Approaches)	$ 140,428	$ 142,822
Additional Tier 1 Capital		
Qualifying noncumulative perpetual preferred stock[1]	$ 18,851	$ 19,069
Qualifying trust preferred securities[6]	1,382	1,377
Qualifying noncontrolling interests	56	61
Regulatory Capital Deductions:		
Less: Permitted ownership interests in covered funds[7]	795	900
Less: Minimum regulatory capital requirements of insurance underwriting subsidiaries[8]	45	52
Total Additional Tier 1 Capital (Standardized Approach and Advanced Approaches)	$ 19,449	$ 19,555
Total Tier 1 Capital (Common Equity Tier 1 Capital + Additional Tier 1 Capital) (Standardized Approach and Advanced Approaches)	$ 159,877	$ 162,377
Tier 2 Capital		
Qualifying subordinated debt	$ 22,948	$ 23,673
Qualifying trust preferred securities[9]	324	329
Qualifying noncontrolling interests	48	50
Eligible allowance for credit losses[10]	13,656	13,612
Regulatory Capital Deduction:		
Less: Minimum regulatory capital requirements of insurance underwriting subsidiaries[8]	45	52
Total Tier 2 Capital (Standardized Approach)	$ 36,931	$ 37,612
Total Capital (Tier 1 Capital + Tier 2 Capital) (Standardized Approach)	$ 196,808	$ 199,989
Adjustment for excess of eligible credit reserves over expected credit losses[10]	$ (12,185)	$ (12,112)
Total Tier 2 Capital (Advanced Approaches)	$ 24,746	$ 25,500
Total Capital (Tier 1 Capital + Tier 2 Capital) (Advanced Approaches)	$ 184,623	$ 187,877

(1) Issuance costs of $184 million related to noncumulative perpetual preferred stock outstanding at September 30, 2018 and December 31, 2017 are excluded from common stockholders' equity and netted against such 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.

Footnotes continue on the following page.

(5) Of Citi's $23.0 billion of net DTAs at September 30, 2018, $11.4 billion were includable in Common Equity Tier 1 Capital pursuant to the U.S. Basel III rules, while $11.6 billion were excluded. Excluded from Citi's Common Equity Tier 1 Capital as of September 30, 2018 was $12.3 billion of net DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards, which was reduced by $0.7 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 entirely deducted from Common Equity Tier 1 Capital under the U.S. Basel III rules. Commencing on December 31, 2017, Citi's DTAs arising from temporary differences were less than the 10% limitation under the U.S. Basel III rules and therefore not subject to deduction from Common Equity Tier 1 Capital, but are subject to risk-weighting at 250%.

(6) Represents Citigroup Capital XIII trust preferred securities, which are permanently grandfathered as Tier 1 Capital under the U.S. Basel III rules.

(7) Banking entities are required to be in compliance with the Volcker Rule of the Dodd-Frank Act, which 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.

(8) 50% of the minimum regulatory capital requirements of insurance underwriting subsidiaries must be deducted from each of Tier 1 Capital and Tier 2 Capital.

(9) 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.

(10) Under the Standardized Approach, 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, which differs from the Advanced Approaches framework, in which 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. The total amount of eligible credit reserves in excess of expected credit losses that were eligible for inclusion in Tier 2 Capital, subject to limitation, under the Advanced Approaches framework was $1.5 billion at both September 30, 2018 and December 31, 2017.

Citigroup Capital Rollforward

In millions of dollars	Three Months Ended September 30, 2018	Nine Months Ended September 30, 2018
Common Equity Tier 1 Capital, beginning of period	$142,868	$142,822
Net income	4,622	13,732
Common and preferred stock dividends declared	(1,397)	(3,637)
Net increase in treasury stock	(5,265)	(9,369)
Net change in common stock and additional paid-in capital	98	(184)
Net increase in foreign currency translation losses net of hedges, net of tax	(221)	(1,968)
Net increase in unrealized losses on debt securities AFS, net of tax	(605)	(2,164)
Net decrease in defined benefit plans liability adjustment, net of tax	26	415
Net change in adjustment related to changes in fair value of financial liabilities attributable to own creditworthiness, net of tax	54	(59)
Net change in ASC 815—excluded component of fair value hedges	10	(22)
Net change in goodwill, net of related DTLs	(82)	161
Net decrease in identifiable intangible assets other than MSRs, net of related DTLs	157	97
Net increase in defined benefit pension plan net assets	(49)	(35)
Net decrease in DTAs arising from net operating loss, foreign tax credit and general business credit carry-forwards	206	727
Other	6	(88)
Net decrease in Common Equity Tier 1 Capital	$(2,440)	$(2,394)
Common Equity Tier 1 Capital, end of period (Standardized Approach and Advanced Approaches)	$140,428	$140,428
Additional Tier 1 Capital, beginning of period	$19,134	$19,555
Net decrease in qualifying perpetual preferred stock	—	(218)
Net increase in qualifying trust preferred securities	2	5
Net decrease in permitted ownership interests in covered funds	314	105
Other	(1)	2
Net change in Additional Tier 1 Capital	$315	$(106)
Tier 1 Capital, end of period (Standardized Approach and Advanced Approaches)	$159,877	$159,877
Tier 2 Capital, beginning of period (Standardized Approach)	$36,962	$37,612
Net decrease in qualifying subordinated debt	(286)	(725)
Net increase in eligible allowance for credit losses	253	44
Other	2	—
Net decrease in Tier 2 Capital (Standardized Approach)	$(31)	$(681)
Tier 2 Capital, end of period (Standardized Approach)	$36,931	$36,931
Total Capital, end of period (Standardized Approach)	$196,808	$196,808
Tier 2 Capital, beginning of period (Advanced Approaches)	$25,238	$25,500
Net decrease in qualifying subordinated debt	(286)	(725)
Net decrease in excess of eligible credit reserves over expected credit losses	(208)	(29)
Other	2	—
Net decrease in Tier 2 Capital (Advanced Approaches)	$(492)	$(754)
Tier 2 Capital, end of period (Advanced Approaches)	$24,746	$24,746
Total Capital, end of period (Advanced Approaches)	$184,623	$184,623

30

Citigroup Risk-Weighted Assets Rollforward (Basel III Standardized Approach)

In millions of dollars	Three Months Ended September 30, 2018	Nine Months Ended September 30, 2018
Total Risk-Weighted Assets, beginning of period	$1,176,863	$1,155,099
Changes in Credit Risk-Weighted Assets		
Net increase in general credit risk exposures[(1)]	2,730	2,715
Net increase in repo-style transactions[(2)]	3,761	5,621
Net decrease in securitization exposures	(1,078)	(232)
Net increase in equity exposures	1,139	2,679
Net increase in over-the-counter (OTC) derivatives[(3)]	7,489	18,213
Net change in other exposures[(4)]	(321)	1,999
Net increase in off-balance sheet exposures[(5)]	266	6,502
Net increase in Credit Risk-Weighted Assets	$13,986	$37,497
Changes in Market Risk-Weighted Assets		
Net increase in risk levels[(6)]	$5,673	$11,603
Net change due to model and methodology updates[(7)]	401	(7,276)
Net increase in Market Risk-Weighted Assets	$6,074	$4,327
Total Risk-Weighted Assets, end of period	$1,196,923	$1,196,923

(1) General credit risk exposures include cash and balances due from depository institutions, securities, and loans and leases. General credit risk exposures increased during the three and nine months ended September 30, 2018, driven by growth in corporate loans.

(2) Repo-style transactions include repurchase and reverse repurchase transactions as well as securities borrowing and securities lending transactions.

(3) OTC derivatives increased during the three and nine months ended September 30, 2018, primarily due to increased notional amounts for bilateral trades.

(4) Other exposures include cleared transactions, unsettled transactions and other assets. Other exposures increased during the nine months ended September 30, 2018, primarily due to additional DTAs arising from temporary differences, which are subject to risk-weighting at 250%.

(5) Off-balance sheet exposures increased during the nine months ended September 30, 2018, primarily due to an increase in commitments to extend credit that will drive future corporate loan growth.

(6) Risk levels increased during the three months ended September 30, 2018 primarily due to an increase in positions subject to specific risk charges, partially offset by decreases in exposure levels subject to Stressed Value at Risk. Risk levels increased during the nine months ended September 30, 2018 primarily due to an increase in positions subject to specific risk charges.

(7) Risk-weighted assets decreased during the nine months ended September 30, 2018 due to changes in model inputs regarding volatility and the correlation between market risk factors, as well as methodology changes for standard specific risk charges.

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

In millions of dollars	Three Months Ended September 30, 2018	Nine Months Ended September 30, 2018
Total Risk-Weighted Assets, beginning of period	$1,147,865	$1,152,644
Changes in Credit Risk-Weighted Assets		
Net change in retail exposures[1]	2,293	(14,218)
Net change in wholesale exposures[2]	(2,519)	5,756
Net increase in repo-style transactions[3]	98	1,394
Net change in securitization exposures	(637)	387
Net increase in equity exposures	1,320	2,878
Net change in over-the-counter (OTC) derivatives[4]	(189)	1,754
Net change in derivatives CVA[5]	(1,415)	1,783
Net increase in other exposures[6]	1,594	3,046
Net increase in supervisory 6% multiplier[7]	118	60
Net increase in Credit Risk-Weighted Assets	$663	$2,840
Changes in Market Risk-Weighted Assets		
Net increase in risk levels[8]	$5,159	$10,920
Net change due to model and methodology updates[9]	401	(7,276)
Net increase in Market Risk-Weighted Assets	$5,560	$3,644
Net change in Operational Risk-Weighted Assets[10]	$1,100	$(3,940)
Total Risk-Weighted Assets, end of period	$1,155,188	$1,155,188

(1) Retail exposures increased during the three months ended September 30, 2018, primarily due to new accounts and spending for qualifying revolving (cards) exposures. Retail exposures decreased during the nine months ended September 30, 2018, primarily due to net reductions in qualifying revolving (cards) exposures attributable to seasonal holiday spending repayments, as well as residential mortgage loan sales and repayments.

(2) Wholesale exposures decreased during the three months ended September 30, 2018 primarily due to decreases in commercial loans. Wholesale exposures increased during the nine months ended September 30, 2018, primarily due to increases in commercial loans and loan commitments.

(3) Repo-style transactions include repurchase and reverse repurchase transactions as well as securities borrowing and securities lending transactions.

(4) OTC derivatives increased during the nine months ended September 30, 2018, primarily due to increases in potential future exposure and fair value.

(5) Derivatives CVA decreased during the three months ended September 30, 2018, primarily due to decreases in exposures. Derivatives CVA increased during the nine months ended September 30, 2018, primarily due to increased exposures and changes in credit spreads.

(6) Other exposures include cleared transactions, unsettled transactions, assets other than those reportable in specific exposure categories and non-material portfolios. Other exposures increased during the three months ended September 30, 2018, primarily due to an increase in other assets. Other exposures increased during the nine months ended September 30, 2018, primarily due to an increase in other assets and additional DTAs arising from temporary differences, which are subject to risk-weighting at 250%.

(7) Supervisory 6% multiplier does not apply to derivatives CVA.

(8) Risk levels increased during the three months ended September 30, 2018 primarily due to an increase in positions subject to specific risk charges, partially offset by decreases in exposure levels subject to Stressed Value at Risk. Risk levels increased during the nine months ended September 30, 2018 primarily due to an increase in positions subject to specific risk charges.

(9) Risk-weighted assets decreased during the nine months ended September 30, 2018 due to changes in model inputs regarding volatility and the correlation between market risk factors, as well as methodology changes for standard specific risk charges.

(10) Operational risk-weighted assets increased during the three months ended September 30, 2018, and decreased during the nine months ended September 30, 2018, primarily due to changes in operational loss severity and frequency.

As set forth in the table above, total risk-weighted assets under the Basel III Standardized Approach increased from year-end 2017 due to higher credit and market risk-weighted assets. The increase in credit risk-weighted assets was primarily due to increased OTC derivatives, corporate loan commitments and an increase in repo-style transactions. Total risk-weighted assets under the Basel III Advanced Approaches increased from year-end 2017, as higher credit and market risk-weighted assets were partially offset by a decrease in operational risk-weighted assets. The increase in credit risk-weighted assets was primarily due to increases in commercial loans and loan commitments, increases in equity exposures, and additional temporary difference DTAs subject to risk weighting, partially offset

by a decline in retail exposures due to reductions in qualifying revolving (cards) exposures attributable to seasonal holiday spending repayments as well as residential mortgage loan sales and repayments. The decline in operational risk-weighted assets was primarily due to changes in operational loss severity and frequency.
Market risk-weighted assets increased under both the Basel III Standardized Approach and Basel III Advanced Approaches primarily due to increases in positions subject to specific risk charges, partially offset by changes in model inputs regarding volatility and the correlation between market risk factors, as well as methodology changes for standard specific risk charges.

Supplementary Leverage Ratio

As set forth in the table below, Citigroup's Supplementary Leverage ratio was 6.5% for the third quarter of 2018, compared to 6.6% for the second quarter of 2018 and 6.7% for the fourth quarter of 2017. The decline in the ratio quarter-over-quarter was principally driven by the return of $6.4 billion of capital to common shareholders as well as adverse net movements in AOCI, partially offset by quarterly net income of $4.6 billion. The ratio decreased from the fourth quarter of 2017, principally driven by the return of capital to common shareholders, adverse net

movements in AOCI and an increase in Total Leverage Exposure (TLE) primarily due to growth in average on-balance sheet assets and off-balance sheet commitments, partially offset by year-to-date net income.

The following table sets forth Citi's Supplementary Leverage ratio and related components for the three months ended September 30, 2018 and December 31, 2017.

Citigroup Basel III Supplementary Leverage Ratio and Related Components

In millions of dollars, except ratios	September 30, 2018	December 31, 2017
Tier 1 Capital	$159,877	$162,377
Total Leverage Exposure (TLE)		
On-balance sheet assets[1]	$1,922,804	$1,909,699
Certain off-balance sheet exposures:[2]		
Potential future exposure on derivative contracts	191,557	191,555
Effective notional of sold credit derivatives, net[3]	48,047	59,207
Counterparty credit risk for repo-style transactions[4]	22,732	27,005
Unconditionally cancellable commitments	69,794	67,644
Other off-balance sheet exposures	245,370	218,754
Total of certain off-balance sheet exposures	$577,500	$564,165
Less: Tier 1 Capital deductions	40,311	41,373
Total Leverage Exposure	$2,459,993	$2,432,491
Supplementary Leverage ratio	6.50 %	6.68 %

(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 and reverse repurchase transactions as well as securities borrowing and securities lending transactions.

Capital Resources of Citigroup's Subsidiary U.S. Depository Institutions
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 2018, Citi's primary subsidiary U.S. depository institution, Citibank, N.A. (Citibank), is subject to effective minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios, inclusive of the 75% phase-in of the 2.5% Capital Conservation Buffer, of 6.375%, 7.875% and 9.875%, respectively. Citibank's effective minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios during 2017, inclusive of the 50% phase-in of

the 2.5% Capital Conservation Buffer, were 5.75%, 7.25% and 9.25%, respectively. Citibank is required to maintain stated minimum Common Equity Tier 1 Capital, Tier 1 Capital and Total Capital ratios of 4.5%, 6.0% and 8.0%, respectively.
The following tables set forth the capital tiers, total risk-weighted assets and underlying risk components, risk-based capital ratios, quarterly adjusted average total assets, Total Leverage Exposure and leverage ratios for Citibank, Citi's primary subsidiary U.S. depository institution, as of September 30, 2018 and December 31, 2017.

Citibank Capital Components and Ratios

In millions of dollars, except ratios	September 30, 2018 Advanced Approaches	September 30, 2018 Standardized Approach	December 31, 2017 Advanced Approaches	December 31, 2017 Standardized Approach
Common Equity Tier 1 Capital	$128,097	$128,097	$122,848	$122,848
Tier 1 Capital	130,222	130,222	124,952	124,952
Total Capital (Tier 1 Capital + Tier 2 Capital)(1)	143,471	154,081	138,008	148,946
Total Risk-Weighted Assets	946,235	1,043,721	965,435	1,024,502
Credit Risk	$667,549	$1,007,205	$674,659	$980,324
Market Risk	36,141	36,516	43,300	44,178
Operational Risk	242,545	—	247,476	—
Common Equity Tier 1 Capital ratio(2)(3)(4)	13.54 %	12.27 %	12.72 %	11.99 %
Tier 1 Capital ratio(2)(3)(4)	13.76	12.48	12.94	12.20
Total Capital ratio(2)(3)(4)	15.16	14.76	14.29	14.54

In millions of dollars, except ratios	September 30, 2018	December 31, 2017
Quarterly Adjusted Average Total Assets(5)	$1,396,471	$1,401,187
Total Leverage Exposure(6)	1,920,675	1,900,641
Tier 1 Leverage ratio(2)(4)	9.33 %	8.92 %
Supplementary Leverage ratio(2)(4)	6.78	6.57

(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 that 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) Citibank's risk-based capital and leverage ratios and related components as of December 31, 2017 are non-GAAP financial measures, which reflect full implementation of regulatory capital adjustments and deductions prior to the effective date of January 1, 2018.

(3) As of September 30, 2018, 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. As of December 31, 2017, Citibank's reportable Common Equity Tier 1 Capital and Tier 1 Capital ratios were the lower derived under the Basel III Standardized Approach, whereas the reportable Total Capital ratio was the lower derived under the Basel III Advanced Approaches framework.

(4) Citibank must maintain minimum Common Equity Tier 1 Capital, Tier 1 Capital, Total Capital and Tier 1 Leverage ratios of 6.5%, 8.0%, 10.0% and 5.0%, respectively, to be considered “well capitalized” under the revised Prompt Corrective Action (PCA) regulations applicable to insured depository institutions as established by the U.S. Basel III rules. Effective January 1, 2018, Citibank must also maintain a minimum Supplementary Leverage ratio of 6.0% to be considered “well capitalized.” For additional information, see “Capital Resources—Current Regulatory Capital Standards—Prompt Corrective Action Framework” in Citigroup’s 2017 Annual Report on Form 10-K.
(5) Tier 1 Leverage ratio denominator.
(6) Supplementary Leverage ratio denominator.

As indicated in the table above, Citibank’s capital ratios at September 30, 2018 were in excess of the stated and effective minimum requirements under the U.S.

Basel III rules. In addition, Citibank was also “well capitalized” as of September 30, 2018 under the revised PCA regulations.

Impact of Changes on Citigroup and Citibank Capital Ratios

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 and quarterly adjusted average total assets, as well as Total Leverage Exposure (denominator), as of September 30, 2018. 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

	Common Equity Tier 1 Capital ratio		Tier 1 Capital ratio		Total Capital ratio	
In basis points	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
Citigroup						
Advanced Approaches	0.9	1.1	0.9	1.2	0.9	1.4
Standardized Approach	0.8	1.0	0.8	1.1	0.8	1.4
Citibank						
Advanced Approaches	1.1	1.4	1.1	1.5	1.1	1.6
Standardized Approach	1.0	1.2	1.0	1.2	1.0	1.4

Impact of Changes on Citigroup and Citibank Leverage Ratios

	Tier 1 Leverage ratio		Supplementary Leverage ratio	
In basis points	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
Citigroup	0.5	0.5	0.4	0.3
Citibank	0.7	0.7	0.5	0.4

Citigroup Broker-Dealer Subsidiaries

At September 30, 2018, 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 $10.5 billion, which exceeded the minimum requirement by $8.1 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 $20.9 billion at September 30, 2018, 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 regulatory capital requirements at September 30, 2018.

35

Regulatory Capital Standards Developments

Leverage Ratio Treatment of Client Cleared Derivatives

In October 2018, the Basel Committee on Banking Supervision (Basel Committee) issued a consultative document seeking views as to whether a targeted and limited revision of the leverage ratio exposure measure is warranted with regard to the treatment of client cleared derivatives. In the U.S., the Basel Committee's leverage ratio framework and leverage ratio exposure measure are most closely aligned with the Supplementary Leverage Ratio and Total Leverage Exposure, respectively. Under the Basel Committee's leverage ratio framework, which was last updated in December 2017, the leverage ratio exposure measure is generally not adjusted for physical or financial collateral, guarantees or other credit risk mitigation techniques. However, the Basel Committee consultative document proposes two alternative treatments for client cleared derivatives that would reduce the leverage ratio exposure measure, to varying degrees, in recognition of the beneficial effects of margin requirements and overcollateralization, as applicable.

One of the options under consideration would allow amounts of cash and non-cash initial margin that are received from the client to offset the potential future exposure of derivatives centrally cleared on the client's behalf. Another option would amend the currently specified treatment of client cleared derivatives to align it with the measurement as determined per the Basel Committee's standardized approach for measuring counterparty credit risk exposures, as used for risk-based capital requirements. This option would permit both cash and non-cash forms of initial margin and variation margin received from the client to offset replacement cost and potential future exposure for client cleared derivatives only.

The U.S. banking agencies may revise the treatment of client cleared derivatives under the Supplementary Leverage Ratio in the future, based upon any revisions adopted by the Basel Committee.

Tangible Common Equity, Book Value Per Share, Tangible Book Value Per Share and Returns on Equity
Tangible common equity (TCE), as defined by Citi, represents common stockholders' equity less goodwill and identifiable 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.

In millions of dollars or shares, except per share amounts	September 30, 2018	December 31, 2017
Total Citigroup stockholders' equity	$ 197,004	$ 200,740
Less: Preferred stock	19,035	19,253
Common stockholders' equity	$ 177,969	$ 181,487
Less:		
Goodwill	22,187	22,256
Identifiable intangible assets (other than MSRs)	4,598	4,588
Goodwill and identifiable intangible assets (other than MSRs) related to assets held-for-sale (HFS)	—	32
Tangible common equity (TCE)	$ 151,184	$ 154,611
Common shares outstanding (CSO)	2,442.1	2,569.9
Book value per share (common equity/CSO)	$ 72.88	$ 70.62
Tangible book value per share (TCE/CSO)	61.91	60.16

In millions of dollars	Three Months Ended September 30, 2018	Three Months Ended September 30, 2017	Nine Months Ended September 30, 2018	Nine Months Ended September 30, 2017
Net income available to common shareholders	$4,352	$3,861	$12,872	$11,202
Average common stockholders' equity[1]	$179,459	$209,764	$180,772	$208,787
Average TCE	$152,712	$182,333	$153,909	$181,271
Return on average common stockholders' equity	9.6 %	7.3 %	9.5 %	7.2 %
Return on average TCE (ROTCE)[2]	11.3	8.4	11.2	8.3

(1) Average common stockholders' equity for the 2018 periods includes the $22.6 billion impact from Tax Reform recorded at the end of the fourth quarter of 2017.
(2) ROTCE represents annualized net income available to common shareholders as a percentage of average TCE.

Managing Global Risk Table of Contents

(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

For Citi, effective risk management is of primary importance to its overall operations. Accordingly, Citi's risk management process has been designed to identify, 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.
For more information on Citi's management of global risk, including its three lines of defense, see "Managing Global Risk" in Citi's 2017 Annual Report on Form 10-K.

CREDIT RISK

For additional information on credit risk, including Citi's credit risk management, measurement and stress testing, see "Credit Risk" and "Risk Factors" in Citi's 2017 Annual Report on Form 10-K.

CONSUMER CREDIT

Citi provides traditional retail banking, including commercial banking, and credit card products in 19 countries and jurisdictions through North America GCB, Latin America GCB and Asia GCB. The retail banking products include consumer mortgages, home equity, personal and 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 "Global Consumer Banking" above, GCB's overall strategy is to leverage Citi's global footprint and be the pre-eminent bank for the affluent and emerging affluent consumers in large urban centers. In credit cards and in certain retail markets (including commercial banking), Citi serves customers in a somewhat broader set of segments and geographies. GCB's commercial banking business primarily focuses on small to mid-size businesses and also serves larger middle market companies in certain regions.

Consumer Credit Portfolio

The following table shows Citi's quarterly end-of-period consumer loans:[1]

In billions of dollars	3Q'17	4Q'17	1Q'18	2Q'18	3Q'18
Retail banking:					
Mortgages	$81.4	$81.7	$82.1	$80.5	$80.9
Commercial banking	35.5	36.3	36.8	36.5	37.2
Personal and other	27.3	27.9	28.5	28.1	28.7
Total retail banking	$144.2	$145.9	$147.4	$145.1	$146.8
Cards:					
Citi-branded cards	$110.7	$115.7	$110.6	$112.3	$112.8
Citi retail services	45.9	49.2	46.0	48.6	49.4
Total cards	$156.6	$164.9	$156.6	$160.9	$162.2
Total GCB	$300.8	$310.8	$304.0	$306.0	$309.0
GCB regional distribution:					
North America	62%	63%	61%	63%	62%
Latin America	9	8	9	8	9
Asia[2]	29	29	30	29	29
Total GCB	100%	100%	100%	100%	100%

Corporate/Other[3]	$24.8	$22.9	$21.1	$17.6	$16.5
Total consumer loans	$325.6	$333.7	$325.1	$323.6	$325.5

(1) End-of-period loans include interest and fees on credit cards.
(2) Asia includes loans and leases in certain EMEA countries for all periods presented.
(3) Primarily consists of legacy assets, principally North America consumer mortgages.

39

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.

Global Consumer Banking

North America GCB

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 "North America GCB" above).

As of September 30, 2018, approximately 71% of North America GCB consumer loans consisted of Citi-branded and Citi retail services cards, which generally drives the overall credit performance of North America GCB (for additional information on North America GCB's cards portfolios, including delinquency and net credit loss rates, see "Credit Card Trends" below).

As shown in the chart above, the quarter-over-quarter net credit loss rate decreased while the 90+ days past due delinquency rate slightly increased, primarily driven by seasonality in both cards portfolios. The year-over-year net credit loss rate decreased due to an episodic charge-off in the commercial portfolio in the prior-year period, while the delinquency rate was broadly stable.

Latin America GCB

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, the 90+ days past due delinquency rate decreased quarter-over-quarter and year-over-year, primarily due to improvements in mortgages and the commercial portfolio. The quarter-over-quarter and year-over year net credit loss rate increased, primarily driven by an episodic charge-off in the commercial portfolio, which was offset by a related loan loss reserve release.

Asia[1] GCB

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

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, the 90+ days past due delinquency and net credit loss rates were broadly stable in Asia GCB quarter-over-quarter and year-over-year as of the third quarter of 2018. 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 portfolio credit quality.

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 13 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, North America Citi-branded cards and Citi retail services portfolios as well as for Latin America and Asia Citi-branded cards portfolios.

Global Cards

North America Citi-Branded Cards

North America GCB's Citi-branded cards portfolio issues proprietary and co-branded cards. As shown in the chart above, quarter-over-quarter the 90+ days past due delinquency rate was stable while the net credit loss rate decreased primarily due to seasonality. The year-over-year increases in both the delinquency and net credit loss rates were driven primarily by portfolio seasoning.

North America Citi Retail Services

Citi retail services partners directly with more than 20 retailers and dealers to offer private-label and co-branded consumer and commercial cards. Citi retail services' target market is focused on select industry segments such as home improvement, 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.

As shown in the chart above, Citi retail services' 90+ days past due delinquency rate increased quarter-over-quarter, mainly due to seasonality, while the net credit loss rate decreased, primarily due to seasonality and the impact of recently acquired portfolios. The year-over-year net credit loss rate decrease was primarily driven by the impact of recently acquired portfolios.

Latin America Citi-Branded Cards

Latin America GCB issues proprietary and co-branded cards. As set forth in the chart above, the quarter-over-quarter net credit loss rate increased while the 90+ days past due delinquency rate decreased, both primarily driven by seasonality. The year-over-year net credit loss and delinquency rates increased, primarily due to portfolio seasoning.

Asia Citi-Branded Cards[(1)]

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

Asia GCB issues proprietary and co-branded cards. As set forth in the chart above, the 90+ days past due delinquency rate has remained broadly stable, driven by the mature and well-diversified cards portfolios. The increase in the year-over-year net credit loss rate was primarily driven by the conversion of an acquired portfolio in Australia. The quarter-over-quarter decrease in the net credit loss rate was primarily related to improvements in this portfolio.
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 13 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 based on end-of-period receivables. FICO scores are updated monthly for substantially all of the portfolio and on a quarterly basis for the remaining portfolio.

Citi-Branded

FICO distribution	September 30, 2018	June 30, 2018	September 30, 2017
> 760	42 %	43 %	40 %
680 - 760	41	40	41
< 680	17	17	19
Total	100 %	100 %	100 %

Citi Retail Services

FICO distribution	September 30, 2018	June 30, 2018	September 30, 2017
> 760	24 %	24 %	23 %
680 - 760	43	43	43
< 680	33	33	34
Total	100 %	100 %	100 %

The FICO distribution of both portfolios was stable compared to the previous quarter and previous year. The portfolios continued to demonstrate strong underlying credit quality. For additional information on FICO scores, see Note 13 to the Consolidated Financial Statements.

42

North America Consumer Mortgage Lending

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	3Q'17	4Q'17	1Q'18	2Q'18	3Q'18
GCB:					
Residential firsts	$40.1	$40.1	$40.1	$40.3	$40.7
Home equity	4.1	4.2	4.1	4.1	3.9
Total GCB	$44.2	$44.3	$44.2	$44.4	$44.6
Corporate/Other:					
Residential firsts	$10.1	$9.3	$8.1	$7.6	$7.0
Home equity	11.5	10.6	9.9	8.8	8.2
Total Corporate/ Other	$21.6	$19.9	$18.0	$16.4	$15.2
Total Citigroup— North America	$65.8	$64.2	$62.2	$60.8	$59.8

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 $12.1 billion of home equity loans as of September 30, 2018, of which $2.5 billion were fixed-rate home equity loans and $9.6 billion were 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 until the end of the draw period, when the 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 September 30, 2018, $6.2 billion had reset (compared to $6.4 billion at June 30, 2018) and $3.4 billion were still within their revolving period and had not reset (compared to $3.7 billion at June 30, 2018). 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 September 30, 2018
Note: Totals may not sum due to rounding.

Approximately 64% of Citi's total Revolving HELOCs portfolio had reset as of September 30, 2018 (compared to 63% as of June 30, 2018). Of the remaining Revolving HELOCs portfolio, approximately 2% will commence amortization during the remainder of 2018. 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 the remainder of 2018 could increase on average by approximately $270, or 98%. Increases in interest rates could further increase these payments given the variable nature of the interest rates on these loans post-reset. 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 continue to reset.

Approximately 5.5% of the Revolving HELOCs that have reset as of September 30, 2018 were 30+ days past due, compared to 3.7% of the total outstanding home equity loan portfolio (amortizing and non-amortizing). This compared to 5.3% and 3.6%, respectively, as of June 30, 2018. As newly amortizing loans continue to season, the delinquency rate of Citi's total home equity loan portfolio could increase. Although interest rates have steadily increased over the past 12 months, 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 establishing a borrower outreach program to provide reset risk education and proactively working with high-risk borrowers through a specialized single point of contact unit.

Additional Consumer Credit Details

Consumer Loan Delinquency Amounts and Ratios

	EOP loans(1)	90+ days past due(2)			30–89 days past due(2)		
In millions of dollars, except EOP loan amounts in billions	September 30, 2018	September 30, 2018	June 30, 2018	September 30, 2017	September 30, 2018	June 30, 2018	September 30, 2017
Global Consumer Banking(3)(4)							
Total	$ 309.0	$2,404	$2,345	$ 2,279	$2,890	$2,558	$ 2,763
Ratio		0.78 %	0.77 %	0.76 %	0.94 %	0.84 %	0.92 %
Retail banking							
Total	$ 146.8	$508	$500	$ 489	$857	$754	$ 805
Ratio		0.35 %	0.35 %	0.34 %	0.59 %	0.52 %	0.56 %
North America	56.3	188	179	167	320	252	270
Ratio		0.34 %	0.33 %	0.30 %	0.58 %	0.46 %	0.49 %
Latin America	21.0	126	132	151	235	183	244
Ratio		0.60 %	0.66 %	0.72 %	1.12 %	0.91 %	1.16 %
Asia(5)	69.5	194	189	171	302	319	291
Ratio		0.28 %	0.27 %	0.25 %	0.43 %	0.46 %	0.43 %
Cards							
Total	$ 162.2	$1,896	$1,845	$ 1,790	$2,033	$1,804	$ 1,958
Ratio		1.17 %	1.15 %	1.14 %	1.25 %	1.12 %	1.25 %
North America—Citi-branded	88.4	707	712	668	722	627	705
Ratio		0.80 %	0.81 %	0.77 %	0.82 %	0.71 %	0.82 %
North America—Citi retail services	49.4	832	781	772	890	761	836
Ratio		1.68 %	1.61 %	1.68 %	1.80 %	1.57 %	1.82 %
Latin America	5.8	169	160	159	170	156	163
Ratio		2.91 %	2.96 %	2.84 %	2.93 %	2.89 %	2.91 %
Asia(5)	18.6	188	192	191	251	260	254
Ratio		1.01 %	1.02 %	1.02 %	1.35 %	1.38 %	1.35 %
Corporate/Other—Consumer(6)							
Total	$ 16.5	$401	$415	$ 605	$422	$355	$ 643
Ratio		2.57 %	2.49 %	2.57 %	2.71 %	2.13 %	2.74 %
International	—	—	—	57	—	—	47
Ratio		— %	— %	3.35 %	— %	— %	2.76 %
North America	16.5	401	415	548	422	355	596
Ratio		2.57 %	2.49 %	2.51 %	2.71 %	2.13 %	2.73 %
Total Citigroup	$ 325.5	$2,805	$2,760	$ 2,884	$3,312	$2,913	$ 3,406
Ratio		0.87 %	0.86 %	0.89 %	1.02 %	0.90 %	1.05 %

(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 past due and 30–89 days past due and related ratios for North America GCB 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 $235 million ($0.7 billion), $244 million ($0.7 billion) and $289 million ($0.7 billion) as of September 30,

2018, June 30, 2018 and September 30, 2017, respectively. The amounts excluded for loans 30–89 days past due and (EOP loans) were $82 million ($0.7 billion), $87 million ($0.7 billion), and $79 million ($0.7 billion) as of September 30, 2018, June 30, 2018 and September 30, 2017, respectively.

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

(6) The loans 90+ days past due and related ratios exclude U.S. mortgage loans that are guaranteed by U.S. government-sponsored agencies since the potential loss predominantly resides with the U.S. agencies. The amounts excluded for 90+ days past due and (EOP loans) for each period were $0.4 billion ($0.8 billion), $0.4 billion ($0.9 billion) and $0.7 billion ($1.2 billion) as of September 30, 2018, June 30, 2018 and September 30, 2017, respectively. The amounts excluded for loans 30–89 days past due and (EOP loans) for each period were $0.1 billion ($0.8 billion), $0.1 billion ($0.9 billion), and $0.1 billion ($1.2 billion) as of September 30, 2018, June 30, 2018 and September 30, 2017, respectively.

Consumer Loan Net Credit Losses and Ratios

In millions of dollars, except average loan amounts in billions	Average loans(1) 3Q18	Net credit losses(2)(3) 3Q18	2Q18	3Q17
Global Consumer Banking				
Total	$ 306.8	$ 1,714	$ 1,726	$ 1,704
Ratio		2.22 %	2.28 %	2.26 %
Retail banking				
Total	$ 145.9	$ 243	$ 228	$ 300
Ratio		0.66 %	0.63 %	0.82 %
North America	56.0	32	32	88
Ratio		0.23 %	0.23 %	0.63 %
Latin America	20.7	153	138	143
Ratio		2.93 %	2.75 %	2.68 %
Asia(4)	69.2	58	58	69
Ratio		0.33 %	0.33 %	0.41 %
Cards				
Total	$ 160.9	$ 1,471	$ 1,498	$ 1,404
Ratio		3.63 %	3.81 %	3.58 %
North America—Citi-branded	87.8	644	657	611
Ratio		2.91 %	3.04 %	2.84 %
North America—Citi retail services	49.0	566	589	540
Ratio		4.58 %	5.07 %	4.70 %
Latin America	5.6	154	140	152
Ratio		10.91 %	10.40 %	10.77 %
Asia(4)	18.5	107	112	101
Ratio		2.29 %	2.38 %	2.13 %
Corporate/Other—Consumer(3)				
Total	$ 17.0	$ 12	$ (20)	$ 52
Ratio		0.28 %	(0.41)%	0.80 %
International	—	—	19	25
Ratio		— %	6.93 %	5.22 %
North America	17.0	12	(39)	27
Ratio		0.28 %	(0.85)%	0.45 %
Other(5)	—	—	—	(22)
Total Citigroup	$ 323.8	$ 1,726	$ 1,706	$ 1,734
Ratio		2.11 %	2.12 %	2.11 %

(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) In October 2016, Citi entered into an agreement to sell Citi's Brazil consumer banking business. The sale was completed at the end of the fourth quarter of 2017. As a result of HFS accounting treatment, approximately $37 million of net credit losses (NCLs) was recorded as a reduction in revenue (Other revenue) during the third quarter of 2017. Accordingly, these NCLs are not included in this table. Loans classified as HFS are excluded from this table as they are recorded in Other assets.

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

(5) The third quarter of 2017 NCLs reflected a recovery related to legacy assets.

CORPORATE CREDIT

Consistent with its overall strategy, Citi's corporate clients are typically large, multinational corporations that value the depth and breadth of 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:

In billions of dollars	At September 30, 2018				June 30, 2018				December 31, 2017			
	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)	$131	$ 103	$ 20	$ 254	$133	$ 103	$ 19	$ 255	$127	$ 96	$ 22	$ 245
Unfunded lending commitments (off-balance sheet)(2)	115	253	25	393	127	235	20	382	111	222	20	353
Total exposure	$246	$ 356	$ 45	$ 647	$260	$ 338	$ 39	$ 637	$238	$ 318	$ 42	$ 598

(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 of this portfolio by region based on Citi's internal management geography:

	September 30, 2018	June 30, 2018	December 31, 2017
North America	55 %	54 %	54 %
EMEA	27	27	27
Asia	11	12	12
Latin America	7	7	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 environmental factors like 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		
	September 30, 2018	June 30, 2018	December 31, 2017
AAA/AA/A	48 %	49 %	49 %
BBB	34	34	34
BB/B	17	16	16
CCC or below	1	1	1
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		
	September 30, 2018	June 30, 2018	December 31, 2017
Transportation and industrial	21 %	22 %	22 %
Consumer retail and health	16	16	16
Technology, media and telecom	14	13	12
Power, chemicals, metals and mining	11	10	10
Energy and commodities	8	8	8
Banks/broker-dealers/finance companies	8	8	8
Real estate	8	7	8
Public sector	5	5	5
Insurance and special purpose entities	4	4	5
Hedge funds	4	4	4
Other industries	1	3	2
Total	100 %	100 %	100 %

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 in the Consolidated Statement of Income.

At September 30, 2018, June 30, 2018 and December 31, 2017, $26.9 billion, $27.4 billion and $16.3 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

	September 30, 2018		June 30, 2018		December 31, 2017	
AAA/AA/A	34	%	34	%	23	%
BBB	47		46		43	
BB/B	17		18		31	
CCC or below	2		2		3	
Total	100	%	100	%	100	%

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

Industry of Hedged Exposure

	September 30, 2018		June 30, 2018		December 31, 2017	
Transportation and industrial	25	%	25	%	27	%
Technology, media and telecom	15		15		12	
Consumer retail and health	14		15		10	
Power, chemicals, metals and mining	14		14		14	
Energy and commodities	11		11		15	
Public sector	7		7		12	
Banks/broker-dealers/finance companies	5		4		6	
Insurance and special purpose entities	4		5		2	
Other industries	5		4		2	
Total	100	%	100	%	100	%

47

ADDITIONAL CONSUMER AND CORPORATE CREDIT DETAILS

Loans Outstanding

In millions of dollars	3rd Qtr. 2018	2nd Qtr. 2018	1st Qtr. 2018	4th Qtr. 2017	3rd Qtr. 2017
Consumer loans					
In U.S. offices					
Mortgage and real estate[1]	$61,048	$61,692	$63,412	$65,467	$67,131
Installment, revolving credit and other	3,515	3,759	3,306	3,398	3,191
Cards	137,051	135,968	131,081	139,006	131,476
Commercial and industrial	7,686	7,459	7,493	7,840	7,619
Total	$209,300	$208,878	$205,292	$215,711	$209,417
In offices outside the U.S.					
Mortgage and real estate[1]	$43,714	$43,056	$44,833	$44,081	$43,723
Installment, revolving credit and other	27,899	27,254	27,651	26,556	26,153
Cards	24,971	24,712	25,993	26,257	25,443
Commercial and industrial	18,821	18,966	20,526	20,238	20,015
Lease financing	52	55	62	76	77
Total	$115,457	$114,043	$119,065	$117,208	$115,411
Total consumer loans	$324,757	$322,921	$324,357	$332,919	$324,828
Unearned income[2]	712	711	727	737	748
Consumer loans, net of unearned income	$325,469	$323,632	$325,084	$333,656	$325,576
Corporate loans					
In U.S. offices					
Commercial and industrial	$51,365	$53,260	$54,005	$51,319	$51,679
Financial institutions	46,255	42,867	40,472	39,128	37,203
Mortgage and real estate[1]	47,629	46,310	45,581	44,683	43,274
Installment, revolving credit and other	32,201	32,663	32,866	33,181	32,464
Lease financing	1,445	1,445	1,463	1,470	1,493
Total	$178,895	$176,545	$174,387	$169,781	$166,113
In offices outside the U.S.					
Commercial and industrial	$98,281	$98,068	$101,368	$93,750	$93,107
Financial institutions	37,851	38,312	35,659	35,273	33,050
Mortgage and real estate[1]	7,344	7,261	7,543	7,309	6,383
Installment, revolving credit and other	22,827	22,755	23,338	22,638	23,830
Lease financing	131	139	167	190	216
Governments and official institutions	4,898	5,270	6,170	5,200	5,628
Total	$171,332	$171,805	$174,245	$164,360	$162,214
Total corporate loans	$350,227	$348,350	$348,632	$334,141	$328,327
Unearned income[3]	(787)	(802)	(778)	(763)	(720)
Corporate loans, net of unearned income	$349,440	$347,548	$347,854	$333,378	$327,607
Total loans—net of unearned income	$674,909	$671,180	$672,938	$667,034	$653,183
Allowance for loan losses—on drawn exposures	(12,336)	(12,126)	(12,354)	(12,355)	(12,366)
Total loans—net of unearned income and allowance for credit losses	$662,573	$659,054	$660,584	$654,679	$640,817
Allowance for loan losses as a percentage of total loans—net of unearned income[4]	1.84%	1.81%	1.85%	1.87%	1.91%
Allowance for consumer loan losses as a percentage of total consumer loans—net of unearned income[4]	3.07%	3.03%	3.09%	2.96%	3.04%

Allowance for corporate loan losses as a percentage of total corporate loans—net of unearned income[4]	0.68 %	0.68 %	0.67 %	0.76 %	0.77 %

(1) Loans secured primarily by real estate.

(2) Unearned income on consumer loans primarily represents unamortized origination fees and costs, premiums and discounts.

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

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

Details of Credit Loss Experience

In millions of dollars	3rd Qtr. 2018	2nd Qtr. 2018	1st Qtr. 2018	4th Qtr. 2017	3rd Qtr. 2017
Allowance for loan losses at beginning of period	$12,126	$12,354	$12,355	$12,366	$12,025
Provision for loan losses					
Consumer	$1,869	$1,764	$1,881	$1,785	$2,142
Corporate	37	31	(78)	231	4
Total	$1,906	$1,795	$1,803	$2,016	$2,146
Gross credit losses					
Consumer					
In U.S. offices	$1,462	$1,490	$1,542	$1,426	$1,429
In offices outside the U.S.	596	599	615	611	642
Corporate					
In U.S. offices	15	5	65	21	15
In offices outside the U.S.	21	15	74	221	34
Total	$2,094	$2,109	$2,296	$2,279	$2,120
Credit recoveries[1]					
Consumer					
In U.S. offices	$212	$255	$238	$228	$167
In offices outside the U.S.	120	128	148	151	170
Corporate					
In U.S. offices	1	5	13	4	2
In offices outside the U.S.	5	17	30	16	4
Total	$338	$405	$429	$399	$343
Net credit losses					
In U.S. offices	$1,264	$1,235	$1,356	$1,215	$1,275
In offices outside the U.S.	492	469	511	665	502
Total	$1,756	$1,704	$1,867	$1,880	$1,777
Other—net[2][3][4][5][6][7]	$60	$(319)	$63	$(147)	$(28)
Allowance for loan losses at end of period	$12,336	$12,126	$12,354	$12,355	$12,366
Allowance for loan losses as a percentage of total loans[8]	1.84%	1.81%	1.85%	1.87%	1.91%
Allowance for unfunded lending commitments[9]	$1,321	$1,278	$1,290	$1,258	$1,232
Total allowance for loan losses and unfunded lending commitments	$13,657	$13,404	$13,644	$13,613	$13,598
Net consumer credit losses	$1,726	$1,706	$1,771	$1,658	$1,734
As a percentage of average consumer loans	2.11%	2.12%	2.19%	2.02%	2.11%
Net corporate credit losses (recoveries)	$30	$(2)	$96	$222	$43
As a percentage of average corporate loans	0.03%	—%	0.11%	0.27%	0.05%
Allowance by type at end of period[10]					
Consumer	$9,997	$9,796	$10,039	$9,869	$9,892
Corporate	2,339	2,330	2,315	2,486	2,474
Total	$12,336	$12,126	$12,354	$12,355	$12,366

(1) Recoveries have been reduced by certain collection costs that are incurred only if collection efforts are successful.

(2) 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.

(3) The third quarter of 2018 includes a reduction of approximately $5 million related to the sale or transfers to held-for-sale (HFS) of various loan portfolios, including a reduction of $2 million related to the transfers of a real estate loan portfolio to HFS. Additionally, the third quarter includes an increase of approximately $62 million related to FX translation.

(4) The second quarter of 2018 includes a reduction of approximately $137 million related to the sale or transfer to HFS of various loan portfolios, including a reduction of $33 million related to the transfer of a real estate loan portfolio to HFS. Additionally, the second quarter includes a decrease of approximately $164 million related to FX translation.

(5) The first quarter of 2018 includes a reduction of approximately $55 million related to the sale or transfer to HFS of various loan portfolios, including a reduction of $53 million related to the transfer of a real estate loan portfolio to HFS. Additionally, the first quarter includes an increase of approximately $118 million related to FX translation.

(6) The fourth quarter of 2017 includes a reduction of approximately $47 million related to the sale or transfer to HFS of various loan portfolios, including a reduction of $22 million related to the transfer of a real estate loan portfolio to HFS. Additionally, the fourth quarter includes a decrease of approximately $106 million related to FX translation.

(7) The third quarter of 2017 includes a reduction of approximately $34 million related to the sale or transfer to HFS of various loan portfolios, including a reduction of $28 million related to the transfer of a real estate loan portfolio to HFS. Additionally, the third quarter includes an increase of approximately $7 million related to FX translation.

(8) September 30, 2018, June 30, 2018, March 31, 2018, December 31, 2017 and September 30, 2017 exclude $4.2 billion, $3.0 billion, $4.5 billion, $4.9 billion and $4.3 billion, respectively, of loans which are carried at fair value.

(9) Represents additional credit reserves recorded as Other liabilities on the Consolidated Balance Sheet.

(10) 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 in Citi’s 2017 Annual Report on Form 10-K. 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:

In billions of dollars	September 30, 2018 Allowance for loan losses	Loans, net of unearned income	Allowance as a percentage of loans[1]	
North America cards[2]	$6.4	$ 137.9	4.6	%
North America mortgages[3]	0.5	59.8	0.8	
North America other	0.3	12.8	2.3	
International cards	1.4	24.4	5.7	
International other[4]	1.4	90.6	1.5	
Total consumer	$10.0	$ 325.5	3.1	%
Total corporate	2.3	349.4	0.7	
Total Citigroup	$12.3	$ 674.9	1.8	%

(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 $6.4 billion of loan loss reserves represented approximately 16 months of coincident net credit loss coverage.

(3) Of the $0.5 billion, approximately $0.4 billion was allocated to North America mortgages in Corporate/Other. Of the $0.5 billion, approximately $0.2 billion and $0.3 billion are determined in accordance with ASC 450-20 and ASC 310-10-35 (troubled debt restructurings), respectively. Of the $59.8 billion in loans, approximately $57.0 billion and $2.7 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 14 to the Consolidated Financial Statements.

(4) Includes mortgages and other retail loans.

In billions of dollars	December 31, 2017 Allowance for loan losses	Loans, net of unearned income	Allowance as a percentage of loans[1]

North America cards[2]	$6.1	$ 139.7	4.4	%
North America mortgages[3]	0.7	64.2	1.1	
North America other	0.3	13.0	2.3	
International cards	1.3	25.7	5.1	
International other[4]	1.5	91.1	1.6	
Total consumer	$9.9	$ 333.7	3.0	%
Total corporate	2.5	333.3	0.8	
Total Citigroup	$12.4	$ 667.0	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 $6.1 billion of loan loss reserves represented approximately 16 months of coincident net credit loss coverage.

(3) Of the $0.7 billion, approximately $0.6 billion was allocated to North America mortgages in Corporate/Other. Of the $0.7 billion, approximately $0.2 billion and $0.5 billion are determined in accordance with ASC 450-20 and ASC 310-10-35 (troubled debt restructurings), respectively. Of the $64.2 billion in loans, approximately $60.4 billion and $3.7 billion are evaluated in accordance with ASC 450-20 and ASC 310-10-35 (troubled debt restructurings), respectively. For additional information, see Note 14 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 57%, 68% and 74% of Citi's corporate non-accrual loans were performing at September 30, 2018, June 30, 2018 and December 31, 2017, respectively.
- Consumer non-accrual status is generally based on aging, i.e., the borrower has fallen behind on payments.
- Consumer mortgage loans, other than Federal Housing Administration (FHA) insured loans, are classified as non-accrual within 60 days of notification that the borrower has filed for bankruptcy. In addition, home equity loans 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 of 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.

In millions of dollars	Sept. 30, 2018	Jun. 30, 2018	Mar. 31, 2018	Dec. 31, 2017	Sept. 30, 2017
Corporate non-accrual loans[1]					
North America	$679	$784	$817	$784	$915
EMEA	362	391	561	849	681
Latin America	266	204	263	280	312
Asia	233	244	27	29	146
Total corporate non-accrual loans	$1,540	$1,623	$1,668	$1,942	$2,054
Consumer non-accrual loans[1]					
North America	$1,323	$1,373	$1,500	$1,650	$1,721
Latin America	764	726	791	756	791
Asia[2]	287	284	284	284	271
Total consumer non-accrual loans	$2,374	$2,383	$2,575	$2,690	$2,783
Total non-accrual loans	$3,914	$4,006	$4,243	$4,632	$4,837

(1) Excludes purchased distressed loans, as they are generally accreting interest. The carrying value of these loans was $131 million at September 30, 2018, $149 million at June 30, 2018, $126 million at March 31, 2018, $167 million at December 31, 2017 and $177 million at September 30, 2017.

(2) Asia GCB includes balances in certain EMEA countries for all periods presented.

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

	Three Months Ended September 30, 2018			Three Months Ended September 30, 2017		
In millions of dollars	Corporate	Consumer	Total	Corporate	Consumer	Total
Non-accrual loans at beginning of period	$1,623	$ 2,383	$4,006	$2,098	$ 2,848	$4,946
Additions	436	758	1,194	190	1,042	1,232
Sales and transfers to HFS	(9)	(44)	(53)	(1)	(69)	(70)
Returned to performing	(14)	(136)	(150)	(2)	(133)	(135)
Paydowns/settlements	(479)	(207)	(686)	(196)	(291)	(487)
Charge-offs	(18)	(417)	(435)	(33)	(611)	(644)
Other	1	37	38	(2)	(3)	(5)
Ending balance	$1,540	$ 2,374	$3,914	$2,054	$ 2,783	$4,837

52

In millions of dollars	Nine Months Ended September 30, 2018			Nine Months Ended September 30, 2017		
	Corporate	Consumer	Total	Corporate	Consumer	Total
Non-accrual loans at beginning of period	$1,942	$ 2,690	$4,632	$2,421	$ 3,158	$5,579
Additions	1,889	2,410	4,299	754	2,563	3,317
Sales and transfers to held-for-sale	(37)	(197)	(234)	(83)	(286)	(369)
Returned to performing	(118)	(490)	(608)	(42)	(462)	(504)
Paydowns/settlements	(1,976)	(804)	(2,780)	(843)	(856)	(1,699)
Charge-offs	(138)	(1,243)	(1,381)	(102)	(1,452)	(1,554)
Other	(22)	8	(14)	(51)	118	67
Ending balance	$1,540	$ 2,374	$3,914	$2,054	$ 2,783	$4,837

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:

In millions of dollars	Sept. 30, 2018	Jun. 30, 2018	Mar. 31, 2018	Dec. 31, 2017	Sept. 30, 2017
OREO					
North America	$76	$66	$70	$89	$97
EMEA	1	1	—	2	1
Latin America	25	24	29	35	30
Asia	7	10	15	18	15
Total OREO	$109	$101	$114	$144	$143
Non-accrual assets					
Corporate non-accrual loans	$1,540	$1,623	$1,668	$1,942	$2,054
Consumer non-accrual loans	2,374	2,383	2,575	2,690	2,783
Non-accrual loans (NAL)	$3,914	$4,006	$4,243	$4,632	$4,837
OREO	$109	$101	$114	$144	$143
Non-accrual assets (NAA)	$4,023	$4,107	$4,357	$4,776	$4,980
NAL as a percentage of total loans	0.58 %	0.60 %	0.63 %	0.69 %	0.74 %
NAA as a percentage of total assets	0.21	0.21	0.23	0.26	0.26
Allowance for loan losses as a percentage of NAL[(1)]	315	303	291	267	256

(1) 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:

In millions of dollars	Sept. 30, 2018	Dec. 31, 2017
Corporate renegotiated loans[1]		
In U.S. offices		
Commercial and industrial[2]	$226	$225
Mortgage and real estate	64	90
Financial institutions	21	33
Other	33	45
Total	$344	$393
In offices outside the U.S.		
Commercial and industrial[2]	$254	$392
Mortgage and real estate	7	11
Financial institutions	—	15
Other	9	7
Total	$270	$425
Total corporate renegotiated loans	$614	$818
Consumer renegotiated loans[3][4][5]		
In U.S. offices		
Mortgage and real estate[6]	$2,698	$3,709
Cards	1,308	1,246
Installment and other	84	169
Total	$4,090	$5,124
In offices outside the U.S.		
Mortgage and real estate	$320	$345
Cards	493	541
Installment and other	415	427
Total	$1,228	$1,313
Total consumer renegotiated loans	$5,318	$6,437

(1) Includes $504 million and $715 million of non-accrual loans included in the non-accrual loans table above at September 30, 2018 and December 31, 2017, respectively. The remaining loans are accruing interest.

(2) In addition to modifications reflected as TDRs at September 30, 2018, Citi also modified $6 million of commercial loans risk rated "Substandard Non-Performing" or worse (asset category defined by banking regulators) in offices outside the U.S. These modifications were not considered TDRs because the modifications did not involve a concession.

(3) Includes $1,113 million and $1,376 million of non-accrual loans included in the non-accrual loans table above at September 30, 2018 and December 31, 2017, respectively. The remaining loans are accruing interest.

(4) Includes $19 million and $26 million of commercial real estate loans at September 30, 2018 and December 31, 2017, respectively.

(5) Includes $94 million and $165 million of other commercial loans at September 30, 2018 and December 31, 2017, respectively.

(6) Reduction in the nine months ended September 30, 2018 compared with December 31, 2017 includes $641 million related to TDRs sold or transferred to HFS.

LIQUIDITY RISK

For additional information on funding and liquidity at Citigroup, including its objectives, management and measurement, see “Liquidity Risk” and “Risk Factors” in Citi’s 2017 Annual Report on Form 10-K.

High-Quality Liquid Assets (HQLA)

	Citibank			Non-Bank and Other			Total		
In billions of dollars	Sept. 30, 2018	Jun. 30, 2018	Sept. 30, 2017	Sept. 30, 2018	Jun. 30, 2018	Sept. 30, 2017	Sept. 30, 2018	Jun. 30, 2018	Sept. 30, 2017
Available cash	$105.1	$97.3	$92.7	$35.1	$27.4	$32.9	$140.2	$124.7	$125.6
U.S. sovereign	102.2	101.4	108.4	29.7	28.7	26.6	131.9	130.1	135.0
U.S. agency/agency MBS	56.4	59.5	68.1	6.5	6.7	0.6	62.9	66.2	68.7
Foreign government debt(1)	74.9	73.5	101.3	9.6	10.9	16.3	84.5	84.4	117.6
Other investment grade	0.2	0.1	0.5	1.1	1.0	1.2	1.3	1.2	1.7
Total HQLA (AVG)	$338.8	$331.8	$371.0	$82.0	$74.8	$77.6	$420.8	$406.6	$448.6

Note: The amounts set forth in the table above are presented on an average basis and reflect HQLA held at Citigroup’s operating entities, which are eligible for inclusion in Citigroup’s consolidated HQLA. For securities, the amounts represent the liquidity value that potentially could be realized and, therefore, exclude any securities that are encumbered and incorporate any haircuts that would be required for securities financing transactions.

(1) 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, Singapore, Korea, Taiwan, India, Mexico and Brazil.

The table above includes average amounts of HQLA held at Citigroup’s operating entities that are eligible for inclusion in the calculation of Citigroup’s consolidated LCR, pursuant to the U.S. LCR rules. These amounts include the HQLA needed to meet the minimum requirements at these entities and any amounts in excess of these minimums that are assumed to be transferable to Citigroup. While available liquidity resources at operating entities generally increased, the amount of HQLA included in the table above declined year-over-year as less HQLA in the operating entities was eligible for inclusion in the consolidated metric. Sequentially, Citi’s total HQLA increased, primarily due to an increase in average cash driven by a reduction in illiquid assets and the timing of long-term debt issuance.

Citi’s HQLA as set forth above does not include Citi’s available borrowing capacity from the Federal Home Loan Banks (FHLBs) of which Citi is a member, which was approximately $29 billion as of September 30, 2018 (compared to $21 billion as of June 30, 2018 and $16 billion as of September 30, 2017) 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 September 30, 2018, the capacity available for lending to these entities under Section 23A was approximately $15 billion, unchanged from both June 30, 2018 and

September 30, 2017, subject to certain eligible non-cash collateral requirements.

Loans

The table below details the average loans, by business and/or segment, and the total end-of-period loans for each of the periods indicated:

In billions of dollars	Sept. 30, 2018	Jun. 30, 2018	Sept. 30, 2017
Global Consumer Banking			
North America	$192.8	$188.8	$186.7
Latin America	26.3	25.5	26.8
Asia(1)	87.7	88.8	86.2
Total	$306.8	$303.1	$299.7
Institutional Clients Group			
Corporate lending	$130.9	$135.5	$123.3
Treasury and trade solutions (TTS)	76.9	77.7	74.9
Private bank	92.8	90.7	82.6
Markets and securities services and other	45.6	43.0	40.1
Total	$346.2	$346.9	$320.9
Total Corporate/Other	$17.3	$19.7	$25.7
Total Citigroup loans (AVG)	$670.3	$669.7	$646.3
Total Citigroup loans (EOP)	$674.9	$671.2	$653.2

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

End-of-period loans increased 3% year-over-year and 1% sequentially. On an average basis, loans increased 4% year-over-year and were largely unchanged sequentially.

Excluding the impact of FX translation, average loans increased 5% year-over-year and 6% in aggregate across GCB and ICG. Average GCB loans grew 3% year-over-year, driven by growth across all regions. Average ICG loans increased 9% year-over-year, with continued momentum across businesses, including in TTS, the private bank and corporate lending.

Average Corporate/Other loans continued to decline (down 34%), driven by the wind-down of legacy assets.

Deposits

The table below details the average deposits, by business and/or segment, and the total end-of-period deposits for each of the periods indicated:

In billions of dollars	Sept. 30, 2018	Jun. 30, 2018	Sept. 30, 2017
Global Consumer Banking			
North America	$180.2	$179.9	$184.1
Latin America	29.4	28.3	28.8
Asia(1)	97.6	97.6	95.2
Total	$307.2	$305.8	$308.1
Institutional Clients Group			
Treasury and trade solutions (TTS)	$456.7	$448.7	$427.8
Banking ex-TTS	124.6	125.5	122.4
Markets and securities services	86.7	88.2	84.7
Total	$668.0	$662.4	$634.9
Corporate/Other	$10.6	$18.0	$22.9

Total Citigroup deposits (AVG)	$985.7	$986.2	$965.9
Total Citigroup deposits (EOP)	$1,005.2	$996.7	$964.0

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

End-of-period deposits increased 4% year-over-year and 1% sequentially. On an average basis, deposits increased 2% year-over-year and were largely unchanged sequentially.
Excluding the impact of FX translation, average deposits grew 3% from the prior-year period. In GCB, deposits increased 1%, as strong growth in Asia GCB and Latin America GCB more than offset a 2% decline in North America GCB, primarily driven by a reduction in money market balances as clients transferred cash into investment accounts. Within ICG, average deposits grew 6% year-over-year, primarily driven by continued high-quality deposit growth in TTS.

Long-Term Debt

The weighted-average maturity of unsecured long-term debt issued by Citigroup and its affiliates (including Citibank) with a remaining life greater than one year was approximately 6.9 years as of September 30, 2018, an increase from both the prior-year period (6.8 years) and the prior quarter (6.5 years).

Citi's long-term debt outstanding at the Citigroup parent company 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 non-bank entities. Citi's long-term debt at the bank also includes benchmark senior debt, FHLB advances and securitizations.

Long-Term Debt Outstanding

The following table sets forth Citi's end-of-period total long-term debt outstanding for each of the dates indicated:

In billions of dollars	Sept. 30, 2018	Jun. 30, 2018	Sept. 30, 2017
Parent and other[1]			
Benchmark debt:			
Senior debt	$107.2	$107.8	$109.8
Subordinated debt	25.1	25.3	27.0
Trust preferred	1.7	1.7	1.7
Customer-related debt	35.4	34.3	30.3
Local country and other[2]	3.8	3.8	1.8
Total parent and other	$173.2	$172.9	$170.6
Bank			
FHLB borrowings	$10.5	$13.7	$19.8
Securitizations[3]	27.4	28.5	28.6
CBNA benchmark senior debt	21.0	18.5	9.5
Local country and other[2]	3.2	3.2	4.2
Total bank	$62.1	$63.9	$62.1
Total long-term debt	$235.3	$236.8	$232.7

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 September 30, 2018, "parent and other" included $25.0 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, primarily driven by the issuance of unsecured benchmark debt at the bank and customer-related debt at the Citigroup parent company, partially offset by declines in FHLB advances and senior unsecured benchmark debt at the parent company. Sequentially, Citi's total long-term debt outstanding decreased modestly, primarily driven by a decline in FHLB advances, partially offset by the issuance of unsecured benchmark debt at the bank.

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 the third quarter of 2018, Citi repurchased and called an aggregate of approximately $1.2 billion of its outstanding long-term debt, including early redemption 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:

In billions of dollars	3Q18 Maturities	3Q18 Issuances	2Q18 Maturities	2Q18 Issuances	3Q17 Maturities	3Q17 Issuances
Parent and other						
Benchmark debt:						
Senior debt	$4.2	$ 4.5	$7.2	$ 4.9	$2.5	$ 5.7
Subordinated debt	—	—	0.3	0.3	—	—
Trust preferred	—	—	—	—	—	—
Customer-related debt	1.2	2.9	1.5	4.7	1.8	3.0
Local country and other	0.3	0.1	0.2	2.1	0.4	—
Total parent and other	$5.7	$ 7.6	$9.1	$ 12.0	$4.7	$ 8.7
Bank						
FHLB borrowings	$3.3	$ —	$4.5	$ 2.5	$1.5	$ 1.0
Securitizations	2.9	1.9	2.7	1.1	1.8	2.2
CBNA benchmark senior debt	—	2.5	—	3.5	—	2.2
Local country and other	0.2	0.3	0.9	0.9	0.5	0.5
Total bank	$6.4	$ 4.7	$8.1	$ 8.0	$3.8	$ 5.9
Total	$12.1	$ 12.3	$17.2	$ 20.0	$8.5	$ 14.6

The table below shows Citi's aggregate long-term debt maturities (including repurchases and redemptions) year-to-date in 2018, as well as its aggregate expected annual long-term debt maturities as of September 30, 2018:

In billions of dollars	Maturities 2018 YTD	Maturities 2018	2019	2020	2021	2022	2023	Thereafter	Total
Parent and other									
Benchmark debt:									
Senior debt	$ 14.9	$3.5	$14.3	$8.7	$14.2	$8.0	$12.4	$ 46.1	$107.2
Subordinated debt	1.8	1.0	—	—	—	0.7	1.1	22.3	$25.1
Trust preferred	—	—	—	—	—	—	—	1.7	1.7
Customer-related debt	5.2	0.9	3.7	5.7	3.2	2.6	2.5	16.8	35.4
Local country and other	0.5	2.2	0.4	0.1	0.4	—	—	0.7	3.8
Total parent and other	$ 22.4	$7.6	$18.4	$14.5	$17.8	$11.3	$16.0	$ 87.6	$173.2
Bank									
FHLB borrowings	$ 14.3	$1.5	$5.6	$3.4	$—	$—	$—	$ —	$10.5
Securitizations	8.5	0.1	7.9	6.1	5.7	2.2	2.5	2.9	27.4
CBNA benchmark debt	—	2.2	4.7	8.7	5.0	—	—	0.4	21.0
Local country and other	2.0	0.1	0.5	1.7	0.1	0.3	0.2	0.3	3.2
Total bank	$ 24.8	$3.9	$18.7	$19.9	$10.8	$2.5	$2.7	$ 3.6	$62.1
Total long-term debt	$ 47.2	$11.5	$37.1	$34.4	$28.6	$13.8	$18.7	$ 91.2	$235.3

58

Secured Funding Transactions and Short-Term Borrowings
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 16 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 decreased 11% year-over-year and 9% sequentially, driven primarily by Citi's continued efforts to optimize its funding profile.

Secured Funding
Secured funding is primarily accessed through Citi's broker-dealer subsidiaries to fund efficiently both secured lending activity and a portion of the 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 $176 billion as of September 30, 2018 increased 9% from the prior-year period and declined 1% sequentially. Excluding the impact of FX translation, secured funding increased 11% from the prior-year period and declined 1% sequentially, both driven by normal business activity. Average balances for secured funding were also approximately $176 billion for the quarter ended September 30, 2018.
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 September 30, 2018.
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.

Liquidity Coverage Ratio (LCR)
In addition to internal liquidity stress metrics 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. The table below sets forth the components of Citi's LCR calculation and HQLA in excess of net outflows for the periods indicated:

In billions of dollars	Sept. 30, 2018	Jun. 30, 2018	Sept. 30, 2017
HQLA	$420.8	$406.6	$448.6
Net outflows	350.8	341.5	365.1
LCR	120 %	119 %	123 %
HQLA in excess of net outflows	$70.0	$65.1	$83.5

Note: The amounts are presented on an average basis.

Citi’s average LCR decreased year-over-year, driven by a decline in average HQLA, partially offset by a decline in modeled net outflows. Sequentially, Citi’s average LCR increased slightly, due to the increase in HQLA, as described above (see “High-Quality Liquid Assets” above), partially offset by an increase in modeled net outflows.

Credit Ratings

The table below sets forth the ratings for Citigroup and Citibank as of September 30, 2018. While not included in the table below, the long- 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 September 30, 2018.

	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	Positive	A1	P-1	Positive
Standard & Poor's (S&P)	BBB+	A-2	Stable	A+	A-1	Stable

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 derivative 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" in Citi's 2017 Annual Report on Form 10-K.

Citigroup Inc. and Citibank—Potential Derivative Triggers

As of September 30, 2018, 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, unchanged from June 30, 2018. Other funding sources, such as secured financing transactions and other margin requirements, for which there are no explicit triggers, could also be adversely affected.

As of September 30, 2018, 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 $0.9 billion as of June 30, 2018.

In total, Citi estimates that a one-notch downgrade of Citigroup and Citibank, across all three major rating agencies, could result in increased aggregate cash obligations and collateral requirements of approximately $1.6 billion, compared to $1.2 billion as of June 30, 2018 (see also Note 19 to the Consolidated Financial Statements). As detailed under "High-Quality Liquid Assets" above, the liquidity resources that are eligible for inclusion in the calculation of Citi's consolidated HQLA were approximately $339 billion for Citibank and $82 billion for Citi's non-bank and other entities, for a total of approximately $421 billion for the quarter ended September 30, 2018. 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 September 30, 2018, Citibank had liquidity commitments of approximately $12.1 billion to consolidated asset-backed commercial paper conduits, compared to $12.0 billion as of June 30, 2018 (as referenced in Note 18 to the Consolidated Financial Statements).

In addition to the above-referenced liquidity resources of certain Citibank 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

Market risk emanates from both Citi's trading and non-trading portfolios. For additional information on market risk and market risk management at Citi, see "Market Risk" and "Risk Factors" in Citi's 2017 Annual Report on Form 10-K.

Market Risk of Non-Trading Portfolios

For additional information on Citi's net interest revenue (for interest rate exposure purposes), interest rate risk and interest rate risk measurement, see "Market Risk of Non-Trading Portfolios" in Citi's 2017 Annual Report on Form 10-K.

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 (bps) increase in interest rates:

In millions of dollars (unless otherwise noted)	Sept. 30, 2018	Jun. 30, 2018	Sept. 30, 2017
Estimated annualized impact to net interest revenue			
U.S. dollar(1)	$879	$1,046	$1,449
All other currencies	649	635	610
Total	$1,528	$1,681	$2,059
As a percentage of average interest-earning assets	0.09 %	0.10 %	0.12 %
Estimated initial impact to AOCI (after-tax)(2)	$(4,597)	$(4,713)	$(4,206)
Estimated initial impact on Common Equity Tier 1 Capital ratio (bps)(3)	(31)	(32)	(48)

(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 $(212) million for a 100 bps instantaneous increase in interest rates as of September 30, 2018.

(2) Includes the effect of changes in interest rates on AOCI related to investment securities, cash flow hedges and pension liability adjustments.

(3) Results as of September 30, 2018 and June 30, 2018 reflect the impact of Tax Reform, including the lower expected effective tax rate and the impact to Citi's DTA position. Results as of September 30, 2017 have not been restated.

The estimated impact to net interest revenue decreased on a sequential basis, reflecting changes in balance sheet composition, including increased sensitivity in deposits combined with loan growth and other actions. The decrease in the estimated impact to AOCI primarily reflected changes to the positioning of Citi Treasury's investment securities and related interest rate derivatives portfolio.

In the event of an unanticipated parallel instantaneous 100 bps increase in interest rates, Citi expects that the negative impact to AOCI would be offset in stockholders' 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 September 30, 2018, Citi expects that the negative $4.6 billion impact to AOCI in such a scenario could potentially be offset over approximately 19 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 bps decrease in short-term rates is not meaningful, as it would imply negative interest rates in many of Citi's markets.

In millions of dollars (unless otherwise noted)	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	$879	$906	$47	$(56)
All other currencies	649	617	37	(37)
Total	$1,528	$1,523	$84	$(93)
Estimated initial impact to AOCI (after-tax)(1)	$(4,597)	$(2,547)	$(2,279)	$1,772
Estimated initial impact to Common Equity Tier 1 Capital ratio (bps)	(31)	(17)	(16)	12

Note: Each scenario 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.

62

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.

In recent years, 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, including applying negative rates to client accounts (for additional information on Citi Treasury's ongoing interest rate mitigation activities, see "Market Risk—Market Risk of Non-Trading Portfolios" in Citi's 2017 Annual Report on Form 10-K).

Changes in Foreign Exchange Rates—Impacts on AOCI and Capital

As of September 30, 2018, 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 $1.4 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 affect 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 17 to the Consolidated Financial Statements.

	For the quarter ended		
In millions of dollars (unless otherwise noted)	Sept. 30, 2018	Jun. 30, 2018	Sept. 30, 2017
Change in FX spot rate[1]	(0.2)%	(5.8)%	1.1%
Change in TCE due to FX translation, net of hedges	$(354)	$(2,241)	$222

As a percentage of TCE	(0.2)%	(1.5)%	0.1 %
Estimated impact to Common Equity Tier 1 Capital ratio (on a fully implemented basis) due to changes in FX translation, net of hedges (bps)	—	—	(3)

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

63

Interest Revenue/Expense and Net Interest Margin

In millions of dollars, except as otherwise noted	3rd Qtr. 2018	2nd Qtr. 2018	3rd Qtr. 2017	Change 3Q18 vs. 3Q17
Interest revenue[1]	$18,228	$17,613	$16,037	14 %
Interest expense[2]	6,368	5,885	4,379	45
Net interest revenue	$11,860	$11,728	$11,658	2 %
Interest revenue—average rate	4.15 %	4.05 %	3.77 %	38 bps
Interest expense—average rate	1.83	1.73	1.33	50 bps
Net interest margin[3]	2.70	2.70	2.74	(4) bps
Interest-rate benchmarks				
Two-year U.S. Treasury note—average rate	2.67 %	2.48 %	1.36 %	131 bps
10-year U.S. Treasury note—average rate	2.92	2.92	2.24	68 bps
10-year vs. two-year spread	25 bps	44 bps	88 bps	

Note: All interest expense amounts include FDIC, as well as other similar deposit insurance assessments outside of the U.S.

(1) Net interest revenue includes the taxable equivalent adjustments related to the tax-exempt bond portfolio (based on the U.S. federal statutory tax rates of 21% in 2018 and 35% in 2017) of $58 million, $63 million and $123 million for the three months ended September 30, 2018, June 30, 2018 and September 30, 2017, respectively.

(2) Interest expense associated with certain hybrid financial instruments, which are classified as Long-term debt and accounted for at fair value, is reported together with any changes in fair value as part of Principal transactions in the Consolidated Statements of Income and is therefore not reflected in Interest expense in the table above.

(3) Citi's net interest margin (NIM) is calculated by dividing gross interest revenue less gross interest expense by average interest-earning assets.

Citi's net interest revenue in the third quarter of 2018 increased 2% to $11.9 billion (as set forth in the table above, also up 2% on a taxable equivalent basis) versus the prior-year period. Excluding the impact of FX translation, net interest revenue increased 5%, or approximately $520 million. This increase was primarily due to higher net interest revenue ($11.3 billion, up approximately 9% or $1.0 billion) from Citi's core accrual activities, which are mainly driven by its deposit and lending businesses. The increase in core accrual net interest revenue was partially offset by lower trading-related net interest revenue ($0.4 billion, down approximately 47% or $0.3 billion) and lower net interest revenue associated with the wind-down of legacy assets in Corporate/Other ($0.2

billion, down approximately 45% or $0.1 billion). The increase in the core accrual net interest revenue was driven mainly by higher interest rates, loan growth and an improved loan mix.

Citi's NIM was 2.70% on a taxable equivalent basis in the third quarter of 2018, a decrease of 4 bps from the prior-year period, driven primarily by lower trading-related NIM. Citi's core accrual NIM was 3.60%, an increase of 12 bps versus the prior-year period, primarily driven by higher interest rates, loan growth and an improved loan mix. (Citi's core accrual net interest revenue and core accrual NIM are non-GAAP financial measures.)

Additional Interest Rate Details
Average Balances and Interest Rates—Assets[1][2][3]
Taxable Equivalent Basis

	Average volume			Interest revenue			% Average rate		
In millions of dollars, except rates	3rd Qtr. 2018	2nd Qtr. 2018	3rd Qtr. 2017	3rd Qtr. 2018	2nd Qtr. 2018	3rd Qtr. 2017	3rd Qtr. 2018	2nd Qtr. 2018	3rd Qtr. 2017
Assets									
Deposits with banks[4]	$186,907	$176,151	$176,942	$629	$493	$486	1.34%	1.12%	1.09%
Federal funds sold and securities borrowed or purchased under agreements to resell[5]									
In U.S. offices	$154,120	$153,273	$136,681	$1,065	$838	$524	2.74%	2.19%	1.52%
In offices outside the U.S.[4]	114,389	118,098	108,770	360	498	334	1.25	1.69	1.22
Total	$268,509	$271,371	$245,451	$1,425	$1,336	$858	2.11%	1.97%	1.39%
Trading account assets[6][7]									
In U.S. offices	$92,034	$92,791	$98,725	$1,048	$851	$918	4.52%	3.68%	3.69%
In offices outside the U.S.[4]	112,979	117,840	105,882	614	922	555	2.16	3.14	2.08
Total	$205,013	$210,631	$204,607	$1,662	$1,773	$1,473	3.22%	3.38%	2.86%
Investments									
In U.S. offices									
Taxable	$227,282	$225,886	$227,680	$1,343	$1,315	$1,138	2.34%	2.34%	1.98%
Exempt from U.S. income tax	17,088	17,339	17,890	175	180	181	4.06	4.16	4.01
In offices outside the U.S.[4]	103,120	104,562	106,456	903	913	835	3.47	3.50	3.11
Total	$347,490	$347,787	$352,026	$2,421	$2,408	$2,154	2.76%	2.78%	2.43%
Loans (net of unearned income)[8]									
In U.S. offices	$385,610	$382,972	$372,067	$7,331	$6,958	$6,650	7.54%	7.29%	7.09%
In offices outside the U.S.[4]	284,663	286,772	274,254	4,326	4,251	4,124	6.03	5.95	5.97
Total	$670,273	$669,744	$646,321	$11,657	$11,209	$10,774	6.90%	6.71%	6.61%
Other interest-earning assets[9]	$63,741	$69,341	$61,677	$434	$394	$292	2.70%	2.28%	1.88%
Total interest-earning assets	$1,741,933	$1,745,025	$1,687,024	$18,228	$17,613	$16,037	4.15%	4.05%	3.77%
Non-interest-earning assets[6]	$180,871	$172,077	$205,268						
Total assets	$1,922,804	$1,917,102	$1,892,292						

(1) Net interest revenue includes the taxable equivalent adjustments related to the tax-exempt bond portfolio (based on the U.S. federal statutory tax rates of 21% in 2018 and 35% in 2017) of $58 million, $63 million and $123 million for the three months ended September 30, 2018, June 30, 2018 and September 30, 2017, 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) Average rates reflect prevailing local interest rates, including inflationary effects and monetary corrections in certain countries.
(5) 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.
(6) 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.
(7) 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.
(8) Includes cash-basis loans.

(9) Includes brokerage receivables.

Average Balances and Interest Rates—Liabilities and Equity, and Net Interest Revenue[1][2][3]
Taxable Equivalent Basis

	Average volume			Interest expense			% Average rate		
	3rd Qtr.	2nd Qtr.	3rd Qtr.	3rd Qtr.	2nd Qtr.	3rd Qtr.	3rd Qtr.	2nd Qtr.	3rd Qtr.
In millions of dollars, except rates	2018	2018	2017	2018	2018	2017	2018	2018	2017
Liabilities									
Deposits									
In U.S. offices[4]	$341,679	$332,595	$318,881	$1,231	$1,041	$695	1.43%	1.26%	0.86%
In offices outside the U.S.[5]	452,197	453,025	438,561	1,349	1,203	1,080	1.18	1.07	0.98
Total	$793,876	$785,620	$757,442	$2,580	$2,244	$1,775	1.29%	1.15%	0.93%
Federal funds purchased and securities loaned or sold under agreements to repurchase[6]									
In U.S. offices	$105,194	$102,517	$93,167	$872	$796	$423	3.29%	3.11%	1.80%
In offices outside the U.S.[5]	70,638	68,556	64,897	378	428	289	2.12	2.50	1.77
Total	$175,832	$171,073	$158,064	$1,250	$1,224	$712	2.82%	2.87%	1.79%
Trading account liabilities[7][8]									
In U.S. offices	$38,385	$36,103	$32,622	$167	$140	$104	1.73%	1.56%	1.26%
In offices outside the U.S.[5]	57,746	61,048	57,187	106	96	65	0.73	0.63	0.45
Total	$96,131	$97,151	$89,809	$273	$236	$169	1.13%	0.97%	0.75%
Short-term borrowings[9]									
In U.S. offices	$85,592	$84,338	$77,211	$502	$439	$234	2.33%	2.09%	1.20%
In offices outside the U.S.[5]	22,579	23,854	20,928	76	84	84	1.34	1.41	1.59
Total	$108,171	$108,192	$98,139	$578	$523	$318	2.12%	1.94%	1.29%
Long-term debt[10]									
In U.S. offices	$200,199	$198,291	$198,766	$1,647	$1,620	$1,377	3.26%	3.28%	2.75%
In offices outside the U.S.[5]	5,390	4,980	4,298	40	38	28	2.94	3.06	2.58
Total	$205,589	$203,271	$203,064	$1,687	$1,658	$1,405	3.26%	3.27%	2.75%
Total interest-bearing liabilities	$1,379,599	$1,365,307	$1,306,518	$6,368	$5,885	$4,379	1.83%	1.73%	1.33%
Demand deposits in U.S. offices	$31,697	$33,737	$37,673						
Other non-interest-bearing liabilities[7]	312,174	316,907	318,060						
Total liabilities	$1,723,470	$1,715,951	$1,662,251						
Citigroup stockholders' equity	$198,494	$200,295	$229,017						
Noncontrolling interest	840	856	1,024						
Total equity	$199,334	$201,151	$230,041						
Total liabilities and stockholders' equity	$1,922,804	$1,917,102	$1,892,292						
Net interest revenue as a percentage of average interest-earning assets[11]									
In U.S. offices	$1,005,236	$983,786	$975,283	$7,307	$6,710	$7,046	2.88%	2.74%	2.87%
In offices outside the U.S.[6]	736,697	761,239	711,741	4,553	5,018	4,612	2.45	2.64	2.57
Total	$1,741,933	$1,745,025	$1,687,024	$11,860	$11,728	$11,658	2.70%	2.70%	2.74%

(1) Net interest revenue includes the taxable equivalent adjustments related to the tax-exempt bond portfolio (based on the U.S. federal statutory tax rates of 21% in 2018 and 35% in 2017) of $58 million, $63 million and $123 million for the three months ended September 30, 2018, June 30, 2018 and September 30, 2017, 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) 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.

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

(6) 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.

(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 brokerage payables.
(10) Excludes hybrid financial instruments and beneficial interests in consolidated VIEs that are classified as Long-term debt, as the changes in fair value for these obligations are recorded in Principal transactions.
(11) Includes allocations for capital and funding costs based on the location of the asset.

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

	Average volume		Interest revenue		% Average rate	
In millions of dollars, except rates	Nine Months 2018	Nine Months 2017	Nine Months 2018	Nine Months 2017	Nine Months 2018	Nine Months 2017
Assets						
Deposits with banks(5)	$177,975	$165,910	$1,554	$1,156	1.17%	0.93 %
Federal funds sold and securities borrowed or purchased under agreements to resell(6)						
In U.S. offices	$149,251	$141,723	$2,616	$1,364	2.34%	1.29 %
In offices outside the U.S.(5)	115,469	105,527	1,184	984	1.37	1.25
Total	$264,720	$247,250	$3,800	$2,348	1.92%	1.27 %
Trading account assets(7)(8)						
In U.S. offices	$94,128	$100,214	$2,768	$2,679	3.93%	3.57 %
In offices outside the U.S.(5)	116,474	101,159	2,048	1,624	2.35	2.15
Total	$210,602	$201,373	$4,816	$4,303	3.06%	2.86 %
Investments						
In U.S. offices						
Taxable	$227,525	$224,384	$3,882	$3,258	2.28%	1.94 %
Exempt from U.S. income tax	17,319	18,345	525	574	4.05	4.18
In offices outside the U.S.(5)	104,330	106,813	2,693	2,454	3.45	3.07
Total	$349,174	$349,542	$7,100	$6,286	2.72%	2.40 %
Loans (net of unearned income)(9)						
In U.S. offices	$382,980	$369,602	$21,021	$19,316	7.34%	6.99 %
In offices outside the U.S.(5)	286,334	265,060	12,754	11,844	5.96	5.97
Total	$669,314	$634,662	$33,775	$31,160	6.75%	6.56 %
Other interest-earning assets(10)	$66,614	$59,506	$1,192	$846	2.39%	1.90 %
Total interest-earning assets	$1,738,399	$1,658,243	$52,237	$46,099	4.02%	3.72 %
Non-interest-earning assets(7)	$176,312	$205,775				
Total assets	$1,914,711	$1,864,018				

(1) Net interest revenue includes the taxable equivalent adjustments (based on the U.S. federal statutory tax rates of 21% in 2018 and 35% in 2017) of $185 million and $370 million for the nine months ended September 30, 2018 and 2017, respectively.
(2) Interest rates and amounts include the effects of risk management activities associated with the respective asset and 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)

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 FIN 41 (ASC 210-20-45). However, Interest revenue excludes the impact of FIN 41 (ASC 210-20-45).

(7) The fair value carrying amounts of derivative contracts are reported 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]
Taxable Equivalent Basis

	Average volume		Interest expense		% Average rate	
In millions of dollars, except rates	Nine Months 2018	Nine Months 2017	Nine Months 2018	Nine Months 2017	Nine Months 2018	Nine Months 2017
Liabilities						
Deposits						
In U.S. offices[5]	$332,542	$310,977	$3,169	$1,795	1.27%	0.77 %
In offices outside the U.S.[6]	450,546	435,704	3,652	2,998	1.08	0.92
Total	$783,088	$746,681	$6,821	$4,793	1.16%	0.86 %
Federal funds purchased and securities loaned or sold under agreements to repurchase[7]						
In U.S. offices	$102,242	$96,417	$2,272	$1,101	2.97%	1.53 %
In offices outside the U.S.[6]	68,215	59,559	1,151	780	2.26	1.75
Total	$170,457	$155,976	$3,423	$1,881	2.68%	1.61 %
Trading account liabilities[8][9]						
In U.S. offices	$36,161	$33,041	$434	$269	1.60%	1.09 %
In offices outside the U.S.[6]	58,840	57,862	290	193	0.66	0.45
Total	$95,001	$90,903	$724	$462	1.02%	0.68 %
Short-term borrowings[10]						
In U.S. offices	$86,377	$72,435	$1,330	$422	2.06%	0.78 %
In offices outside the U.S.[6]	23,305	22,668	242	297	1.39	1.75
Total	$109,682	$95,103	$1,572	$719	1.92%	1.01 %
Long-term debt[11]						
In U.S. offices	$199,471	$188,344	$4,749	$3,993	3.18%	2.83 %
In offices outside the U.S.[6]	4,908	4,715	124	133	3.38	3.77
Total	$204,379	$193,059	$4,873	$4,126	3.19%	2.86 %
Total interest-bearing liabilities	$1,362,607	$1,281,722	$17,413	$11,981	1.71%	1.25 %
Demand deposits in U.S. offices	$33,654	$38,064				
Other non-interest-bearing liabilities[8]	317,697	313,605				
Total liabilities	$1,713,958	$1,633,391				
Citigroup stockholders' equity[12]	$199,874	$229,618				
Noncontrolling interest	879	1,009				
Total equity[12]	$200,753	$230,627				
Total liabilities and stockholders' equity	$1,914,711	$1,864,018				
Net interest revenue as a percentage of average interest-earning assets						
In U.S. offices	$987,592	$963,789	$20,734	$20,588	2.81%	2.86 %
In offices outside the U.S.[6]	750,807	694,454	14,090	13,530	2.51	2.60
Total	$1,738,399	$1,658,243	$34,824	$34,118	2.68%	2.75 %

(1) Net interest revenue includes the taxable equivalent adjustments (based on the U.S. federal statutory tax rates of 21% in 2018 and 35% in 2017) of $185 million and $370 million for the nine months ended September 30, 2018 and 2017, respectively.
(2) Interest rates and amounts include the effects of risk management activities associated with the respective asset and 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 fees and charges.

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

(7) Average volumes of securities loaned or sold under agreements to repurchase are reported net pursuant to FIN 41 (ASC 210-20-45). However, Interest expense excludes the impact of FIN 41 (ASC 210-20-45).

(8) The fair value carrying amounts of derivative contracts are reported 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) 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.

(11) Includes stockholders' equity from discontinued operations.

(12) Includes allocations for capital and funding costs based on the location of the asset.

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

In millions of dollars	3rd Qtr. 2018 vs. 2nd Qtr. 2018 Increase (decrease) due to change in: Average volume	Average rate	Net change	3rd Qtr. 2018 vs. 3rd Qtr. 2017 Increase (decrease) due to change in: Average volume	Average rate	Net change
Deposits with banks(4)	$32	$ 104	$136	$29	$ 114	$143
Federal funds sold and securities borrowed or purchased under agreements to resell						
In U.S. offices	$5	$ 222	$227	$74	$ 467	$541
In offices outside the U.S.(4)	(15)	(123)	(138)	18	8	26
Total	$(10)	$ 99	$89	$92	$ 475	$567
Trading account assets(5)						
In U.S. offices	$(7)	$ 204	$197	$(65)	$ 195	$130
In offices outside the U.S.(4)	(37)	(271)	(308)	38	21	59
Total	$(44)	$ (67)	$(111)	$(27)	$ 216	$189
Investments(1)						
In U.S. offices	$7	$ 16	$23	$(6)	$ 205	$199
In offices outside the U.S.(4)	(13)	3	(10)	(27)	95	68
Total	$(6)	$ 19	$13	$(33)	$ 300	$267
Loans (net of unearned income)(6)						
In U.S. offices	$48	$ 325	$373	$248	$ 433	$681
In offices outside the U.S.(4)	(31)	106	75	158	44	202
Total	$17	$ 431	$448	$406	$ 477	$883
Other interest-earning assets(7)	$(34)	$ 74	$40	$10	$ 132	$142
Total interest revenue	$(45)	$ 660	$615	$477	$ 1,714	$2,191

(1) The taxable equivalent adjustment is related to the tax-exempt bond portfolio based on the U.S. federal statutory tax rates of 21% in 2018 and 35% in 2017 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]

In millions of dollars	3rd Qtr. 2018 vs. 2nd Qtr. 2018 Increase (decrease) due to change in: Average volume	Average rate	Net change	3rd Qtr. 2018 vs. 3rd Qtr. 2017 Increase (decrease) due to change in: Average volume	Average rate	Net change
Deposits						
In U.S. offices	$29	$ 161	$ 190	$53	$483	$536
In offices outside the U.S.[4]	(2)	148	146	34	235	269
Total	$27	$ 309	$ 336	$87	$718	$805
Federal funds purchased and securities loaned or sold under agreements to repurchase						
In U.S. offices	$21	$ 55	$ 76	$61	$388	$449
In offices outside the U.S.[4]	13	(63)	(50)	27	62	89
Total	$34	$ (8)	$ 26	$88	$450	$538
Trading account liabilities[5]						
In U.S. offices	$9	$ 18	$ 27	$21	$42	$63
In offices outside the U.S.[4]	(5)	15	10	1	40	41
Total	$4	$ 33	$ 37	$22	$82	$104
Short-term borrowings[6]						
In U.S. offices	$7	$ 56	$ 63	$28	$240	$268
In offices outside the U.S.[4]	(4)	(4)	(8)	6	(14)	(8)
Total	$3	$ 52	$ 55	$34	$226	$260
Long-term debt						
In U.S. offices	$16	$ 11	$ 27	$10	$260	$270
In offices outside the U.S.[4]	3	(1)	2	8	4	12
Total	$19	$ 10	$ 29	$18	$264	$282
Total interest expense	$85	$ 396	$ 483	$249	$1,740	$1,989
Net interest revenue	$(130)	$ 262	$ 132	$225	$(23)	$202

(1) The taxable equivalent adjustment is related to the tax-exempt bond portfolio based on the U.S. federal statutory tax rates of 21% in 2018 and 35% in 2017 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.

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

In millions of dollars	Nine Months 2018 vs. Nine Months 2017 Increase (decrease) due to change in: Average volume	Average rate	Net change[(2)]
Deposits with banks[(4)]	$89	$309	$398
Federal funds sold and securities borrowed or purchased under agreements to resell			
In U.S. offices	$76	$1,176	$1,252
In offices outside the U.S.[(4)]	97	103	200
Total	$173	$1,279	$1,452
Trading account assets[(5)]			
In U.S. offices	$(169)	$258	$89
In offices outside the U.S.[(4)]	260	164	424
Total	$91	$422	$513
Investments[(1)]			
In U.S. offices	$34	$541	$575
In offices outside the U.S.[(4)]	(58)	297	239
Total	$(24)	$838	$814
Loans (net of unearned income)[(6)]			
In U.S. offices	$714	$991	$1,705
In offices outside the U.S.[(4)]	948	(38)	910
Total	$1,662	$953	$2,615
Other interest-earning assets	$109	$237	$346
Total interest revenue	$2,100	$4,038	$6,138
Deposits[(7)]			
In U.S. offices	$132	$1,242	$1,374
In offices outside the U.S.[(4)]	105	549	654
Total	$237	$1,791	$2,028
Federal funds purchased and securities loaned or sold under agreements to repurchase			
In U.S. offices	$70	$1,101	$1,171
In offices outside the U.S.[(4)]	124	247	371
Total	$194	$1,348	$1,542
Trading account liabilities[(5)]			
In U.S. offices	$27	$138	$165
In offices outside the U.S.[(4)]	3	94	97
Total	$30	$232	$262
Short-term borrowings			
In U.S. offices	$95	$813	$908
In offices outside the U.S.[(4)]	8	(63)	(55)
Total	$103	$750	$853
Long-term debt			
In U.S. offices	$245	$511	$756
In offices outside the U.S.[(4)]	5	(14)	(9)
Total	$250	$497	$747
Total interest expense	$814	$4,618	$5,432
Net interest revenue	$1,286	$(580)	$706

(1)

The taxable equivalent adjustment is related to the tax-exempt bond portfolio based on the U.S. federal statutory tax rates of 21% in 2018 and 35% in 2017 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.

(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 Trading account assets and Trading account liabilities, respectively.
(6) Includes cash-basis loans.
(7) The interest expense on deposits includes the FDIC assessment and deposit insurance fees and charges of $1,006 million and $935 million for the nine months ended September 30, 2018 and 2017, respectively.

Market Risk of Trading Portfolios

For additional information on Citi's market risk of trading portfolios, see "Market Risk—Market Risk of Trading Portfolios" in Citi's 2017 Annual Report on Form 10-K.

Value at Risk

As of September 30, 2018, Citi estimates that the conservative features of its VAR calibration contributed an approximate 22% add-on to what would be a VAR estimated under the assumption of stable and perfectly normal distributed markets. As of June 30, 2018, the add-on was 25%.

As set forth in the table below, Citi's average trading VAR as of September 30, 2018 decreased compared to June 30, 2018. The decrease was mainly due to lower foreign exchange risk in the Markets businesses within ICG. The decrease of average trading and credit portfolio VAR was in line with the decrease in average trading VAR.

Quarter-end and Average Trading VAR and Trading and Credit Portfolio VAR

In millions of dollars	September 30, 2018	Third Quarter 2018 Average	June 30, 2018	Second Quarter 2018 Average	September 30, 2017	Third Quarter 2017 Average
Interest rate	$ 33	$ 58	$ 60	$ 61	$ 63	$ 63
Credit spread	45	42	46	47	43	44
Covariance adjustment[1]	(17)	(24)	(25)	(26)	(28)	(23)
Fully diversified interest rate and credit spread[2]	$ 61	$ 76	$ 81	$ 82	$ 78	$ 84
Foreign exchange	18	21	29	30	26	26
Equity	23	21	23	20	15	13
Commodity	17	21	16	17	20	23
Covariance adjustment[1]	(58)	(68)	(74)	(69)	(64)	(65)
Total trading VAR—all market risk factors, including general and specific risk (excluding credit portfolios)[2]	$ 61	$ 71	$ 75	$ 80	$ 75	$ 81
Specific risk-only component[3]	$ 7	$ 1	$ 2	$ 3	$ 3	$ 2
Total trading VAR—general market risk factors only (excluding credit portfolios)	$ 54	$ 70	$ 73	$ 77	$ 72	$ 79
Incremental impact of the credit portfolio[4]	$ 11	$ 11	$ 16	$ 10	$ 8	$ 8
Total trading and credit portfolio VAR	$ 72	$ 82	$ 91	$ 90	$ 83	$ 89

(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 in ICG, 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 in ICG.

73

The table below provides the range of market factor VARs associated with Citi's total trading VAR, inclusive of specific risk:

	Third Quarter 2018		Second Quarter 2018		Third Quarter 2017	
In millions of dollars	Low	High	Low	High	Low	High
Interest rate	$33	$ 80	$38	$91	$33	$97
Credit spread	38	47	43	52	38	52
Fully diversified interest rate and credit spread	$61	$ 95	$59	$118	$59	$108
Foreign exchange	13	27	20	44	19	38
Equity	16	28	15	26	8	18
Commodity	16	27	13	22	14	31
Total trading	$56	$ 91	$57	$120	$58	$106
Total trading and credit portfolio	66	101	69	123	67	112

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:

In millions of dollars	Sept. 30, 2018
Total—all market risk factors, including general and specific risk	
Average—during quarter	$ 71
High—during quarter	91
Low—during quarter	56

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.

As of September 30, 2018, there was one back-testing exception observed for Citi's Regulatory VAR for the prior 12 months, due to market moves triggered by political events in Italy.

Country Risk

For additional information on country risk at Citi, see “Country Risk” in Citi’s 2017 Annual Report on Form 10-K.

Top 25 Country Exposures

The following table presents Citi’s top 25 exposures by country (excluding the U.S.) as of September 30, 2018. The total exposure as of September 30, 2018 to the top 25 countries disclosed below in combination with the U.S., would represent approximately 95% of Citi’s exposure to all countries. 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 28% of corporate loans presented in the table below are to U.K. domiciled entities (29% for unfunded commitments), with the balance of the loans predominately to European domiciled counterparties. Approximately 83% of the total U.K. funded loans and 91% of the total U.K. unfunded commitments were investment grade as of September 30, 2018. 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 U.K.’s potential exit from the EU, see “Risk Factors—Strategic Risks” in Citigroup’s 2017 Annual Report on Form 10-K.

In billions of dollars	ICG loans[1]	GCB loans	Other funded[2]	Unfunded[3]	Net MTM on derivatives/repos[4]	Total hedges (on loans and CVA)	Investment securities[5]	Trading account assets[6]	Total as of 3Q18	Total as of 2Q18	Total as of 3Q17	Total as a % of Citi as of 3Q18
United Kingdom	$ 40.3	$ —	$ 8.3	$ 62.1	$ 11.6	$ (3.4)	$ 5.6	$ (0.8)	$ 123.7	$ 125.8	$ 110.2	7.7 %
Mexico	9.9	26.8	0.3	7.9	0.9	(0.7)	12.4	4.4	61.9	60.2	62.8	3.9
Hong Kong	16.8	12.3	0.8	6.9	1.6	(0.2)	6.6	1.1	45.9	45.1	40.8	2.9
Singapore	13.3	12.3	0.4	5.1	1.6	(0.2)	7.9	0.6	41.0	41.2	43.8	2.6
Korea	2.1	19.0	0.2	2.8	1.2	(1.1)	8.8	0.7	33.7	35.0	34.2	2.1
Ireland	12.2	—	0.8	16.7	0.5	—	—	0.9	31.1	31.3	28.8	1.9
India	4.1	6.7	0.8	5.1	2.6	(0.8)	7.8	0.9	27.2	27.6	28.7	1.7
Brazil	12.8	—	—	3.0	4.5	(1.0)	3.2	3.4	25.9	24.4	28.0	1.6
Australia	5.1	10.0	—	6.2	1.0	(0.4)	1.8	0.4	24.1	23.2	27.0	1.5
Germany	0.1	—	0.1	4.1	3.7	(3.4)	9.3	5.8	19.7	16.8	18.6	1.2
China	7.4	4.7	0.4	1.9	1.5	(0.5)	2.8	0.6	18.8	19.5	20.8	1.2
Japan	2.9	0.1	0.1	2.5	4.4	(1.4)	4.7	5.1	18.4	15.9	18.8	1.1
Taiwan	5.1	8.9	0.1	1.1	0.4	—	1.1	1.1	17.8	19.0	18.5	1.1
Canada	2.3	0.7	0.5	7.4	2.3	(0.3)	3.1	0.4	16.4	15.8	16.0	1.0
Poland	3.7	2.0	0.1	3.8	0.1	(0.1)	4.0	0.8	14.4	13.0	13.6	0.9
Jersey	6.6	—	0.3	3.4	—	—	—	—	10.3	10.0	4.5	0.6
	5.6	1.6	0.1	2.5	0.1	(0.1)	—	—	9.8	10.2	6.7	0.6

United Arab Emirates												
Malaysia	1.8	4.7	0.3	1.1	0.2	(0.1)	1.3	0.3	9.6	9.7	9.1	0.6
Thailand	1.2	2.4	—	1.5	—	—	1.4	0.7	7.2	6.9	7.0	0.4
Indonesia	2.2	1.0	0.1	1.3	0.1	(0.1)	1.1	0.1	5.8	6.2	6.2	0.4
Luxembourg	—	—	—	—	0.5	(0.3)	4.1	0.8	5.1	4.9	6.1	0.3
South Africa	1.8	—	—	1.4	0.5	(0.1)	1.5	(0.1)	5.0	5.3	4.3	0.3
Philippines	0.8	1.2	—	0.4	1.1	(0.1)	1.4	0.1	4.9	5.2	3.6	0.3
Russia	1.8	0.9	—	0.8	0.1	(0.1)	0.7	(0.1)	4.1	4.6	5.0	0.3
Italy	0.2	—	—	2.3	5.0	(4.3)	—	0.5	3.7	3.2	3.1	0.2
Total												36.4%

(1) ICG loans reflect funded corporate loans and private bank loans, net of unearned income. As of September 30, 2018, private bank loans in the table above totaled $24.5 billion, concentrated in Hong Kong ($7.0 billion), Singapore ($6.8 billion) and the U.K. ($6.1 billion).

75

(2) Other funded includes other direct exposure such as accounts receivable, loans HFS, other loans in Corporate/Other and investments accounted for under the equity method.
(3) Unfunded exposure includes unfunded corporate lending commitments, letters of credit and other contingencies.
(4) Net mark-to-market counterparty risk on OTC derivatives and securities lending/borrowing transactions (repos). Exposures are shown net of collateral and inclusive of CVA. Includes margin loans.
(5) Investment securities include securities available-for-sale, recorded at fair market value, and securities held-to-maturity, recorded at historical cost.
(6) Trading account assets are shown on a net basis and include issuer risk on cash products and derivative exposure where the underlying reference entity/issuer is located in that country.

INCOME TAXES

Deferred Tax Assets

For additional information on Citi's deferred tax assets (DTAs), see "Risk Factors—Strategic Risks," "Significant Accounting Policies and Significant Estimates—Income Taxes" and Notes 1 and 9 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.

At September 30, 2018, Citigroup had recorded net DTAs of approximately $23.0 billion, an increase of $0.1 billion from June 30, 2018 and an increase of $0.5 billion from December 31, 2017. The increase for the quarter was primarily driven by losses in Other comprehensive income, partially offset by earnings. The increase for the nine months was primarily driven by losses in Other comprehensive income and adoption of ASU 2016-16 (see Note 1 to the Consolidated Financial Statements), partially offset by earnings.

The table below summarizes Citi's net DTAs balance. Of Citi's net DTAs as of September 30, 2018, those arising from net operating losses, foreign tax credit and general business credit carry-forwards are 100% deducted in calculating Citi's regulatory capital, while DTAs arising from temporary differences are deducted from regulatory capital if in excess of the 10%/15% limitations.

Despite the $0.5 billion increase in net DTAs from December 31, 2017, Citi was able to reduce the amount of DTAs arising from net operating losses, foreign tax credits and general business credit carry-forwards by $0.7 billion, thereby reducing the amount of DTAs that was excluded from Common Equity Tier 1 Capital from $12.3 billion to $11.6 billion as of September 30, 2018. There were no DTAs in excess of the 10%/15% limitations as of September 30, 2018, (see "Capital Resources" above). Thus, approximately $11.4 billion of net DTAs was not deducted in calculating regulatory capital pursuant to Basel III standards as of September 30, 2018, and was appropriately risk weighted as per those rules.

Jurisdiction/Component	DTAs balance	
In billions of dollars	September 30, 2018	December 31, 2017
Total U.S.	$20.4	$ 19.9
Total foreign	2.6	2.6
Total	$23.0	$ 22.5

Effective Tax Rate

Citi's effective tax rate for the third quarter of 2018 was 24.1%, as compared with 31.1% in the third quarter of 2017. The decrease in the effective tax rate was primarily due to the lower U.S. federal statutory tax rate pursuant to Tax

Reform.

SEC Staff Accounting Bulletin 118
Citi’s third quarter of 2018 tax provision did not include any changes to Citi’s provisional income tax estimates recorded in the fourth quarter of 2017. The U.S. Treasury issued certain U.S. tax reform guidance through September 30, 2018 and it is anticipated that additional guidance will be issued by the end of 2018. Citi expects to complete its analysis within the one-year measurement period and record final adjustments to the provisional income tax estimates during the fourth quarter of 2018.

FUTURE APPLICATION OF ACCOUNTING STANDARDS

Accounting for Financial Instruments—Credit Losses

In June 2016, the Financial Accounting Standards Board (FASB) issued ASU No. 2016-13, Financial Instruments—Credit Losses (Topic 326). The ASU introduces a new credit loss methodology, the Current Expected Credit Losses (CECL) methodology, which requires earlier recognition of credit losses, while also providing additional transparency about credit risk.

The CECL methodology utilizes a lifetime "expected credit loss" measurement objective for the recognition of credit losses for loans, held-to-maturity debt securities and other receivables at the time the financial asset is originated or acquired. The expected credit losses (ECL) are adjusted each period for changes in expected lifetime credit losses. This methodology replaces the multiple existing impairment methods in current GAAP, which generally require that a loss be incurred before it is recognized. For available-for-sale debt securities where fair value is less than cost, credit-related impairment, if any, will be recognized through an allowance for credit losses and adjusted each period for changes in credit risk.

The CECL methodology represents a significant change 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. Based on a preliminary analysis performed in 2018 and the environment and portfolios at that time, the overall impact is estimated to be an approximate 10% to 20% increase in credit loss reserves. However, there are still some implementation questions to be resolved by the FASB that could affect the estimated impact, including (i) the amounts and types of recoveries that can be included in expected credit loss estimates and (ii) whether recovery inputs can be discounted under a non-discounted cash flow approach to estimating expected credit losses.

The ASU will be effective for Citi as of January 1, 2020. For additional information, see "Capital Resources—Regulatory Capital Treatment—Implementation and Transition of the Current Expected Credit Losses (CECL) Methodology" in the First Quarter of 2018 Form 10-Q.

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 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 and will be adopted prospectively with a cumulative adjustment to Retained earnings. The Company estimates that upon adoption, its Consolidated Balance Sheet

will have an approximate $5 billion increase in assets and liabilities. Additionally, the Company estimates an approximate $140 million increase in retained earnings due to the cumulative effect of recognizing previously deferred gains on sale/leaseback transactions.

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. Under the ASU, the impairment test is 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 will be effective for Citi as of January 1, 2020. The impact of the ASU will depend upon the performance of Citi's reporting units and the market conditions impacting the fair value of each reporting unit going forward.

Fair Value Measurement

In August 2018, the FASB issued ASU No. 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement. The amendments modify certain disclosure requirements for fair value measurements and are effective January 1, 2020, with early adoption permitted. Adoption of this standard is not expected to have a material impact on the Company.

See Note 1 to the Consolidated Financial Statements for a discussion of "Accounting Changes."

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 September 30, 2018 and, based on that evaluation, the CEO and CFO have concluded that at that date, Citigroup's disclosure controls and procedures were effective.

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, 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 disclosed reportable activities pursuant to Section 219 in the second quarter of 2018 in the Second Quarter of 2018 Form 10-Q.
During the third quarter of 2018, Bank Handlowy w Warszawie S.A., a Citibank subsidiary located in Poland, processed a funds transfer involving the Iranian Embassy in Poland. The value of the funds transfer was EUR 100.00 (approximately USD 116.54). In addition, Citibank N.A., India Branch, processed a payment involving the Consulate General of Iran in India. The value of the payment was INR 8,200.00 (approximately USD 111.62). These payments were for visa- and passport-related fees respectively, which are permissible under the travel exemption in the Iranian Transactions and Sanctions Regulations. Citibank realized nominal fees for the processing of these payments.

FORWARD-LOOKING STATEMENTS

Certain statements in this Form 10-Q, 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 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, target, illustrative, 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 (i) the precautionary statements included within each individual business's discussion and analysis of its results of operations above and in Citi's 2017 Annual Report on Form 10-K, First Quarter of 2018 Form 10-Q and Second Quarter of 2018 Form 10-Q; (ii) the factors listed and described under "Risk Factors" in Citi's 2017 Annual Report on Form 10-K; and (iii) the risks and uncertainties summarized below:

- the potential impact on Citi's ability to return capital to common shareholders, consistent with its capital optimization efforts and targets, due to, among other things, Citi's results of operations, Citi's ability to effectively manage its level of risk weighted assets and GSIB surcharge, potential changes to the regulatory capital framework, the CCAR process and the results of regulatory stress tests or any changes to the stress testing and CCAR requirements or process, such as the proposed introduction of a firm-specific "stress capital buffer" (SCB), including as a result of any year-to-year variability resulting from the SCB and the impact on Citi's estimated management buffer;
- the ongoing regulatory and other uncertainties and changes faced by financial institutions, including Citi, in the U.S. and globally, including, uncertainties and potential changes to various aspects of the regulatory capital framework, and the potential impact these uncertainties and changes could have on Citi's businesses, results of operations, financial condition, strategy or organizational structure and compliance risks and costs;
- Citi's ability to utilize its remaining DTAs (including the foreign tax credit component of its DTAs) and thus reduce the negative impact of the DTAs on Citi's regulatory capital, including as a result of its ability to generate U.S. taxable income and by the provisions of and guidance issued in connection with Tax Reform;
- the potential impact to Citi if its interpretation or application of the complex tax laws to which it is subject, such as withholding tax obligations and stamp and other transactional taxes, differs from those of the relevant governmental authorities;
- Citi's ability to achieve its expected results from ongoing investments in its businesses and efficiency initiatives, including revenue growth, as part of Citi's operational and financial objectives and targets, including as a result of factors that Citi cannot control;
- the potential impact from declining sales and revenues or other difficulties of any retailer or merchant with whom Citi has a co-branding or private label credit card relationship, such as Sears, including as a result of accelerated store closures, termination of a particular relationship, external factors outside the control of either party to the relationship, such as the general economic environment, or other factors, including bankruptcies, liquidations, consolidations and other similar events, and the potential negative impact any such event could have on Citi retail services, including as a result of loss of revenues, higher cost of credit, impairment of purchased credit card relationships and contract-related intangibles or other losses;
- the potential impact to Citi's businesses, including funding costs, level and mix of deposits and other products and net interest revenues, from ongoing increases in interest rates;
-

- the potential impact to Citi’s businesses, credit costs, revenues or other results of operations and financial condition as a result of macroeconomic and geopolitical challenges and uncertainties and volatility, including, among others, potential policy and/or regulatory changes arising from a new administration in Mexico, the implementation of protectionist trade or other related policies by the U.S. and/or other countries, governmental fiscal and monetary actions, or expected actions, such as any balance sheet normalization program implemented by the Federal Reserve Board or other central banks, any agreement, or lack thereof, for the U.K. to withdraw from the European Union, or geopolitical disputes;
- the various risks faced by Citi as a result of its presence in the emerging markets, including, among others, sovereign volatility, political events, foreign exchange controls, limitations on foreign investment, sociopolitical instability (including from hyper-inflation), fraud, nationalization or loss of licenses, business restrictions, sanctions or asset freezes, potential criminal charges, closure of branches or subsidiaries and confiscation of assets as well as the increased compliance, regulatory and legal risks and costs;
- Citi’s ability in its resolution plan submissions to address any deficiencies identified or future guidance, including any final 2019 resolution plan guidance, provided by the Federal Reserve Board and FDIC;
- the potential impact on Citi’s performance, including its competitive position and ability to effectively manage its businesses and continue to execute its strategies, if Citi is

unable to hire and retain highly qualified employees for any reason;

- Citi's ability to effectively compete with U.S. and non-U.S. financial services companies and others;
- the potential impact of concentrations of risk, such as credit and market risk arising from the size and volume of Citi's transactions with counterparties in the public sector, including the U.S. government and its agencies, or in the financial services industry, on Citi's results of operations;
- the potential impacts on Citi's liquidity and/or costs of funding as a result of external factors, including, among others, market disruptions and governmental fiscal and monetary policies as well as regulatory changes or negative investor perceptions of Citi's creditworthiness;
- the impact of ratings downgrades of Citi or one or more of its more significant subsidiaries or issuing entities on Citi's funding and liquidity as well as the results of operations of certain of its businesses;
- the potential impact to Citi from a disruption of its operational systems, including as a result of, among other things, human error, fraud or malice, accidental technological failure, electrical or telecommunication outages or failure of computer servers, or other similar damage to Citi's property or assets, or failures by third parties with whom Citi does business, as well as disruptions in the operations of Citi's clients, customers or other third parties;
- the increasing risk of continually evolving, sophisticated cybersecurity risks faced by financial institutions, including Citi and third parties with whom it does business, and others (such as theft of funds or theft, loss, misuse or disclosure of confidential client, customer, corporate or network information or assets and other attempts by unauthorized parties to disrupt computer and network systems), and the potential impact from such risks, including, among others, reputational damage with clients, customers and others, lost revenues, additional costs (including credit, remediation and other costs), regulatory penalties and inquiries, legal exposure and other financial losses;
- the potential impact of incorrect assumptions or estimates in Citi's financial statements or the impact of ongoing changes to financial accounting and reporting standards or interpretations, on how Citi records and reports its financial condition and results of operations;
- the potential impact to Citi's results of operations and/or regulatory capital and capital ratios if Citi's risk management process, strategies or models, including those related to its ability to manage and aggregate data, are deficient or ineffective, require refinement, modification or enhancement or any approval is withdrawn by Citi's U.S. banking regulators;
- the potential impact to Citi of ongoing implementation and interpretation of regulatory changes and requirements in the U.S. and globally, such as on Citi's compliance risks and costs, including reputational and legal risks as

well as remediation and other financial costs, such as penalties and fines; and

- the potential outcomes of the extensive legal and regulatory proceedings, investigations and other inquiries to which Citi is or may be subject at any given time, particularly given the increased focus on conduct risk and the severity of the remedies sought and potential collateral consequences to Citi arising from such outcomes.

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.

FINANCIAL STATEMENTS AND NOTES TABLE OF CONTENTS

CONSOLIDATED FINANCIAL STATEMENTS

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED STATEMENT OF INCOME (UNAUDITED) Citigroup Inc. and Subsidiaries

	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars, except per share amounts	2018	2017	2018	2017
Revenues				
Interest revenue	$18,170	$15,914	$52,052	$45,729
Interest expense	6,368	4,379	17,413	11,981
Net interest revenue	$11,802	$11,535	$34,639	$33,748
Commissions and fees	$2,803	$3,241	$8,944	$9,552
Principal transactions	2,566	2,248	8,006	7,985
Administration and other fiduciary fees	911	929	2,750	2,672
Realized gains on sales of investments, net	69	213	341	626
Impairment losses on investments				
Gross impairment losses	(70)	(15)	(113)	(47)
Net impairment losses recognized in earnings	$(70)	$(15)	$(113)	$(47)
Other revenue	$308	$268	$1,163	$404
Total non-interest revenues	$6,587	$6,884	$21,091	$21,192
Total revenues, net of interest expense	$18,389	$18,419	$55,730	$54,940
Provisions for credit losses and for benefits and claims				
Provision for loan losses	$1,906	$2,146	$5,504	$5,487
Policyholder benefits and claims	26	28	73	81
Provision (release) for unfunded lending commitments	42	(175)	66	(190)
Total provisions for credit losses and for benefits and claims	$1,974	$1,999	$5,643	$5,378
Operating expenses				
Compensation and benefits	$5,319	$5,304	$16,578	$16,301
Premises and equipment	565	608	1,728	1,832
Technology/communication	1,806	1,764	5,361	5,122
Advertising and marketing	378	417	1,170	1,222
Other operating	2,243	2,324	7,111	7,423
Total operating expenses	$10,311	$10,417	$31,948	$31,900
Income from continuing operations before income taxes	$6,104	$6,003	$18,139	$17,662
Provision for income taxes	1,471	1,866	4,356	5,524
Income from continuing operations	$4,633	$4,137	$13,783	$12,138
Discontinued operations				
Loss from discontinued operations	$(8)	$(9)	$(17)	$(4)
Benefit for income taxes	—	(4)	(17)	(2)
Loss from discontinued operations, net of taxes	$(8)	$(5)	$—	$(2)
Net income before attribution of noncontrolling interests	$4,625	$4,132	$13,783	$12,136
Noncontrolling interests	3	(1)	51	41
Citigroup's net income	$4,622	$4,133	$13,732	$12,095
Basic earnings per share(1)				
Income from continuing operations	$1.74	$1.42	$5.04	$4.05
Income from discontinued operations, net of taxes	—	—	—	—
Net income	$1.73	$1.42	$5.04	$4.05
Weighted average common shares outstanding (in millions)	2,479.8	2,683.6	2,524.1	2,729.3
Diluted earnings per share(1)				
Income from continuing operations	$1.74	$1.42	$5.04	$4.05

Income (loss) from discontinued operations, net of taxes	—	—	—	—
Net income	$1.73	$1.42	$5.04	$4.05
Adjusted weighted average common shares outstanding (in millions)	2,481.4	2,683.7	2,525.5	2,729.5

(1) 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.

82

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME (UNAUDITED) Citigroup Inc. and Subsidiaries

	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars	2018	2017	2018	2017
Citigroup's net income	$4,622	$4,133	$13,732	$12,095
Add: Citigroup's other comprehensive income				
Net change in unrealized gains and losses on investment securities, net of taxes[1][2]	$(605)	$(66)	$(2,161)	$127
Net change in debt valuation adjustment (DVA), net of taxes[1]	(287)	(123)	159	(267)
Net change in cash flow hedges, net of taxes	(74)	8	(397)	123
Benefit plans liability adjustment, net of taxes	26	(29)	415	(176)
Net change in foreign currency translation adjustment, net of taxes and hedges	(221)	218	(1,968)	2,179
Net change in excluded component of fair value hedges, net of taxes	10	—	(22)	—
Citigroup's total other comprehensive income (loss)	$(1,151)	$8	$(3,974)	$1,986
Citigroup's total comprehensive income	$3,471	$4,141	$9,758	$14,081
Add: Other comprehensive income attributable to noncontrolling interests	$8	$12	$(35)	$82
Add: Net income attributable to noncontrolling interests	3	(1)	51	41
Total comprehensive income	$3,482	$4,152	$9,774	$14,204

(1) See Note 1 to the Consolidated Financial Statements.

(2) For the three and nine months ended September 30, 2018, respectively, amount represents the net change in unrealized gains and losses on available-for-sale (AFS) debt securities. Effective January 1, 2018, the AFS category is eliminated for equity securities under ASU 2016-01.

The Notes to the Consolidated Financial Statements are an integral part of these Consolidated Financial Statements.

CONSOLIDATED BALANCE SHEET Citigroup Inc. and Subsidiaries

In millions of dollars	September 30, 2018 (Unaudited)	December 31, 2017
Assets		
Cash and due from banks (including segregated cash and other deposits)	$25,727	$23,775
Deposits with banks	173,559	156,741
Federal funds sold and securities borrowed and purchased under agreements to resell (including $178,442 and $132,949 as of September 30, 2018 and December 31, 2017, respectively, at fair value)	280,941	232,478
Brokerage receivables	40,679	38,384
Trading account assets (including $107,753 and $99,460 pledged to creditors at September 30, 2018 and December 31, 2017, respectively)	257,502	252,790
Investments:		
Available-for-sale debt securities (including $7,854 and $9,493 pledged to creditors as of September 30, 2018 and December 31, 2017, respectively)	284,782	290,725
Held-to-maturity debt securities (including $1,073 and $435 pledged to creditors as of September 30, 2018 and December 31, 2017, respectively)	53,249	53,320
Equity securities (including $1,388 and $1,395 at fair value as of September 30, 2018 and December 31, 2017, respectively, of which $189 was available for sale as of December 31, 2017)	7,482	8,245
Total investments	$345,513	$352,290
Loans:		
Consumer (including $21 and $25 as of September 30, 2018 and December 31, 2017, respectively, at fair value)	325,469	333,656
Corporate (including $4,218 and $4,349 as of September 30, 2018 and December 31, 2017, respectively, at fair value)	349,440	333,378
Loans, net of unearned income	$674,909	$667,034
Allowance for loan losses	(12,336)	(12,355)
Total loans, net	$662,573	$654,679
Goodwill	22,187	22,256
Intangible assets (other than MSRs)	4,598	4,588
Mortgage servicing rights (MSRs)	618	558
Other assets (including $25,151 and $18,559 as of September 30, 2018 and December 31, 2017, respectively, at fair value)	111,268	103,926
Total assets	$1,925,165	$1,842,465

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.

In millions of dollars	September 30, 2018 (Unaudited)	December 31, 2017

Assets of consolidated VIEs to be used to settle obligations of consolidated VIEs		
Cash and due from banks	$ 40	$ 52
Trading account assets	722	1,129
Investments	2,276	2,498
Loans, net of unearned income		
Consumer	48,678	54,656
Corporate	17,971	19,835
Loans, net of unearned income	$ 66,649	$ 74,491
Allowance for loan losses	(1,876)	(1,930)
Total loans, net	$ 64,773	$ 72,561
Other assets	167	154
Total assets of consolidated VIEs to be used to settle obligations of consolidated VIEs	$ 67,978	$ 76,394

Statement continues on the next page.

CONSOLIDATED BALANCE SHEET (Continued) Citigroup Inc. and Subsidiaries

In millions of dollars, except shares and per share amounts	September 30, 2018 (Unaudited)	December 31, 2017
Liabilities		
Non-interest-bearing deposits in U.S. offices	$111,446	$126,880
Interest-bearing deposits in U.S. offices (including $354 and $303 as of September 30, 2018 and December 31, 2017, respectively, at fair value)	351,291	318,613
Non-interest-bearing deposits in offices outside the U.S.	83,200	87,440
Interest-bearing deposits in offices outside the U.S. (including $1,086 and $1,162 as of September 30, 2018 and December 31, 2017, respectively, at fair value)	459,239	426,889
Total deposits	$1,005,176	$959,822
Federal funds purchased and securities loaned and sold under agreements to repurchase (including $48,148 and $40,638 as of September 30, 2018 and December 31, 2017, respectively, at fair value)	175,915	156,277
Brokerage payables	73,346	61,342
Trading account liabilities	147,652	125,170
Short-term borrowings (including $5,041 and $4,627 as of September 30, 2018 and December 31, 2017, respectively, at fair value)	33,770	44,452
Long-term debt (including $36,771 and $31,392 as of September 30, 2018 and December 31, 2017, respectively, at fair value)	235,270	236,709
Other liabilities (including $19,947 and $13,961 as of September 30, 2018 and December 31, 2017, respectively, at fair value)	56,173	57,021
Total liabilities	$1,727,302	$1,640,793
Stockholders' equity		
Preferred stock ($1.00 par value; authorized shares: 30 million), issued shares: as of September 30, 2018—761,400 and as of December 31, 2017—770,120, at aggregate liquidation value	$19,035	$19,253
Common stock ($0.01 par value; authorized shares: 6 billion), issued shares: as of September 30, 2018—3,099,567,177 and as of December 31, 2017—3,099,523,273	31	31
Additional paid-in capital	107,825	108,008
Retained earnings	148,436	138,425
Treasury stock, at cost: September 30, 2018—657,430,364 shares and December 31, 2017—529,614,728 shares	(39,678)	(30,309)
Accumulated other comprehensive income (loss) (AOCI)	(38,645)	(34,668)
Total Citigroup stockholders' equity	$197,004	$200,740
Noncontrolling interest	859	932
Total equity	$197,863	$201,672
Total liabilities and equity	$1,925,165	$1,842,465

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.

September 30,

In millions of dollars	2018 (Unaudited)	December 31, 2017
Liabilities of consolidated VIEs for which creditors or beneficial interest holders do not have recourse to the general credit of Citigroup		
Short-term borrowings	$ 12,307	$ 10,142
Long-term debt	27,625	30,492
Other liabilities	748	611
Total liabilities of consolidated VIEs for which creditors or beneficial interest holders do not have recourse to the general credit of Citigroup	$ 40,680	$ 41,245

The Notes to the Consolidated Financial Statements are an integral part of these Consolidated Financial Statements.

CONSOLIDATED STATEMENT OF CHANGES IN STOCKHOLDERS' EQUITY (UNAUDITED) Citigroup Inc. and Subsidiaries

In millions of dollars	Three Months Ended September 30, 2018	Three Months Ended September 30, 2017	Nine Months Ended September 30, 2018	Nine Months Ended September 30, 2017
Preferred stock at aggregate liquidation value				
Balance, beginning of period	$19,035	$19,253	$19,253	$19,253
Redemption of preferred stock	—	—	(218)	—
Balance, end of period	$19,035	$19,253	$19,035	$19,253
Common stock and additional paid-in capital				
Balance, beginning of period	$107,755	$107,829	$108,039	$108,073
Employee benefit plans	98	102	(187)	(137)
Other	3	(4)	4	(9)
Balance, end of period	$107,856	$107,927	$107,856	$107,927
Retained earnings				
Balance, beginning of period	$145,211	$152,178	$138,425	$146,477
Adjustment to opening balance, net of taxes[1]	—	—	(84)	(660)
Adjusted balance, beginning of period	$145,211	$152,178	$138,341	$145,817
Citigroup's net income	4,622	4,133	13,732	12,095
Common dividends[2]	(1,127)	(865)	(2,777)	(1,755)
Preferred dividends	(270)	(272)	(860)	(893)
Other[3]	—	—	—	(90)
Balance, end of period	$148,436	$155,174	$148,436	$155,174
Treasury stock, at cost				
Balance, beginning of period	$(34,413)	$(19,342)	$(30,309)	$(16,302)
Employee benefit plans[4]	6	3	477	526
Treasury stock acquired[5]	(5,271)	(5,490)	(9,846)	(9,053)
Balance, end of period	$(39,678)	$(24,829)	$(39,678)	$(24,829)
Citigroup's accumulated other comprehensive income (loss)				
Balance, beginning of period	$(37,494)	$(29,899)	$(34,668)	$(32,381)
Adjustment to opening balance, net of taxes[1]	—	—	(3)	504
Adjusted balance, beginning of period	$(37,494)	$(29,899)	$(34,671)	$(31,877)
Citigroup's total other comprehensive income (loss)	(1,151)	8	(3,974)	1,986
Balance, end of period	$(38,645)	$(29,891)	$(38,645)	$(29,891)
Total Citigroup common stockholders' equity	$177,969	$208,381	$177,969	$208,381
Total Citigroup stockholders' equity	$197,004	$227,634	$197,004	$227,634
Noncontrolling interests				
Balance, beginning of period	$874	$1,088	$932	$1,023
Transactions between noncontrolling-interest shareholders and the related consolidated subsidiary	—	(3)	—	(3)
Transactions between Citigroup and the noncontrolling-interest shareholders	(23)	(56)	(39)	(50)
Net income attributable to noncontrolling-interest shareholders	3	—	51	41
Distributions paid to noncontrolling-interest shareholders	(2)	(44)	(38)	(44)
Other comprehensive income (loss) attributable to noncontrolling-interest shareholders	8	12	(35)	82
Other	(1)	(9)	(12)	(61)
Net change in noncontrolling interests	$(15)	$(100)	$(73)	$(35)
Balance, end of period	$859	$988	$859	$988

Total equity	$197,863	$228,622	$197,863	$228,622

(1) See Note 1 to the Consolidated Financial Statements for additional details.

(2) Common dividends declared were $0.32 per share in the first and second quarters and $0.45 per share in the third quarter of 2018. Common dividends declared were $0.16 per share in the first and second quarters and $0.32 for the third quarter of 2017.

(3) Includes the impact of ASU 2016-09, Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. See Note 1 to the Consolidated Financial Statements.

(4) 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.

(5) For the three and nine months ended September 30, 2018 and 2017, 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
(UNAUDITED)

	Nine Months Ended September 30,	
In millions of dollars	2018	2017
Cash flows from operating activities of continuing operations		
Net income before attribution of noncontrolling interests	$13,783	$12,136
Net income attributable to noncontrolling interests	51	41
Citigroup's net income	$13,732	$12,095
Loss from discontinued operations, net of taxes	—	(2)
Income from continuing operations—excluding noncontrolling interests	$13,732	$12,097
Adjustments to reconcile net income to net cash provided by operating activities of continuing operations		
Net gains on significant disposals[1]	(247)	(602)
Depreciation and amortization	2,800	2,717
Provision for loan losses	5,504	5,487
Realized gains from sales of investments	(341)	(626)
Net impairment losses on investments, goodwill and intangible assets	113	75
Change in trading account assets	(4,831)	(14,383)
Change in trading account liabilities	22,482	(1,015)
Change in brokerage receivables net of brokerage payables	9,709	(3,136)
Change in loans HFS	1,380	1,969
Change in other assets	(8,696)	(5,351)
Change in other liabilities	(848)	1,569
Other, net	(10,691)	(2,262)
Total adjustments	$16,334	$(15,558)
Net cash provided by (used in) operating activities of continuing operations	$30,066	$(3,461)
Cash flows from investing activities of continuing operations		
Change in federal funds sold and securities borrowed or purchased under agreements to resell	$(48,462)	$(15,795)
Change in loans	(16,131)	(41,569)
Proceeds from sales and securitizations of loans	4,021	7,019
Purchases of investments	(129,054)	(151,362)
Proceeds from sales of investments	52,170	89,724
Proceeds from maturities of investments	82,940	67,166
Proceeds from significant disposals[1]	314	3,411
Capital expenditures on premises and equipment and capitalized software	(2,682)	(2,502)
Proceeds from sales of premises and equipment, subsidiaries and affiliates and repossessed assets	174	292
Other, net	147	156
Net cash used in investing activities of continuing operations	$(56,563)	$(43,460)
Cash flows from financing activities of continuing operations		
Dividends paid	$(3,616)	$(2,639)
Redemption of preferred stock	(218)	—
Treasury stock acquired	(9,848)	(9,071)
Stock tendered for payment of withholding taxes	(479)	(402)
Change in federal funds purchased and securities loaned or sold under agreements to repurchase	19,638	19,461
Issuance of long-term debt	53,027	52,293
Payments and redemptions of long-term debt	(47,201)	(29,785)

Change in deposits	45,354	34,632
Change in short-term borrowings	(10,681)	7,448

88

CONSOLIDATED STATEMENT OF CASH FLOWS

(UNAUDITED) (Continued)

In millions of dollars	Nine Months Ended September 30, 2018	2017
Net cash provided by financing activities of continuing operations	$45,976	$71,937
Effect of exchange rate changes on cash and due from banks	$(709)	$599
Change in cash and due from banks and deposits with banks[2]	$18,770	$25,615
Cash, due from banks and deposits with banks at beginning of period[2]	180,516	160,494
Cash, due from banks and deposits with banks at end of period[2]	$199,286	$186,109
Cash and due from banks	$25,727	$22,604
Deposits with banks	173,559	163,505
Cash, due from banks and deposits with banks at end of period	$199,286	$186,109
Supplemental disclosure of cash flow information for continuing operations		
Cash paid during the period for income taxes	$3,261	$2,714
Cash paid during the period for interest	16,278	11,604
Non-cash investing activities		
Transfers to loans HFS from loans	$3,300	$3,800
Transfers to OREO and other repossessed assets	94	85

(1) See Note 2 to the Consolidated Financial Statements for further information on significant disposals.
(2) Includes the impact of ASU 2016-18, Restricted Cash. See Notes 1 and 22 to the Consolidated Financial Statements.
The Notes to the Consolidated Financial Statements are an integral part of these Consolidated Financial Statements.

89

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)
1. BASIS OF PRESENTATION AND ACCOUNTING CHANGES

Basis of Presentation
The accompanying unaudited Consolidated Financial Statements as of September 30, 2018 and for the three- and nine-month periods ended September 30, 2018 and 2017 include the accounts of Citigroup Inc. and its consolidated subsidiaries.
In the opinion of management, all adjustments, consisting of normal recurring adjustments, necessary for a fair presentation have been reflected. The accompanying unaudited Consolidated Financial Statements should be read in conjunction with the Consolidated Financial Statements and related notes included in Citigroup's Annual Report on Form 10-K for the fiscal year ended December 31, 2017 (2017 Annual Report on Form 10-K) and Citigroup's Quarterly Reports on Form 10-Q for the quarters ended June 30, 2018 (Second Quarter of 2018 Form 10-Q) and March 31, 2018 (First Quarter of 2018 Form 10-Q).
Certain financial information that is normally included in annual financial statements prepared in accordance with U.S. generally accepted accounting principles (GAAP), but is not required for interim reporting purposes, has been condensed or omitted.
Management must make estimates and assumptions that affect the Consolidated Financial Statements and the related footnote disclosures. While management uses its best judgment, actual results could differ from those estimates.
As noted above, the Notes to Consolidated Financial Statements are unaudited.
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.

ACCOUNTING CHANGES

Revenue Recognition
In May 2014, the Financial Accounting Standards Board (FASB) issued ASU 2014-09, Revenue from Contracts with Customers (Revenue Recognition), which outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers. The core principle of the revenue model is that an entity recognizes revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The ASU defines the promised good or service as the performance obligation under the contract.
While the guidance replaces most existing revenue recognition guidance in GAAP, the ASU is not applicable to financial instruments and, therefore, does not impact a majority of the Company's revenues, including net interest income, loan fees, gains on sales and mark-to-market accounting.
In accordance with the new revenue recognition standard, Citi has identified the specific performance obligation (promised services) associated with the contract with the customer and has determined when that specific performance obligation has been satisfied, which may be at a point in time or over time depending on how the performance obligation is defined. The contracts with customers also contain the transaction price, which consists of fixed consideration and/or consideration that may vary (variable consideration), and is defined as the amount of consideration an entity expects to be entitled to when or as the performance obligation is satisfied, excluding amounts collected on behalf of third parties (including transaction taxes). The amounts recognized at the point in time the performance obligation is satisfied may differ from the ultimate transaction price associated with that performance obligation when a portion of it is based on variable consideration. For example, some consideration is based on the client's month-end balance or market values which are unknown at the time the contract is executed. The remaining transaction price amount, if any, will be recognized as the variable consideration becomes determinable. In certain transactions, the performance obligation is considered satisfied at a point in time in the future. In this instance, Citi defers revenue on the balance sheet that will only be recognized upon completion of the performance obligation.

The new revenue recognition standard further clarified the guidance related to reporting revenue gross as principal versus net as an agent. In many cases, Citi outsources a component of its performance obligations to third parties. The Company has determined that it acts as principal in the majority of these transactions and therefore presents the amounts paid to these third parties gross within operating expenses.

The Company has retrospectively adopted this standard as of January 1, 2018 and as a result was required to report amounts paid to third parties where Citi is principal to the contract within Operating expenses. The adoption resulted in an increase in both revenue and expenses of approximately $250 million for the three-month period ended September 30, 2018 and approximately $750 million for the nine-month period ended September 30, 2018, respectively, while increasing approximately $1 billion for the year ended December 31, 2017 with similar amounts for prior periods. Prior to adoption, these expense amounts were reported as contra revenue primarily within Commissions and fees and Administration and other fiduciary fees revenue. Accordingly, prior periods have been reclassified to conform to the new presentation.

See Note 5 to the Consolidated Financial Statements for a description of the Company’s revenue recognition policies for Commissions and fees and Administration and other fiduciary fees.

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 requires 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 was effective January 1, 2018 and was adopted as of that date. The impact of this standard was an increase of DTAs by approximately $300 million, a decrease of retained earnings by approximately $80 million and a decrease of prepaid tax assets by approximately $380 million.

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, then 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 was effective for public entities, including Citi, as of January 1, 2018 with prospective application. The ongoing 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.

Changes in Accounting for Pension and Postretirement (Benefit) Expense
In March 2017, the FASB issued ASU No. 2017-07, Compensation—Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, which changes the income statement presentation of net benefit expense and requires restating the Company's financial statements for each of the earlier periods presented in Citi's annual and interim financial statements. The change in presentation was effective for annual and interim periods starting January 1, 2018. The ASU requires that only the service cost component of net benefit expense be included in Compensation and benefits on the income statement. The other components of net benefit expense are required to be presented outside of Compensation and benefits and are presented in Other operating expenses. Since both of these income statement line items are part of Operating expenses, total Operating expenses and Net income will not change. This change in presentation did not have a material effect on Compensation and benefits and Other operating expenses and is applied prospectively. The components of

the net benefit expense are currently disclosed in Note 8 to the Consolidated Financial Statements.
The new standard also changes the components of net benefit expense that are eligible for capitalization when employee costs are capitalized in connection with various activities, such as internally developed software, construction-in-progress and loan origination costs. Prospectively from January 1, 2018, only the service cost component of net benefit expense may be capitalized. Existing capitalized balances are not affected. This change in amounts eligible for capitalization does not have a material effect on the Company's Consolidated Financial Statements and related disclosures.

Hedging
In August 2017, the FASB issued ASU No. 2017-12, Targeted Improvements to Accounting for Hedging Activities, which better aligns an entity's risk management activities and financial reporting for hedging relationships through changes to the designation and measurement guidance for qualifying hedging relationships and the presentation of hedge results. The ASU requires the change in the fair value of the hedging instrument to be presented in the same income statement line as the hedged item and also requires expanded disclosures. Citi adopted this standard on January 1, 2018 and transferred approximately $4 billion of pre-payable mortgage-backed securities and municipal bonds from held-to-maturity (HTM) into available-for-sale (AFS) securities classification as permitted as a one-time transfer upon adoption of the standard, as these assets were deemed to be eligible to be hedged under the last of layer

hedge strategy. The impact to opening retained earnings was immaterial. See Note 19 to the Consolidated Financial Statements for more information.

Recognition and Measurement of Financial Assets and Financial Liabilities

In January 2016, the FASB issued 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. In February 2018, the FASB issued ASU No. 2018-03, Technical Corrections and Improvements to Financial Instruments—Overall (Subtopic 825-10), to clarify certain provisions in ASU 2016-01.

The ASUs require entities to present separately in 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. The ASUs also require 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 the AFS category for equity investments. However, Federal Reserve Bank and Federal Home Loan Bank stock, as well as certain exchange seats, will continue to be presented at cost. The

ASUs also provide an instrument-by-instrument election to measure non-marketable equity investments using a measurement alternative. Under the measurement alternative, the investment is carried at cost plus or minus changes resulting from observable prices in orderly transactions for the identical or a similar investment of the same issuer. Equity securities under the measurement alternative are also assessed for impairment. Finally, the ASUs require that fair value disclosures for financial instruments not measured at fair value on the balance sheet be presented at their exit prices (e.g., held-for-investment loans).

Citi early adopted the provisions of ASU 2016-01
related to presentation of the change in fair value of liabilities for which the fair value option was elected, related to changes in Citigroup's own credit spreads in Accumulated other comprehensive income (loss) (AOCI) effective January 1, 2016. Accordingly, since the first quarter of 2016, these amounts have been 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 Notes 17, 20 and 21 to the Consolidated Financial Statements.

The other provisions of ASU 2016-01, as discussed above, were effective on January 1, 2018. Citi has adopted both ASU 2016-01 and ASU 2018-03 as of January 1, 2018. Accordingly, as of the first quarter of 2018, the changes to accounting for equity securities and fair value disclosures have been reflected in Citigroup's financial statements. The impact of adopting the change to AFS equity securities resulted in a cumulative catch-up reclassification from AOCI to Retained earnings of an accumulated after-tax gain of approximately $3 million at January 1, 2018. Citi elected the measurement alternative for all non-marketable equity investments that no longer qualify for cost measurement under the ASUs. This provision in the ASUs was adopted prospectively. Financial statements for periods prior to 2018 were not subject to restatement under the provisions of the ASUs. For additional information, see Notes 12, 17 and 20 to the Consolidated Financial Statements.

Statement of Cash Flows

In November 2016, the FASB issued ASU No. 2016-18, Restricted Cash, which requires that companies present cash, cash equivalents and amounts generally described as restricted cash or restricted cash equivalents (restricted cash) when reconciling beginning-of-period and end-of-period totals on the Statement of Cash Flows. In connection with the adoption of the ASU, Citigroup also changed its definition of cash and cash equivalents to include all of Cash and due from banks and predominately all of Deposits with banks. The Company has retrospectively adopted this ASU as of January 1, 2018 and as a result Net cash provided by investing activities of continuing operations on the

Statement of Cash Flows increased by $26.1 billion for the nine months ended September 30, 2017.

In August 2016, the FASB issued ASU No. 2016-15, Classification of Certain Cash Receipts and Cash Payments, which provides guidance on the classification and presentation of certain cash receipts and payments on the Statement of Cash Flows. The Company has retrospectively adopted this ASU as of January 1, 2018, which resulted in immaterial changes to Citi's Consolidated Statement of Cash Flows.

Premium Amortization on Purchased Callable Debt Securities

In March 2017, the FASB issued Accounting Standards Update (ASU) No. 2017-08, Receivables—Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities, which amends the amortization period for certain purchased callable debt securities held at a premium. The ASU requires entities to amortize premiums on debt securities by the first call date when the securities have fixed and determinable call dates and prices. The scope of the ASU includes all accounting premiums, such as purchase premiums and cumulative fair value hedge adjustments. The ASU does not change the accounting for discounts, which continue to be recognized over the contractual life of a security.

Citi early adopted the ASU in the second quarter of 2017, with an effective date of January 1, 2017. Adoption of the ASU is on a modified retrospective basis through a cumulative effect adjustment to Retained earnings as of the beginning of the year of adoption. Adoption of the ASU primarily affected Citi's AFS and HTM portfolios of callable state and municipal debt securities. The ASU adoption resulted in a net reduction to total stockholders' equity of $156 million (after-tax), effective as of January 1, 2017. This amount is composed of a reduction of approximately $660 million to Retained earnings for the incremental amortization of purchase premiums and cumulative hedge adjustments generated under fair value hedges of these callable debt securities, offset by an increase to AOCI of $504 million related to the cumulative fair value hedge adjustments reclassified to Retained earnings for AFS debt securities.

2. DISCONTINUED OPERATIONS AND SIGNIFICANT DISPOSALS

Summary of Discontinued Operations

Citi sold its German retail banking operations and Egg Banking plc credit card business in 2008 and 2011, respectively. Residual items from these disposals are summarized below. All Discontinued operations results are recorded within Corporate/Other.

	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars	2018	2017	2018	2017
Total revenues, net of interest expense	$—	$—	$—	$—
Loss from discontinued operations	$(8)	$(9)	$(17)	$(4)
Benefit for income taxes	—	(4)	(17)	(2)
Loss from discontinued operations, net of taxes	$(8)	$(5)	$—	$(2)

Cash flows for discontinued operations were not material for the periods presented.

Significant Disposals

During the third quarter of 2018, one previously disclosed significant disposal transaction was completed as summarized below. There were no new significant disposal transactions during the three and nine months ended September 30, 2018. For a description of the Company’s significant disposal transactions and financial impact, see Note 2 to the Consolidated Financial Statements in Citi’s 2017 Annual Report on Form 10-K.

Sale of Mexico Asset Management Business

On September 21, 2018, Citi completed the sale of its Mexico asset management business, which was part of Latin America Global Consumer Banking (GCB). As part of the sale, Citi derecognized net assets of $96 million, including goodwill of $32 million, already classified as held-for-sale beginning in the fourth quarter of 2017. The transaction resulted in a pretax gain on sale of approximately $250 million (approximately $150 million after-tax) recorded in Other revenue in the third quarter of 2018.

Income before taxes, excluding the pretax gain on sale, of the divested business was immaterial for the periods presented. Going forward, revenues in Latin America GCB will reflect the loss of ongoing operating revenues from the Mexico asset management business. However, this impact should be partially offset by lower operating expenses related to the asset management business, as well as expected growth in distribution revenues resulting from the transaction over time.

3. BUSINESS SEGMENTS

Citigroup's activities are conducted through the following business segments: GCB and Institutional Clients Group (ICG). In addition, Corporate/Other includes activities not assigned to a specific business segment, as well as certain North America and international loan portfolios, discontinued operations and other legacy assets.

The prior-period balances reflect reclassifications to conform the presentation for all periods to the current period's presentation. Effective January 1, 2018, financial data was reclassified to reflect:

- adoption of ASU No. 2014-09, Revenue Recognition, which occurred on January 1, 2018 on a retrospective basis. See "Accounting Changes" in Note 1 to the Consolidated Financial Statements;
- the re-attribution of certain costs between Corporate/Other and GCB and ICG; and
- certain other immaterial reclassifications.

Citi's consolidated results remain unchanged for all periods presented as a result of the changes and reclassifications discussed above.

For additional information regarding Citigroup's business segments, see Note 3 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.

The following table presents certain information regarding the Company's continuing operations by segment:

	Three Months Ended September 30,							
	Revenues, net of interest expense		Provision (benefits) for income taxes		Income (loss) from continuing operations(1)		Identifiable assets(2)	
In millions of dollars, except identifiable assets in billions	2018	2017	2018	2017	2018	2017	September 30, 2018	December 31, 2017
Global Consumer Banking	$8,654	$8,470	$493	$635	$1,567	$1,170	$427	$ 428
Institutional Clients Group	9,241	9,430	862	1,394	3,117	3,062	1,404	1,336
Corporate/Other	494	519	116	(163)	(51)	(95)	94	78
Total	$18,389	$18,419	$1,471	$1,866	$4,633	$4,137	$1,925	$ 1,842

(1) Includes total revenues, net of interest expense (excluding Corporate/Other), in North America of $8.5 billion and $8.9 billion; in EMEA of $2.9 billion and $2.7 billion; in Latin America of $2.7 billion and $2.5 billion; and in Asia of $3.8 billion and $3.8 billion for the three months ended September 30, 2018 and 2017, respectively. These regional numbers exclude Corporate/Other, which largely operates within the U.S.

(2) Includes pretax provisions for credit losses and for benefits and claims in the GCB results of $1.9 billion and $2.2 billion; in the ICG results of $71 million and $(164) million; and in the Corporate/Other results of $(30) million and $(50) million for the three months ended September 30, 2018 and 2017, respectively.

	Nine Months Ended September 30,					
	Revenues, net of interest expense[1]		Provision (benefits) for income taxes		Income (loss) from continuing operations[2]	
In millions of dollars	2018	2017	2018	2017	2018	2017
Global Consumer Banking	$25,337	$24,389	$ 1,357	$ 1,863	$ 4,240	$ 3,296
Institutional Clients Group	28,780	28,170	2,890	4,096	9,683	8,853
Corporate/Other	1,613	2,381	109	(435)	(140)	(11)
Total	$55,730	$54,940	$ 4,356	$ 5,524	$ 13,783	$ 12,138

(1) Includes total revenues, net of interest expense, in North America of $25.4 billion and $26.0 billion; in EMEA of $9.1 billion and $8.4 billion; in Latin America of $7.8 billion and $7.2 billion; and in Asia of $11.8 billion and $10.9 billion for the nine months ended September 30, 2018 and 2017, respectively. Regional numbers exclude Corporate/Other, which largely operates within the U.S.

(2) Includes pretax provisions for credit losses and for benefits and claims in the GCB results of $5.7 billion and $5.8 billion; in the ICG results of $55 million and $(282) million; and in Corporate/Other results of $(155) million and $(130) million for the nine months ended September 30, 2018 and 2017, respectively.

4. INTEREST REVENUE AND EXPENSE

Interest revenue and Interest expense consisted of the following:

In millions of dollars	Three Months Ended September 30, 2018	2017	Nine Months Ended September 30, 2018	2017
Interest revenue				
Loan interest, including fees	$11,639	$10,745	$33,721	$31,082
Deposits with banks	629	486	1,554	1,156
Federal funds sold and securities borrowed or purchased under agreements to resell	1,425	858	3,800	2,348
Investments, including dividends	2,388	2,104	6,996	6,122
Trading account assets(1)	1,655	1,429	4,789	4,175
Other interest	434	292	1,192	846
Total interest revenue	$18,170	$15,914	$52,052	$45,729
Interest expense				
Deposits(2)	$2,580	$1,775	$6,821	$4,793
Federal funds purchased and securities loaned or sold under agreements to repurchase	1,250	712	3,423	1,881
Trading account liabilities(1)	273	169	724	462
Short-term borrowings	578	318	1,572	719
Long-term debt	1,687	1,405	4,873	4,126
Total interest expense	$6,368	$4,379	$17,413	$11,981
Net interest revenue	$11,802	$11,535	$34,639	$33,748
Provision for loan losses	1,906	2,146	5,504	5,487
Net interest revenue after provision for loan losses	$9,896	$9,389	$29,135	$28,261

(1) Interest expense on Trading account liabilities is reported as a reduction of interest revenue from Trading account assets.

(2) Includes deposit insurance fees and charges of $311 million and $301 million for the three months ended September 30, 2018 and 2017, respectively, and $1,006 million and $935 million for the nine months ended September 30, 2018 and 2017, respectively.

5. COMMISSIONS AND FEES; ADMINISTRATION AND OTHER FIDUCIARY FEES

The primary components of Commissions and fees revenue are investment banking fees, brokerage commissions, credit- and bank-card income and deposit-related fees.

Investment banking fees are substantially composed of underwriting and advisory revenues. Such fees are recognized at the point in time when Citigroup’s performance under the terms of a contractual arrangement is completed, which is typically at the closing of a transaction. Reimbursed expenses related to these transactions are recorded as revenue and are included within investment banking fees. In certain instances for advisory contracts, Citi will receive amounts in advance of the deal’s closing. In these instances, the amounts received will be recognized as a liability and not recognized in revenue until the transaction closes. The contract liability amount for the periods presented was negligible. Out-of-pocket expenses associated with underwriting activity are deferred and recognized at the time the related revenue is recognized, while out-of-pocket expenses associated with advisory arrangements are expensed as incurred. In general, expenses incurred related to investment banking transactions, whether consummated or not, are recorded in Other operating expenses. The Company has determined that it acts as principal in the majority of these transactions and therefore presents expenses gross within Other operating expenses.

Brokerage commissions primarily include commissions and fees from the following: executing transactions for clients on exchanges and over-the-counter markets; sales of mutual funds and other annuity products; and assisting clients in clearing transactions, providing brokerage services and other such activities. Brokerage commissions are recognized in Commissions and fees at the point in time the associated service is fulfilled, generally on trade-execution date. Gains or losses, if any, on these transactions are included in Principal transactions (see Note 6 to the Consolidated Financial Statements). Sales of certain investment products include a portion of variable consideration associated with the underlying product. In these instances, a portion of the revenue associated with the sale of the product is not recognized until the variable consideration becomes fixed. The Company recognized $130 million and $107 million of revenue related to such variable consideration for the three months ended September 30, 2018 and 2017, respectively, and $402 million and $302 million for the nine months ended September 30, 2018 and 2017, respectively. These amounts primarily relate to performance obligations satisfied in prior periods.

Credit- and bank-card income is primarily composed of interchange fees, which are earned by card issuers based on purchase sales, and certain card fees, including annual fees. Costs related to customer reward programs and certain payments to partners (primarily based on program sales, profitability and customer acquisitions) are recorded as a reduction of credit- and bank-card income. Interchange revenues are recognized as earned on a daily basis when Citi's performance obligation to transmit funds to the payment networks has been satisfied. Annual card fees, net of origination costs, are deferred and amortized on a straight-line basis over a 12-month period. Costs related to card reward programs are recognized when the rewards are earned by the cardholders. Payments to partners are recognized when incurred.

Deposit-related fees consist of service charges on deposit accounts and fees earned from performing cash management activities and other deposit account services. Such fees are recognized in the period in which the related service is provided.

Transactional service fees primarily consist of fees charged for processing services such as cash management, global payments, clearing, international funds transfer and other trade services. Such fees are recognized as/when the associated service is satisfied, which normally occurs at the point in time the service is requested by the customer and provided by Citi.

Insurance distribution revenue consists of commissions earned from third-party insurance companies for marketing and selling insurance policies on behalf of such entities. Such commissions are recognized in Commissions and fees at the point in time the associated service is fulfilled, generally when the insurance policy is sold to the policyholder. Sales of certain insurance products include a portion of variable consideration associated with the underlying product. In these instances, a portion of the revenue associated with the sale of the policy is not recognized until the variable consideration becomes determinable. The Company recognized $92 million and $115 million for the three months ended September 30, 2018 and 2017, respectively, and $296 million and $342 million for the nine months ended September 30, 2018 and 2017, respectively. These amounts primarily relate to performance obligations in prior periods.

Insurance premiums consist of premium income from insurance policies that Citi has underwritten and sold to policyholders.

The following tables present Commissions and fees revenue:

	Three Months Ended September 30, 2018				Nine Months Ended September 30, 2018			
In millions of dollars	ICG	GCB	Corporate/Other	Total	ICG	GCB	Corporate/Other	Total
Investment banking	$856	$—	$ —	$856	$2,695	$—	$ —	$2,695
Brokerage commissions	453	199	—	652	1,510	654	—	2,164
Credit- and bank-card income								
Interchange fees	268	2,063	1	2,332	804	5,963	11	6,778
Card-related loan fees	16	172	—	188	47	474	12	533
Card rewards and partner payments	(125)	(2,130)	—	(2,255)	(375)	(6,070)	(11)	(6,456)
Deposit-related fees(1)	239	160	—	399	711	503	1	1,215
Transactional service fees	171	22	1	194	543	64	4	611
Corporate finance(2)	145	1	—	146	506	4	—	510
Insurance distribution revenue(3)	3	144	(4)	143	13	429	6	448
Insurance premiums(3)	—	31	(2)	29	—	96	(4)	92
Loan servicing	42	27	8	77	118	89	31	238
Other	10	29	3	42	20	90	6	116
Total commissions and fees(4)	$2,078	$718	$ 7	$2,803	$6,592	$2,296	$ 56	$8,944

	Three Months Ended September 30, 2017				Nine Months Ended September 30, 2017			
In millions of dollars	ICG	GCB	Corporate/Other	Total	ICG	GCB	Corporate/Other	Total
Investment banking	$961	$—	$ —	$961	$2,840	$—	$ —	$2,840
Brokerage commissions	459	222	1	682	1,431	615	3	2,049
Credit- and bank-card income								
Interchange fees	242	1,912	24	2,178	705	5,507	87	6,299
Card-related loan fees	13	172	13	198	39	526	41	606
Card rewards and partner payments	(105)	(1,822)	(8)	(1,935)	(316)	(5,352)	(49)	(5,717)
Deposit-related fees(1)	249	188	4	441	696	554	12	1,262
Transactional service fees	185	21	11	217	556	74	44	674
Corporate finance(2)	183	2	—	185	616	4	—	620
Insurance distribution revenue(3)	5	142	17	164	10	425	58	493
Insurance premiums(3)	—	32	(1)	31	—	97	(4)	93
Loan servicing	38	25	25	88	109	79	89	277
Other	2	25	4	31	(36)	64	28	56
Total commissions and fees(4)	$2,232	$919	$ 90	$3,241	$6,650	$2,593	$ 309	$9,552

(1) Includes overdraft fees of $33 million and $35 million for the three months ended September 30, 2018 and 2017, respectively, and $95 million and $101 million for the nine months ended September 30, 2018 and 2017, respectively. Overdraft fees are accounted for under ASC 310.

(2) Consists primarily of fees earned from structuring and underwriting loan syndications or related financing activity. This activity is accounted for under ASC 310.

(3) Previously reported as insurance premiums on the Consolidated Statement of Income.

(4) Commissions and fees includes $(1,774) million and $(1,398) million not accounted for under ASC 606, Revenue from Contracts with Customers, for the three months ended September 30, 2018 and 2017, respectively, and $(4,967) million and $(4,023) million for the nine months ended September 30, 2018 and 2017, respectively. Amounts reported in Commissions and fees accounted for under other guidance primarily include card-related loan fees, card reward programs and certain partner payments, corporate finance fees, insurance premiums and loan

servicing fees.

Administration and Other Fiduciary Fees

Administration and other fiduciary fees are primarily composed of custody fees and fiduciary fees.

The custody product is composed of numerous services related to the administration, safekeeping and reporting for both U.S. and non-U.S. denominated securities. The services offered to clients include trade settlement, safekeeping, income collection, corporate action notification, record-keeping and reporting, tax reporting and cash management. These services are provided for a wide range of securities, including but not limited to equities, municipal and corporate bonds, mortgage-backed and asset-backed securities, money market instruments, U.S. Treasuries and agencies, derivative instruments, mutual funds, alternative investments and precious metals. Custody fees are recognized as/when the associated promised service is satisfied, which normally occurs at the point in time the service is requested by the customer and provided by Citi.

Fiduciary fees consist of trust services and investment management services. As an escrow agent, Citi receives, safe-keeps, services and manages clients' escrowed assets such as cash, securities, property (including intellectual property), contracts or other collateral. Citi performs its escrow agent duties by safekeeping the funds during the specified time period agreed upon by all parties and therefore earns its revenue evenly during the contract duration.

Investment management services consist of managing assets on behalf of Citi's retail and institutional clients. Revenue from these services primarily consists of asset-based fees for advisory accounts, which are based on the market value of the client's assets and recognized monthly, when the market value is fixed. In some instances, the Company contracts with third-party advisors and with third-party custodians. The Company has determined that it acts as principal in the majority of these transactions and therefore presents the amounts paid to third parties gross within Other operating expenses.

The following table presents Administration and other fiduciary fees:

	Three Months Ended September 30, 2018				Nine Months Ended September 30, 2018			
In millions of dollars	ICG	GCB	Corporate/Other	Total	ICG	GCB	Corporate/Other	Total
Custody fees	$371	$41	$ 18	$430	$1,138	$133	$ 50	$1,321
Fiduciary fees	160	158	12	330	492	455	31	978
Guarantee fees	136	14	1	151	403	43	5	451
Total administration and other fiduciary fees[(1)]	$667	$213	$ 31	$911	$2,033	$631	$ 86	$2,750
	Three Months Ended September 30, 2017				Nine Months Ended September 30, 2017			
In millions of dollars	ICG	GCB	Corporate/Other	Total	ICG	GCB	Corporate/Other	Total
Custody fees	$397	$44	$ 14	$455	$1,135	$123	$ 41	$1,299
Fiduciary fees	149	157	18	324	437	431	59	927
Guarantee fees	134	13	3	150	400	39	7	446
Total administration and other fiduciary fees[(1)]	$680	$214	$ 35	$929	$1,972	$593	$ 107	$2,672

(1) Administration and other fiduciary fees includes $151 million and $150 million for the three months ended September 30, 2018 and 2017, respectively, and $451 million and $446 million for the nine months ended September 30, 2018 and 2017, respectively, that are not accounted for under ASC 606, Revenue from Contracts with Customers. These amounts include guarantee fees.

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 that 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) and FVA (funding valuation adjustments) on over-the-counter derivatives. These adjustments are discussed further in Note 20 to the Consolidated Financial Statements.

In certain transactions, Citi incurs fees and presents these fees paid to third parties in operating expenses.

The following table presents Principal transactions
revenue:

	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars	2018	2017	2018	2017
Interest rate risks(1)	$1,403	$1,180	$4,576	$4,421
Foreign exchange risks(2)	467	606	1,387	1,942
Equity risks(3)	311	154	997	440
Commodity and other risks(4)	244	112	544	434
Credit products and risks(5)	141	196	502	748
Total	$2,566	$2,248	$8,006	$7,985

(1) 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.

(2) Includes revenues from foreign exchange spot, forward, option and swap contracts, as well as foreign currency translation (FX translation) gains and losses.

(3) Includes revenues from common, preferred and convertible preferred stock, convertible corporate debt, equity-linked notes and exchange-traded and OTC equity options and warrants.

(4) Primarily includes revenues from crude oil, refined oil products, natural gas and other commodities trades.
(5) Includes revenues from structured credit products.

7. INCENTIVE PLANS
For additional information on Citi's incentive plans, see Note 7 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.

8. RETIREMENT BENEFITS
For additional information on Citi's retirement benefits, see Note 8 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.

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:

	Three Months Ended September 30,							
	Pension plans				Postretirement benefit plans			
	U.S. plans		Non-U.S. plans		U.S. plans		Non-U.S. plans	
In millions of dollars	2018	2017	2018	2017	2018	2017	2018	2017
Benefits earned during the period	$—	$1	$ 35	$ 38	$ —	$ —	$ 2	$ 3
Interest cost on benefit obligation	132	131	73	76	6	9	26	27
Expected return on plan assets	(210)	(217)	(71)	(77)	(4)	(2)	(22)	(24)
Amortization of unrecognized:								
Prior service benefit	—	—	(1)	(1)	—	—	(2)	(2)
Net actuarial loss	39	45	14	15	—	—	7	8
Curtailment loss[1]	—	1	—	—	—	—	—	—
Settlement loss[1]	—	—	—	4	—	—	—	—
Total net (benefit) expense	$(39)	$(39)	$ 50	$ 55	$ 2	$ 7	$ 11	$ 12

(1) Losses due to curtailment and settlement relate to repositioning and divestiture activities.

	Nine Months Ended September 30,							
	Pension plans				Postretirement benefit plans			
	U.S. plans		Non-U.S. plans		U.S. plans		Non-U.S. plans	
In millions of dollars	2018	2017	2018	2017	2018	2017	2018	2017
Benefits earned during the period	$1	$2	$ 111	$ 112	$ —	$ —	$ 7	$ 7
Interest cost on benefit obligation	381	406	220	221	19	20	77	76
Expected return on plan assets	(634)	(650)	(221)	(223)	(10)	(5)	(67)	(67)
Amortization of unrecognized:								
Prior service benefit	—	1	(3)	(3)	—	—	(7)	(7)
Net actuarial loss	128	129	41	46	—	—	22	25
Curtailment loss(1)	1	4	—	—	—	—	—	—
Settlement loss(1)	—	—	5	8	—	—	—	—
Total net (benefit) expense	$(123)	$(108)	$ 153	$ 161	$ 9	$ 15	$ 32	$ 34

(1) Losses due to curtailment and settlement relate to repositioning and divestiture activities.

Funded Status and Accumulated Other Comprehensive Income (AOCI)
The following tables summarize the funded status and amounts recognized in the Consolidated Balance Sheet for the Company's
Significant Plans:

	Nine Months Ended September 30, 2018			
	Pension plans		Postretirement benefit plans	
In millions of dollars	U.S. plans	Non-U.S. plans	U.S. plans	Non-U.S. plans
Change in projected benefit obligation				
Projected benefit obligation at beginning of year	$14,040	$ 7,433	$699	$ 1,261
Plans measured annually	(28)	(1,987)	—	(334)
Projected benefit obligation at beginning of year—Significant Plans	$14,012	$ 5,446	$699	$ 927
First quarter activity	(576)	151	(32)	89
Second quarter activity	(595)	(344)	—	(65)
Projected benefit obligation at June 30, 2018—Significant Plans	$12,841	$ 5,253	$667	$ 951
Benefits earned during the period	—	20	—	2
Interest cost on benefit obligation	132	60	6	23
Actuarial gain	(60)	(59)	—	(61)
Benefits paid, net of participants' contributions and government subsidy	(217)	(68)	(15)	(14)
Foreign exchange impact and other	—	48	—	48
Projected benefit obligation at period end—Significant Plans	$12,696	$ 5,254	$658	$ 949

	Nine Months Ended September 30, 2018			
	Pension plans		Postretirement benefit plans	
In millions of dollars	U.S. plans	Non-U.S. plans	U.S. plans	Non-U.S. plans
Change in plan assets				
Plan assets at fair value at beginning of year	$12,725	$ 7,128	$262	$ 1,119
Plans measured annually	—	(1,305)	—	(10)
Plan assets at fair value at beginning of year—Significant Plans	$12,725	$ 5,823	$262	$ 1,109
First quarter activity	(349)	115	(21)	58
Second quarter activity	(220)	(328)	(4)	(78)
Plan assets at fair value at June 30, 2018—Significant Plans	$12,156	$ 5,610	$237	$ 1,089
Actual return on plan assets	123	7	1	23
Company contributions, net of reimbursements	13	15	153	—
Benefits paid, net of participants' contributions and government subsidy	(217)	(68)	(15)	(14)
Foreign exchange impact and other	—	40	—	56
Plan assets at fair value at period end—Significant Plans	$12,075	$ 5,604	$376	$ 1,154
Funded status of the Significant Plans				
Qualified plans[(1)]	$36	$ 350	$(282)	$ 205
Nonqualified plans	(657)	—	—	—
Funded status of the plans at period end—Significant Plans	$(621)	$ 350	$(282)	$ 205
Net amount recognized at period end				
Benefit asset	$36	$ 850	$—	$ 205
Benefit liability	(657)	(500)	(282)	—
Net amount recognized on the balance sheet—Significant Plans	$(621)	$ 350	$(282)	$ 205
Amounts recognized in AOCI at period end				
Prior service benefit	$—	$ 25	$—	$ 80
Net actuarial (loss) gain	(6,313)	(807)	77	(284)
Net amount recognized in equity (pretax)—Significant Plans	$(6,313)	$ (782)	$77	$ (204)
Accumulated benefit obligation at period end—Significant Plans	$12,689	$ 4,980	$658	$ 949

(1) The U.S. qualified pension plan is fully funded pursuant to the Employee Retirement Income Security Act of 1974, as amended (ERISA), funding rules as of January 1, 2018 and no minimum required funding is expected for 2018.

The following table shows the change in AOCI related to the Company's pension, postretirement and post employment plans:

In millions of dollars	Three Months Ended September 30, 2018	Nine Months Ended September 30, 2018
Beginning of period balance, net of tax[(1)(2)]	$ (5,794)	$ (6,183)
Actuarial assumptions changes and plan experience	181	1,300
Net asset loss due to difference between actual and expected returns	(140)	(919)
Net amortization	49	161
Curtailment/settlement gain[(3)]	—	6
Foreign exchange impact and other	(35)	1
Change in deferred taxes, net	(29)	(134)

Change, net of tax	$ 26	$ 415
End of period balance, net of tax(1)(2)	$ (5,768)	$ (5,768)

(1) See Note 17 to the Consolidated Financial Statements for further discussion of net AOCI balance.
(2) Includes net-of-tax amounts for certain profit sharing plans outside the U.S.
(3) Gains due to curtailment and settlement relate to repositioning and divestiture activities.

Plan Assumptions

The discount rates utilized during the period in determining the pension and postretirement net (benefit) expense for the Significant Plans are as follows:

Net (benefit) expense assumed discount rates during the period	Three Months Ended Sept. 30, 2018	Jun. 30, 2018
U.S. plans		
Qualified pension	4.25%	3.95%
Nonqualified pension	4.25	3.95
Postretirement	4.20	3.90
Non-U.S. plans		
Pension	0.80-10.70	0.75-9.90
Weighted average	4.88	4.86
Postretirement	9.50	9.50

The discount rates utilized at period-end in determining the pension and postretirement benefit obligations for the Significant Plans are as follows:

Plan obligations assumed discount rates at period ended	Sept. 30, 2018	Jun. 30, 2018	Mar. 31, 2018
U.S. plans			
Qualified pension	4.30%	4.25%	3.95%
Nonqualified pension	4.30	4.25	3.95
Postretirement	4.20	4.20	3.90
Non-U.S. plans			
Pension	0.95-10.75	0.80-10.70	0.75-9.90
Weighted average	5.08	4.88	4.86
Postretirement	10.10	9.50	9.50

Sensitivities of Certain Key Assumptions

The following table summarizes the estimated effect on the Company’s Significant Plans quarterly expense of a one-percentage-point change in the discount rate:

In millions of dollars	Three Months Ended September 30, 2018 One-percentage-point increase	One-percentage-point decrease
Pension		
U.S. plans	$ 5	$ (8)
Non-U.S. plans	(3)	5
Postretirement		
U.S. plans	—	(1)
Non-U.S. plans	(2)	2

Contributions

For the U.S. pension plans, there were no required minimum cash contributions during the first nine months of 2018.

The following table summarizes the Company’s actual contributions for the nine months ended September 30, 2018 and 2017, as well as estimated expected Company contributions for the remainder of 2018 and the actual contributions made for the remainder of 2017:

	Pension plans				Postretirement plans			
	U.S. plans[1]		Non-U.S. plans		U.S. plans		Non-U.S. plans	
In millions of dollars	2018	2017	2018	2017	2018	2017	2018	2017
Company contributions[2] for the nine months ended September 30	$42	$ 90	$ 143	$ 109	$ 159	$ 30	$ 7	$ 7
Company contributions made during the remainder of the year	—	15	—	26	—	146	—	3
Company contributions expected to be made during the remainder of the year	15	—	33	—	2	—	2	—

(1) The U.S. pension plans include benefits paid directly by the Company for the nonqualified pension plans.
(2) Company contributions are composed of cash contributions made to the plans and benefits paid directly by the Company.

103

Defined Contribution Plans

The following table summarizes the Company's contributions for the defined contribution plans:

	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars	2018	2017	2018	2017
U.S. plans	$ 90	$ 95	$ 293	$ 293
Non-U.S. plans	68	68	216	203

Post Employment Plans

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:

	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars	2018	2017	2018	2017
Interest cost on benefit obligation	$ —	$ —	$ 1	$ 1
Expected return on plan assets	—	—	(1)	—
Amortization of unrecognized:				
Prior service benefit	(8)	(8)	(23)	(23)
Net actuarial loss	1	1	2	2
Total service-related benefit	$ (7)	$ (7)	$ (21)	$ (20)
Non-service-related expense	$ 4	$ 9	$ 7	$ 21
Total net (benefit) expense	$ (3)	$ 2	$ (14)	$ 1

104

9. EARNINGS PER SHARE

The following table reconciles the income and share data used in the basic and diluted earnings per share (EPS) computations:

	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars, except per share amounts	2018	2017	2018	2017
Income from continuing operations before attribution of noncontrolling interests	$4,633	$4,137	$13,783	$12,138
Less: Noncontrolling interests from continuing operations	3	(1)	51	41
Net income from continuing operations (for EPS purposes)	$4,630	$4,138	$13,732	$12,097
Loss from discontinued operations, net of taxes	(8)	(5)	—	(2)
Citigroup's net income	$4,622	$4,133	$13,732	$12,095
Less: Preferred dividends(1)	270	272	860	893
Net income available to common shareholders	$4,352	$3,861	$12,872	$11,202
Less: Dividends and undistributed earnings allocated to employee restricted and deferred shares with nonforfeitable rights to dividends, applicable to basic EPS	51	53	151	156
Net income allocated to common shareholders for basic EPS	$4,301	$3,808	$12,721	$11,046
Net income allocated to common shareholders for diluted EPS	4,301	3,808	12,721	11,046
Weighted-average common shares outstanding applicable to basic EPS (in millions)	2,479.8	2,683.6	2,524.1	2,729.3
Effect of dilutive securities(2)				
Options(3)	0.2	0.1	0.1	0.1
Other employee plans	1.4	—	1.3	—
Adjusted weighted-average common shares outstanding applicable to diluted EPS(4)	2,481.4	2,683.7	2,525.5	2,729.5
Basic earnings per share(5)				
Income from continuing operations	$1.74	$1.42	$5.04	$4.05
Discontinued operations	—	—	—	—
Net income	$1.73	$1.42	$5.04	$4.05
Diluted earnings per share(5)				
Income from continuing operations	$1.74	$1.42	$5.04	$4.05
Discontinued operations	—	—	—	—
Net income	$1.73	$1.42	$5.04	$4.05

(1) As of September 30, 2018, Citi estimates it will distribute preferred dividends of approximately $313 million during the remainder of 2018, assuming such dividends are declared by the Citi Board of Directors. During the first nine months of 2018, Citi redeemed all of its 3.8 million Series AA preferred shares for $96.8 million and all of its 4.9 million Series E preferred shares for $121.3 million. All preferred shares were redeemed at par value. Citi redeemed all of its 23 million Series C preferred shares for $575 million in October 2018.

(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 $103.82 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 the three and nine months ended September 30, 2018 and 2017 because they were anti-dilutive.

(3) During the third quarters of 2018 and 2017, weighted-average options to purchase 0.5 million and 0.8 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 $142.30 and $206.70 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.

10. FEDERAL FUNDS, SECURITIES BORROWED, LOANED AND SUBJECT TO REPURCHASE AGREEMENTS

For additional information on the Company's resale and repurchase agreements and securities borrowing and lending agreements, see Note 11 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.

Federal funds sold and securities borrowed and purchased under agreements to resell, at their respective carrying values, consisted of the following:

In millions of dollars	September 30, 2018	December 31, 2017
Federal funds sold	$ 20	$ —
Securities purchased under agreements to resell	152,889	130,984
Deposits paid for securities borrowed	128,032	101,494
Total[(1)]	$ 280,941	$ 232,478

Federal funds purchased and securities loaned and sold under agreements to repurchase, at their respective carrying values, consisted of the following:

In millions of dollars	September 30, 2018	December 31, 2017
Federal funds purchased	$ 117	$ 326
Securities sold under agreements to repurchase	161,987	142,646
Deposits received for securities loaned	13,811	13,305
Total[(1)]	$ 175,915	$ 156,277

(1) The above tables do not include securities-for-securities lending transactions of $19.9 billion and $14.0 billion at September 30, 2018 and December 31, 2017, 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.

It is the Company'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, the Company posts additional collateral in order to maintain contractual margin protection.

A substantial portion of the resale and repurchase agreements is recorded at fair value, as described in Notes 20 and 21 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.

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 the Company elected the fair value option for certain securities borrowed and loaned portfolios, as described in Note 21 to the Consolidated Financial Statements. With respect to securities loaned, the Company receives cash collateral in an amount generally in excess of the market value of the securities loaned. The Company 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 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 the Company may not have sought or been able to obtain a legal opinion evidencing enforceability of the offsetting right.

As of September 30, 2018

In millions of dollars

	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	$248,802	$ 95,913	$ 152,889	$ 121,141	$ 31,748
Deposits paid for securities borrowed	128,032	—	128,032	29,461	98,571
Total	$376,834	$ 95,913	$ 280,921	$ 150,602	$ 130,319

In millions of dollars	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	$ 257,900	$ 95,913	$ 161,987	$ 87,917	$ 74,070
Deposits received for securities loaned	13,811	—	13,811	4,730	9,081
Total	$ 271,711	$ 95,913	$ 175,798	$ 92,647	$ 83,151

	As of December 31, 2017				
In millions of dollars	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	$ 204,460	$ 73,476	$ 130,984	$ 103,022	$ 27,962
Deposits paid for securities borrowed	101,494	—	101,494	22,271	79,223
Total	$ 305,954	$ 73,476	$ 232,478	$ 125,293	$ 107,185

In millions of dollars	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	$ 216,122	$ 73,476	$ 142,646	$ 73,716	$ 68,930
Deposits received for securities loaned	13,305	—	13,305	4,079	9,226
Total	$ 229,427	$ 73,476	$ 155,951	$ 77,795	$ 78,156

(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 the Company 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 September 30, 2018				
In millions of dollars	Open and overnight	Up to 30 days	31–90 days	Greater than 90 days	Total
Securities sold under agreements to repurchase	$121,109	$59,246	$30,558	$46,987	$257,900
Deposits received for securities loaned	7,091	307	3,200	3,213	13,811
Total	$128,200	$59,553	$33,758	$50,200	$271,711

	As of December 31, 2017				
In millions of dollars	Open and overnight	Up to 30 days	31–90 days	Greater than 90 days	Total
Securities sold under agreements to repurchase	$82,073	$68,372	$33,846	$31,831	$216,122
Deposits received for securities loaned	9,946	266	1,912	1,181	13,305
Total	$92,019	$68,638	$35,758	$33,012	$229,427

The following tables present the gross amount of liabilities associated with repurchase agreements and securities lending agreements, by class of underlying collateral:

	As of September 30, 2018		
In millions of dollars	Repurchase agreements	Securities lending agreements	Total
U.S. Treasury and federal agency securities	$95,116	$ 110	$95,226
State and municipal securities	2,803	—	2,803
Foreign government securities	94,306	301	94,607
Corporate bonds	22,247	545	22,792
Equity securities	18,759	11,982	30,741
Mortgage-backed securities	15,088	—	15,088
Asset-backed securities	6,513	—	6,513
Other	3,068	873	3,941
Total	$257,900	$ 13,811	$271,711

	As of December 31, 2017		
In millions of dollars	Repurchase agreements	Securities lending agreements	Total
U.S. Treasury and federal agency securities	$58,774	$ —	$58,774
State and municipal securities	1,605	—	1,605
Foreign government securities	89,576	105	89,681
Corporate bonds	20,194	657	20,851
Equity securities	20,724	11,907	32,631
Mortgage-backed securities	17,791	—	17,791
Asset-backed securities	5,479	—	5,479
Other	1,979	636	2,615
Total	$216,122	$ 13,305	$229,427

11. BROKERAGE RECEIVABLES AND BROKERAGE PAYABLES

The Company has receivables and payables for financial instruments sold to and purchased from brokers, dealers and customers, which arise in the ordinary course of business.
For additional information on these receivables and payables, see Note 12 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.
Brokerage receivables and Brokerage payables consisted of the following:

In millions of dollars	September 30, 2018	December 31, 2017
Receivables from customers	$ 15,195	$ 19,215
Receivables from brokers, dealers and clearing organizations	25,484	19,169
Total brokerage receivables(1)	$ 40,679	$ 38,384
Payables to customers	$ 41,414	$ 38,741
Payables to brokers, dealers and clearing organizations	31,932	22,601
Total brokerage payables(1)	$ 73,346	$ 61,342

(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.

109

12. INVESTMENTS

For additional information regarding Citi's investment portfolios, including evaluating investments for other-than-temporary impairment (OTTI), see Note 13 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.

Overview

Citi adopted ASU 2016-01 and ASU 2018-03 as of January 1, 2018. The ASUs require fair value changes on marketable equity securities to be recognized in earnings. The available-for-sale category was eliminated for equity securities. Also, non-marketable equity securities are required to be measured at fair value with changes in fair value recognized in earnings unless (i) the measurement alternative is elected or (ii) the investment represents Federal Reserve Bank and Federal Home Loan Bank stock or certain exchange seats that continue to be carried at cost. See Note 1 to the Consolidated Financial Statements for additional details.

The following tables present Citi's investments by category:

In millions of dollars	September 30, 2018
Debt securities available-for-sale (AFS)	$ 284,782
Debt securities held-to-maturity (HTM)(1)	53,249
Marketable equity securities carried at fair value(2)	260
Non-marketable equity securities carried at fair value(2)	1,128
Non-marketable equity securities measured using the measurement alternative(3)	452
Non-marketable equity securities carried at cost(4)	5,642
Total investments	$ 345,513

In millions of dollars	December 31, 2017
Securities available-for-sale (AFS)	$ 290,914
Debt securities held-to-maturity (HTM)(1)	53,320
Non-marketable equity securities carried at fair value(2)	1,206

Non-marketable equity securities carried at cost[4]	6,850
Total investments	$ 352,290

(1) Carried at adjusted amortized cost basis, net of any credit-related impairment.
(2) Unrealized gains and losses are recognized in earnings.
(3) Impairment losses and adjustments to the carrying value as a result of observable price changes are recognized in earnings.
(4) Represents shares issued by the Federal Reserve Bank, Federal Home Loan Banks and certain exchanges of which Citigroup is a member.

The following table presents interest and dividend income on investments:

	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars	2018	2017	2018	2017
Taxable interest	$2,195	$1,922	$6,395	$5,545
Interest exempt from U.S. federal income tax	130	129	392	412
Dividend income	63	53	209	165
Total interest and dividend income	$2,388	$2,104	$6,996	$6,122

The following table presents realized gains and losses on the sales of investments, which excludes OTTI losses:

In millions of dollars	Three Months Ended September 30, 2018	2017	Nine Months Ended September 30, 2018	2017
Gross realized investment gains	$153	$293	$550	$840
Gross realized investment losses	(84)	(80)	(209)	(214)
Net realized gains on sale of investments	$69	$213	$341	$626

Securities Available-for-Sale

The amortized cost and fair value of AFS securities were as follows:

	September 30, 2018				December 31, 2017			
In millions of dollars	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Securities AFS								
Mortgage-backed securities[1]								
U.S. government-sponsored agency guaranteed	$46,675	$ 61	$ 1,575	$45,161	$42,116	$ 125	$ 500	$41,741
Prime	—	—	—	—	11	6	—	17
Alt-A	1	—	—	1	26	90	—	116
Non-U.S. residential	1,620	7	1	1,626	2,744	13	6	2,751
Commercial	233	1	3	231	334	—	2	332
Total mortgage-backed securities	$48,529	$ 69	$ 1,579	$47,019	$45,231	$ 234	$ 508	$44,957
U.S. Treasury and federal agency securities								
U.S. Treasury	$108,509	$ 28	$ 1,949	$106,588	$108,344	$ 77	$ 971	$107,450
Agency obligations	9,752	—	197	9,555	10,813	7	124	10,696
Total U.S. Treasury and federal agency securities	$118,261	$ 28	$ 2,146	$116,143	$119,157	$ 84	$ 1,095	$118,146
State and municipal[2]	$9,662	$ 87	$ 269	$9,480	$8,870	$ 140	$ 245	$8,765
Foreign government	94,937	293	769	94,461	100,615	508	590	100,533
Corporate	12,498	21	139	12,380	14,144	51	86	14,109
Asset-backed securities[1]	1,265	3	6	1,262	3,906	14	2	3,918
Other debt securities	4,036	1	—	4,037	297	—	—	297
Total debt securities AFS	$289,188	$ 502	$ 4,908	$284,782	$292,220	$ 1,031	$ 2,526	$290,725
Marketable equity securities AFS[3]	$—	$ —	$ —	$—	$186	$ 4	$ 1	$189
Total securities AFS	$289,188	$ 502	$ 4,908	$284,782	$292,406	$ 1,035	$ 2,527	$290,914

(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 18 to the Consolidated Financial Statements.

(2) In the second quarter of 2017, Citi early adopted ASU 2017-08, Receivables—Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities. Upon adoption, a cumulative

effect adjustment was recorded to reduce Retained earnings, effective January 1, 2017, for the incremental amortization of purchase premiums and cumulative fair value hedge adjustments on callable state and municipal debt securities. For additional information, see Note 1 to the Consolidated Financial Statements.

(3) Citi adopted ASU 2016-01 and ASU 2018-03 as of January 1, 2018, resulting in a cumulative effect adjustment from AOCI to Retained earnings for net unrealized gains on marketable equity securities AFS. The available-for-sale category was eliminated for equity securities effective January 1, 2018. See Note 1 to the Consolidated Financial Statements for additional details.

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	
In millions of dollars	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses
September 30, 2018						
Debt Securities AFS[1]						
Mortgage-backed securities						
U.S. government-sponsored agency guaranteed	$21,723	$ 574	$18,828	$ 1,001	$40,551	$ 1,575
Non-U.S. residential	256	1	1	—	257	1
Commercial	168	2	51	1	219	3
Total mortgage-backed securities	$22,147	$ 577	$18,880	$ 1,002	$41,027	$ 1,579
U.S. Treasury and federal agency securities						
U.S. Treasury	$27,095	$ 279	$65,789	$ 1,670	$92,884	$ 1,949
Agency obligations	1,549	15	8,004	182	9,553	197
Total U.S. Treasury and federal agency securities	$28,644	$ 294	$73,793	$ 1,852	$102,437	$ 2,146
State and municipal	$1,811	$ 48	$1,260	$ 221	$3,071	$ 269
Foreign government	48,491	463	11,598	306	60,089	769
Corporate	6,556	114	798	25	7,354	139
Asset-backed securities	604	6	27	—	631	6
Other debt securities	1,313	—	—	—	1,313	—
Total debt securities AFS	$109,566	$ 1,502	$106,356	$ 3,406	$215,922	$ 4,908
December 31, 2017						
Securities AFS						
Mortgage-backed securities						
U.S. government-sponsored agency guaranteed	$30,994	$ 438	$2,206	$ 62	$33,200	$ 500
Non-U.S. residential	753	6	—	—	753	6
Commercial	150	1	57	1	207	2
Total mortgage-backed securities	$31,897	$ 445	$2,263	$ 63	$34,160	$ 508
U.S. Treasury and federal agency securities						
U.S. Treasury	$79,050	$ 856	$7,404	$ 115	$86,454	$ 971
Agency obligations	8,857	110	1,163	14	10,020	124
Total U.S. Treasury and federal agency securities	$87,907	$ 966	$8,567	$ 129	$96,474	$ 1,095
State and municipal	$1,009	$ 11	$1,155	$ 234	$2,164	$ 245
Foreign government	53,206	356	9,051	234	62,257	590
Corporate	6,737	74	859	12	7,596	86
Asset-backed securities	449	1	25	1	474	2
Other debt securities	—	—	—	—	—	—
Marketable equity securities AFS[1]	11	1	—	—	11	1
Total securities AFS	$181,216	$ 1,854	$21,920	$ 673	$203,136	$ 2,527

(1) Citi adopted ASU 2016-01 and ASU 2018-03 as of January 1, 2018, resulting in a cumulative effect adjustment from AOCI to retained earnings for net unrealized gains on marketable equity securities AFS. The available-for-sale category was eliminated for equity securities effective January 1, 2018. See Note 1 to the Consolidated Financial Statements for additional details.

The following table presents the amortized cost and fair value of AFS debt securities by contractual maturity dates:

In millions of dollars	September 30, 2018		December 31, 2017	
	Amortized cost	Fair value	Amortized cost	Fair value
Mortgage-backed securities[1]				
Due within 1 year	$434	$431	$45	$45
After 1 but within 5 years	1,201	1,194	1,306	1,304
After 5 but within 10 years	2,159	2,119	1,376	1,369
After 10 years[2]	44,735	43,275	42,504	42,239
Total	$48,529	$47,019	$45,231	$44,957
U.S. Treasury and federal agency securities				
Due within 1 year	$34,543	$34,471	$4,913	$4,907
After 1 but within 5 years	81,735	79,739	111,236	110,238
After 5 but within 10 years	1,893	1,842	3,008	3,001
After 10 years[2]	90	91	—	—
Total	$118,261	$116,143	$119,157	$118,146
State and municipal				
Due within 1 year	$2,773	$2,772	$1,792	$1,792
After 1 but within 5 years	1,575	1,570	2,579	2,576
After 5 but within 10 years	572	590	514	528
After 10 years[2]	4,742	4,548	3,985	3,869
Total	$9,662	$9,480	$8,870	$8,765
Foreign government				
Due within 1 year	$34,686	$34,649	$32,130	$32,100
After 1 but within 5 years	47,933	47,416	53,034	53,165
After 5 but within 10 years	10,371	10,386	12,949	12,680
After 10 years[2]	1,947	2,010	2,502	2,588
Total	$94,937	$94,461	$100,615	$100,533
All other[3]				
Due within 1 year	$6,439	$6,435	$3,998	$3,991
After 1 but within 5 years	9,151	9,068	9,047	9,027
After 5 but within 10 years	1,614	1,603	3,415	3,431
After 10 years[2]	595	573	1,887	1,875
Total	$17,799	$17,679	$18,347	$18,324
Total debt securities AFS	$289,188	$284,782	$292,220	$290,725

(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:

In millions of dollars	Carrying value	Gross unrealized gains	Gross unrealized losses	Fair value
September 30, 2018				
Debt securities held-to-maturity				
Mortgage-backed securities[1]				
U.S. government agency guaranteed	$25,058	$ 3	$ 869	$24,192
Alt-A	—	—	—	—
Non-U.S. residential	1,288	19	—	1,307
Commercial	260	—	—	260
Total mortgage-backed securities	$26,606	$ 22	$ 869	$25,759
State and municipal	$7,399	$ 124	$ 185	$7,338
Foreign government	1,151	—	14	1,137
Asset-backed securities[1]	18,093	27	11	18,109
Total debt securities held-to-maturity	$53,249	$ 173	$ 1,079	$52,343
December 31, 2017				
Debt securities held-to-maturity				
Mortgage-backed securities[1]				
U.S. government agency guaranteed	$23,880	$ 40	$ 157	$23,763
Alt-A	141	57	—	198
Non-U.S. residential	1,841	65	—	1,906
Commercial	237	—	—	237
Total mortgage-backed securities	$26,099	$ 162	$ 157	$26,104
State and municipal [2]	$8,897	$ 378	$ 73	$9,202
Foreign government	740	—	18	722
Asset-backed securities[1]	17,584	162	22	17,724
Total debt securities held-to-maturity	$53,320	$ 702	$ 270	$53,752

(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 18 to the Consolidated Financial Statements.

(2) In the second quarter of 2017, Citi early adopted ASU 2017-08, Receivables—Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities. Upon adoption, a cumulative effect adjustment was recorded to reduce retained earnings, effective January 1, 2017, for the incremental amortization of purchase premiums and cumulative fair value hedge adjustments on callable state and municipal debt securities. For additional information, see Note 1 to the Consolidated Financial Statements.

114

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	
In millions of dollars	Fair value	Gross unrecognized losses	Fair value	Gross unrecognized losses	Fair value	Gross unrecognized losses
September 30, 2018						
Debt securities held-to-maturity						
Mortgage-backed securities	$13,815	$ 392	$9,815	$ 477	$23,630	$ 869
State and municipal	2,283	58	799	127	3,082	185
Foreign government	1,138	14	—	—	1,138	14
Asset-backed securities	3,670	11	2	—	3,672	11
Total debt securities held-to-maturity	$20,906	$ 475	$10,616	$ 604	$31,522	$ 1,079
December 31, 2017						
Debt securities held-to-maturity						
Mortgage-backed securities	$8,569	$ 50	$6,353	$ 107	$14,922	$ 157
State and municipal	353	5	835	68	1,188	73
Foreign government	723	18	—	—	723	18
Asset-backed securities	71	3	134	19	205	22
Total debt securities held-to-maturity	$9,716	$ 76	$7,322	$ 194	$17,038	$ 270

Note: Excluded from the gross unrecognized losses presented in the table above are $(65) million and $(117) million of net unrealized losses recorded in AOCI as of September 30, 2018 and December 31, 2017, respectively, primarily related to the difference between the amortized cost and carrying value of HTM debt 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 September 30, 2018 and December 31, 2017.

The following table presents the carrying value and fair value of HTM debt securities by contractual maturity dates:

In millions of dollars	September 30, 2018 Carrying value	Fair value	December 31, 2017 Carrying value	Fair value
Mortgage-backed securities				
Due within 1 year	$—	$—	$—	$—
After 1 but within 5 years	129	127	720	720
After 5 but within 10 years	101	99	148	149
After 10 years(1)	26,376	25,533	25,231	25,235
Total	$26,606	$25,759	$26,099	$26,104
State and municipal				
Due within 1 year	$31	$31	$407	$425
After 1 but within 5 years	131	133	259	270
After 5 but within 10 years	492	495	512	524
After 10 years(1)	6,745	6,679	7,719	7,983
Total	$7,399	$7,338	$8,897	$9,202
Foreign government				
Due within 1 year	$114	$114	$381	$381
After 1 but within 5 years	1,037	1,023	359	341
After 5 but within 10 years	—	—	—	—
After 10 years(1)	—	—	—	—
Total	$1,151	$1,137	$740	$722
All other(2)				
Due within 1 year	$—	$—	$—	$—
After 1 but within 5 years	—	—	—	—
After 5 but within 10 years	2,244	2,250	1,669	1,680
After 10 years(1)	15,849	15,859	15,915	16,044
Total	$18,093	$18,109	$17,584	$17,724
Total debt securities held-to-maturity	$53,249	$52,343	$53,320	$53,752

(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. This review applies to all securities that are not measured at fair value through earnings. Effective January 1, 2018, the AFS category was eliminated for equity securities and, therefore, other-than-temporary impairment (OTTI) review is not required for those securities. See Note 1 to the Consolidated Financial Statements for additional details.

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. Temporary losses related to HTM debt securities generally are not recorded, as these investments are carried at adjusted amortized cost basis. However, for HTM debt securities with credit-related impairment, 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 debt 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 debt 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 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 any anticipated recovery.

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.

AFS Equity Securities and Equity Method Investments

For AFS equity securities, prior to January 1, 2018, management considered the various factors described above, including its intent and ability to hold an equity security for a period of time sufficient for recovery to cost or whether it was more-likely-than-not that the Company would have been required to sell the security prior to recovery of its cost basis. Where management lacked that intent or ability, the security's decline in fair value was deemed to be other-than-temporary and was recorded in earnings. Effective January 1, 2018, the AFS category has been eliminated for equity securities and, therefore, OTTI review is not required for those securities. See Note 1 to the Consolidated Financial Statements for additional details.

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 20 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:

- 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 September 30, 2018.

Mortgage-Backed Securities
For U.S. mortgage-backed securities, 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, or would be more-likely-than-not required to sell, the full impairment is recognized in earnings.

Recognition and Measurement of OTTI
The following tables present total OTTI recognized in earnings:

OTTI on Investments	Three Months Ended September 30, 2018			Nine Months Ended September 30, 2018		
In millions of dollars	AFS[(1)]	HTM	Total	AFS[(1)]	HTM	Total
Impairment losses related to debt securities that the Company does not intend to sell nor will likely be required to sell:						

Total OTTI losses recognized during the period	$ —	$ —	$ —	$ —	$ —	$ —
Less: portion of impairment loss recognized in AOCI (before taxes)	—	—	—	—	—	—
Net impairment losses recognized in earnings for debt securities that the Company does not intend to sell nor will likely be required to sell	$ —	$ —	$ —	$ —	$ —	$ —
Impairment losses recognized in earnings for debt 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	70	—	70	109	—	109
Total OTTI losses recognized in earnings	$ 70	$ —	$ 70	$ 109	$ —	$ 109

(1) For the three and nine months ended September 30, 2018, amounts represent AFS debt securities. Effective January 1, 2018, the AFS category was eliminated for equity securities. See Note 1 to the Consolidated Financial Statements for additional details.

OTTI on Investments	Three Months Ended September 30, 2017			Nine Months Ended September 30, 2017		
In millions of dollars	AFS (1)	HTM	Total	AFS (1)	HTM	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	$2	$ —	$ 2	$2	$ —	$ 2
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	$2	$ —	$ 2	$2	$ —	$ 2
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 and FX losses	12	1	13	43	2	45
Total impairment losses recognized in earnings	$14	$ 1	$ 15	$45	$ 2	$ 47

(1) Includes OTTI on non-marketable equity securities.

The following are three-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 debt securities still held				
In millions of dollars	June 30, 2018 balance	Credit impairments recognized in earnings on securities not previously impaired	Credit impairments recognized in earnings on securities that have been previously impaired	Changes due to credit-impaired securities sold, transferred or matured	September 30, 2018 balance
AFS debt securities					
Mortgage-backed securities[(1)]	$ 1	$ —	$ —	$ —	$ 1
State and municipal	—	—	—	—	—
Foreign government securities	—	—	—	—	—
Corporate	4	—	—	—	4
All other debt securities	2	—	—	—	2
Total OTTI credit losses recognized for AFS debt securities	$ 7	$ —	$ —	$ —	$ 7
HTM debt securities					
Mortgage-backed securities	$ —	$ —	$ —	$ —	$ —
State and municipal	—	—	—	—	—
Total OTTI credit losses recognized for HTM debt securities	$ —	$ —	$ —	$ —	$ —

(1) Primarily consists of Prime securities.

In millions of dollars	Cumulative OTTI credit losses recognized in earnings on debt securities still held				
	June 30, 2017 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	September 30, 2017 balance
AFS debt securities					
Mortgage-backed securities	$—	$—	$—	$—	$—
State and municipal	4	—	—	—	4
Foreign government securities	—	—	—	—	—
Corporate	4	—	—	—	4
All other debt securities	—	—	2	—	2
Total OTTI credit losses recognized for AFS debt securities	$8	$—	$2	$—	$10
HTM debt securities					
Mortgage-backed securities(1)	$97	$—	$—	$—	$97
State and municipal	3	—	—	—	3
Total OTTI credit losses recognized for HTM debt securities	$100	$—	$—	$—	$100

(1) Primarily consists of Alt-A securities.

The following are nine-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:

In millions of dollars	Cumulative OTTI credit losses recognized in earnings on debt securities still held				
	December 31, 2017 balance	Credit impairments recognized in earnings on securities not previously impaired	Credit impairments recognized in earnings on securities that have been previously impaired	Changes due to credit-impaired securities sold, transferred or matured(1)	September 30, 2018 balance
AFS debt securities					
Mortgage-backed securities(2)	$38	$—	$—	$(37)	$1
State and municipal	4	—	—	(4)	—
Foreign government securities	—	—	—	—	—
Corporate	4	—	—	—	4
All other debt securities	2	—	—	—	2
Total OTTI credit losses recognized for AFS debt securities	$48	$—	$—	$(41)	$7
HTM debt securities					
Mortgage-backed securities(3)	$54	$—	$—	$(54)	$—
State and municipal	3	—	—	(3)	—
	$57	$—	$—	$(57)	$—

Total OTTI credit losses recognized for HTM debt securities

(1) Includes $18 million in cumulative OTTI reclassified from HTM to AFS due to the transfer of the related debt securities from HTM to AFS. Citi adopted ASU 2017-12, Targeted Improvements to Accounting for Hedge Activities, on January 1, 2018 and transferred approximately $4 billion of HTM debt securities into AFS classification as permitted as a one-time transfer under the standard.
(2) Primarily consists of Prime securities.
(3) Primarily consists of Alt-A securities.

In millions of dollars	Cumulative OTTI credit losses recognized in earnings on debt securities still held				
	December 31, 2016 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	September 30, 2017 balance
AFS debt securities					
Mortgage-backed securities	$—	$ —	$ —	$ —	$ —
State and municipal	4	—	—	—	4
Foreign government securities	—	—	—	—	—
Corporate	5	—	—	(1)	4
All other debt securities	22	—	2	(22)	2
Total OTTI credit losses recognized for AFS debt securities	$31	$ —	$ 2	$ (23)	$ 10
HTM debt securities					
Mortgage-backed securities[1]	$101	$ —	$ —	$ (4)	$ 97
State and municipal	3	—	—	—	3
Total OTTI credit losses recognized for HTM debt securities	$104	$ —	$ —	$ (4)	$ 100

(1) Primarily consists of Alt-A securities.

Non-Marketable Equity Securities Not Carried at Fair Value

Effective January 1, 2018, non-marketable equity securities are required to be measured at fair value with changes in fair value recognized in earnings unless (i) the measurement alternative is elected or (ii) the investment represents Federal Reserve Bank and Federal Home Loan Bank stock or certain exchange seats that continue to be carried at cost. See Note 1 to the Consolidated Financial Statements for additional details.

The election to measure a non-marketable equity security using the measurement alternative is made on an instrument-by-instrument basis. Under the measurement alternative, an equity security is carried at cost plus or minus changes resulting from observable prices in orderly transactions for the identical or a similar investment of the same issuer. The carrying value of the equity security is adjusted to fair value on the date of an observed transaction. Fair value may differ from the observed transaction price due to a number of factors, including marketability adjustments and differences in rights and obligations when the observed transaction is not for the identical investment held by Citi.

Equity securities under the measurement alternative are also assessed for impairment. On a quarterly basis, management qualitatively assesses whether each equity security under the measurement alternative is impaired. Impairment indicators that are considered include, but are not limited to, the following:

- a significant deterioration in the earnings performance, credit rating, asset quality or business prospects of the investee;
- a significant adverse change in the regulatory, economic or technological environment of the investee;
- a significant adverse change in the general market condition of either the geographical area or the industry in which the investee operates;
- a bona fide offer to purchase, an offer by the investee to sell or a completed auction process for the same or similar investment for an amount less than the carrying amount of that investment; and
-

factors that raise significant concerns about the investee’s ability to continue as a going concern, such as negative cash flows from operations, working capital deficiencies or noncompliance with statutory capital requirements or debt covenants.

When the qualitative assessment indicates that impairment exists, the investment is written down to fair value, with the full difference between the fair value of the investment and its carrying amount recognized in earnings.

Below is the carrying value of non-marketable equity securities measured using the measurement alternative at September 30, 2018, and amounts recognized in earnings for the three and nine months ended September 30, 2018:

In millions of dollars	Three Months Ended September 30, 2018	Nine Months Ended September 30, 2018
Measurement alternative:		
Balance as of September 30, 2018	$ 452	$ 452
Impairment losses[1]	—	4
Downward changes for observable prices[1]	14	18
Upward changes for observable prices[1]	21	133

(1) See Note 20 to the Consolidated Financial Statements for additional information on these nonrecurring fair value measurements.

A similar impairment analysis is performed for non-marketable equity securities carried at cost. For the three and nine months ended September 30, 2018, there was no

impairment loss recognized in earnings for non-marketable equity securities carried at cost.

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. On April 21, 2017, Citi's request for extension of the permitted holding period under the Volcker Rule for certain of its investments in illiquid funds was approved, allowing the Company to hold such investments until the earlier of 5 years from the July 21, 2017 expiration date of the general conformance period, or the date such investments mature or are otherwise conformed with the Volcker Rule.

	Fair value		Unfunded commitments		Redemption frequency (if currently eligible) monthly, quarterly, annually	Redemption notice period
In millions of dollars	September 30, 2018	December 31, 2017	September 30, 2018	December 31, 2017		
Hedge funds	$ —	$ 1	$ —	$ —	Generally quarterly	10–95 days
Private equity funds[1][2]	186	372	62	62	—	—
Real estate funds [2][3]	14	31	19	20	—	—
Mutual/collective investment funds	25	—	—	—	—	—
Total	$ 225	$ 404	$ 81	$ 82	—	—

(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.

13. 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. For additional information regarding Citi's consumer and corporate loans, including related accounting policies, see Note 14 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.

Consumer Loans

Consumer loans represent loans and leases managed primarily by GCB and Corporate/Other. The following table provides Citi's consumer loans by loan type:

In millions of dollars	September 30, 2018	December 31, 2017
In U.S. offices		
Mortgage and real estate[1]	$ 61,048	$ 65,467
Installment, revolving credit and other	3,515	3,398
Cards	137,051	139,006
Commercial and industrial	7,686	7,840
	$ 209,300	$ 215,711
In offices outside the U.S.		
Mortgage and real estate[1]	$ 43,714	$ 44,081
Installment, revolving credit and other	27,899	26,556
Cards	24,971	26,257
Commercial and industrial	18,821	20,238
Lease financing	52	76
	$ 115,457	$ 117,208
Total consumer loans	$ 324,757	$ 332,919
Net unearned income	$ 712	$ 737
Consumer loans, net of unearned income	$ 325,469	$ 333,656

(1) Loans secured primarily by real estate.

The Company sold and/or reclassified to held-for-sale $0.3 billion and $3.0 billion, $0.4 billion and $3.2 billion of consumer loans during the three and nine months ended September 30, 2018 and 2017, respectively.

Consumer Loan Delinquency and Non-Accrual Details at September 30, 2018

In millions of dollars	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)	$ 46,038	$ 503	$ 263	$ 903	$47,707	$ 628	$ 641
Home equity loans(6)(7)	11,693	174	264	—	12,131	561	—
Credit cards	134,721	1,612	1,539	—	137,872	—	1,539
Installment and other	3,473	40	14	—	3,527	20	—
Commercial banking loans	9,206	25	48	—	9,279	114	—
Total	$ 205,131	$ 2,354	$ 2,128	$ 903	$210,516	$ 1,323	$ 2,180
In offices outside North America							
Residential first mortgages(5)	$ 35,919	$ 217	$ 146	$ —	$36,282	$ 397	$ —
Credit cards	23,638	420	356	—	24,414	314	223
Installment and other	25,192	267	108	—	25,567	163	—
Commercial banking loans	28,569	54	66	—	28,689	177	—
Total	$ 113,318	$ 958	$ 676	$ —	$114,952	$ 1,051	$ 223
Total GCB and Corporate/Other—Consumer	$ 318,449	$ 3,312	$ 2,804	$ 903	$325,468	$ 2,374	$ 2,403
Other(8)	1	—	—	—	1	—	—
Total Citigroup	$ 318,450	$ 3,312	$ 2,804	$ 903	$325,469	$ 2,374	$ 2,403

(1) Loans less than 30 days past due are presented as current.
(2) Includes $21 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 $0.7 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 GCB or Corporate/Other consumer credit metrics.

Consumer Loan Delinquency and Non-Accrual Details at December 31, 2017

In millions of dollars	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)	$ 47,366	$ 505	$ 280	$ 1,225	$49,376	$ 665	$ 941
Home equity loans(6)(7)	14,268	207	352	—	14,827	750	—
Credit cards	136,588	1,528	1,613	—	139,729	—	1,596
Installment and other	3,395	45	16	—	3,456	22	1
Commercial banking loans	9,395	51	65	—	9,511	213	—
Total	$ 211,012	$ 2,336	$ 2,326	$ 1,225	$216,899	$ 1,650	$ 2,538
In offices outside North America							
Residential first mortgages(5)	$ 37,062	$ 209	$ 148	$ —	$37,419	$ 400	$ —
Credit cards	24,934	427	366	—	25,727	323	259
Installment and other	25,634	275	123	—	26,032	157	—
Commercial banking loans	27,449	57	72	—	27,578	160	—
Total	$ 115,079	$ 968	$ 709	$ —	$116,756	$ 1,040	$ 259
Total GCB and Corporate/Other—Consumer	$ 326,091	$ 3,304	$ 3,035	$ 1,225	$333,655	$ 2,690	$ 2,797
Other(8)	1	—	—	—	1	—	—
Total Citigroup	$ 326,092	$ 3,304	$ 3,035	$ 1,225	$333,656	$ 2,690	$ 2,797

(1) Loans less than 30 days past due are presented as current.
(2) Includes $25 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 $1.0 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 GCB or Corporate/Other consumer credit metrics.

Consumer Credit Scores (FICO)

The following tables provide details on the FICO scores for Citi's U.S. consumer loan portfolio based on end-of-period receivables (commercial banking loans are excluded from 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.

FICO score distribution in U.S. portfolio(1)(2)	September 30, 2018		
In millions of dollars	Less than 680	680 to 760	Greater than 760
Residential first mortgages	$4,647	$13,854	$26,553
Home equity loans	2,575	4,495	4,692
Credit cards	31,379	56,636	47,675
Installment and other	624	1,080	1,189
Total	$39,225	$76,065	$80,109

FICO score distribution in U.S. portfolio[1][2]	December 31, 2017		
In millions of dollars	Less than 680	680 to 760	Greater than 760
Residential first mortgages	$5,603	$14,423	$26,271
Home equity loans	3,347	5,439	5,650
Credit cards	30,875	56,443	48,989
Installment and other	716	1,020	1,275
Total	$40,541	$77,325	$82,185

(1) Excludes loans guaranteed by U.S. government entities, loans subject to long-term standby commitments (LTSC) 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

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)]	September 30, 2018		
In millions of dollars	Less than or equal to 80%	> 80% but less than or equal to 100%	Greater than 100%
Residential first mortgages	$42,823	$2,205	$ 151
Home equity loans	9,884	1,366	446
Total	$52,707	$3,571	$ 597

LTV distribution in U.S. portfolio[(1)(2)]	December 31, 2017		
In millions of dollars	Less than or equal to 80%	> 80% but less than or equal to 100%	Greater than 100%
Residential first mortgages	$43,626	$2,578	$247
Home equity loans	11,403	2,147	800
Total	$55,029	$4,725	$1,047

(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.

Impaired Consumer Loans

The following tables present information about impaired consumer loans and interest income recognized on impaired consumer loans:

	Balance at September 30, 2018				Three Months Ended September 30,		Nine Months Ended September 30,	
					2018	2017	2018	2017
In millions of dollars	Recorded investment[1][2]	Unpaid principal balance	Related specific allowance[3]	Average carrying value[4]	Interest income recognized[5]	Interest income recognized[5]	Interest income recognized[5]	Interest income recognized[5]
Mortgage and real estate								
Residential first mortgages	$2,294	$ 2,508	$ 197	$ 2,670	$ 21	$ 29	$ 63	$ 97
Home equity loans	704	980	125	815	2	7	10	21
Credit cards	1,801	1,828	654	1,807	24	37	79	110
Installment and other								
Individual installment and other	406	436	153	421	5	5	17	18
Commercial banking	296	441	46	306	2	4	10	18
Total	$5,501	$ 6,193	$ 1,175	$ 6,019	$ 54	$ 82	$ 179	$ 264

(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) $529 million of residential first mortgages, $270 million of home equity loans and $25 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.

	Balance, December 31, 2017			
In millions of dollars	Recorded investment[1][2]	Unpaid principal balance	Related specific allowance[3]	Average carrying value[4]
Mortgage and real estate				
Residential first mortgages	$2,877	$ 3,121	$ 278	$ 3,155
Home equity loans	1,151	1,590	216	1,181
Credit cards	1,787	1,819	614	1,803
Installment and other				
Individual installment and other	431	460	175	415
Commercial banking	334	541	51	429
Total	$6,580	$ 7,531	$ 1,334	$ 6,983

(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) $607 million of residential first mortgages, $370 million of home equity loans and $10 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.

Consumer Troubled Debt Restructurings

	For the Three Months Ended September 30, 2018					
In millions of dollars, except number of loans modified	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	461	$ 66	$ —	$ —	$ —	— %
Home equity loans	261	26	1	—	—	1
Credit cards	61,508	253	—	—	—	18
Installment and other revolving	322	2	—	—	—	5
Commercial banking(6)	11	3	—	—	—	—
Total(8)	62,563	$ 350	$ 1	$ —	$ —	
International						
Residential first mortgages	660	$ 22	$ —	$ —	$ —	— %
Credit cards	18,413	77	—	—	2	17
Installment and other revolving	6,421	34	—	—	2	10
Commercial banking(6)	131	9	—	—	—	—
Total(8)	25,625	$ 142	$ —	$ —	$ 4	

	For the Three Months Ended September 30, 2017					
In millions of dollars, except number of loans modified	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	1,400	$ 199	$ 1	$ —	$ —	— %
Home equity loans	830	70	5	—	—	1
Credit cards	59,285	225	—	—	—	17
Installment and other revolving	299	2	—	—	—	6
Commercial banking(6)	33	59	—	—	—	—
Total(8)	61,847	$ 555	$ 6	$ —	$ —	
International						
Residential first mortgages	703	$ 25	$ —	$ —	$ —	— %
Credit cards	28,254	103	—	—	2	11
Installment and other revolving	11,725	70	—	—	3	11
Commercial banking(6)	97	11	—	—	—	—
Total(8)	40,779	$ 209	$ —	$ —	$ 5	

(1) Post-modification balances include past due amounts that are capitalized at the modification date.

(2) Post-modification balances in North America include $10 million of residential first mortgages and $2 million of home equity loans to borrowers who have gone through Chapter 7 bankruptcy in the three months ended September 30, 2018. These amounts include $7 million of residential first mortgages and $2 million of home equity loans that were newly classified as TDRs in the three months ended September 30, 2018, 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 banking 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 $12 million of residential first mortgages and $5 million of home equity loans to borrowers who have gone through Chapter 7 bankruptcy in the three months ended September 30, 2017. These amounts include $7 million of residential first mortgages and $5 million of home equity loans that were newly classified as TDRs in the three months ended September 30, 2017, based on previously received OCC guidance.

(8) The above tables reflect activity for loans outstanding that were considered TDRs as of the end of the reporting period.

In millions of dollars, except number of loans modified	For the Nine Months Ended September 30, 2018 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	1,544	$ 233	$ 2	$ —	$ —	— %
Home equity loans	1,097	104	4	—	—	1
Credit cards	180,170	717	—	—	—	17
Installment and other revolving	956	7	—	—	—	5
Commercial banking[6]	37	5	—	—	—	—
Total[8]	183,804	$ 1,066	$ 6	$ —	$ —	
International						
Residential first mortgages	1,833	$ 62	$ —	$ —	$ —	— %
Credit cards	59,589	249	—	—	7	16
Installment and other revolving	22,918	136	—	—	6	10
Commercial banking[6]	433	60	—	—	—	1
Total[8]	84,773	$ 507	$ —	$ —	$ 13	

In millions of dollars, except number of loans modified	For the Nine Months Ended September 30, 2017 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	3,172	$ 445	$ 5	$ —	$ 2	1 %
Home equity loans	2,186	185	13	—	—	1
Credit cards	171,702	659	—	—	—	17
Installment and other revolving	770	6	—	—	—	5
Commercial banking[6]	89	107	—	—	—	—
Total[8]	177,919	$ 1,402	$ 18	$ —	$ 2	
International						
Residential first mortgages	2,071	$ 80	$ —	$ —	$ —	— %
Credit cards	82,042	286	—	—	6	12
Installment and other revolving	34,654	194	—	—	9	9
Commercial banking[6]	182	30	—	—	—	—
Total[8]	118,949	$ 590	$ —	$ —	$ 15	

(1) Post-modification balances include past due amounts that are capitalized at the modification date.

(2) Post-modification balances in North America include $29 million of residential first mortgages and $10 million of home equity loans to borrowers who have gone through Chapter 7 bankruptcy in the nine months ended September 30, 2018. These amounts include $20 million of residential first mortgages and $9 million of home equity loans that were newly classified as TDRs in the nine months ended September 30, 2018, 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 banking 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 $42 million of residential first mortgages and $16 million of home equity loans to borrowers who have gone through Chapter 7 bankruptcy in the nine months ended September 30, 2017. These amounts include $28 million of residential first mortgages and $14 million of home equity loans that were newly classified as TDRs in the nine months ended September 30, 2017, based on previously received OCC guidance.

(8) The above tables reflect activity for loans outstanding that were considered TDRs as of the end of the reporting period.

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 banking loans, where default is defined as 90 days past due.

In millions of dollars	Three Months Ended September 30, 2018	2017	Nine Months Ended September 30, 2018	2017
North America				
Residential first mortgages	$ 31	$ 57	$ 105	$ 156
Home equity loans	5	8	21	25
Credit cards	57	54	173	163
Installment and other revolving	1	1	2	2
Commercial banking	1	—	22	2
Total	$ 95	$ 120	$ 323	$ 348
International				
Residential first mortgages	$ 2	$ 3	$ 6	$ 8
Credit cards	48	48	156	136
Installment and other revolving	18	25	62	71
Commercial banking	7	—	17	—
Total	$ 75	$ 76	$ 241	$ 215

Corporate Loans

Corporate loans represent loans and leases managed by ICG. The following table presents information by corporate loan type:

In millions of dollars	September 30, 2018	December 31, 2017
In U.S. offices		
Commercial and industrial	$ 51,365	$ 51,319
Financial institutions	46,255	39,128
Mortgage and real estate[(1)]	47,629	44,683
Installment, revolving credit and other	32,201	33,181
Lease financing	1,445	1,470
	$ 178,895	$ 169,781
In offices outside the U.S.		
Commercial and industrial	$ 98,281	$ 93,750
Financial institutions	37,851	35,273
Mortgage and real estate[(1)]	7,344	7,309
Installment, revolving credit and other	22,827	22,638
Lease financing	131	190
Governments and official institutions	4,898	5,200
	$ 171,332	$ 164,360
Total corporate loans	$ 350,227	$ 334,141
Net unearned income	$ (787)	$ (763)
Corporate loans, net of unearned income	$ 349,440	$ 333,378

(1) Loans secured primarily by real estate.

The Company sold and/or reclassified to held-for-sale $0.3 billion and $0.8 billion of corporate loans during the three and nine months ended September 30, 2018, respectively, and $0.1 billion and $0.6 billion during three and nine months ended September 30, 2017, respectively. The Company did not have significant purchases of corporate loans classified as held-for-investment for the three and nine months ended September 30, 2018 or 2017.

Corporate Loan Delinquency and Non-Accrual Details at September 30, 2018

In millions of dollars	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	$ 430	$ 30	$ 460	$ 1,123	$145,612	$147,195
Financial institutions	146	9	155	74	82,299	82,528
Mortgage and real estate	209	5	214	258	54,492	54,964
Leases	16	3	19	—	1,557	1,576
Other	79	41	120	85	58,754	58,959
Loans at fair value						4,218
Total	$ 880	$ 88	$ 968	$ 1,540	$342,714	$349,440

Corporate Loan Delinquency and Non-Accrual Details at December 31, 2017

In millions of dollars	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	$ 249	$ 13	$ 262	$ 1,506	$139,554	$141,322
Financial institutions	93	15	108	92	73,557	73,757
Mortgage and real estate	147	59	206	195	51,563	51,964
Leases	68	8	76	46	1,533	1,655
Other	70	13	83	103	60,145	60,331
Loans at fair value						4,349
Total	$ 627	$ 108	$ 735	$ 1,942	$326,352	$333,378

(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) 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.

Corporate Loans Credit Quality Indicators

In millions of dollars	Recorded investment in loans[1] September 30, 2018	December 31, 2017
Investment grade[2]		
Commercial and industrial	$102,875	$ 101,313
Financial institutions	70,435	60,404
Mortgage and real estate	24,351	23,213
Leases	1,054	1,090
Other	53,609	56,306
Total investment grade	$252,324	$ 242,326
Non-investment grade[2]		
Accrual		
Commercial and industrial	$43,196	$ 38,503
Financial institutions	12,019	13,261
Mortgage and real estate	3,240	2,881
Leases	523	518
Other	5,264	3,924
Non-accrual		
Commercial and industrial	1,123	1,506
Financial institutions	74	92
Mortgage and real estate	258	195
Leases	—	46
Other	85	103
Total non-investment grade	$65,782	$ 61,029
Non-rated private bank loans managed on a delinquency basis[2]	$27,116	$ 25,674
Loans at fair value	4,218	4,349
Corporate loans, net of unearned income	$349,440	$ 333,378

(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.

Non-Accrual Corporate Loans

The following tables present non-accrual loan information by corporate loan type and interest income recognized on non-accrual corporate loans:

In millions of dollars	September 30, 2018 Recorded investment(1)	Unpaid principal balance	Related specific allowance	Average carrying value(2)	Three Months Ended September 30, 2018 Interest income recognized(3)	Nine Months Ended September 30, 2018 Interest income recognized(3)
Non-accrual corporate loans						
Commercial and industrial	$ 1,123	$ 1,379	$ 207	$ 1,246	$ 8	$ 24
Financial institutions	74	90	39	97	—	—
Mortgage and real estate	258	423	45	228	—	1
Lease financing	—	39	—	33	—	—
Other	85	205	13	90	—	—
Total non-accrual corporate loans	$ 1,540	$ 2,136	$ 304	$ 1,694	$ 8	$ 25

In millions of dollars	December 31, 2017 Recorded investment(1)	Unpaid principal balance	Related specific allowance	Average carrying value(2)
Non-accrual corporate loans				
Commercial and industrial	$ 1,506	$ 1,775	$ 368	$ 1,547
Financial institutions	92	102	41	212
Mortgage and real estate	195	324	11	183
Lease financing	46	46	4	59
Other	103	212	2	108
Total non-accrual corporate loans	$ 1,942	$ 2,459	$ 426	$ 2,109

In millions of dollars	September 30, 2018 Recorded investment(1)	Related specific allowance	December 31, 2017 Recorded investment(1)	Related specific allowance
Non-accrual corporate loans with valuation allowances				
Commercial and industrial	$ 643	$ 207	$ 1,017	$ 368
Financial institutions	72	39	88	41
Mortgage and real estate	122	45	51	11
Lease financing	—	—	46	4
Other	17	13	13	2
Total non-accrual corporate loans with specific allowance	$ 854	$ 304	$ 1,215	$ 426
Non-accrual corporate loans without specific allowance				
Commercial and industrial	$ 480		$ 489	
Financial institutions	2		4	
Mortgage and real estate	136		144	
Lease financing	—		—	
Other	68		90	
Total non-accrual corporate loans without specific allowance	$ 686	N/A	$ 727	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 three and nine months ended September 30, 2017 was $11 million and $30 million, respectively.

N/A Not applicable

Corporate Troubled Debt Restructurings

For the three months ended September 30, 2018:

In millions of dollars	Carrying value of TDRs modified during the period	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	$ 62	$ 1	$ 4	$ 57
Mortgage and real estate	3	—	—	3
Total	$ 65	$ 1	$ 4	$ 60

For the three months ended September 30, 2017:

In millions of dollars	Carrying value of TDRs modified during the period	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	$ 175	$ 99	$ —	$ 76
Mortgage and real estate	14	—	—	14
Total	$ 189	$ 99	$ —	$ 90

For the nine months ended September 30, 2018:

In millions of dollars	Carrying value of TDRs modified during the period	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	$ 103	$ 5	$ 8	$ 90
Mortgage and real estate	6	—	—	6

Total	$ 109	$ 5	$ 8	$ 96

For the nine months ended September 30, 2017:

In millions of dollars	Carrying value of TDRs modified during the period	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	$ 463	$ 131	$ —	$ 332
Mortgage and real estate	15	—	—	15
Other	18	—	—	18
Total	$ 496	$ 131	$ —	$ 365

(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.

In millions of dollars	TDR balances at September 30, 2018	TDR loans in payment default during the three months ended September 30, 2018	TDR loans in payment default nine months ended September 30, 2018	TDR balances at September 30, 2017	TDR loans in payment default during the three months ended September 30, 2017	TDR loans in payment default during the nine months ended September 30, 2017
Commercial and industrial	$ 480	$ —	$ 70	$ 686	$ —	$ 12
Financial institutions	21	—	—	24	—	3
Mortgage and real estate	71	—	—	84	—	—
Other	42	—	—	155	—	—
Total(1)	$ 614	$ —	$ 70	$ 949	$ —	$ 15

(1) The above table reflects activity for loans outstanding that were considered TDRs as of the end of the reporting period.

135

14. ALLOWANCE FOR CREDIT LOSSES

	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars	2018	2017	2018	2017
Allowance for loan losses at beginning of period	$12,126	$12,025	$12,355	$12,060
Gross credit losses	(2,094)	(2,120)	(6,499)	(6,394)
Gross recoveries[1]	338	343	1,172	1,198
Net credit losses (NCLs)	$(1,756)	$(1,777)	$(5,327)	$(5,196)
NCLs	$1,756	$1,777	$5,327	$5,196
Net reserve builds (releases)	169	419	302	466
Net specific reserve builds (releases)	(19)	(50)	(125)	(175)
Total provision for loan losses	$1,906	$2,146	$5,504	$5,487
Other, net (see table below)	60	(28)	(196)	15
Allowance for loan losses at end of period	$12,336	$12,366	$12,336	$12,366
Allowance for credit losses on unfunded lending commitments at beginning of period	$1,278	$1,406	$1,258	$1,418
Provision (release) for unfunded lending commitments	42	(175)	66	(190)
Other, net	1	1	(3)	4
Allowance for credit losses on unfunded lending commitments at end of period[2]	$1,321	$1,232	$1,321	$1,232
Total allowance for loans, leases and unfunded lending commitments	$13,657	$13,598	$13,657	$13,598

(1) Recoveries have been reduced by certain collection costs that are incurred only if collection efforts are successful.
(2) 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	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars	2018	2017	2018	2017
Sales or transfers of various consumer loan portfolios to HFS				
Transfer of real estate loan portfolios	$(2)	$(28)	$(88)	$(84)
Transfer of other loan portfolios	(3)	(6)	(109)	(130)
Sales or transfers of various consumer loan portfolios to HFS	$(5)	$(34)	$(197)	$(214)
FX translation, consumer	62	7	16	221
Other	3	(1)	(15)	8
Other, net	$60	$(28)	$(196)	$15

Allowance for Credit Losses and Investment in Loans

	Three Months Ended					
	September 30, 2018			September 30, 2017		
In millions of dollars	Corporate	Consumer	Total	Corporate	Consumer	Total
Allowance for loan losses at beginning of period	$2,330	$9,796	$12,126	$2,510	$9,515	$12,025
Charge-offs	(36)	(2,058)	(2,094)	(49)	(2,071)	(2,120)

Recoveries	6	332	338	6	337	343
Replenishment of net charge-offs	30	1,726	1,756	43	1,734	1,777
Net reserve builds (releases)	34	135	169	(60)	479	419
Net specific reserve builds (releases)	(27)	8	(19)	21	(71)	(50)
Other	2	58	60	3	(31)	(28)
Ending balance	$2,339	$ 9,997	$12,336	$2,474	$ 9,892	$12,366

136

	Nine Months Ended					
	September 30, 2018			September 30, 2017		
In millions of dollars	Corporate	Consumer	Total	Corporate	Consumer	Total
Allowance for loan losses at beginning of period	$2,486	$ 9,869	$12,355	$2,702	$ 9,358	$12,060
Charge-offs	(195)	(6,304)	(6,499)	(248)	(6,146)	(6,394)
Recoveries	71	1,101	1,172	91	1,107	1,198
Replenishment of net charge-offs	124	5,203	5,327	157	5,039	5,196
Net reserve builds (releases)	(15)	317	302	(230)	696	466
Net specific reserve builds (releases)	(119)	(6)	(125)	(18)	(157)	(175)
Other	(13)	(183)	(196)	20	(5)	15
Ending balance	$2,339	$ 9,997	$12,336	$2,474	$ 9,892	$12,366

	September 30, 2018			December 31, 2017		
In millions of dollars	Corporate	Consumer	Total	Corporate	Consumer	Total
Allowance for loan losses						
Collectively evaluated in accordance with ASC 450	$2,035	$8,820	$10,855	$2,060	$8,531	$10,591
Individually evaluated in accordance with ASC 310-10-35	304	1,175	1,479	426	1,334	1,760
Purchased credit impaired in accordance with ASC 310-30	—	2	2	—	4	4
Total allowance for loan losses	$2,339	$9,997	$12,336	$2,486	$9,869	$12,355
Loans, net of unearned income						
Collectively evaluated in accordance with ASC 450	$343,774	$319,816	$663,590	$327,142	$326,884	$654,026
Individually evaluated in accordance with ASC 310-10-35	1,448	5,501	6,949	1,887	6,580	8,467
Purchased credit impaired in accordance with ASC 310-30	—	131	131	—	167	167
Held at fair value	4,218	21	4,239	4,349	25	4,374
Total loans, net of unearned income	$349,440	$325,469	$674,909	$333,378	$333,656	$667,034

15. GOODWILL AND INTANGIBLE ASSETS

Goodwill

The changes in Goodwill were as follows:

In millions of dollars	Global Consumer Banking	Institutional Clients Group	Corporate/Other	Total
Balance at December 31, 2017	$ 12,784	$ 9,456	$ 16	$ 22,256
Foreign currency translation and other	$ 184	$ 235	$ —	$ 419
Divestiture[1]	—	—	(16)	(16)
Balance at March 31, 2018	$ 12,968	$ 9,691	$ —	$ 22,659
Foreign exchange translation and other	$ (226)	$ (375)	$ —	$ (601)
Balance at June 30, 2018	$ 12,742	$ 9,316	$ —	$ 22,058
Foreign exchange translation and other	$ 7	$ 122	$ —	$ 129
Balance at September 30, 2018	$ 12,749	$ 9,438	$ —	$ 22,187

(1) Goodwill allocated to the sale of the Citi Colombia consumer business, the only remaining business in Citi Holdings—Consumer Latin America reporting unit reported as part of Corporate/Other, which was classified as HFS beginning the first quarter of 2018. The sale was completed during the second quarter of 2018.

Goodwill impairment testing is performed at the level below each business segment (referred to as a reporting unit). See Note 3 for further information on business segments. For additional information regarding Citi's goodwill impairment testing process, see Notes 1 and 16 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.

The Company performed its annual goodwill impairment test as of July 1, 2018. The fair values of the Company's reporting units exceeded their carrying values by approximately 14% to 243% and no reporting unit is at risk of impairment. Further, there were no triggering events identified and no goodwill was impaired during the three and nine months ended September 30, 2018.

Intangible Assets

The components of intangible assets were as follows:

	September 30, 2018			December 31, 2017		
In millions of dollars	Gross carrying amount	Accumulated amortization	Net carrying amount	Gross carrying amount	Accumulated amortization	Net carrying amount
Purchased credit card relationships	$ 5,732	$ 3,890	$ 1,842	$ 5,375	$ 3,836	$ 1,539
Credit card contract related intangibles[1]	5,042	2,708	2,334	5,045	2,456	2,589
Core deposit intangibles	438	433	5	639	628	11
Other customer relationships	463	289	174	459	272	187
Present value of future profits	34	30	4	32	28	4
Indefinite-lived intangible assets	227	—	227	244	—	244
Other	84	72	12	100	86	14
Intangible assets (excluding MSRs)	$ 12,020	$ 7,422	$ 4,598	$ 11,894	$ 7,306	$ 4,588
Mortgage servicing rights (MSRs)[2]	618	—	618	558	—	558
Total intangible assets	$ 12,638	$ 7,422	$ 5,216	$ 12,452	$ 7,306	$ 5,146

(1)

Primarily reflects contract-related intangibles associated with the American Airlines, The Home Depot, Costco, Sears and AT&T credit card program agreements, which represented 97% of the aggregate net carrying amount as of September 30, 2018.

(2) For additional information on Citi's MSRs, see Note 18 to the Consolidated Financial Statements.

The changes in intangible assets were as follows:

In millions of dollars	Net carrying amount at December 31, 2017	Acquisitions/ divestitures	Amortization	FX translation and other	Net carrying amount at September 30, 2018
Purchased credit card relationships[1]	$ 1,539	$ 429	$ (124)	$ (2)	$ 1,842
Credit card contract related intangibles[2]	2,589	—	(255)	—	2,334
Core deposit intangibles	11	—	(6)	—	5
Other customer relationships	187	—	(19)	6	174
Present value of future profits	4	—	—	—	4
Indefinite-lived intangible assets	244	—	—	(17)	227
Other	14	—	(9)	7	12
Intangible assets (excluding MSRs)	$ 4,588	$ 429	$ (413)	$ (6)	$ 4,598
Mortgage servicing rights (MSRs)[3]	558				618
Total intangible assets	$ 5,146				$ 5,216

(1) Reflects intangibles for the value of cardholder relationships, which are discrete from partner contract intangibles and include credit card accounts primarily in the Costco, Macy's and Sears portfolios. The increase since December 31, 2017 reflects the purchase of certain rights related to credit card accounts in the Sears portfolio.

(2) Primarily reflects contract-related intangibles associated with the American Airlines, The Home Depot, Costco, Sears and AT&T credit card program agreements, which represented 97% of the aggregate net carrying amount at September 30, 2018 and December 31, 2017.

(3) For additional information on Citi's MSRs, including the rollforward for the nine months ended September 30, 2018, see Note 18 to the Consolidated Financial Statements.

139

16. DEBT

For additional information regarding Citi's short-term borrowings and long-term debt, see Note 17 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.

Short-Term Borrowings

In millions of dollars	September 30, 2018	December 31, 2017
Commercial paper	$ 12,051	$ 9,940
Other borrowings(1)	21,719	34,512
Total	$ 33,770	$ 44,452

(1) Includes borrowings from Federal Home Loan Banks and other market participants. At September 30, 2018 and December 31, 2017, collateralized short-term advances from the Federal Home Loan Banks were $10.5 billion and $23.8 billion, respectively.

Long-Term Debt

In millions of dollars	September 30, 2018	December 31, 2017
Citigroup Inc.(1)	$ 148,183	$ 152,163
Bank(2)	62,085	65,856
Broker-dealer and other(3)	25,002	18,690
Total	$ 235,270	$ 236,709

(1) Represents the parent holding company.

(2) Represents Citibank entities as well as other bank entities. At September 30, 2018 and December 31, 2017, collateralized long-term advances from the Federal Home Loan Banks were $10.5 billion and $19.3 billion, respectively.

(3) Represents broker-dealer and other non-bank subsidiaries that are consolidated into Citigroup Inc., the parent holding company.

Long-term debt outstanding includes trust preferred securities with a balance sheet carrying value of $1.7 billion at both September 30, 2018 and December 31, 2017.

The following table summarizes Citi's outstanding trust preferred securities at September 30, 2018:

						Junior subordinated debentures owned by trust		
Trust	Issuance date	Securities issued	Liquidation value(1)	Coupon rate(2)	Common shares issued to parent	Amount	Maturity	Redeemable by issuer beginning
In millions of dollars, except share amounts								
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	Jun. 2007	99,901	130	3 mo LIBOR + 88.75 bps	50	130	Jun. 28, 2067	June 28, 2017
Total obligated			$ 2,570			$2,576		

Note: Distributions on the trust preferred securities and interest on the subordinated debentures are payable semiannually for Citigroup Capital III and Citigroup Capital XVIII and quarterly for Citigroup Capital XIII.

(1) Represents the notional value received by outside 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.

17. CHANGES IN ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS) (AOCI)

Changes in each component of Citigroup's Accumulated other comprehensive income (loss) were as follows:

Three Months Ended September 30, 2018

In millions of dollars	Net unrealized gains (losses) on investment securities	Debt valuation adjustment (DVA)	Cash flow hedges(1)	Benefit plans(2)	Foreign currency translation adjustment (CTA), net of hedges(3)	Excluded component of fair value hedges(4)	Accumulated other comprehensive income (loss)
Balance, June 30, 2018	$ (2,717)	$ (475)	$ (1,021)	$ (5,794)	$ (27,455)	$ (32)	$ (37,494)
Other comprehensive income before reclassifications	(601)	(294)	(114)	(14)	(221)	10	(1,234)
Increase (decrease) due to amounts reclassified from AOCI	(4)	7	40	40	—	—	83
Change, net of taxes	$ (605)	$ (287)	$ (74)	$ 26	$ (221)	$ 10	$ (1,151)
Balance at September 30, 2018	$ (3,322)	$ (762)	$ (1,095)	$ (5,768)	$ (27,676)	$ (22)	$ (38,645)

Nine Months Ended September 30, 2018

In millions of dollars	Net unrealized gains (losses) on investment securities	Debt valuation adjustment (DVA)	Cash flow hedges(1)	Benefit plans(2)	Foreign currency translation adjustment (CTA), net of hedges(3)	Excluded component of fair value hedges(4)	Accumulated other comprehensive income (loss)
Balance, December 31, 2017	$ (1,158)	$ (921)	$ (698)	$ (6,183)	$ (25,708)	$ —	$ (34,668)
Adjustment to opening balance, net of taxes(5)	(3)	—	—	—	—	—	(3)
Adjusted balance, beginning of period	$ (1,161)	$ (921)	$ (698)	$ (6,183)	$ (25,708)	$ —	$ (34,671)
Other comprehensive income before reclassifications	(1,984)	123	(393)	288	(1,968)	(22)	(3,956)
Increase (decrease) due to amounts reclassified from AOCI	(177)	36	(4)	127	—	—	(18)
Change, net of taxes	$ (2,161)	$ 159	$ (397)	$ 415	$ (1,968)	$ (22)	$ (3,974)
Balance, September 30, 2018	$ (3,322)	$ (762)	$ (1,095)	$ (5,768)	$ (27,676)	$ (22)	$ (38,645)

Note: Footnotes to the tables above appear on the following page.

Three Months Ended September 30, 2017

In millions of dollars	Net unrealized gains (losses) on investment securities	Debt valuation adjustment (DVA)	Cash flow hedges[1]	Benefit plans[2]	Foreign currency translation adjustment (CTA), net of hedges[3]	Excluded component of fair value hedges[4]	Accumulated other comprehensive income (loss)
Balance, June 30, 2017	$ (102)	$ (496)	$ (445)	$ (5,311)	$ (23,545)	$ —	$ (29,899)
Other comprehensive income before reclassifications	60	(125)	(27)	(71)	218	—	55
Increase (decrease) due to amounts reclassified from AOCI	(126)	2	35	42	—	—	(47)
Change, net of taxes	$ (66)	$ (123)	$ 8	$ (29)	$ 218	$ —	$ 8
Balance, September 30, 2017	$ (168)	$ (619)	$ (437)	$ (5,340)	$ (23,327)	$ —	$ (29,891)

Nine Months Ended September 30, 2017

In millions of dollars	Net unrealized gains (losses) on investment securities	Debt valuation adjustment (DVA)	Cash flow hedges[1]	Benefit plans[2]	Foreign currency translation adjustment (CTA), net of hedges[3]	Excluded component of fair value hedges[4]	Accumulated other comprehensive income (loss)
Balance, December 31, 2016	$ (799)	$ (352)	$ (560)	$ (5,164)	$ (25,506)	$ —	$ (32,381)
Adjustment to opening balance, net of taxes[6]	504	—	—	—	—	—	504
Adjusted balance, beginning of period	$ (295)	$ (352)	$ (560)	$ (5,164)	$ (25,506)	$ —	$ (31,877)
Other comprehensive income before reclassifications	495	(259)	59	(293)	2,326	—	2,328
Increase (decrease) due to amounts reclassified from AOCI	(368)	(8)	64	117	(147)	—	(342)
Change, net of taxes	$ 127	$ (267)	$ 123	$ (176)	$ 2,179	$ —	$ 1,986
Balance, September 30, 2017	$ (168)	$ (619)	$ (437)	$ (5,340)	$ (23,327)	$ —	$ (29,891)

(1) Primarily driven by Citigroup’s pay fixed/receive floating interest rate swap programs that hedge the floating rates on liabilities.

(2) Primarily reflects adjustments based on the quarterly actuarial valuations of the Company’s significant pension and postretirement plans, annual actuarial valuations of all other plans and amortization of amounts previously recognized in other comprehensive income.

(3) Primarily reflects the movements in (by order of impact) the Indian rupee, Chinese yuan renminbi, Turkish lira and Brazilian real against the U.S. dollar and changes in related tax effects and hedges for the three months ended September 30, 2018. Primarily reflects the movements in (by order of impact) the Brazilian real, Indian rupee, Australian dollar, and Argentine peso against the U.S. dollar and changes in related tax effects and hedges for the nine months ended September 30, 2018. Primarily reflects the movements in (by order of impact) the Euro, British pound, Chilean peso and Brazilian real against the U.S. dollar and changes in related tax effects and hedges for the three months ended September 30, 2017. Primarily reflects the movements in (by order of impact) the Mexican peso, Euro, Korean won and Polish zloty against the U.S. dollar and changes in related tax effects and hedges for the nine months ended September 30, 2017. Amounts recorded in the CTA component of AOCI remain in AOCI until the sale or substantial liquidation of the foreign entity, at which point such amounts related to the foreign entity are reclassified into earnings.

(4) Beginning in the first quarter of 2018, changes in the excluded component of fair value hedges are reflected as a component of AOCI, pursuant to the early adoption of ASU No. 2017-12, Targeted Improvements to Accounting for Hedging Activities. See Note 1 to the Consolidated Financial Statements for further information regarding this change.

(5) Citi adopted ASU 2016-01 and ASU 2018-03 on January 1, 2018. Upon adoption, a cumulative effect adjustment was recorded from AOCI to Retained earnings for net unrealized gains on former AFS equity securities. For additional information, see Note 1 to the Consolidated Financial Statements.

(6) In the second quarter of 2017, Citi early adopted ASU 2017-08, Receivables—Nonrefundable Fees and Other Costs (Subtopic 310-20): Premium Amortization on Purchased Callable Debt Securities. Upon adoption, a cumulative effect adjustment was recorded to reduce Retained earnings, effective January 1, 2017, for the incremental amortization of cumulative fair value hedge adjustments on callable state and municipal debt securities. For additional information, see Note 1 to the Consolidated Financial Statements.

The pretax and after-tax changes in each component of Accumulated other comprehensive income (loss) were as follows:

Three Months Ended September 30, 2018

In millions of dollars	Pretax	Tax effect[1]	After-tax
Balance, June 30, 2018	$(44,407)	$6,913	$(37,494)
Change in net unrealized gains (losses) on AFS debt securities	(810)	205	(605)
Debt valuation adjustment (DVA)	(377)	90	(287)
Cash flow hedges	(97)	23	(74)
Benefit plans	55	(29)	26
Foreign currency translation adjustment	(192)	(29)	(221)
Excluded component of fair value hedges	13	(3)	10
Change	$(1,408)	$257	$(1,151)
Balance, September 30, 2018	$(45,815)	$7,170	$(38,645)

Nine Months Ended September 30, 2018

In millions of dollars	Pretax	Tax effect[1]	After-tax
Balance, December 31, 2017[1]	$(41,228)	$6,560	$(34,668)
Adjustment to opening balance[2]	(4)	1	(3)
Adjusted balance, beginning of period	$(41,232)	$6,561	$(34,671)
Change in net unrealized gains (losses) on investment securities	(2,861)	700	(2,161)
Debt valuation adjustment (DVA)	208	(49)	159
Cash flow hedges	(519)	122	(397)
Benefit plans	549	(134)	415
Foreign currency translation adjustment	(1,931)	(37)	(1,968)
Excluded component of fair value hedges	(29)	7	(22)
Change	$(4,583)	$609	$(3,974)
Balance, September 30, 2018	$(45,815)	$7,170	$(38,645)

(1) Includes the impact of ASU 2018-02, which transferred amounts from AOCI to Retained earnings. For additional information, see Note 19 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.

(2) Citi adopted ASU 2016-01 and ASU 2018-03 on January 1, 2018. Upon adoption, a cumulative effect adjustment was recorded from AOCI to Retained earnings for net unrealized gains on former AFS equity securities. For additional information, see Note 1 to the Consolidated Financial Statements.

Three Months Ended September 30, 2017

In millions of dollars	Pretax	Tax effect	After-tax
Balance, June 30, 2017	$(39,106)	$9,207	$(29,899)
Change in net unrealized gains (losses) on investment securities	(107)	41	(66)
Debt valuation adjustment (DVA)	(195)	72	(123)
Cash flow hedges	12	(4)	8
Benefit plans	(45)	16	(29)
Foreign currency translation adjustment	285	(67)	218
Excluded component of fair value hedges	—	—	—
Change	$(50)	$58	$8
Balance, September 30, 2017	$(39,156)	$9,265	$(29,891)

Nine Months Ended September 30, 2017

In millions of dollars	Pretax	Tax effect	After-tax
Balance, December 31, 2016	$(42,035)	$9,654	$(32,381)
Adjustment to opening balance[1]	803	(299)	504
Adjusted balance, beginning of period	$(41,232)	$9,355	$(31,877)
Change in net unrealized gains (losses) on investment securities	194	(67)	127
Debt valuation adjustment (DVA)	(422)	155	(267)
Cash flow hedges	198	(75)	123
Benefit plans	(266)	90	(176)
Foreign currency translation adjustment	2,372	(193)	2,179
Excluded component of fair value hedges	—	—	—
Change	$2,076	$(90)	$1,986
Balance, September 30, 2017	$(39,156)	$9,265	$(29,891)

(1) In the second quarter of 2017, Citi early adopted ASU 2017-08. Upon adoption, a cumulative effect adjustment was recorded to reduce Retained earnings, effective January 1, 2017, for the incremental amortization of cumulative fair value hedge adjustments on callable state and municipal debt securities. See Note 1 to the Consolidated Financial Statements.

The Company recognized pretax gains (losses) related to amounts in AOCI reclassified to the Consolidated Statement of Income as follows:

	Increase (decrease) in AOCI due to amounts reclassified to Consolidated Statement of Income	
In millions of dollars	Three Months Ended September 30, 2018	Nine Months Ended September 30, 2018
Realized (gains) losses on sales of investments	$(69)	$ (341)
Gross impairment losses	68	111
Subtotal, pretax	$(1)	$ (230)
Tax effect	(3)	53
Net realized (gains) losses on investments after-tax(1)	$(4)	$ (177)
Realized DVA (gains) losses on fair value option liabilities	$9	$ 46
Subtotal, pretax	$9	$ 46
Tax effect	(2)	(10)
Net realized debt valuation adjustment, after-tax	$7	$ 36
Interest rate contracts	$54	$ 3
Foreign exchange contracts	(2)	(8)
Subtotal, pretax	$52	$ (5)
Tax effect	(12)	1
Amortization of cash flow hedges, after-tax(2)	$40	$ (4)
Amortization of unrecognized		
Prior service cost (benefit)	$(10)	$ (32)
Net actuarial loss	60	193
Curtailment/settlement impact(3)	—	6
Subtotal, pretax	$50	$ 167
Tax effect	(10)	(40)
Amortization of benefit plans, after-tax(3)	$40	$ 127
Foreign currency translation adjustment	$—	$ —
Tax effect	—	—
Foreign currency translation adjustment	$—	$ —
Total amounts reclassified out of AOCI, pretax	$110	$ (22)
Total tax effect	(27)	4
Total amounts reclassified out of AOCI, after-tax	$83	$ (18)

(1) The pretax amount is reclassified to Realized gains (losses) on sales of investments, net and Gross impairment losses in the Consolidated Statement of Income. See Note 12 to the Consolidated Financial Statements for additional details.
(2) See Note 19 to the Consolidated Financial Statements for additional details.
(3) See Note 8 to the Consolidated Financial Statements for additional details.

The Company recognized pretax gains (losses) related to amounts in AOCI reclassified to the Consolidated Statement of Income as follows:

In millions of dollars	Increase (decrease) in AOCI due to amounts reclassified to Consolidated Statement of Income Three Months Ended September 30, 2017	Nine Months Ended September 30, 2017
Realized (gains) losses on sales of investments	$(213)	$ (626)
OTTI gross impairment losses	15	47
Subtotal, pretax	$(198)	$ (579)
Tax effect	72	211
Net realized (gains) losses on investment securities, after-tax[1]	$(126)	$ (368)
Realized DVA (gains) losses on fair value option liabilities	$3	$ (13)
Subtotal, pretax	$3	$ (13)
Tax effect	$(1)	$ 5
Net realized debt valuation adjustment, after-tax	$2	$ (8)
Interest rate contracts	$48	$ 94
Foreign exchange contracts	7	8
Subtotal, pretax	$55	$ 102
Tax effect	(20)	(38)
Amortization of cash flow hedges, after-tax[2]	$35	$ 64
Amortization of unrecognized		
Prior service cost (benefit)	$(10)	$ (32)
Net actuarial loss	70	203
Curtailment/settlement impact[3]	5	12
Subtotal, pretax	$65	$ 183
Tax effect	(23)	(66)
Amortization of benefit plans, after-tax[3]	$42	$ 117
Foreign currency translation adjustment	$—	$ (232)
Tax effect	—	85
Foreign currency translation adjustment	$—	$ (147)
Total amounts reclassified out of AOCI, pretax	$(75)	$ (539)
Total tax effect	28	197
Total amounts reclassified out of AOCI, after-tax	$(47)	$ (342)

(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 12 to the Consolidated Financial Statements for additional details.
(2) See Note 19 to the Consolidated Financial Statements for additional details.
(3) See Note 8 to the Consolidated Financial Statements for additional details.

146

18. SECURITIZATIONS AND VARIABLE INTEREST ENTITIES

For additional information regarding Citi's use of special purpose entities (SPEs) and variable interest entities (VIEs), see Note 21 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.
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 September 30, 2018							
				Maximum exposure to loss in significant unconsolidated VIEs(1)				
				Funded exposures(2)		Unfunded exposures		
In millions of dollars	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	$45,319	$ 45,319	$ —	$—	$ —	$—	$ —	$—
Mortgage securitizations(4)								
U.S. agency-sponsored	113,565	—	113,565	2,965	—	—	68	3,033
Non-agency-sponsored	25,452	1,580	23,872	356	—	—	1	357
Citi-administered asset-backed commercial paper conduits (ABCP)	17,435	17,435	—	—	—	—	—	—
Collateralized loan obligations (CLOs)	17,870	—	17,870	5,524	—	—	9	5,533
Asset-based financing	64,817	639	64,178	20,060	601	9,214	—	29,875
Municipal securities tender option bond trusts (TOBs)	8,016	2,029	5,987	37	—	4,106	—	4,143
Municipal investments	17,765	1	17,764	2,622	3,798	2,268	—	8,688
Client intermediation	592	419	173	72	—	—	9	81
Investment funds	1,353	525	828	12	—	3	5	20
Other	652	31	621	39	8	22	46	115
Total	$312,836	$ 67,978	$ 244,858	$31,687	$ 4,407	$15,613	$ 138	$51,845

	As of December 31, 2017							
				Maximum exposure to loss in significant unconsolidated VIEs(1)				
				Funded exposures(2)		Unfunded exposures		
In millions of dollars	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	$50,795	$ 50,795	$ —	$—	$ —	$—	$ —	$—
Mortgage securitizations(4)								
U.S. agency-sponsored	116,610	—	116,610	2,647	—	—	74	2,721
Non-agency-sponsored	22,251	2,035	20,216	330	—	—	1	331
Citi-administered asset-backed commercial paper conduits (ABCP)	19,282	19,282	—	—	—	—	—	—
Collateralized loan obligations (CLOs)	20,588	—	20,588	5,956	—	—	9	5,965
Asset-based financing	60,472	633	59,839	19,478	583	5,878	—	25,939
	6,925	2,166	4,759	138	—	3,035	—	3,173

Municipal securities tender option bond trusts (TOBs)								
Municipal investments	19,119	7	19,112	2,709	3,640	2,344	—	8,693
Client intermediation	958	824	134	32	—	—	9	41
Investment funds	1,892	616	1,276	14	7	13	—	34
Other	677	36	641	27	9	34	47	117
Total	$319,569	$ 76,394	$ 243,175	$31,331	$ 4,239	$11,304	$ 140	$47,014

(1) The definition of maximum exposure to loss is included in the text that follows this table.
(2) Included on Citigroup's September 30, 2018 and December 31, 2017 Consolidated Balance Sheet.
(3) A significant unconsolidated VIE is an entity in which 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.

147

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 in which 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, in which the Company has no other involvement with the related securitization entity deemed to be significant (for more information on these positions, see Notes 12 and 20 to the Consolidated Financial Statements);
- certain representations and warranties exposures in legacy ICG-sponsored mortgage-backed and asset-backed securitizations in which the Company has no variable interest or continuing involvement as servicer. The outstanding balance of mortgage loans securitized during 2005 to 2008 in which the Company has no variable interest or continuing involvement as servicer was approximately $8 billion and $9 billion at September 30, 2018 and December 31, 2017, 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 in which 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:

In millions of dollars	September 30, 2018 Liquidity facilities	September 30, 2018 Loan/equity commitments	December 31, 2017 Liquidity facilities	December 31, 2017 Loan/equity commitments
Asset-based financing	$—	$ 9,214	$—	$ 5,878
Municipal securities tender option bond trusts (TOBs)	4,106	—	3,035	—
Municipal investments	—	2,268	—	2,344
Investment funds	—	3	—	13
Other	—	22	—	34
Total funding commitments	$4,106	$ 11,507	$3,035	$ 8,269

Significant Interests in Unconsolidated VIEs—Balance Sheet Classification

The following table presents the carrying amounts and classification of significant variable interests in unconsolidated VIEs:

In billions of dollars	September 30, 2018	December 31, 2017
Cash	$ —	$ —
Trading account assets	8.2	8.5
Investments	4.7	4.4
Total loans, net of allowance	22.7	22.2
Other	0.5	0.5
Total assets	$ 36.1	$ 35.6

Credit Card Securitizations

Substantially all of the Company’s credit card securitization activity is through two trusts—Citibank Credit Card Master Trust (Master Trust) and Citibank Omni Master Trust (Omni

Trust), with the substantial majority through the Master Trust. These trusts are consolidated entities.

The following table reflects amounts related to the Company’s securitized credit card receivables:

In billions of dollars	September 30, 2018	December 31, 2017
Ownership interests in principal amount of trust credit card receivables		
Sold to investors via trust-issued securities	$ 26.3	$ 28.8
Retained by Citigroup as trust-issued securities	7.5	7.6
Retained by Citigroup via non-certificated interests	11.6	14.4
Total	$ 45.4	$ 50.8

The following tables summarize selected cash flow information related to Citigroup’s credit card securitizations:

In billions of dollars	Three Months Ended September 30, 2018	2017
Proceeds from new securitizations	$1.9	$2.2
Pay down of maturing notes	(2.9)	(1.8)

Nine
Months
Ended

In billions of dollars	September 30, 2018	2017
Proceeds from new securitizations	$5.8	$9.8
Pay down of maturing notes	(8.3)	(4.6)

Master Trust Liabilities (at Par Value)
The weighted average maturity of the third-party term notes issued by the Master Trust was 3.0 years as of September 30, 2018 and 2.6 years as of December 31, 2017.

In billions of dollars	Sept. 30, 2018	Dec. 31, 2017
Term notes issued to third parties	$ 24.8	$ 27.8
Term notes retained by Citigroup affiliates	5.7	5.7
Total Master Trust liabilities	$ 30.5	$ 33.5

Omni Trust Liabilities (at Par Value)
The weighted average maturity of the third-party term notes issued by the Omni Trust was 1.7 years as of September 30, 2018 and 1.9 years as of December 31, 2017.

In billions of dollars	Sept. 30, 2018	Dec. 31, 2017
Term notes issued to third parties	$ 1.5	$ 1.0
Term notes retained by Citigroup affiliates	1.9	1.9
Total Omni Trust liabilities	$ 3.4	$ 2.9

149

Mortgage Securitizations

The following tables summarize selected cash flow information and retained interests related to Citigroup mortgage securitizations:

	Three Months Ended September 30,			
	2018		2017	
In billions of dollars	U.S. agency-sponsored mortgages	Non-agency-sponsored mortgages	U.S. agency-sponsored mortgages	Non-agency-sponsored mortgages
Proceeds from new securitizations	$7.9	$ 2.1	$11.7	$ 4.1
Contractual servicing fees received	—	—	0.1	—

	Nine Months Ended September 30,			
	2018		2017	
In billions of dollars	U.S. agency-sponsored mortgages	Non-agency-sponsored mortgages	U.S. agency-sponsored mortgages	Non-agency-sponsored mortgages
Proceeds from new securitizations	$23.7	$ 8.2	$26.2	$ 6.9
Contractual servicing fees received	0.1	—	0.2	—

Gains recognized on the securitization of U.S. agency-sponsored mortgages were $6 million and $18 million for the three and nine months ended September 30, 2018, respectively. For the three and nine months ended September 30, 2018, gains recognized on the securitization of non-agency-sponsored mortgages were $5 million and $40 million, respectively.

Gains recognized on the securitization of U.S. agency-sponsored mortgages were $14 million and $61 million for the three and nine months ended September 30, 2017, respectively. For the three and nine months ended September 30, 2017, gains recognized on the securitization of non-agency-sponsored mortgages were $29 million and $75 million, respectively.

	September 30, 2018			December 31, 2017		
		Non-agency-sponsored mortgages(1)			Non-agency-sponsored mortgages(1)	
In millions of dollars	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Carrying value of retained interests	$2,092	$ 296	$ 112	$1,634	$ 214	$ 139

(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.

Key assumptions used in measuring the fair value of retained interests at the date of sale or securitization of mortgage receivables were as follows:

Three Months Ended September 30, 2018		
	Non-agency-sponsored mortgages(1)	
U.S. agency-sponsored mortgages	Senior interests	Subordinated interests

Discount rate	3.0% to 10.4%	3.8% to 4.2%	4.1% to 8.6%
Weighted average discount rate	6.9%	4.1%	5.6%
Constant prepayment rate	5.3% to 12.8%	7.0% to 10.0%	7.0% to 10.0%
Weighted average constant prepayment rate	8.1%	7.9%	8.2%
Anticipated net credit losses[2]	NM	3.4% to 3.7%	3.4% to 3.7%
Weighted average anticipated net credit losses	NM	3.6%	3.6%
Weighted average life	6.9 to 22.1 years	3.0 to 3.9 years	7.3 to 15.7 years

	Three Months Ended September 30, 2017		
		Non-agency-sponsored mortgages[1]	
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Discount rate	2.0% to 13.2%	1.4% to 4.5%	1.7% to 4.2%
Weighted average discount rate	8.5%	2.8%	3.5%
Constant prepayment rate	6.6% to 31.6%	—	—
Weighted average constant prepayment rate	10.6%	—	—
Anticipated net credit losses[2]	NM	6.7% to 6.8%	6.4%
Weighted average anticipated net credit losses	NM	6.7	6.4%
Weighted average life	2.5 to 10.5 years	4.9 to 9.4 years	5.0 to 9.1 years

	Nine Months Ended September 30, 2018		
		Non-agency-sponsored mortgages[1]	
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Discount rate	3.0% to 11.4%	1.6% to 4.5%	3.0% to 8.6%
Weighted average discount rate	6.3%	3.6%	4.4%
Constant prepayment rate	3.5% to 16.0%	7.0% to 12.0%	7.0% to 12.0%
Weighted average constant prepayment rate	8.2%	8.8%	9.1%
Anticipated net credit losses[2]	NM	2.0% to 6.7%	2.0% to 4.6%
Weighted average anticipated net credit losses	NM	4.4%	3.4%
Weighted average life	5.0 to 22.1 years	2.5 to 9.9 years	2.5 to 15.7 years

	Nine Months Ended September 30, 2017		
		Non-agency-sponsored mortgages[1]	
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Discount rate	2.0% to 19.9%	1.4% to 4.5%	1.7% to 19.1%
Weighted average discount rate	9.1%	2.8%	4.0%
Constant prepayment rate	3.8% to 31.6%	—	—
Weighted average constant prepayment rate	9.6%	—	—
Anticipated net credit losses[2]	NM	6.7% to 6.8%	6.4% to 69.1%
Weighted average anticipated net credit losses	NM	6.7%	10.8%
Weighted average life	2.5 to 14.5 years	4.9 to 10.0 years	5.0 to 10.0 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.

	September 30, 2018		
		Non-agency-sponsored mortgages[1]	
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Discount rate	2.6% to 55.0%	12.2 %	4.9% to 5.8%
Weighted average discount rate	6.0 %	12.2 %	5.2 %
Constant prepayment rate	3.7% to 19.6%	8.0 %	5.0% to 16.0%
Weighted average constant prepayment rate	8.8 %	8.0 %	7.7 %
Anticipated net credit losses[2]	NM	38.0 %	37.0% to 91.0%
Weighted average anticipated net credit losses	NM	38.0 %	49.7 %
Weighted average life	0.5 to 28.2 years	7.6 years	6.2 to 15.5 years

	December 31, 2017		
		Non-agency-sponsored mortgages[1]	
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Discount rate	1.8% to 84.2%	5.8% to 100.0%	2.8% to 35.1%
Weighted average discount rate	7.1 %	5.8 %	9.0 %
Constant prepayment rate	6.9% to 27.8%	8.9% to 15.5%	8.6% to 13.1%
Weighted average constant prepayment rate	11.6 %	8.9 %	10.6 %
Anticipated net credit losses[2]	NM	0.4% to 46.9%	35.1% to 52.1%
Weighted average anticipated net credit losses	NM	46.9 %	44.9 %
Weighted average life	0.1 to 27.8 years	4.8 to 5.3 years	0.2 to 18.6 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.

	September 30, 2018		
		Non-agency-sponsored mortgages	
In millions of dollars	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Discount rates			
Adverse change of 10%	$ (61)	$ —	$ (1)
Adverse change of 20%	(119)	—	(2)
Constant prepayment rate			
Adverse change of 10%	(32)	—	—
Adverse change of 20%	(63)	—	—
Anticipated net credit losses			
Adverse change of 10%	NM	—	—

Adverse change of 20%	NM	—	—

In millions of dollars	December 31, 2017		
		Non-agency-sponsored mortgages	
	U.S. agency-sponsored mortgages	Senior interests	Subordinated interests
Discount rates			
Adverse change of 10%	$(44)	$ (2)	$ (3)
Adverse change of 20%	(85)	(4)	(5)
Constant prepayment rate			
Adverse change of 10%	(41)	(1)	(1)
Adverse change of 20%	(84)	(1)	(2)
Anticipated net credit losses			
Adverse change of 10%	NM	(3)	—
Adverse change of 20%	NM	(7)	—

NM Anticipated net credit losses are not meaningful due to U.S. agency guarantees.

Mortgage Servicing Rights (MSRs)

The fair value of Citi's capitalized MSRs was $618 million and $553 million at September 30, 2018 and 2017, respectively. The MSRs correspond to principal loan balances of $62 billion and $68 billion as of September 30, 2018 and 2017, respectively. The following tables summarize the changes in capitalized MSRs:

	Three Months Ended September 30,	
In millions of dollars	2018	2017
Balance, as of June 30	$596	$560
Originations	14	19
Changes in fair value of MSRs due to changes in inputs and assumptions	25	(6)
Other changes[1]	(17)	(20)
Sale of MSRs	—	—
Balance, as of September 30	$618	$553

	Nine Months Ended September 30,	
In millions of dollars	2018	2017
Balance, beginning of year	$558	$1,564
Originations	46	75
Changes in fair value of MSRs due to changes in inputs and assumptions	82	50
Other changes[1]	(50)	(90)
Sale of MSRs[2]	(18)	(1,046)
Balance, as of September 30	$618	$553

(1) Represents changes due to customer payments and passage of time.

(2) See Note 2 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K for more information on the exit of the U.S. mortgage servicing operations and sale of MSRs in 2017.

The Company receives fees during the course of servicing previously securitized mortgages. The amounts of these fees were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars	2018	2017	2018	2017
Servicing fees	$ 41	$ 65	$ 130	$ 236
Late fees	1	2	3	8
Ancillary fees	1	3	7	11
Total MSR fees	$ 43	$ 70	$ 140	$ 255

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.

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 three and nine months ended September 30, 2018 and 2017. These securities are backed by either residential or commercial mortgages and are often structured on behalf of clients.

As of September 30, 2018, the fair value of Citi-retained interests in private-label re-securitization transactions structured by Citi totaled approximately $33 million (all related to re-securitization transactions executed 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, 2017, the fair value of Citi-retained interests in private-label re-securitization transactions structured by Citi totaled approximately $79 million (all related to re-securitization transactions executed prior to 2016). Of this amount, substantially all 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 September 30, 2018 and December 31, 2017 was approximately $316 million and $887 million, respectively.

The Company also re-securitizes U.S. government-agency guaranteed mortgage-backed (agency) securities. During the three and nine months ended September 30, 2018, Citi transferred agency securities with a fair value of approximately $6.8 billion and $20.4 billion, respectively, to re-securitization entities compared to approximately $9.9 billion and $20.0 billion for the three and nine months ended September 30, 2017, respectively.

As of September 30, 2018, the fair value of Citi-retained interests in agency re-securitization transactions structured by Citi totaled approximately $2.4 billion (including $1.3 billion related to re-securitization transactions executed in 2018) compared to $2.1 billion as of December 31, 2017 (including $854 million related to re-securitization transactions executed in 2017), 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 September 30, 2018 and December 31, 2017 was approximately $67.2 billion and $68.3 billion, respectively.

As of September 30, 2018 and December 31, 2017, the Company did not consolidate any private-label or agency re-securitization entities.

Citi-Administered Asset-Backed Commercial Paper Conduits

At September 30, 2018 and December 31, 2017, the commercial paper conduits administered by Citi had approximately $17.4 billion and $19.3 billion of purchased assets outstanding, respectively, and had incremental funding commitments with clients of approximately $16.3 billion and $14.5 billion, respectively.

Substantially all of the funding of the conduits is in the form of short-term commercial paper. At September 30, 2018 and December 31, 2017, the weighted average remaining lives of the commercial paper issued by the conduits were approximately 55 and 51 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 $1.6 billion as of September 30, 2018 and December 31, 2017. The net result across multi-seller conduits administered by the Company 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 to the commercial paper investors.

At September 30, 2018 and December 31, 2017, the Company owned $5.4 billion and $9.3 billion, respectively, of the commercial paper issued by its administered conduits. The Company's investments were not driven by market illiquidity and the Company is not obligated under any agreement to purchase the commercial paper issued by the conduits.

Collateralized Loan Obligations

The following tables summarize selected cash flow information and retained interests related to Citigroup CLOs:

In billions of dollars	Three Months Ended September 30, 2018	2017
Proceeds from new securitizations	$ 0.4	$ 1.1

In billions of dollars	Nine Months Ended September 30, 2018	2017
Proceeds from new securitizations	$ 4.0	$ 2.5
Cash flows received on retained interests and other cash flows	0.1	0.1

In millions of dollars	Sept. 30, 2018	Dec. 31, 2017
Carrying value of retained interests	$ 3,461	$ 4,079

Asset-Based Financing

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.

In millions of dollars	September 30, 2018 Total unconsolidated VIE assets	September 30, 2018 Maximum exposure to unconsolidated VIEs
Type		
Commercial and other real estate	$18,098	$ 6,949
Corporate loans	6,815	5,764
Hedge funds and equities	416	54
Airplanes, ships and other assets	38,849	17,108
Total	$64,178	$ 29,875

In millions of dollars	December 31, 2017 Total unconsolidated VIE assets	December 31, 2017 Maximum exposure to unconsolidated VIEs
Type		
Commercial and other real estate	$15,370	$ 5,445
Corporate loans	4,725	3,587
Hedge funds and equities	542	58
Airplanes, ships and other assets	39,202	16,849
Total	$59,839	$ 25,939

Municipal Securities Tender Option Bond (TOB) Trusts

At September 30, 2018 and December 31, 2017, none of the municipal bonds owned by non-customer TOB trusts were subject to a credit guarantee provided by the Company.

At September 30, 2018 and December 31, 2017, liquidity agreements provided with respect to customer TOB trusts totaled $4.1 billion and $3.2 billion, respectively, of which $2.2 billion and $2.0 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 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 $6.1 billion as of September 30, 2018 and December 31, 2017. These liquidity agreements and letters of credit are offset by reimbursement agreements with various term-out provisions.

Client Intermediation

The proceeds from new securitizations related to the Company's client intermediation transactions for the three and nine months ended September 30, 2018 totaled approximately $0.2 billion and $0.7 billion, respectively, compared to $0.2 billion and $0.9 billion for the three and nine months ended September 30, 2017, respectively.

19. DERIVATIVES ACTIVITIES

As of January 1, 2018, Citigroup early adopted ASU 2017-12, Targeted Improvements to Accounting for Hedge Activities. This standard primarily impacts Citi's accounting for derivatives designated as cash flow hedges and fair value hedges. Refer to the respective sections below for details.

In the ordinary course of business, Citigroup enters into various types of derivative transactions. All derivatives are recorded in Trading account assets/Trading account liabilities on the Consolidated Balance Sheet. For additional information regarding Citi's use of and accounting for derivatives, see Note 22 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.

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 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. In addition, 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		Trading derivative instruments	
	September 30, 2018	December 31, 2017	September 30, 2018	December 31, 2017
Interest rate contracts				
Swaps	$246,079	$ 189,779	$19,759,439	$18,754,219
Futures and forwards	—	—	8,297,965	6,460,539
Written options	—	—	3,857,773	3,516,131
Purchased options	—	—	3,236,924	3,234,025
Total interest rate contract notionals	$246,079	$ 189,779	$35,152,101	$31,964,914
Foreign exchange contracts				
Swaps	$54,502	$ 37,162	$7,004,521	$5,576,357
Futures, forwards and spot	37,769	33,103	5,711,577	3,097,700
Written options	2,497	3,951	1,727,916	1,127,728
Purchased options	2,934	6,427	1,695,392	1,148,686
Total foreign exchange contract notionals	$97,702	$ 80,643	$16,139,406	$10,950,471
Equity contracts				
Swaps	$—	$ —	$245,167	$215,834
Futures and forwards	—	—	70,526	72,616
Written options	—	—	436,032	389,961
Purchased options	—	—	333,448	328,154
Total equity contract notionals	$—	$ —	$1,085,173	$1,006,565
Commodity and other contracts				
Swaps	$—	$ —	$118,699	$82,039
Futures and forwards	397	23	164,427	153,248
Written options	—	—	72,021	62,045
Purchased options	—	—	69,862	60,526
Total commodity and other contract notionals	$397	$ 23	$425,009	$357,858
Credit derivatives[(1)]				
Protection sold	$—	$ —	$723,060	$735,142
Protection purchased	—	—	793,792	777,713
Total credit derivatives	$—	$ —	$1,516,852	$1,512,855
Total derivative notionals	$344,178	$ 270,445	$54,318,541	$45,792,663

(1) 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 September 30, 2018 and December 31, 2017. 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.

In addition, the following tables reflect rule changes adopted by clearing organizations that require or allow entities to treat certain derivative assets, liabilities and the related variation margin as settlement of the related derivative fair values for legal and accounting purposes, as opposed to presenting gross derivative assets and liabilities that are subject to collateral, whereby the counterparties would record a related collateral payable or receivable. As a result, the tables reflect a reduction of approximately $110 billion and $100 billion as of September 30, 2018 and December 31, 2017, respectively, of derivative assets and derivative liabilities that previously would have been reported on a gross basis, but are now settled and not subject to 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 that 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

In millions of dollars at September 30, 2018	Derivatives classified in Trading account assets/liabilities[1][2]	
Derivatives instruments designated as ASC 815 hedges	Assets	Liabilities
Over-the-counter	$1,411	$81
Cleared	137	575
Interest rate contracts	$1,548	$656
Over-the-counter	$1,568	$718
Foreign exchange contracts	$1,568	$718
Total derivatives instruments designated as ASC 815 hedges	$3,116	$1,374
Derivatives instruments not designated as ASC 815 hedges		
Over-the-counter	$155,901	$136,989
Cleared	8,262	10,062
Exchange traded	130	136
Interest rate contracts	$164,293	$147,187
Over-the-counter	$169,989	$164,571
Cleared	3,326	3,360
Exchange traded	88	236
Foreign exchange contracts	$173,403	$168,167
Over-the-counter	$19,891	$24,766
Cleared	10	9
Exchange traded	10,143	10,354
Equity contracts	$30,044	$35,129
Over-the-counter	$22,449	$25,024
Exchange traded	826	756
Commodity and other contracts	$23,275	$25,780
Over-the-counter	$4,240	$5,912
Cleared	7,326	5,781
Credit derivatives	$11,566	$11,693
Total derivatives instruments not designated as ASC 815 hedges	$402,581	$387,956
Total derivatives	$405,697	$389,330
Cash collateral paid/received[3]	$10,759	$13,676
Less: Netting agreements[4]	(322,565)	(322,565)
Less: Netting cash collateral received/paid[5]	(37,678)	(30,701)
Net receivables/payables included on the Consolidated Balance Sheet[6]	$56,213	$49,740
Additional amounts subject to an enforceable master netting agreement, but not offset on the Consolidated Balance Sheet		
Less: Cash collateral received/paid	$(739)	$(83)
Less: Non-cash collateral received/paid	(12,389)	(11,376)
Total net receivables/payables[6]	$43,085	$38,281

(1) The derivatives fair values are also presented in Note 20 to the Consolidated Financial Statements.

(2) 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.

(3)

Reflects the net amount of the $41,460 million and $51,354 million of gross cash collateral paid and received, respectively. Of the gross cash collateral paid, $30,701 million was used to offset trading derivative liabilities and, of the gross cash collateral received, $37,678 million was used to offset trading derivative assets.

(4) Represents the netting of derivative receivable and payable balances with the same counterparty under enforceable netting agreements. Approximately $304 billion, $9 billion and $10 billion of the netting against trading account asset/liability balances is attributable to each of the OTC, cleared and exchange-traded derivatives, respectively.

(5) 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.

(6) The net receivables/payables include approximately $6 billion of derivative asset and $7 billion of derivative liability fair values not subject to enforceable master netting agreements, respectively.

In millions of dollars at December 31, 2017	Derivatives classified in Trading account assets/liabilities[1][2]	
Derivatives instruments designated as ASC 815 hedges	Assets	Liabilities
Over-the-counter	$1,969	$134
Cleared	110	92
Interest rate contracts	$2,079	$226
Over-the-counter	$1,143	$1,150
Foreign exchange contracts	$1,143	$1,150
Total derivatives instruments designated as ASC 815 hedges	$3,222	$1,376
Derivatives instruments not designated as ASC 815 hedges		
Over-the-counter	$195,677	$173,937
Cleared	7,129	10,381
Exchange traded	102	95
Interest rate contracts	$202,908	$184,413
Over-the-counter	$119,092	$117,473
Cleared	1,690	2,028
Exchange traded	34	121
Foreign exchange contracts	$120,816	$119,622
Over-the-counter	$17,221	$21,201
Cleared	21	25
Exchange traded	9,736	10,147
Equity contracts	$26,978	$31,373
Over-the-counter	$13,499	$16,362
Exchange traded	604	665
Commodity and other contracts	$14,103	$17,027
Over-the-counter	$12,972	$12,958
Cleared	7,562	8,575
Credit derivatives	$20,534	$21,533
Total derivatives instruments not designated as ASC 815 hedges	$385,339	$373,968
Total derivatives	$388,561	$375,344
Cash collateral paid/received[3]	$7,541	$14,308
Less: Netting agreements[4]	(306,401)	(306,401)
Less: Netting cash collateral received/paid[5]	(38,532)	(35,666)
Net receivables/payables included on the Consolidated Balance Sheet[6]	$51,169	$47,585
Additional amounts subject to an enforceable master netting agreement, but not offset on the Consolidated Balance Sheet		
Less: Cash collateral received/paid	$(872)	$(121)
Less: Non-cash collateral received/paid	(12,739)	(6,929)
Total net receivables/payables[6]	$37,558	$40,535

(1) The derivatives fair values are presented in Note 20 to the Consolidated Financial Statements. Derivative mark-to-market receivables/payables previously reported within Other assets/Other liabilities have been reclassified to Trading account assets/Trading account liabilities to conform with the current-period presentation.

(2) 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.

(3) Reflects the net amount of the $43,207 million and $52,840 million of gross cash collateral paid and received, respectively. Of the gross cash collateral paid, $35,666 million was used to offset trading derivative liabilities and, of the gross cash collateral received, $38,532 million was used to offset trading derivative assets.

(4) Represents the netting of derivative receivable and payable balances with the same counterparty under enforceable netting agreements. Approximately $283 billion, $14 billion and $9 billion of the netting against trading account asset/liability balances is attributable to each of the OTC, cleared and exchange-traded derivatives, respectively.

(5) 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.

(6) The net receivables/payables include approximately $6 billion of derivative asset and $8 billion of derivative liability fair values not subject to enforceable master netting agreements, respectively.

For the three and nine months ended September 30, 2018 and 2017, 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 how 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.

	Gains (losses) included in Other revenue			
	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars	2018	2017	2018	2017
Interest rate contracts	$(22)	$(5)	$(65)	$(72)
Foreign exchange	7	596	(6)	1,897
Credit derivatives	(200)	(125)	(271)	(501)
Total	$(215)	$466	$(342)	$1,324

161

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 debt securities or loans.
For qualifying fair value hedges of interest rate risk, the changes in the fair value of the derivative and the change in the fair value of the hedged item attributable to the hedged risk, either total cash flows or benchmark only cash flows are presented within Interest revenue or Interest expense based on whether the hedged item is an asset or a liability. Prior to the adoption of ASU 2017-12, the fair value of the derivative was presented in Other revenue or Principal transactions and the difference between the changes in the hedged item and the derivative was defined as ineffectiveness.

Hedging of Foreign Exchange Risk
Citigroup hedges the change in fair value attributable to foreign exchange rate movements in available-for-sale debt securities and long-term debt that are denominated in currencies other than the functional currency of the entity holding the securities or issuing the debt, which may be within or outside the U.S. The hedging instrument may be a forward foreign exchange contract or a cross-currency swap contract. Citigroup considers the premium associated with forward contracts (i.e., the differential between the 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. Beginning January 1, 2018, Citi excludes changes in cross-currency basis associated with cross-currency swaps from the assessment of hedge effectiveness and records it in Other comprehensive income.

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 and amortizes it directly into earnings over the life of the hedge.

The following table summarizes the gains (losses) on the Company's fair value hedges:

	Gains (losses) on fair value hedges[1]					
	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018		2017[3]	2018		2017[3]
In millions of dollars	Other revenue	Net interest revenue	Other revenue	Other revenue	Net interest revenue	Other revenue
Gain (loss) on the derivatives in designated and qualifying fair value hedges						
Interest rate hedges	$—	$(857)	$(194)	$—	$(497)	$(570)
Foreign exchange hedges	(158)	—	(166)	341	—	(803)
Commodity hedges	(14)	—	(11)	(14)	—	(20)
Total gain (loss) on the derivatives in designated and qualifying fair value hedges	$(172)	$(857)	$(371)	$327	$(497)	$(1,393)
Gain (loss) on the hedged item in designated and qualifying fair value hedges						
Interest rate hedges	$—	$871	$189	$—	$525	$532
Foreign exchange hedges	132	—	144	(464)	—	910
Commodity hedges	8	—	12	9	—	22
Total gain (loss) on the hedged item in designated and qualifying fair value hedges	$140	$871	$345	$(455)	$525	$1,464
Net gain (loss) excluded from assessment of the effectiveness of fair value hedges						
Interest rate hedges	$—	$—	$—	$—	$(5)	$(7)
Foreign exchange hedges[2]	7	—	(5)	63	—	75
Commodity hedges	(7)	—	1	(5)	—	2
Total net gain (loss) excluded from assessment of the effectiveness of fair value hedges	$—	$—	$(4)	$58	$(5)	$70

(1) Beginning January 1, 2018, gain (loss) amounts for interest rate risk hedges are included in Interest income/Interest expense, while the remaining amounts including the amounts for interest rate hedges prior to January 1, 2018 are included in Other revenue or Principal transactions on the Consolidated Statement of Income. The accrued interest income on fair value hedges both prior to and after January 1, 2018 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. After January 1, 2018, amounts include cross-currency basis, which is recognized in accumulated other comprehensive income. The amount of cross-currency basis that was included in accumulated other comprehensive income was $15 million and $57 million for the three and nine months ended September 30, 2018, respectively, none of which was recognized in earnings.

(3) Hedge ineffectiveness recognized in earnings on designated and qualifying fair value hedges for the three months ended September 30, 2017 was $(5) million for interest rate hedges and $(17) million for foreign exchange hedges, for a total of $(22) million. Hedge ineffectiveness recognized in earnings on designated and qualifying fair value hedges for the nine months ended September 30, 2017 was $(31) million for interest rate hedges and $32 million for foreign exchange hedges, for a total of $1 million.

Cumulative Basis Adjustment

Upon electing to apply ASC 815 fair value hedge accounting, the carrying value of the hedged item is adjusted to reflect the cumulative impact of changes in the hedged risk. The hedge basis adjustment, whether arising from an active or de-designated hedge relationship, remains with the hedged item until the hedged item is derecognized from the balance sheet. The table below presents the carrying amount of Citi's hedged assets and liabilities under qualifying fair value hedges at September 30, 2018, along with the cumulative hedge basis adjustments included in the carrying value of those hedged assets and liabilities.

In millions of dollars as of September 30, 2018

Balance sheet line item in which hedged item is recorded	Carrying amount of hedged asset/ liability	Cumulative fair value hedging adjustment increasing (decreasing) the carrying amount Active	De-designated
Debt securities AFS	$ 80,244	$ (326)	$ 421
Long-term debt	154,540	(775)	1,218

163

Cash Flow Hedges

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. Prior to the adoption of ASU 2017-12, Citigroup designated the risk being hedged as the risk of overall variability in the hedged cash flows for certain items.

With the adoption of ASU 2017-12, Citigroup hedges the variability from changes in a contractually specified rate and recognizes the entire change in fair value of the cash flow hedging instruments in AOCI. Prior to the adoption of ASU 2017-12, to the extent that these derivatives were not fully effective, changes in their fair values in excess of changes in the value of the hedged transactions were immediately included in Other revenue. With the adoption of ASU 2017-12, such amounts are no longer required to be immediately recognized in income, but instead the full change in the value of the hedging instrument is required to be recognized in AOCI, and then recognized in earnings in the same period that the cash flows impact earnings. The pretax change in AOCI from cash flow hedges is presented below:

	Three Months Ended September 30,			Nine Months Ended September 30,		
In millions of dollars	2018		2017	2018		2017
Amount of gain (loss) recognized in AOCI on derivative						
Interest rate contracts[1]	$(146)		$ (36)	$(665)		$ 103
Foreign exchange contracts	(3)		(7)	(4)		(7)
Total gain (loss) recognized in AOCI	$(149)		$ (43)	$(669)		$ 96
Amount of gain (loss) reclassified from AOCI to earnings	Other revenue	Net interest revenue	Other revenue	Other revenue	Net interest revenue	Other revenue
Interest rate contracts[1]	$—	$ (54)	$ (48)	$—	$ (142)	$ (94)
Foreign exchange contracts	2	—	(7)	(8)	—	(8)
Total gain (loss) reclassified from AOCI into earnings	$2	$ (54)	$ (55)	$(8)	$ (142)	$ (102)

(1) After January 1, 2018, all amounts reclassified into earnings for interest rate contracts are included in Interest income/Interest expense (Net interest revenue). For all other hedges, including interest rate hedges prior to January 1, 2018, the amounts reclassified to earnings are 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 (loss) associated with cash flow hedges expected to be reclassified from AOCI within 12 months of September 30, 2018 is approximately $475 million. 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 17 to the Consolidated Financial Statements.

Net Investment Hedges

The pretax gain (loss) recorded in the Foreign currency translation adjustment account within AOCI, related to net investment hedges, is $(46) million and $1,587 million for the three and nine months ended September 30, 2018, and $(245) million and $(1,993) million for the three and nine months ended September 30, 2017, respectively.

Credit Derivatives

The following tables summarize the key characteristics of Citi's credit derivatives portfolio by counterparty and derivative form:

	Fair values		Notionals	
In millions of dollars at September 30, 2018	Receivable[1]	Payable[2]	Protection purchased	Protection sold
By industry/counterparty				
Banks	$5,366	$ 5,097	$222,802	$234,338
Broker-dealers	1,826	1,661	66,676	67,833
Non-financial	65	90	2,823	4,247
Insurance and other financial institutions	4,309	4,845	501,491	416,642
Total by industry/counterparty	$11,566	$ 11,693	$793,792	$723,060
By instrument				
Credit default swaps and options	$10,997	$ 11,168	$771,239	$712,451
Total return swaps and other	569	525	22,553	10,609
Total by instrument	$11,566	$ 11,693	$793,792	$723,060
By rating				
Investment grade	$5,180	$ 5,014	$616,595	$552,452
Non-investment grade	6,386	6,679	177,197	170,608
Total by rating	$11,566	$ 11,693	$793,792	$723,060
By maturity				
Within 1 year	$1,442	$ 1,680	$232,670	$204,358
From 1 to 5 years	8,083	7,855	472,276	439,089
After 5 years	2,041	2,158	88,846	79,613
Total by maturity	$11,566	$ 11,693	$793,792	$723,060

(1) The fair value amount receivable is composed of $3,657 million under protection purchased and $7,909 million under protection sold.

(2) The fair value amount payable is composed of $8,476 million under protection purchased and $3,217 million under protection sold.

165

In millions of dollars at December 31, 2017	Fair values		Notionals	
	Receivable[(1)]	Payable[(2)]	Protection purchased	Protection sold
By industry/counterparty				
Banks	$7,471	$ 6,669	$264,414	$273,711
Broker-dealers	2,325	2,285	73,273	83,229
Non-financial	70	91	1,288	1,140
Insurance and other financial institutions	10,668	12,488	438,738	377,062
Total by industry/counterparty	$20,534	$ 21,533	$777,713	$735,142
By instrument				
Credit default swaps and options	$20,251	$ 20,554	$754,114	$724,228
Total return swaps and other	283	979	23,599	10,914
Total by instrument	$20,534	$ 21,533	$777,713	$735,142
By rating				
Investment grade	$10,473	$ 10,616	$588,324	$557,987
Non-investment grade	10,061	10,917	189,389	177,155
Total by rating	$20,534	$ 21,533	$777,713	$735,142
By maturity				
Within 1 year	$2,477	$ 2,914	$231,878	$218,097
From 1 to 5 years	16,098	16,435	498,606	476,345
After 5 years	1,959	2,184	47,229	40,700
Total by maturity	$20,534	$ 21,533	$777,713	$735,142

(1) The fair value amount receivable is composed of $3,195 million under protection purchased and $17,339 under protection sold.

(2) The fair value amount payable is composed of $3,147 million under protection purchased and $18,386 million under protection sold.

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 September 30, 2018 and December 31, 2017 was $37 billion and $29 billion, respectively. The Company posted $36 billion and $28 billion as collateral for this exposure in the normal course of business as of September 30, 2018 and December 31, 2017, 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 September 30, 2018, the Company could be required to post an additional $1.4 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 $0.2 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

For transfers of financial assets accounted for as a sale by the Company and for which the Company has retained substantially all of the economic exposure to the transferred asset through a total return swap executed with the same counterparty in contemplation of the initial sale (and still outstanding), both the asset amounts derecognized and the gross cash proceeds received as of the date of derecognition were $3.3 billion and $3.0 billion as of September 30, 2018 and December 31, 2017, respectively.
At September 30, 2018, the fair value of these previously derecognized assets was $3.2 billion. The fair value of the total return swaps as of September 30, 2018 was $24 million recorded as gross derivative assets and $31 million recorded as gross derivative liabilities. At December 31, 2017, the fair value of these previously derecognized assets was $3.1 billion, and the fair value of the total return swaps was $89 million recorded as gross derivative assets and $15 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.

20. FAIR VALUE MEASUREMENT

For additional information regarding fair value measurement at Citi, see Note 24 to the Consolidated Financial Statements in Citi's 2017 Annual Report on Form 10-K.

Market Valuation Adjustments

The table below summarizes the credit valuation adjustments (CVA) and funding valuation adjustments (FVA) applied to the fair value of derivative instruments at September 30, 2018 and December 31, 2017:

	Credit and funding valuation adjustments contra-liability (contra-asset)	
In millions of dollars	September 30, 2018	December 31, 2017
Counterparty CVA	$(815)	$ (970)
Asset FVA	(324)	(447)
Citigroup (own-credit) CVA	317	287
Liability FVA	39	47
Total CVA—derivative instruments[1]	$(783)	$ (1,083)

(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 periods indicated:

	Credit/funding/debt valuation adjustments gain (loss)			
	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars	2018	2017	2018	2017
Counterparty CVA	$94	$27	$117	$197
Asset FVA	74	(5)	123	74
Own-credit CVA	(75)	(2)	24	(127)
Liability FVA	(23)	(16)	(8)	(10)
Total CVA—derivative instruments	$70	$4	$256	$134
DVA related to own FVO liabilities[1]	$(377)	$(195)	$208	$(422)
Total CVA and DVA[2]	$(307)	$(191)	$464	$(288)

(1) See Note 1 and Note 17 to the Consolidated Financial Statements.
(2) FVA is included with CVA for presentation purposes.

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 September 30, 2018 and December 31, 2017. 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

In millions of dollars at September 30, 2018	Level 1[1]	Level 2[1]	Level 3	Gross inventory	Netting[2]	Net balance
Assets						
Federal funds sold and securities borrowed and purchased under agreements to resell	$—	$241,745	$65	$241,810	$(63,368)	$178,442
Trading non-derivative assets						
Trading mortgage-backed securities						
U.S. government-sponsored agency guaranteed	—	20,293	128	20,421	—	20,421
Residential	1	730	215	946	—	946
Commercial	—	1,346	57	1,403	—	1,403
Total trading mortgage-backed securities	$1	$22,369	$400	$22,770	$—	$22,770
U.S. Treasury and federal agency securities	$22,054	$5,347	$6	$27,407	$—	$27,407
State and municipal	—	3,612	200	3,812	—	3,812
Foreign government	44,714	19,945	52	64,711	—	64,711
Corporate	835	13,409	253	14,497	—	14,497
Equity securities	45,556	8,195	170	53,921	—	53,921
Asset-backed securities	—	1,628	1,453	3,081	—	3,081
Other trading assets[3]	5	10,355	730	11,090	—	11,090
Total trading non-derivative assets	$113,165	$84,860	$3,264	$201,289	$—	$201,289
Trading derivatives						
Interest rate contracts	$183	$163,345	$2,313	$165,841		
Foreign exchange contracts	6	174,455	510	174,971		
Equity contracts	2,495	27,255	294	30,044		
Commodity contracts	15	22,576	684	23,275		
Credit derivatives	—	10,750	816	11,566		
Total trading derivatives	$2,699	$398,381	$4,617	$405,697		
Cash collateral paid[4]				$10,759		
Netting agreements					$(322,565)	
Netting of cash collateral received					(37,678)	
Total trading derivatives	$2,699	$398,381	$4,617	$416,456	$(360,243)	$56,213
Investments						
Mortgage-backed securities						
U.S. government-sponsored agency guaranteed	$—	$45,127	$34	$45,161	$—	$45,161
Residential	—	1,627	—	1,627	—	1,627
Commercial	—	226	5	231	—	231
Total investment mortgage-backed securities	$—	$46,980	$39	$47,019	$—	$47,019
U.S. Treasury and federal agency securities	$106,098	$10,045	$—	$116,143	$—	$116,143
State and municipal	—	8,798	682	9,480	—	9,480

Foreign government	56,866	37,514	81	94,461	—	94,461
Corporate	4,687	7,693	—	12,380	—	12,380
Equity securities	246	14	—	260	—	260
Asset-backed securities	—	978	284	1,262	—	1,262
Other debt securities	—	4,037	—	4,037	—	4,037
Non-marketable equity securities(5)	—	170	733	903	—	903
Total investments	$167,897	$116,229	$1,819	$285,945	$—	$285,945

Table continues on the next page.

In millions of dollars at September 30, 2018	Level 1[(1)]	Level 2[(1)]	Level 3	Gross inventory	Netting[(2)]	Net balance
Loans	$—	$3,856	$383	$4,239	$—	$4,239
Mortgage servicing rights	—	—	618	618	—	618
Non-trading derivatives and other financial assets measured on a recurring basis	$19,789	$5,362	$—	$25,151	$—	$25,151
Total assets	$303,550	$850,433	$10,766	$1,175,508	$(423,611)	$751,897
Total as a percentage of gross assets[(6)]	26.1 %	73.0 %	0.9 %			
Liabilities						
Interest-bearing deposits	$—	$1,137	$303	$1,440	$—	$1,440
Federal funds purchased and securities loaned and sold under agreements to repurchase	—	110,519	997	111,516	(63,368)	48,148
Trading account liabilities						
Securities sold, not yet purchased	85,760	10,281	387	96,428	—	96,428
Other trading liabilities	—	1,484	—	1,484	—	1,484
Total trading liabilities	$85,760	$11,765	$387	$97,912	$—	$97,912
Trading derivatives						
Interest rate contracts	$189	$145,460	$2,194	$147,843		
Foreign exchange contracts	7	168,557	321	168,885		
Equity contracts	2,667	31,254	1,208	35,129		
Commodity contracts	5	23,286	2,489	25,780		
Credit derivatives	—	9,871	1,822	11,693		
Total trading derivatives	$2,868	$378,428	$8,034	$389,330		
Cash collateral received[(7)]				$13,676		
Netting agreements					$(322,565)	
Netting of cash collateral paid					(30,701)	
Total trading derivatives	$2,868	$378,428	$8,034	$403,006	$(353,266)	$49,740
Short-term borrowings	$—	$5,002	$39	$5,041	$—	$5,041
Long-term debt	—	22,980	13,791	36,771	—	36,771
Total non-trading derivatives and other financial liabilities measured on a recurring basis	$19,789	$158	$—	$19,947	$—	$19,947
Total liabilities	$108,417	$529,989	$23,551	$675,633	$(416,634)	$258,999
Total as a percentage of gross liabilities[(6)]	16.4 %	80.1 %	3.6 %			

(1) For the three and nine months ended September 30, 2018, the Company transferred assets of approximately $1.7 billion and $3.4 billion from Level 1 to Level 2, primarily related to foreign government securities and equity securities not traded in active markets. During the three and nine months ended September 30, 2018, the Company transferred assets of approximately $2.6 billion and $7.9 billion from Level 2 to Level 1, primarily related to foreign government bonds, foreign corporate securities, marketable certificates of deposits and equity securities traded with sufficient frequency to constitute an active market. For the three and nine months ended September 30, 2018, there were $0.1 billion and $0.3 billion transfers of liabilities from Level 1 to Level 2. During the three and nine months ended September 30, 2018, the Company transferred liabilities of approximately $0.3 billion and $0.7 billion, from Level 2 to Level 1.

(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 21 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 $48,437 million gross cash collateral paid, of which $37,678 million was used to offset trading derivative liabilities.

(5) Amounts exclude $0.2 billion of investments measured at Net Asset Value (NAV) in accordance with ASU 2015-07, Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities That Calculate Net Asset Value per Share (or Its Equivalent).

(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 $44,377 million of gross cash collateral received, of which $30,701 million was used to offset trading derivative assets.

Fair Value Levels

In millions of dollars at December 31, 2017	Level 1(1)	Level 2(1)	Level 3	Gross inventory	Netting(2)	Net balance
Assets						
Federal funds sold and securities borrowed and purchased under agreements to resell	$—	$188,571	$16	$188,587	$(55,638)	$132,949
Trading non-derivative assets						
Trading mortgage-backed securities						
U.S. government-sponsored agency guaranteed	—	22,801	163	22,964	—	22,964
Residential	—	649	164	813	—	813
Commercial	—	1,309	57	1,366	—	1,366
Total trading mortgage-backed securities	$—	$24,759	$384	$25,143	$—	$25,143
U.S. Treasury and federal agency securities	$17,524	$3,613	$—	$21,137	$—	$21,137
State and municipal	—	4,426	274	4,700	—	4,700
Foreign government	39,347	20,843	16	60,206	—	60,206
Corporate	301	15,129	275	15,705	—	15,705
Equity securities	53,305	6,794	120	60,219	—	60,219
Asset-backed securities	—	1,198	1,590	2,788	—	2,788
Other trading assets(3)	3	11,105	615	11,723	—	11,723
Total trading non-derivative assets	$110,480	$87,867	$3,274	$201,621	$—	$201,621
Trading derivatives						
Interest rate contracts	$145	$203,134	$1,708	$204,987		
Foreign exchange contracts	19	121,363	577	121,959		
Equity contracts	2,364	24,170	444	26,978		
Commodity contracts	282	13,252	569	14,103		
Credit derivatives	—	19,624	910	20,534		
Total trading derivatives	$2,810	$381,543	$4,208	$388,561		
Cash collateral paid(4)				$7,541		
Netting agreements					$(306,401)	
Netting of cash collateral received					(38,532)	
Total trading derivatives	$2,810	$381,543	$4,208	$396,102	$(344,933)	$51,169
Investments						
Mortgage-backed securities						
U.S. government-sponsored agency guaranteed	$—	$41,717	$24	$41,741	$—	$41,741
Residential	—	2,884	—	2,884	—	2,884
Commercial	—	329	3	332	—	332
Total investment mortgage-backed securities	$—	$44,930	$27	$44,957	$—	$44,957
U.S. Treasury and federal agency securities	$106,964	$11,182	$—	$118,146	$—	$118,146
State and municipal	—	8,028	737	8,765	—	8,765
Foreign government	56,456	43,985	92	100,533	—	100,533
Corporate	1,911	12,127	71	14,109	—	14,109
Equity securities	176	11	2	189	—	189
Asset-backed securities	—	3,091	827	3,918	—	3,918
Other debt securities	—	297	—	297	—	297
Non-marketable equity securities(5)	—	121	681	802	—	802
Total investments	$165,507	$123,772	$2,437	$291,716	$—	$291,716

Table continues on the next page.

In millions of dollars at December 31, 2017	Level 1[1]	Level 2[1]	Level 3	Gross inventory	Netting[2]	Net balance
Loans	$—	$3,824	$550	$4,374	$—	$4,374
Mortgage servicing rights	—	—	558	558	—	558
Non-trading derivatives and other financial assets measured on a recurring basis	$13,903	$4,640	$16	$18,559	$—	$18,559
Total assets	$292,700	$790,217	$11,059	$1,101,517	$(400,571)	$700,946
Total as a percentage of gross assets[6]	26.8 %	72.2 %	1.0 %			
Liabilities						
Interest-bearing deposits	$—	$1,179	$286	$1,465	$—	$1,465
Federal funds purchased and securities loaned and sold under agreements to repurchase	—	95,550	726	96,276	(55,638)	40,638
Trading account liabilities						
Securities sold, not yet purchased	65,843	10,306	22	76,171	—	76,171
Other trading liabilities	—	1,409	5	1,414	—	1,414
Total trading liabilities	$65,843	$11,715	$27	$77,585	$—	$77,585
Trading account derivatives						
Interest rate contracts	$137	$182,372	$2,130	$184,639		
Foreign exchange contracts	9	120,316	447	120,772		
Equity contracts	2,430	26,472	2,471	31,373		
Commodity contracts	115	14,482	2,430	17,027		
Credit derivatives	—	19,824	1,709	21,533		
Total trading derivatives	$2,691	$363,466	$9,187	$375,344		
Cash collateral received[7]				$14,308		
Netting agreements					$(306,401)	
Netting of cash collateral paid					(35,666)	
Total trading derivatives	$2,691	$363,466	$9,187	$389,652	$(342,067)	$47,585
Short-term borrowings	$—	$4,609	$18	$4,627	$—	$4,627
Long-term debt	—	18,310	13,082	31,392	—	31,392
Non-trading derivatives and other financial liabilities measured on a recurring basis	$13,903	$50	$8	$13,961	$—	$13,961
Total liabilities	$82,437	$494,879	$23,334	$614,958	$(397,705)	$217,253
Total as a percentage of gross liabilities[6]	13.7 %	82.4 %	3.9 %			

(1) In 2017, the Company transferred assets of approximately $4.8 billion from Level 1 to Level 2, primarily related to foreign government securities and equity securities not traded in active markets. In 2017, the Company transferred assets of approximately $4.0 billion from Level 2 to Level 1, primarily related to foreign government bonds and equity securities traded with sufficient frequency to constitute a liquid market. In 2017, the Company transferred liabilities of approximately $0.4 billion from Level 1 to Level 2. In 2017, the Company transferred liabilities of approximately $0.3 billion from Level 2 to Level 1.

(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 21 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 $43,207 million of gross cash collateral paid, of which $35,666 million was used to offset trading derivative liabilities.

(5)

Amounts exclude $0.4 billion of 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) 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 $52,840 million of gross cash collateral received, of which $38,532 million was used to offset trading derivative assets.

Changes in Level 3 Fair Value Category

The following tables present the changes in the Level 3 fair value category for the three and nine months ended September 30, 2018 and 2017. 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 or 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

		Net realized/unrealized gains (losses) incl. in		Transfers							Unrealized gains (losses)
In millions of dollars	Jun. 30, 2018	Principal transactions	Other[1][2]	into Level 3	out of Level 3	Purchases	Issuances	Sales	Settlements	Sept. 30, 2018	still held[3]
Assets											
Federal funds sold and securities borrowed and purchased under agreements to resell	$66	$ —	$ —	$(1)	$—	$ 61	$ —	$—	$ (61)	$65	$ 4
Trading non-derivative assets											
Trading mortgage-backed securities											
U.S. government-sponsored agency guaranteed	99	(2)	—	3	(7)	38	—	(3)	—	128	(2)
Residential	132	111	—	17	(36)	8	—	(17)	—	215	(2)
Commercial	51	(2)	—	4	(8)	29	—	(17)	—	57	(1)
Total trading mortgage-backed securities	$282	$ 107	$ —	$24	$(51)	$ 75	$ —	$(37)	$ —	$400	$ (5)
U.S. Treasury and federal agency securities	$7	$ —	$ —	$—	$—	$ —	$ —	$—	$ (1)	$6	$ —
State and municipal	226	6	—	—	(52)	22	—	(2)	—	200	6
Foreign government	36	27	—	—	(8)	4	—	(7)	—	52	26
Corporate	520	(214)	—	24	(15)	110	—	(172)	—	253	7
Equity securities	293	(87)	—	7	(21)	24	—	(46)	—	170	(99)
Asset-backed securities	1,688	(44)	—	20	(39)	305	—	(477)	—	1,453	(45)
Other trading assets	542	78	—	94	(10)	185	2	(157)	(4)	730	53
Total trading non-derivative assets	$3,594	$ (127)	$ —	$169	$(196)	$ 725	$ 2	$(898)	$ (5)	$3,264	$ (57)
Trading derivatives, net[4]											
Interest rate contracts	$86	$ 10	$ —	$(11)	$(2)	$ —	$ 8	$—	$ 28	$119	$ 59
Foreign exchange contracts	239	(16)	—	(15)	56	4	—	(66)	(13)	189	(51)
Equity contracts	(1,446)	265	—	3	372	3	(15)	(3)	(93)	(914)	283
Commodity contracts	(1,906)	(67)	—	44	(16)	12	—	(8)	136	(1,805)	1

Credit derivatives	(848)	(240)	—	(6)	7	—	—	—	81	(1,006)	(231)
Total trading derivatives, net[4]	$(3,875)	$ (48)	$ —	$15	$417	$ 19	$ (7)	$(77)	$ 139	$(3,417)	$ 61

Table continues on the next page.

In millions of dollars	Jun. 30, 2018	Net realized/unrealized gains (losses) incl. in Principal transactions	Other[1][2]	Transfers into Level 3	Transfers out of Level 3	Purchases	Issuances	Sales	Settlements	Sept. 30, 2018	Unrealized gains (losses) still held[3]
Investments											
Mortgage-backed securities											
U.S. government-sponsored agency guaranteed	$34	$ —	$ —	$—	$—	$ —	$ —	$—	$ —	$34	$ —
Residential	—	—	—	—	—	—	—	—	—	—	—
Commercial	6	—	—	—	(1)	—	—	—	—	5	—
Total investment mortgage-backed securities	$40	$ —	$ —	$—	$(1)	$ —	$ —	$—	$ —	$39	$ —
U.S. Treasury and federal agency securities	$—	$ —	$ —	$—	$—	$ —	$ —	$—	$ —	$—	$ —
State and municipal	762	—	(10)	—	—	17	—	(87)	—	682	(7)
Foreign government	54	—	(3)	—	(2)	45	—	(13)	—	81	(3)
Corporate	68	—	—	—	(64)	—	—	(4)	—	—	—
Equity securities	1	—	—	—	—	—	—	—	(1)	—	—
Asset-backed securities	456	—	(6)	—	(177)	34	—	(23)	—	284	(5)
Other debt securities	—	—	—	—	—	—	—	—	—	—	—
Non-marketable equity securities	611	—	(73)	163	—	71	—	(40)	1	733	(70)
Total investments	$1,992	$ —	$ (92)	$163	$(244)	$ 167	$ —	$(167)	$ —	$1,819	$ (85)
Loans	$381	$ —	$ (27)	$—	$(46)	$ 79	$ —	$(3)	$ (1)	$383	$ 95
Mortgage servicing rights	596	—	25	—	—	—	14	—	(17)	618	26
Other financial assets measured on a recurring basis	—	—	15	—	—	—	—	(4)	(11)	—	14
Liabilities											
Interest-bearing deposits	$320	$ —	$ 14	$—	$—	$ —	$ —	$—	$ (3)	$303	$ 14
Federal funds purchased and securities loaned and sold under agreements to repurchase	966	(31)	—	—	—	—	—	—	—	997	24
Trading account liabilities											
Securities sold, not yet purchased	189	(137)	—	28	(55)	14	121	(45)	(2)	387	(90)
Other trading liabilities	—	—	—	—	—	—	—	—	—	—	—
Short-term borrowings	90	1	—	—	(18)	—	5	—	(37)	39	19
Long-term debt	13,781	(231)	—	445	(646)	—	(42)	(1)	23	13,791	(298)
Other financial liabilities measured on a recurring basis	—	—	—	—	—	—	—	—	—	—	—

(1) Changes in fair value of available-for-sale debt securities 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 debt securities), attributable to the change in fair value relating to assets and liabilities classified as Level 3 that are still held at September 30, 2018.

(4) Total Level 3 trading derivative assets and liabilities have been netted in these tables for presentation purposes only.

In millions of dollars	Dec. 31, 2017	Net realized/unrealized gains (losses) incl. in		Transfers		Purchases	Issuances	Sales	Settlements	Sept. 30, 2018	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 and purchased under agreements to resell	16	19	—	48	—	61	—	—	(79)	65	10
Trading non-derivative assets											
Trading mortgage-backed securities											
U.S. government-sponsored agency guaranteed	163	—	—	92	(97)	191	—	(221)	—	128	—
Residential	164	116	—	75	(124)	99	—	(115)	—	215	(1)
Commercial	57	(3)	—	15	(45)	67	—	(34)	—	57	2
Total trading mortgage-backed securities	384	113	—	182	(266)	357	—	(370)	—	400	1
U.S. Treasury and federal agency securities	—	—	—	6	—	1	—	—	(1)	6	—
State and municipal	274	16	—	—	(96)	35	—	(29)	—	200	8
Foreign government	16	26	—	2	(13)	50	—	(29)	—	52	26
Corporate	275	(119)	—	85	(106)	389	—	(271)	—	253	(1)
Equity securities	120	(5)	—	24	(41)	266	—	(194)	—	170	(68)
Asset-backed securities	1,590	31	—	65	(86)	994	—	(1,141)	—	1,453	(6)
Other trading assets	615	161	—	179	(52)	342	7	(509)	(13)	730	31
Total trading non-derivative assets	3,274	223	—	543	(660)	2,434	7	(2,543)	(14)	3,264	(9)
Trading derivatives, net[4]											
Interest rate contracts	(422)	597	—	(6)	(74)	8	8	(16)	24	119	540
Foreign exchange contracts	130	89	—	(28)	59	11	—	(71)	(1)	189	52
Equity contracts	(2,027)	163	—	(70)	1,123	20	(15)	(14)	(94)	(914)	66
Commodity contracts	(1,861)	(241)	—	1	82	39	—	(8)	183	(1,805)	(70)
Credit derivatives	(799)	(338)	—	(15)	19	2	—	1	124	(1,006)	(468)
Total trading derivatives, net[4]	(4,979)	270	—	(118)	1,209	80	(7)	(108)	236	(3,417)	120
Investments											
Mortgage-backed securities											
U.S. government-sponsored agency guaranteed	24	—	10	—	—	—	—	—	—	34	(12)
Residential	—	—	—	—	—	—	—	—	—	—	—
Commercial	3	—	2	1	(1)	—	—	—	—	5	—
Total investment mortgage-backed securities	27	—	12	1	(1)	—	—	—	—	39	(12)
U.S. Treasury and federal agency securities	—	—	—	—	—	—	—	—	—	—	—
State and municipal	737	—	(23)	—	(18)	157	—	(171)	—	682	(32)
Foreign government	92	—	(7)	1	(4)	107	—	(108)	—	81	(3)
Corporate	71	—	(1)	3	(66)	3	—	(10)	—	—	—

Equity securities	2	—	—	—	—	—	—	(1)	(1)	—	—
Asset-backed securities	827	—	(21)	3	(521)	45	—	(49)	—	284	(6)
Other debt securities	—	—	—	—	—	—	—	—	—	—	—
Non-marketable equity securities	681	—	(103)	193	—	86	—	(73)	(51)	733	(56)
Total investments	2,437	—	(143)	201	(610)	398	—	(412)	(52)	1,819	(109)

In millions of dollars	Dec. 31, 2017	Net realized/unrealized gains (losses) incl. in		Transfers		Purchases	Issuances	Sales	Settlements	Sept. 30, 2018	Unrealized gains (losses) still held[3]
		Principal transactions	Other[1][2]	into Level 3	out of Level 3						
Loans	550	—	(282)	—	13	130	—	(25)	(3)	383	286
Mortgage servicing rights	558	—	82	—	—	—	46	(18)	(50)	618	83
Other financial assets measured on a recurring basis	16	—	37	—	(11)	4	12	(8)	(50)	—	53
Liabilities											
Interest-bearing deposits	286	—	37	12	—	—	45	—	(3)	303	(104)
Federal funds purchased and securities loaned and sold under agreements to repurchase	726	8	—	—	—	—	243	—	36	997	52
Trading account liabilities											
Securities sold, not yet purchased	22	(384)	—	35	(86)	14	121	(36)	(67)	387	(128)
Other trading liabilities	5	5	—	—	—	—	—	—	—	—	—
Short-term borrowings	18	2	—	48	(39)	—	54	—	(40)	39	22
Long-term debt	13,082	(474)	—	2,200	(1,950)	36	(35)	(45)	29	13,791	(1,709)
Other financial liabilities measured on a recurring basis	8	—	(2)	1	(10)	—	2	—	(3)	—	(9)

(1) Changes in fair value of available-for-sale debt securities 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 debt securities), attributable to the change in fair value relating to assets and liabilities classified as Level 3 that are still held at December 31, 2017.

(4) Total Level 3 trading derivative assets and liabilities have been netted in these tables for presentation purposes only.

175

In millions of dollars	Jun. 30, 2017	Net realized/unrealized gains (losses) incl. in Principal transactions	Other(1)(2)	Transfers into Level 3	Transfers out of Level 3	Purchases	Issuances	Sales	Settlements	Sept. 30, 2017	Unrealized gains (losses) still held(3)
Assets											
Federal funds sold and securities borrowed and purchased under agreements to resell	$1,002	$(338)	$—	$—	$—	$—	$—	$—	$—	$664	$(338)
Trading non-derivative assets											
Trading mortgage-backed securities											
U.S. government-sponsored agency guaranteed	$204	$—	$—	$75	$(21)	$174	$—	$(123)	$—	$309	$—
Residential	327	24	—	41	(9)	39	—	(71)	—	351	12
Commercial	318	10	—	22	(17)	11	—	(232)	—	112	5
Total trading mortgage-backed securities	$849	$34	$—	$138	$(47)	$224	$—	$(426)	$—	$772	$17
U.S. Treasury and federal agency securities	$—	$—	$—	$—	$—	$—	$—	$—	$—	$—	$—
State and municipal	284	(2)	—	—	—	49	—	(61)	—	270	(1)
Foreign government	108	(5)	—	4	(114)	161	—	(59)	—	95	(2)
Corporate	401	105	—	16	(11)	148	—	(268)	—	391	103
Equity securities	240	183	—	3	(41)	29	—	(178)	—	236	6
Asset-backed securities	1,570	114	—	5	(6)	481	—	(460)	—	1,704	26
Other trading assets	1,803	(38)	—	38	(607)	1,349	4	(394)	(4)	2,151	29
Total trading non-derivative assets	$5,255	$391	$—	$204	$(826)	$2,441	$4	$(1,846)	$(4)	$5,619	$178
Trading derivatives, net(4)											
Interest rate contracts	(288)	196	—	4	(4)	25	—	(20)	(114)	(201)	120
Foreign exchange contracts	184	(92)	—	1	(4)	(6)	—	(3)	68	148	(92)
Equity contracts	(1,647)	201	—	(52)	(34)	31	—	(126)	(221)	(1,848)	(10)
Commodity contracts	(2,024)	(248)	—	(29)	(10)	—	—	(3)	(25)	(2,339)	(255)
Credit derivatives	(1,339)	(150)	—	25	115	7	—	—	401	(941)	(185)
Total trading derivatives, net(4)	$(5,114)	$(93)	$—	$(51)	$63	$57	$—	$(152)	$109	$(5,181)	$(422)
Investments											
Mortgage-backed securities											
U.S. government-sponsored agency guaranteed	$50	$—	$12	$—	$(5)	$—	$—	$—	$—	$57	$28
Residential	—	—	—	—	—	—	—	—	—	—	—
Commercial	—	—	—	3	—	—	—	—	—	3	—
Total investment mortgage-backed securities	$50	$—	$12	$3	$(5)	$—	$—	$—	$—	$60	$28
	$1	$—	$—	$—	$—	$—	$—	$(1)	$—	$—	$—

U.S. Treasury and federal agency securities											
State and municipal	1,285	—	(2)	21	(3)	16	—	(45)	—	1,272	17
Foreign government	358	—	(58)	—	(18)	122	—	(103)	—	301	(7)
Corporate	156	—	146	10	(2)	41	—	(231)	—	120	—
Equity securities	9	—	(1)	—	—	—	—	(5)	—	3	—
Asset-backed securities	1,028	—	(280)	2	(7)	504	—	(417)	—	830	(134)
Other debt securities	10	—	—	—	—	—	—	—	—	10	—
Non-marketable equity securities	939	—	(61)	—	—	1	—	(1)	(49)	829	(18)
Total investments	$3,836	$—	$(244)	$36	$(35)	$684	$—	$(803)	$(49)	$3,425	$(114)

		Net realized/unrealized gains (losses) incl. in		Transfers							Unrealized gains (losses)
In millions of dollars	Jun. 30, 2017	Principal transactions	Other(1)(2)	into Level 3	out of Level 3	Purchases	Issuances	Sales	Settlements	Sept. 30, 2017	still held(3)
Loans	$ 577	$ —	$ 73	$ —	$ —	$ 131	$ —	$ (236)	$ (1)	$ 544	$ 264
Mortgage servicing rights	560	—	(6)	—	—	—	19	—	(20)	553	3
Other financial assets measured on a recurring basis	17	—	13	—	—	1	43	(4)	(56)	14	17
Liabilities											
Interest-bearing deposits	$ 300	$ —	$ (2)	$ —	$ —	$ —	$ —	$ —	$ (2)	$ 300	$ 6
Federal funds purchased and securities loaned and sold under agreements to repurchase	807	(1)	—	—	—	—	—	—	(43)	765	4
Trading account liabilities											
Securities sold, not yet purchased	1,143	496	—	5	(10)	—	—	88	(46)	684	24
Short-term borrowings	29	(13)	—	3	(1)	—	12	—	—	56	7
Long-term debt	11,831	1,057	—	181	(490)	—	419	—	437	11,321	716
Other financial liabilities measured on a recurring basis	2	—	—	—	—	—	1	—	(1)	2	(1)

In millions of dollars	Dec. 31, 2016	Net realized/unrealized gains (losses) incl. in Principal transactions	Other[1][2]	Transfers into Level 3	Transfers out of Level 3	Purchases	Issuances	Sales	Settlements	Sept. 30, 2017	Unrealized gains (losses) still held[3]
Assets											
Federal funds sold and securities borrowed and purchased under agreements to resell	$1,496	$(340)	$—	$—	$(491)	$—	$—	$—	$(1)	$664	$—
Trading non-derivative assets											
Trading mortgage-backed securities											
U.S. government-sponsored agency guaranteed	176	4	—	154	(86)	438	—	(377)	—	309	1
Residential	399	61	—	88	(58)	105	—	(244)	—	351	35
Commercial	206	7	—	66	(46)	445	—	(566)	—	112	(5)
Total trading mortgage-backed securities	$781	$72	$—	$308	$(190)	$988	$—	$(1,187)	$—	$772	$31
U.S. Treasury and federal agency securities	$1	$—	$—	$—	$—	$—	$—	$(1)	$—	$—	$—
State and municipal	296	3	—	24	(48)	137	—	(142)	—	270	(1)
Foreign government	40	2	—	88	(204)	288	—	(119)	—	95	(1)
Corporate	324	320	—	132	(84)	424	—	(725)	—	391	167
Equity securities	127	212	—	135	(54)	38	—	(222)	—	236	20
Asset-backed securities	1,868	251	—	28	(87)	1,185	—	(1,541)	—	1,704	34
Other trading assets	2,814	(88)	—	470	(1,381)	2,002	5	(1,652)	(19)	2,151	29
Total trading non-derivative assets	$6,251	$772	$—	$1,185	$(2,048)	$5,062	$5	$(5,589)	$(19)	$5,619	$279
Trading derivatives, net[4]											
Interest rate contracts	$(663)	$4	$—	$(24)	$647	$90	$—	$(225)	$(30)	$(201)	$65
Foreign exchange contracts	413	(389)	—	54	(63)	32	—	(37)	138	148	(134)
Equity contracts	(1,557)	98	—	(34)	(8)	180	—	(263)	(264)	(1,848)	(22)
Commodity contracts	(1,945)	(576)	—	29	39	—	—	(3)	117	(2,339)	(255)
Credit derivatives	(1,001)	(535)	—	(43)	91	5	—	2	540	(941)	(197)
Total trading derivatives, net[4]	$(4,753)	$(1,398)	$—	$(18)	$706	$307	$—	$(526)	$501	$(5,181)	$(543)
Investments											
Mortgage-backed securities											
U.S. government-sponsored agency guaranteed	$101	$—	$15	$1	$(60)	$—	$—	$—	$—	$57	$30
Residential	50	—	2	—	(47)	—	—	(5)	—	—	—

Commercial	—	—	—	3	—	8	—	(8)	—	3	—
Total investment mortgage-backed securities	$151	$—	$17	$4	$(107)	$8	$ —	$(13)	$—	$60	$30
U.S. Treasury and federal agency securities	$2	$—	$—	$—	$—	$—	$ —	$(2)	$—	$—	$—
State and municipal	1,211	—	37	70	(36)	92	—	(102)	—	1,272	35
Foreign government	186	—	(47)	2	(37)	455	—	(258)	—	301	(5)
Corporate	311	—	11	74	(6)	224	—	(494)	—	120	—
Equity securities	9	—	(1)	—	—	—	—	(5)	—	3	—
Asset-backed securities	660	—	(98)	23	(20)	864	—	(599)	—	830	(134)
Other debt securities	—	—	—	—	—	21	—	(11)	—	10	—
Non-marketable equity securities	1,331	—	(124)	2	—	10	—	(228)	(162)	829	49
Total investments	$3,861	$—	$(205)	$175	$(206)	$1,674	$ —	$(1,712)	$(162)	$3,425	$(25)

In millions of dollars	Dec. 31, 2016	Net realized/unrealized gains (losses) incl. in Principal transactions	Other[(1)(2)]	Transfers into Level 3	Transfers out of Level 3	Purchases	Issuances	Sales	Settlements	Sept. 30, 2017	Unrealized gains (losses) still held[(3)]
Loans	$568	$ —	$ 57	$80	$(16)	$ 173	$ —	$(312)	$ (6)	$ 544	$ 266
Mortgage servicing rights	1,564	—	50	—	—	—	75	(1,046)	(90)	553	(40)
Other financial assets measured on a recurring basis	34	—	(147)	3	(8)	1	303	(8)	(164)	14	(68)
Liabilities											
Interest-bearing deposits	$293	$ —	$ 9	$40	$—	$ —	$ —	$—	$ (24)	$ 300	$ 6
Federal funds purchased and securities loaned and sold under agreements to repurchase	849	7	—	—	—	—	—	—	(77)	765	4
Trading account liabilities											
Securities sold, not yet purchased	1,177	490	—	18	(53)	—	—	265	(233)	684	24
Short-term borrowings	42	18	—	4	(1)	—	31	—	(2)	56	7
Long-term debt	9,744	456	—	702	(1,457)	—	2,701	—	87	11,321	708
Other financial liabilities measured on a recurring basis	8	—	—	—	—	—	3	(1)	(8)	2	(1)

(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 June 30, 2017.

(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, 2017 to September 30, 2018:

- During the three and nine months ended September 30, 2018, transfers of Long-term debt of $0.4 billion and $2.2 billion from Level 2 to Level 3, and of $0.6 billion and $2.0 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 were no significant Level 3 transfers for the period from June 30, 2017 to September 30, 2017.

The following were the significant Level 3 transfers for the period December 31, 2016 to September 30, 2017:

- Transfers of Long-term debt of $0.7 billion from Level 2 to Level 3, and of $1.5 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.

Valuation Techniques and Inputs for Level 3 Fair Value Measurements
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.

As of September 30, 2018	Fair value[1] (in millions)	Methodology	Input	Low[2][3]	High[2][3]	Weighted average[4]
Assets						
Federal funds sold and securities borrowed and purchased under agreements to resell	$ 65	Model-based	Interest rate	2.27 %	3.67 %	3.54 %
Mortgage-backed securities	$ 273	Price-based	Price	$37.40	$108.00	$92.56
	137	Yield analysis	Yield	3.13 %	14.29 %	4.72 %
State and municipal, foreign government, corporate and other debt securities	$ 930	Price-based	Price	$—	$108.15	$79.65
	926	Model-based	Credit spread	35 bps	446 bps	246 bps
Equity securities[5]	$ 124	Price-based	Price	$—	$865.86	$3.50
	46	Model-based	WAL	1.73 years	1.73 years	1.73 years
Asset-backed securities	$ 1,666	Price-based	Price	$3.56	$100.91	$69.41
Non-marketable equities	$ 428	Comparables analysis	Net operating income multiple	$7.30	$25.00	$10.49
	$ 282	Price-based	Discount to price	— %	100.00 %	0.62 %
Derivatives—gross[6]						
Interest rate contracts (gross)	$ 4,470	Model-based	Mean reversion	1.00 %	20.00 %	10.50 %
			IR normal volatility	0.14 %	78.79 %	53.37 %
			Inflation volatility	0.20 %	2.56 %	0.76 %
Foreign exchange contracts (gross)	$ 749	Model-based	FX volatility	3.15 %	17.35 %	10.96 %
	$ 82	Cash flow	Credit spread	39 bps	880 bps	379 bps
			IR-IR correlation	(51.00)%	40.00 %	33.60 %
			IR-FX correlation	40.00 %	60.00 %	50.00 %
			FX rate	— %	0.04 %	0.03 %
			IR basis	(0.79)%	9.00 %	0.67 %

Equity contracts (gross)	$ 1,478	Model-based	Equity volatility	3.00	%	83.72	%	28.96	%
			Forward price	63.10	%	159.10	%	97.77	%
			WAL	1.73 years		1.73 years		1.73 years	
Commodity and other contracts (gross)	$ 3,049	Model-based	Forward price	45.19	%	549.00	%	129.77	%
			Commodity volatility	7.60	%	55.00	%	17.32	%
			Commodity Correlation	(52.45	)%	91.37	%	17.71	%
Credit derivatives (gross)	$ 1,924	Model-based	Credit correlation	25.00	%	85.00	%	43.50	%
	714	Price-based	Upfront points	5.13	%	97.98	%	53.49	%
			Credit spread	2 bps		1,260 bps		84 bps	
			Price	$31.77		$98.00		$79.28	
			Recovery rate	5.00	%	65.00	%	48.09	%

180

As of September 30, 2018	Fair value[1] (in millions)	Methodology	Input	Low[2][3]	High[2][3]	Weighted average[4]
Loans and leases	$ 318	Model-based	Credit spread	128 bps	215 bps	161 bps
	66	Price-based	Yield	4.15 %	4.15 %	4.15 %
Mortgage servicing rights	$ 531	Cash flow	Yield	4.79 %	12.00 %	8.31 %
	87	Model-based	WAL	4.11 years	8.10 years	6.92 years
Liabilities						
Interest-bearing deposits	$ 303	Model-based	Mean reversion	— %	20.00 %	7.95 %
			Forward price	99.23 %	106.69 %	101.80 %
			Equity volatility	7.34 %	20.78 %	17.98 %
Federal funds purchased and securities loaned and sold under agreement to repurchase	$ 997	Model-based	Interest rate	2.27 %	3.41 %	3.14 %
Trading account liabilities						
Securities sold, not yet purchased	$ 360	Model-based	Forward price	45.19 %	549.00 %	100.21 %
			Equity volatility	3.00 %	83.72 %	22.17 %
			Equity-equity correlation	(81.39)%	100.00 %	41.02 %
			Equity-FX correlation	(82.74)%	54.00 %	(32.58)%
			Mean reversion	1.00 %	20.00 %	10.50 %
Short-term borrowings and long-term debt	$ 12,944	Model-based	Mean reversion	1.00 %	20.00 %	10.50 %
			Forward price	65.99 %	259.53 %	103.59 %
			Equity volatility	3.00 %	83.72 %	19.28 %

As of December 31, 2017	Fair value[1] (in millions)	Methodology	Input	Low[2][3]	High[2][3]	Weighted average[4]
Assets						
Federal funds sold and securities borrowed and purchased under agreements to resell	$ 16	Model-based	Interest rate	1.43 %	2.16 %	2.09 %
Mortgage-backed securities	$ 214	Price-based	Price	$ 2.96	$ 101.00	$ 56.52
	184	Yield analysis	Yield	2.52 %	14.06 %	5.97 %
State and municipal, foreign government, corporate and other debt securities	$ 949	Model-based	Price	$ —	$ 184.04	$ 91.74
	914	Price-based	Credit spread	35 bps	500 bps	249 bps
			Yield	2.36 %	14.25 %	6.03 %
Equity securities[5]	$ 65	Price-based	Price	$ —	$ 25,450.00	$ 2,526.62
	55	Model-based	WAL	2.50 years	2.50 years	2.50 years
Asset-backed securities	$ 2,287	Price-based	Price	$ 4.25	$ 100.60	$ 74.57
Non-marketable equity	$ 423			6.90 x	12.80 x	8.66 x

		Comparables analysis	EBITDA multiples							
	223	Price-based	Discount to price	—	%	100.00	%	11.83	%	
			Price-to-book ratio	0.05	x	1.00	x	0.32	x	
Derivatives—gross[(6)]										
Interest rate contracts (gross)	$ 3,818	Model-based	IR normal volatility	9.40	%	77.40	%	58.86	%	
			Mean reversion	1.00	%	20.00	%	10.50	%	
Foreign exchange contracts (gross)	$ 940	Model-based	Foreign exchange (FX) volatility	4.58	%	15.02	%	8.16	%	

181

As of December 31, 2017	Fair value(1) (in millions)	Methodology	Input	Low(2)(3)	High(2)(3)	Weighted average(4)
			Interest rate	(0.55)%	0.28 %	0.04 %
			IR-IR correlation	(51.00)%	40.00 %	36.56 %
			IR-FX correlation	(7.34)%	60.00 %	49.04 %
			Credit spread	11 bps	717 bps	173 bps
Equity contracts (gross)(7)	$ 2,897	Model-based	Equity volatility	3.00 %	68.93 %	24.66 %
			Forward price	69.74 %	154.19 %	92.80 %
Commodity contracts (gross)	$ 2,937	Model-based	Forward price	3.66 %	290.59 %	114.16 %
			Commodity volatility	8.60 %	66.73 %	25.04 %
			Commodity correlation	(37.64)%	91.71 %	15.21 %
Credit derivatives (gross)	$ 1,797	Model-based	Credit correlation	25.00 %	90.00 %	44.64 %
	823	Price-based	Upfront points	6.03 %	97.26 %	62.88 %
			Credit spread	3 bps	1,636 bps	173 bps
			Price	$ 1.00	$ 100.24	$ 57.63
Nontrading derivatives and other financial assets and liabilities measured on a recurring basis (gross)(6)	$ 24	Model-based	Recovery rate	25.00 %	40.00 %	31.56 %
			Redemption rate	10.72 %	99.50 %	74.24 %
			Credit spread	38 bps	275 bps	127 bps
			Upfront points	61.00 %	61.00 %	61.00 %
Loans and leases	$ 391	Model-based	Equity volatility	3.00 %	68.93 %	22.52 %
	148	Price-based	Credit spread	134 bps	500 bps	173 bps
			Yield	3.09 %	4.40 %	3.13 %
Mortgage servicing rights	$ 471	Cash flow	Yield	8.00 %	16.38 %	11.47 %
	87	Model-based	WAL	3.83 years	6.89 years	5.93 years
Liabilities						
Interest-bearing deposits	$ 286	Model-based	Mean reversion	1.00 %	20.00 %	10.50 %
			Forward price	99.56 %	99.95 %	99.72 %
Federal funds purchased and securities loaned and sold under agreements to repurchase	$ 726	Model-based	Interest rate	1.43 %	2.16 %	2.09 %
Trading account liabilities						
Securities sold, not yet purchased	$ 21	Price-based	Price	$ 1.00	$ 287.64	$ 88.19
Short-term borrowings and long-term debt	$ 13,100	Model-based	Forward price	69.74 %	161.11 %	100.70 %

(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 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.

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. These also include non-marketable equity investments that have been measured using the measurement alternative and are either (i) written down to fair value during the periods as a result of an impairment or (ii) adjusted upward or downward to fair value as a result of a transaction observed during the periods for the identical or similar investment of the same issuer. In addition, these assets include loans held-for-sale and other real estate owned that are measured at the lower of cost or market value.

The following table presents the carrying amounts of all assets that were still held for which a nonrecurring fair value measurement was recorded:

In millions of dollars	Fair value	Level 2	Level 3
September 30, 2018			
Loans HFS[(1)]	$4,823	$1,870	$2,953
Other real estate owned	85	68	17
Loans[(2)]	349	155	194
Non-marketable equity investments measured using the measurement alternative	115	115	—
Total assets at fair value on a nonrecurring basis	$5,372	$2,208	$3,164

In millions of dollars	Fair value	Level 2	Level 3
December 31, 2017			
Loans HFS[(1)]	$5,675	$2,066	$3,609
Other real estate owned	54	10	44
Loans[(2)]	630	216	414
Total assets at fair value on a nonrecurring basis	$6,359	$2,292	$4,067

(1) Net of fair value amounts on the unfunded portion of loans HFS recognized as Other liabilities on the Consolidated Balance Sheet.

(2) Represents impaired loans held for investment whose carrying amount is based on the fair value of the underlying collateral less costs to sell, primarily real estate.

183

Valuation Techniques and Inputs for Level 3 Nonrecurring Fair Value Measurements

The following table presents the valuation techniques covering the majority of Level 3 nonrecurring fair value measurements and the most significant unobservable inputs used in those measurements:

As of September 30, 2018	Fair value[1] (in millions)	Methodology	Input	Low[2]	High	Weighted average[3]
Loans held-for-sale	$ 2,533	Price-based	Price	$80.90	$100.00	$99.26
Other real estate owned	$ 17	Price-based	Appraised value	$2,353,777	$8,394,102	$7,071,276
			Discount to price	13.00 %	13.00 %	13.00 %
			Price	$56.31	$56.31	$56.31
Loans[5]	$ 123	Recovery analysis	Price	$13.36	$100.00	$92.33
	54	Price-based	Recovery rate	9.00 %	90.00 %	76.62 %
			Appraised Value	$9,855,140	$55,972,000	$38,154,269

As of December 31, 2017	Fair value[1] (in millions)	Methodology	Input	Low[2]	High	Weighted average[3]
Loans held-for-sale	$ 3,186	Price-based	Price	$77.93	$100.00	$99.26
Other real estate owned	$ 42	Price-based	Appraised value[4]	$20,278	$8,091,760	$4,016,665
			Discount to price[5]	34.00 %	34.00 %	34.00 %
			Price	$30.00	$50.36	$49.09
Loans[6]	$ 133	Price-based	Price	$2.80	$100.00	$62.46
	129	Cash flow	Recovery rate	50.00 %	100.00 %	63.59 %
	127	Recovery analysis	Appraised value	$—	$45,500,000	$38,785,667

(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) Appraised values are disclosed in whole dollars.
(5) Includes estimated costs to sell.
(6) Represents impaired loans held for investment whose carrying amounts are based on the fair value of the underlying collateral, primarily real estate secured loans.

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:

	Three Months Ended September 30,	
In millions of dollars	2018	2017
Loans HFS	$(1)	$10
Other real estate owned	(1)	(4)
Loans[1]	(22)	(66)
Non-marketable equity investments measured using the measurement alternative	7	—

Total nonrecurring fair value gains (losses)	$(17)	$(60)

(1) Represents loans held for investment whose carrying amount is based on the fair value of the underlying collateral, primarily real estate.

In millions of dollars	Nine Months Ended September 30, 2018	2017
Loans HFS	$8	$(15)
Other real estate owned	(2)	(6)
Loans[1]	(51)	(110)
Non-marketable equity investments measured using the measurement alternative	111	—
Total nonrecurring fair value gains (losses)	$66	$(131)

(1) Represents loans held for investment whose carrying amount is based on the fair value of the underlying collateral, primarily real estate.

Estimated Fair Value of Financial Instruments Not Carried at Fair Value

The following table 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.

	September 30, 2018		Estimated fair value		
In billions of dollars	Carrying value	Estimated fair value	Level 1	Level 2	Level 3
Assets					
Investments	$58.9	$58.0	$1.1	$54.9	$2.0
Federal funds sold and securities borrowed and purchased under agreements to resell	102.5	102.5	—	100.5	2.0
Loans[1][2]	656.7	655.2	—	5.2	650.0
Other financial assets[2][3]	263.9	264.4	184.6	14.7	65.1
Liabilities					
Deposits	$1,003.7	$1,002.8	$—	$836.7	$166.1
Federal funds purchased and securities loaned or sold under agreements to repurchase	127.8	127.8	—	127.8	—
Long-term debt[4]	198.5	200.6	—	186.3	14.3
Other financial liabilities[5]	110.6	110.6	—	16.1	94.5

	December 31, 2017		Estimated fair value		
In billions of dollars	Carrying value	Estimated fair value	Level 1	Level 2	Level 3
Assets					
Investments	$60.2	$ 60.6	$0.5	$57.5	$2.6
Federal funds sold and securities borrowed and purchased under agreements to resell	99.5	99.5	—	94.4	5.1
Loans[1][2]	648.6	644.9	—	6.0	638.9
Other financial assets[2][3]	242.6	243.0	166.4	14.1	62.5
Liabilities					
Deposits	$958.4	$ 955.6	$—	$816.1	$139.5
Federal funds purchased and securities loaned or sold under agreements to repurchase	115.6	115.6	—	115.6	—
Long-term debt[4]	205.3	214.0	—	187.2	26.8
Other financial liabilities[5]	129.9	129.9	—	15.5	114.4

(1) The carrying value of loans is net of the Allowance for loan losses of $12.3 billion for September 30, 2018 and $12.4 billion for December 31, 2017. In addition, the carrying values exclude $1.6 billion and $1.7 billion of lease finance receivables at September 30, 2018 and December 31, 2017, 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 recoverables 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, separate and variable accounts, 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.

The estimated fair values of the Company's corporate unfunded lending commitments at September 30, 2018 and December 31, 2017 were liabilities of $3.2 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 cancellable by providing notice to the borrower.

21. FAIR VALUE ELECTIONS

The Company 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 are reported in AOCI. Additional discussion regarding the applicable areas in which fair value elections were made is presented in Note 20 to the Consolidated Financial Statements.

The Company has elected fair value accounting for its mortgage servicing rights. See Note 18 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:

	Changes in fair value—gains (losses)			
	Three Months Ended September 30,		Nine Months Ended September 30,	
In millions of dollars	2018	2017	2018	2017
Assets				
Federal funds sold and securities borrowed and purchased under agreements to resell	$(17)	$(17)	$(14)	$(108)
Trading account assets	3	581	(98)	1,243
Investments	—	—	—	(3)
Loans				
Certain corporate loans	11	(61)	(115)	(42)
Certain consumer loans	—	1	—	3
Total loans	$11	$(60)	$(115)	$(39)
Other assets				
MSRs	$25	$(6)	$82	$50
Certain mortgage loans held-for-sale[1]	9	34	21	115
Total other assets	$34	$28	$103	$165
Total assets	$31	$532	$(124)	$1,258
Liabilities				
Interest-bearing deposits	$(20)	$(16)	$18	$(60)
Federal funds purchased and securities loaned and sold under agreements to repurchase	230	97	104	183
Trading account liabilities	25	19	4	70
Short-term borrowings	20	(30)	138	(110)
Long-term debt	(270)	(510)	1,269	(981)
Total liabilities	$(15)	$(440)	$1,533	$(898)

(1) 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. Effective January 1, 2016, changes in fair value of fair value option liabilities related to changes in Citigroup's own credit spreads (DVA) are reflected as a component of AOCI; previously these amounts were recognized in Citigroup's Revenues and Net income along with all other changes in fair value. See Note 1 to the Consolidated Financial Statements for additional information.
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 the Company's credit spreads.
The estimated change in the fair value of these liabilities due to such changes in the Company's own credit spread (or instrument-specific credit risk) was a loss of $377 million and a loss of $195 million for the three months ended September 30, 2018 and 2017, and a gain of $208 million and a loss of $422 million for the nine months ended September 30, 2018 and 2017, respectively. Changes in fair value resulting from changes in instrument-specific credit risk were estimated by incorporating the Company's current credit spreads observable in the bond market into the relevant valuation technique used to value each liability as described above.

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
The Company 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.

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 Interest expense in the Consolidated Statement of Income.

Certain Loans and Other Credit Products
Citigroup 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 Citigroup'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 the Company pays the total return on the underlying loans to a third party. Citigroup 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 the Company.
The following table provides information about certain credit products carried at fair value:

	September 30, 2018		December 31, 2017	
In millions of dollars	Trading assets	Loans	Trading assets	Loans
Carrying amount reported on the Consolidated Balance Sheet	$8,922	$4,239	$8,851	$4,374
Aggregate unpaid principal balance in excess of (less than) fair value	432	538	623	682
Balance of non-accrual loans or loans more than 90 days past due	—	1	—	