

JPMORGAN CHASE & CO
Form 10-Q
August 02, 2017

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 Commission file
June 30, 2017 number 1-5805

JPMorgan Chase & Co.
(Exact name of registrant as specified in its charter)
Delaware 13-2624428
(State or other jurisdiction of (I.R.S. employer
incorporation or organization) identification no.)

270 Park Avenue, New York, New York 10017
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (212) 270-6000

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes No

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

Large accelerated filer Accelerated filer

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

Emerging growth company

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

Number of shares of common stock outstanding as of June 30, 2017: 3,518,964,410

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JPMorgan Chase & Co.
 Consolidated financial highlights
 (unaudited)

Six months ended
 June 30,

As
 of
 or
 for
 the
 period
 ended,
 (in
 millions,
 except
 2017
 per
 share,
 ratio,
 headcount
 data
 and
 where
 otherwise
 noted)

Selected
 income
 statement
 data

Total	1Q17	4Q16	3Q16	2Q16	2017	2016
Total revenue \$25,470	\$24,675	\$23,376	\$24,673	\$24,380	\$50,145	\$47,619
Total interest expense 14,506	15,019	13,833	14,463	13,638	29,525	27,475
Pre-provision profit 10,964	9,656	9,543	10,210	10,742	20,620	20,144
Provision for credit losses 1,215	1,315	864	1,271	1,402	2,530	3,226
Income before tax expense 9,749	8,341	8,679	8,939	9,340	18,090	16,918
Income tax expense 2,720	1,893	1,952	2,653	3,140	4,613	5,198
Net income \$7,029	\$6,448	\$6,727	\$6,286	\$6,200	\$13,477	\$11,720

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Earnings per share data							
Net income:	\$1.83	\$1.66	\$1.73	\$1.60	\$1.56	\$3.49	\$2.92
Basic							
Diluted	1.65	1.71	1.58	1.55	3.47	2.89	
Average shares:							
Basic	3,601.7	3,611.3	3,637.7	3,675.5	3,587.9	3,693.0	
Diluted	3,630.4	3,646.6	3,669.8	3,706.2	3,614.7	3,721.9	
Market and per common share data							
Market capitalization	321,633	312,078	307,295	238,277	224,449	321,633	224,449
Common shares at period-end	3,519.0	3,552.8	3,561.2	3,578.3	3,612.0	3,519.0	3,612.0
Share price: ^(a)							
9/30/15	\$93.65	\$93.98	\$87.39	\$67.90	\$66.20	\$93.98	\$66.20
6/30/15	81.64	83.03	66.10	58.76	57.05	81.64	52.50
3/31/15	91.40	87.84	86.29	66.59	62.14	91.40	62.14
Book value per share	66.05	64.68	64.06	63.79	62.67	66.05	62.67
Tangible book value per share ("TBVPS" ^(b))	53.29	52.04	51.44	51.23	50.21	53.29	50.21
Cash dividends declared per share	0.50	0.50	0.48	0.48	0.48	1.00	0.92
Selected ratios and metrics							
Return on common equity	% 11	% 11	% 11	% 10	% 10	% 11	% 10

Return on tangible common equity (“ROE”)	13	14	13	13	14	12	
Return on common equity (“ROTCE”)	1.03	1.06	1.01	1.02	1.07	0.97	
Overhead ratio	61	59	59	56	59	58	
Loans-to-deposits ratio	63	65	65	66	63	66	
High quality liquid assets (“HQLA”) (in billions) ^(c)	\$577	\$528	\$524	\$539	\$516	\$577	\$516
Common equity Tier 1 capital ratio ^(d)	12.6%	12.5%	12.4%	12.0%	12.0%	12.6%	12.0%
Tier 1 capital ratio ^(d)	14.4%	14.3%	14.1%	13.6%	13.6%	14.4%	13.6%
Total capital ratio ^(d)	16.0%	15.6%	15.5%	15.1%	15.2%	16.0%	15.2%
Tier 1 leverage ratio ^(d)	8.5%	8.4%	8.4%	8.5%	8.5%	8.5%	8.5%
Selected balance sheet data (period-end)							
Trading assets	\$407,064	\$402,513	\$372,130	\$374,837	\$380,793	\$407,064	\$380,793
Securities	281,850	281,850	289,059	272,401	278,610	263,458	278,610
Loans	208,767	895,974	894,765	888,054	872,804	908,767	872,804
Core loans	834,935	812,119	806,152	795,077	775,813	834,935	775,813
	824,583	805,382	799,698	779,383	760,721	815,034	749,009

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Average core loans						
Total assets	2,563,174	2,546,290	2,490,972	2,521,029	2,466,096	2,563,174
Deposits	1,430,473	1,422,999	1,375,179	1,376,138	1,330,958	1,439,473
Long-term debt ^(e)	292,973	289,492	295,245	309,418	295,627	292,973
Common stockholders' equity	332,415	229,795	228,122	228,263	226,355	232,415
Total stockholders' equity	358,483	255,863	254,190	254,331	252,423	258,483
Headcount	246,345	246,345	243,355	242,315	240,046	249,257
Credit quality metrics						
Allowance for credit losses	\$14,480	\$14,490	\$14,854	\$15,304	\$15,187	\$14,480
Allowance for loan losses to total retained loans	1.49%	1.52%	1.55%	1.61%	1.64%	1.49%
Allowance for loan losses to retained loans excluding purchased credit-impaired loans ^(f)	1.31	1.34	1.37	1.40	1.28	1.40
Nonperforming assets	\$6,432	\$6,826	\$7,535	\$7,779	\$7,757	\$6,432
Net charge-offs ^(g)	1,204	1,654	1,280	1,121	1,181	2,858
Net charge-off rate ^(g)	0.54%	0.76%	0.58%	0.51%	0.56%	0.65%

(a) Share prices are from the New York Stock Exchange.

(b) TBVPS and ROTCE are non-GAAP financial measures. For further discussion of these measures, see Explanation and Reconciliation of the Firm's Use of Non-GAAP Financial Measures and Key Financial Performance Measures

on pages 15–17.

(c) HQLA represents the amount of assets that qualify for inclusion in the liquidity coverage ratio (“LCR”). For additional information, see HQLA on page 67.

(d) Ratios presented are calculated under the Basel III Transitional capital rules and for the capital ratios represent the lower of the Standardized or Advanced approach as required by the Collins Amendment of the Dodd-Frank Act (the “Collins Floor”). See Capital Risk Management on pages 42–48 for additional information on Basel III and the Collins Floor.

(e) Included unsecured long-term debt of \$221.0 billion, \$212.0 billion, \$212.6 billion, \$226.8 billion and \$220.6 billion at June 30, 2017, March 31, 2017, December 31, 2016, September 30, 2016 and June 30, 2016, respectively.

(f) Excluded the impact of residential real estate purchased credit-impaired (“PCI”) loans, a non-GAAP financial measure. For further discussion of these measures, see Explanation and Reconciliation of the Firm’s Use of Non-GAAP Financial Measures and Key Performance Measures on pages 15–17. For further discussion, see Allowance for credit losses on pages 63–65.

(g) Excluding net charge-offs of \$467 million related to the student loan portfolio transfer, the net charge-off rates for both the three months ended March 31, 2017 and six months ended June 30, 2017 would have been 0.54%.

INTRODUCTION

The following is management's discussion and analysis ("MD&A") of the financial condition and results of operations of JPMorgan Chase & Co. ("JPMorgan Chase" or the "Firm") for the second quarter of 2017.

This Form 10-Q should be read in conjunction with JPMorgan Chase's Annual Report on Form 10-K for the year ended December 31, 2016, filed with the U.S. Securities and Exchange Commission ("2016 Annual Report" or 2016 "Form 10-K"), to which reference is hereby made. See the Glossary of terms and acronyms on pages 168–175 for definitions of terms and acronyms used throughout this Form 10-Q.

The MD&A included in this Form 10-Q contains statements that are forward-looking within the meaning of the Private Securities Litigation Reform Act of 1995. These statements are based on the current beliefs and expectations of JPMorgan Chase's management and are subject to significant risks and uncertainties. Actual results may differ from those set forth in the forward-looking statements. For a discussion of certain of those risks and uncertainties and the factors that could cause JPMorgan Chase's actual results to differ materially because of those risks and uncertainties, see Forward-looking Statements on page 82 of this Form 10-Q and Part I, Item 1A, Risk Factors, on pages 8–21 of JPMorgan Chase's 2016 Annual Report.

JPMorgan Chase & Co., a financial holding company incorporated under Delaware law in 1968, is a leading global financial services firm and one of the largest banking institutions in the United States of America ("U.S."), with operations worldwide; the Firm had \$2.6 trillion in assets and \$258.5 billion in stockholders' equity as of June 30, 2017. The Firm is a leader in investment banking, financial

services for consumers and small businesses, commercial banking, financial transaction processing and asset management. Under the J.P. Morgan and Chase brands, the Firm serves millions of customers in the U.S. and many of the world's most prominent corporate, institutional and government clients.

JPMorgan Chase's principal bank subsidiaries are JPMorgan Chase Bank, National Association ("JPMorgan Chase Bank, N.A."), a national banking association with U.S. branches in 23 states, and Chase Bank USA, National Association ("Chase Bank USA, N.A."), a national banking association that is the Firm's credit card-issuing bank. JPMorgan Chase's principal nonbank subsidiary is J.P. Morgan Securities LLC ("JPMorgan Securities"), the Firm's U.S. investment banking firm. The bank and nonbank subsidiaries of JPMorgan Chase operate nationally as well as through overseas branches and subsidiaries, representative offices and subsidiary foreign banks. One of the Firm's principal operating subsidiaries in the United Kingdom ("U.K.") is J.P. Morgan Securities plc, a subsidiary of JPMorgan Chase Bank, N.A.

For management reporting purposes, the Firm's activities are organized into four major reportable business segments, as well as a Corporate segment. The Firm's consumer business is the Consumer & Community Banking ("CCB") segment. The Firm's wholesale business segments are Corporate & Investment Bank ("CIB"), Commercial Banking ("CB"), and Asset & Wealth Management ("AWM"). For a description of the Firm's business segments, and the products and services they provide to their respective client bases, refer to Note 33 of JPMorgan Chase's 2016 Annual Report.

EXECUTIVE
OVERVIEW

This executive overview of the MD&A highlights selected information and does not contain all of the information that is important to readers of this Form 10-Q. For a complete description of the trends and uncertainties, as well as the risks and critical accounting estimates affecting the Firm and its various lines of business, this Form 10-Q should be read in its entirety.

Financial performance of JPMorgan Chase
(unaudited)

As of or for the period ended, (in millions, except per share data and ratios)	Three months ended June 30,			Six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Selected income statement data						
Total net revenue	\$25,470	\$24,380	4	% \$50,145	\$47,619	5%
Total noninterest expense	14,506	13,638	6	29,525	27,475	7
Pre-provision profit	10,964	10,742	2	20,620	20,144	2
Provision for credit losses	1,215	1,402	(13)	2,530	3,226	(22)
Net income	7,029	6,200	13	13,477	11,720	15
Diluted earnings per share	\$1.82	\$1.55	17	\$3.47	\$2.89	20
Selected ratios and metrics						
Return on common equity	12	% 10	%	11	% 10	%
Return on tangible common equity	14	13		14	12	
Book value per share	\$66.05	\$62.67	5	\$66.05	\$62.67	5
Tangible book value per share	53.29	50.21	6	53.29	50.21	6
Capital ratios ^(a)						
CET1	12.6%	12.0	%	12.6	% 12.0	%
Tier 1 capital	14.4	13.6		14.4	13.6	
Total capital	16.0	15.2		16.0	15.2	

(a) Ratios presented are calculated under the Basel III Transitional capital rules and represent the Collins Floor. See Capital Risk Management on pages 42–48 for additional information on Basel III.

Comparisons noted in the sections below are calculated for the second quarter of 2017 versus the prior-year second quarter, unless otherwise specified.

Firmwide overview

JPMorgan Chase reported strong results in the second quarter of 2017 with record net income of \$7.0 billion, or \$1.82 per share, on net revenue of \$25.5 billion. The Firm reported ROE of 12% and ROTCE of 14%.

Net income increased 13%, reflecting higher net revenue, lower income tax expense, and lower provision for credit losses, largely offset by higher noninterest expense.

Total net revenue increased 4%. Net interest income was \$12.2 billion, up 8%, primarily driven by the net impact of higher interest rates and loan growth, partially offset by declines in Markets net interest income. Noninterest revenue was \$13.3 billion, up 2%, driven by a legal benefit in Corporate related to a settlement with the Federal Deposit Insurance Corporation (“FDIC”) receivership for Washington Mutual and with Deutsche Bank as trustee to certain Washington Mutual trusts, higher Banking revenue in the CIB, higher auto lease income, and higher revenue in AWM. These increases were predominantly offset by higher Card new account origination costs, lower Mortgage Banking revenue and lower Markets revenue in the CIB.

Noninterest expense was \$14.5 billion, up 6%, reflecting the absence of a legal benefit recorded in the prior-year quarter, as well as higher auto lease depreciation and FDIC-related expenses.

The provision for credit losses was \$1.2 billion, a decrease from \$1.4 billion. This quarter included a net reduction in the allowance for credit losses in the wholesale portfolio of \$241 million driven by Oil & Gas, Natural Gas Pipelines and Metals & Mining, offset by a net addition to the allowance for credit losses in the consumer portfolio of \$252 million driven by Card.

The total allowance for credit losses was \$14.5 billion at June 30, 2017, and the Firm had a loan loss coverage ratio, excluding the PCI portfolio, of 1.28%, compared with 1.40%. The Firm's nonperforming assets totaled \$6.4 billion at June 30, 2017, a decrease from \$7.8 billion.

Firmwide average core loans increased 8%.

Selected capital-related metrics

The Firm added to its capital, ending the second quarter of 2017 with a TBVPS of \$53.29, up 6%.

The Firm's Basel III Fully Phased-In CET1 capital was \$187 billion, and the Standardized and Advanced CET1 ratios were 12.5% and 12.7%, respectively.

The Fully Phased-In supplementary leverage ratio ("SLR") was 6.6% for the Firm and 6.7% for JPMorgan Chase Bank, N.A. at June 30, 2017.

ROTCE and TBVPS are considered non-GAAP financial measures. Core loans and each of the Fully Phased-In capital and leverage measures are considered key performance measures. For a further discussion of each of these measures, see Explanation and Reconciliation of the Firm's Use of Non-GAAP Financial Measures and Key Performance Measures on pages 15–17, and Capital Risk Management on pages 42–48.

Lines of business highlights

Selected business metrics for each of the Firm's four lines of business are presented below for the second quarter of 2017.

-
- CCB Average core loans up 9%; average deposits of \$640 billion, up 10%
-
- ROE 28.4 million active mobile customers, up 14%
- 17%
-
- Credit card sales volume up 15% and merchant processing volume up 12%
-
- CIB Maintained #1 ranking for Global Investment Banking fees with 8.3% wallet share YTD
- ROE
- 15%
-
- Banking revenue up 17%; Markets revenue down 14%
-
- CB Record revenue and net income of \$2.1 billion (up 15%), and \$902 million (up 30%), respectively
- ROE
- 17%
-
- Average loan balances of \$198 billion, up 12%
-
- Record net income of \$624 million, up 20%; revenue of \$3.2 billion, up 9%
- AWM
-
- ROE Average loan balances of \$122 billion, up 9%
- 27%
-
- Assets under management (“AUM”) of \$1.9 trillion, up 11%; 77% of mutual fund AUM ranked in the 1st or 2nd quartile over 5 years

For a detailed discussion of results by line of business, refer to the Business Segment Results on pages 18–40.

Credit provided and capital raised

JPMorgan Chase continues to support consumers, businesses and communities around the globe. The Firm provided credit and raised capital of \$1.2 trillion for wholesale and consumer clients during the first six months of 2017:

\$131 billion of credit for consumers

\$11 billion of credit for U.S. small businesses

\$413 billion of credit for corporations

\$605 billion of capital raised for corporate clients and non-U.S. government entities

\$38 billion of credit and capital raised for U.S. government and nonprofit entities, including states, municipalities, hospitals and universities

2017 outlook

These current expectations are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements are based on the current beliefs and expectations of JPMorgan Chase's management and are subject to significant risks and uncertainties. These risks and uncertainties could cause the Firm's actual results to differ materially from those set forth in such forward-looking statements. See Forward-Looking Statements on page 82 of this Form 10-Q and Risk Factors on pages 8–21 of JPMorgan Chase's 2016 Annual Report. There is no assurance that actual results for the full year of 2017 will be in line with the outlook set forth below, and the Firm does not undertake to update any of these forward-looking statements to reflect the impact of circumstances or events that arise after the date hereof.

JPMorgan Chase's outlook for the remainder of 2017 should be viewed against the backdrop of the global and U.S. economies, financial markets activity, the geopolitical environment, the competitive environment, client activity levels, and regulatory and legislative developments in the U.S. and other countries where the Firm does business. Each of these interrelated factors will affect the performance of the Firm and its lines of business. The Firm expects it will continue to make appropriate adjustments to its businesses and operations in response to ongoing developments in the legal and regulatory, as well as business and economic, environment in which it operates.

Firmwide

- Management expects 2017 net interest income to increase by approximately \$4 billion compared with the prior year, depending on market conditions.

The Firm continues to take a disciplined approach to managing its expenses, while investing in growth and innovation. As a result, Firmwide adjusted expense in 2017 is expected to be approximately \$58 billion (excluding Firmwide legal expense).

- The Firm continues to experience charge-off rates at or near historically low levels, reflecting favorable credit conditions across the consumer and wholesale portfolios. Management expects total net charge-offs of approximately \$5 billion in 2017, excluding net charge-offs of \$467 million related to the write-down of the student loan portfolio in the first quarter of 2017.

Management expects average core loan growth of approximately 8% in 2017.

CCB

In Card, management expects the portfolio average net charge-off rate to increase in 2017, but remain below 3% for the year, reflecting continued loan growth and the seasoning of newer vintages, with quarterly net charge-off rates reflecting normal seasonal trends.

CIB

Management expects Investment Banking fees in the second half of 2017 to be lower compared to a strong prior-year period.

CONSOLIDATED
RESULTS OF
OPERATIONS

This section provides a comparative discussion of JPMorgan Chase's Consolidated Results of Operations on a reported basis for the three and six months ended June 30, 2017 and 2016, unless otherwise specified. Factors that relate primarily to a single business segment are discussed in more detail within that business segment. For a discussion of the Critical Accounting Estimates Used by the Firm that affect the Consolidated Results of Operations, see pages 77–79 of this Form 10-Q and pages 132–134 of JPMorgan Chase's 2016 Annual Report.

Revenue

(in millions)	Three months ended June 30,			Six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Investment banking fees	\$1,810	\$1,644	10 %	\$3,627	\$2,977	22 %
Principal transactions	3,137	2,976	5	6,719	5,655	19
Lending- and deposit-related fees	1,482	1,403	6	2,930	2,806	4
Asset management, administration and commissions	3,824	3,681	4	7,501	7,305	3
Securities gains/(losses)	(34)	21	NM	(37)	72	NM
Mortgage fees and related income	404	689	(41)	810	1,356	(40)
Card income	1,167	1,358	(14)	2,081	2,659	(22)
Other income ^(a)	1,472	1,261	17	2,242	2,062	9
Noninterest revenue	13,262	13,033	2	25,873	24,892	4
Net interest income	12,208	11,347	8	24,272	22,727	7
Total net revenue	\$25,470	\$24,380	4%	\$50,145	\$47,619	5%

^(a) Included operating lease income of \$873 million and \$651 million for the three months ended June 30, 2017 and 2016, respectively and \$1.7 billion and \$1.3 billion for the six months ended June 30, 2017 and 2016, respectively.

Quarterly results

Investment banking fees increased, with strong performance across products. Higher equity underwriting fees were driven by growth in industry-wide issuance, including a strong IPO market; higher debt underwriting fees were driven by a higher share of fees; and higher advisory fees were driven by a higher level of completed transactions. For additional information, see CIB segment results on pages 25–30 and Note 5.

Principal transactions revenue increased reflecting higher gains on private equity investments held in Corporate, and the absence of fair value losses recorded in the prior year on the investment in Square, Inc. in CCB, partially offset by lower Markets revenue in CIB. For additional information, see CIB, Corporate and CCB segment results on pages 25–30, page 39 and pages 20–24, respectively, and Note 5.

Mortgage fees and related income decreased driven by lower mortgage servicing right (“MSR”) risk management results and lower net production revenue on lower margins. For further information on mortgage fees and related income, see CCB segment results on pages 20–24 and Note 14.

Card income decreased predominantly driven by higher credit card new account origination costs, partially offset by higher other card-related fees, largely annual fees.

For further information, see CCB segment results on pages 20–24.

Other income increased primarily reflecting the following:

- a legal benefit of \$645 million in Corporate related to a settlement with the FDIC receivership for Washington Mutual and with Deutsche Bank as trustee to certain Washington Mutual trusts

- higher operating lease income reflecting growth in auto operating lease volume in CCB; the increases were partially offset by

- the absence of a gain in the prior year on the sale of Visa Europe interests in CCB, and

- lower other income in CIB.

For further information on other income, see Note 5.

Net interest income increased primarily driven by the net impact of higher rates and loan growth across the businesses, partially offset by the declines in Markets net interest income in CIB driven by a shift in asset mix in Currencies & Emerging Markets and Equity Markets, and an adjustment for capitalized interest on modified loans in Mortgage Banking. The Firm's average interest-earning assets were \$2.2 trillion, and the net interest yield on these assets, on a fully taxable-equivalent ("FTE") basis, was 2.31%, an increase of 6 basis points from the prior year.

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For additional information on asset management, administration and commissions income, see the segment discussions of CIB and AWM on pages 25–30 and pages 35–38, respectively, and Note 5; on lending- and deposit-related fees, see the segment results for CCB on pages 20–24, CIB on pages 25–30, and CB on pages 31–34 and Note 5; and on securities gains, see the Corporate segment discussion on page 39.

Year-to-date results

Investment banking fees increased reflecting higher debt and equity underwriting fees. The higher debt underwriting fees were driven by a higher share of fees and an overall increase in industry-wide fee levels; and the higher equity underwriting fees were driven by growth in industry-wide issuance, including a stronger IPO market.

Principal transactions revenue increased primarily as a result of higher client-driven market-making revenue in CIB, reflecting:

- Higher Fixed Income-related revenue primarily from Securitized Products driven by strong demand in the first quarter

- Higher Equity-related revenue primarily from corporate derivatives and Prime Services, partially offset by lower revenue in other derivatives related to market-making activities, and

- Higher Lending-related revenue reflecting lower fair value losses on hedges of accrual loans and higher gains on securities received from restructurings.

Asset management, administration and commissions revenue increased in AWM and CCB reflecting higher market levels.

Mortgage fees and related income decreased driven by lower MSR risk management results, lower net production revenue on lower margins, and lower servicing revenue due to lower average third-party loans serviced.

Card income decreased predominantly driven by higher credit card new account origination costs, partially offset by higher other card-related fees, largely annual fees.

For further information, see CCB segment results on pages 20–24.

Other income increased primarily reflecting the following:

- a legal benefit of \$645 million in Corporate related to a settlement with the FDIC receivership for Washington Mutual and with Deutsche Bank as trustee to certain Washington Mutual trusts

- higher operating lease income reflecting growth in auto operating lease volume in CCB;

the increases were partially offset by

- the absence of gains in the prior year on the sale of Visa Europe interests in CCB, as well as on the disposal of assets in AWM, and

- lower other income in CIB.

Net interest income increased primarily driven by the net impact of higher rates and loan growth across the businesses, partially offset by the declines in Markets net interest income in CIB driven by a shift in asset mix in Currencies & Emerging Markets and Equity Markets.

The Firm's average interest-earning assets were \$2.2 trillion, and the net interest yield on these assets, on a FTE basis, was 2.32%, an increase of 4 basis points from the prior year.

Provision for credit losses

(in millions)	Three months ended June 30,			Six months ended June 30,			
	2017	2016	Change	2017	2016	Change	
Consumer, excluding credit card	\$12	\$95	(87)%	\$454	\$316	44	%
Credit card	1,387	1,110	25	2,380	1,940	23	%
Total consumer	1,399	1,205	16	2,834	2,256	26	%
Wholesale	(184)	197	NM	(304)	970	NM	
Total provision for credit losses	\$1,215	\$1,402	(13)%	\$2,530	\$3,226	(22)%	

Quarterly results

The provision for credit losses decreased as a result of:

a decline in the wholesale provision predominantly due to a \$241 million reduction in the allowance for credit losses compared with an addition in the prior year; actions for both periods related to Oil & Gas, Natural Gas Pipelines and Metals & Mining

the decline was partially offset by

an increase in the consumer provision primarily driven by \$120 million of higher net charge-offs, predominantly in the credit card portfolio, and a \$74 million higher addition to the allowance for credit losses, which included current quarter additions in the credit card, business banking and auto portfolios, partially offset by a reduction in the residential real estate portfolio.

For a more detailed discussion of the credit portfolio and the allowance for credit losses, see the segment discussions of CCB on pages 20–24, CIB on pages 25–30, CB on pages 31–34, the Allowance for Credit Losses on pages 63–65 and Note 12.

Year-to-date results

The provision for credit losses decreased as a result of:

a decline in the wholesale provision predominantly due to a \$334 million reduction in the allowance for credit losses compared with an addition in the prior year; actions for both periods related to Oil & Gas, Natural Gas Pipelines and Metals & Mining

the decline was partially offset by

an increase in the consumer provision primarily driven by \$284 million of higher net charge-offs, predominantly in the credit card portfolio, \$218 million related to the transfer of the student loan portfolio to held-for-sale, and a \$76 million higher addition to the allowance for credit losses, which included current year additions in the credit card, business banking and auto portfolios, partially offset by a reduction in the residential real estate portfolio.

For a more detailed discussion of the student loan sale, see CCB segment results on pages 20–24.

Noninterest expense

(in millions)	Three months ended June 30,			Six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Compensation expense	\$7,706	\$7,778	(1)%	\$15,907	\$15,438	3%
Noncompensation expense:						
Occupancy	912	899	1	1,873	1,782	5
Technology, communications and equipment	1,870	1,665	12	3,698	3,283	13
Professional and outside services	1,644	1,700	(3)	3,187	3,248	(2)
Marketing	756	672	13	1,469	1,375	7
Other expense ^{(a)(b)}	1,618	924	75	3,391	2,349	44
Total noncompensation expense	6,800	5,860	16	13,618	12,037	13
Total noninterest expense	\$14,506	\$13,638	6 %	\$29,525	\$27,475	7 %

Included Firmwide legal expense of \$61 million and \$(430) million for the three months ended June 30, 2017 and (a) 2016, respectively and \$279 million and \$(476) million for the six months ended June 30, 2017 and 2016, respectively.

Included FDIC-related expense of \$376 million and \$283 million for the three months ended June 30, 2017 and (b) 2016, respectively and \$757 million and \$552 million for the six months ended June 30, 2017 and 2016, respectively.

Quarterly results

Compensation expense decreased predominantly driven by lower performance-based compensation expense in CIB, partially offset by investments in headcount, including bankers and support staff in certain businesses.

Noncompensation expense increased as a result of:

the absence of a legal benefit recorded in the prior year in Corporate
higher depreciation expense from growth in auto operating lease volume in CCB
higher FDIC-related expense

- higher marketing expense in CCB,
and

contributions to the Firm's Foundation.

For a further discussion of legal expense, see Note 21.

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Year-to-date results

Compensation expense increased predominantly driven by investments in headcount, including bankers and support staff in certain businesses, as well as higher performance-based compensation expense particularly in AWM.

Noncompensation expense increased as a result of:

- higher legal expense driven by the combined impact of an increase in legal expense in AWM and a lower legal benefit in Corporate

- higher depreciation expense from growth in auto operating leased assets in CCB

- higher FDIC-related expense

- contributions to the Firm's Foundation, and

- higher marketing expense in CCB.

Income tax expense

(in millions)	Three months ended June 30,			Six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Income before income tax expense	\$9,749	\$9,340	4 %	\$18,090	\$16,918	7 %
Income tax expense	2,720	3,140	(13)	4,613	5,198	(11)
Effective tax rate	27.9 %	33.6 %		25.5 %	30.7 %	

Quarterly results

The effective tax rate decreased predominantly due to the release of a valuation allowance and the write-off of certain deferred tax liabilities, as well as due to the change in the mix of income and expenses subject to U.S. federal and state and local taxes.

Year-to-date results

The effective tax rate decreased predominantly due to larger tax benefits resulting from the vesting of employee-based stock awards and the release of a valuation allowance. The tax benefits resulting from employee-based stock awards were related to the appreciation of the Firm's stock price upon vesting of these awards above their original grant price.

CONSOLIDATED
BALANCE
SHEETS
ANALYSIS

Consolidated balance sheets overview

The following is a discussion of the significant changes between June 30, 2017, and December 31, 2016.

Selected Consolidated balance sheets data

(in millions)	Jun 30, 2017	Dec 31, 2016	Change
Assets			
Cash and due from banks	\$21,781	\$23,873	(9)%
Deposits with banks	427,380	365,762	17
Federal funds sold and securities purchased under resale agreements	218,570	229,967	(5)
Securities borrowed	90,654	96,409	(6)
Trading assets:			
Debt and equity instruments	350,558	308,052	14
Derivative receivables	56,506	64,078	(12)
Securities	263,458	289,059	(9)
Loans	908,767	894,765	2
Allowance for loan losses	(13,363)	(13,776)	(3)
Loans, net of allowance for loan losses	895,404	880,989	2
Accrued interest and accounts receivable	64,038	52,330	22
Premises and equipment	14,206	14,131	1
Goodwill	47,300	47,288	—
Mortgage servicing rights	5,753	6,096	(6)
Other intangible assets	827	862	(4)
Other assets	106,739	112,076	(5)
Total assets	\$2,563,174	\$2,490,972	3 %

Cash and due from banks and deposits with banks

The net increase was primarily driven by deposit growth and a shift in the deployment of excess cash from securities and securities purchased under resale agreements. The Firm's excess cash is placed with various central banks, predominantly Federal Reserve Banks.

Federal funds sold and securities purchased under resale agreements decreased primarily due to the shift in the deployment of excess cash to deposits with banks.

For additional information on the Firm's Liquidity Risk Management, see pages 67–71.

Trading assets and trading liabilities—debt and equity instruments increased predominantly related to client-driven market-making activities in CIB.

The increase in trading assets was driven by higher debt and equity instruments in Prime Services reflecting client demand and in Rates reflecting higher levels when compared to lower levels at year-end.

- The increase in trading liabilities was driven by higher levels of client-driven short positions in debt instruments, partially offset by reductions in equity instruments.

For additional information, refer to Note 2.

Trading assets and trading liabilities—derivative receivables and payables decreased predominantly related to client-driven market-making activities in CIB Markets, reflecting lower foreign exchange and interest rate derivative receivables and payables, driven by maturities and market movements.

For additional information, refer to Derivative contracts on pages 61–62, and Notes 2 and 4.

Securities decreased primarily due to sales of U.S. Treasuries and non-U.S. government securities.

Loans increased reflecting the following:

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higher wholesale loans predominantly driven by originations in CB and higher loans to Private Banking clients in AWM, partially offset by lower consumer loans as a result of the student loan portfolio sale, lower home equity loans, and the seasonal decline in credit card balances, predominantly offset by higher retention of originated high-quality prime mortgages in CCB and AWM.

The allowance for loan losses decreased reflecting the following:

- a net reduction in the wholesale allowance primarily driven by Oil & Gas, Natural Gas Pipelines and Metals & Mining

- the consumer allowance remained relatively flat, with the utilization of the allowance in connection with the transfer of the student loan portfolio to held-for-sale, and a reduction in the residential real estate portfolio driven by continued improvement in home prices and delinquencies, predominantly offset by additions to the credit card, business banking and auto portfolios, driven by loan growth as well as higher loss rates in credit card.

For detailed discussion of loans and the allowance for loan losses, refer to Credit Risk Management on pages 49–65, and Notes 2, 3, 11 and 12.

Accrued interest and accounts receivable increased reflecting higher client receivables related to client-driven market-making activities in CIB.

For information on Securities, see Notes 2 and 9; and MSRs, see Note 14.

Selected Consolidated balance sheets data (continued)

(in millions)	Jun 30, 2017	Dec 31, 2016	Change	
Liabilities				
Deposits	\$1,439,473	\$1,375,1795		%
Federal funds purchased and securities loaned or sold under repurchase agreements	165,621	165,666	—	
Commercial paper	22,207	11,738	89	
Other borrowed funds	30,936	22,705	36	
Trading liabilities:				
Debt and equity instruments	91,628	87,428	5	
Derivative payables	41,795	49,231	(15))
Accounts payable and other liabilities	189,160	190,543	(1))
Beneficial interests issued by consolidated variable interest entities (“VIEs”)	30,898	39,047	(21))
Long-term debt	292,973	295,245	(1))
Total liabilities	2,304,691	2,236,782	3	
Stockholders’ equity	258,483	254,190	2	
Total liabilities and stockholders’ equity	\$2,563,174	\$2,490,9723		%

Deposits increased due to the following:

higher wholesale deposits driven by growth in client activity in CIB’s Securities Services and Treasury Services businesses, partially offset by lower balances in AWM reflecting balance migration into the Firm’s investment-related products, and the impact of seasonality in both CB and AWM.

higher consumer deposits reflecting the continuation of strong growth from existing and new customers, and low attrition rates

For more information on deposits, refer to the Liquidity Risk Management discussion on pages 67–71; and Notes 2 and 15.

Federal funds purchased and securities loaned or sold under repurchase agreements were flat reflecting a change in the mix of funding to commercial paper and other borrowed funds offset by on-going client activity in CIB.

Commercial paper increased due to higher issuance in the wholesale market, reflecting a change in the mix of funding from securities sold under repurchase agreements for CIB Markets activities. For additional information, see Liquidity Risk Management on pages 67–71.

Other borrowed funds increased driven by a change in the mix of funding from securities sold under repurchase agreements in CIB.

Beneficial interests issued by consolidated VIEs decreased due to net maturities of credit card securitizations and the deconsolidation of the student loan securitization entities. For further information on Firm-sponsored VIEs and loan securitization trusts, see Off-Balance Sheet Arrangements on page 14 and Note 19; and for a more detailed discussion of the student loan sale, see CCB segment results on pages 20–24 and Note 23.

For information on the Firm’s long-term debt activities, see Liquidity Risk Management on pages 67–71; on changes in stockholders’ equity, see page 86, and on the Firm’s capital actions, see Capital actions on page 47.

CONSOLIDATED
CASH FLOWS
ANALYSIS

Consolidated cash flows overview

The following is a discussion of cash flow activities during the six months ended June 30, 2017 and 2016.

(in millions)	Six months ended	
	June 30, 2017	2016
Net cash provided by/(used in)		
Operating activities	\$(13,024)	\$(22,907)
Investing activities	(37,079)	(52,064)
Financing activities	47,911	74,159
Effect of exchange rate changes on cash	100	32
Net decrease in cash and due from banks	\$(2,092)	\$(780)

Operating activities

Cash used in operating activities for the period ending June 30, 2017 resulted from:

Client-driven market-making activities in CIB

- an increase in trading assets was primarily driven by higher debt and equity instruments in Prime Services reflecting client demand and in Rates reflecting higher levels when compared to lower levels at year-end

- an increase in accrued interest and accounts receivable due to higher client receivables

Other operating activity

- higher net originations and purchases of loans held-for-sale predominantly in CIB and CB.

Cash used in operating activities for the period ending June 30, 2016 resulted from:

Client-driven market-making activities in CIB

- an increase in accrued interest and accounts receivable driven by higher client receivables

- an increase in trading assets, which was predominantly offset by an increase in trading liabilities.

Investing activities

Cash used in investing activities during 2017 resulted from:

- an increase in deposits with banks, which were placed with various central banks, predominantly Federal Reserve Banks

- higher wholesale loans predominantly driven by originations in CB and higher loans to Private Banking

- clients in AWM, partially offset by lower consumer loans as a result of the student loan portfolio sale, lower home equity loans, and the seasonal decline in credit card balances, predominantly offset by higher retention of originated high-quality prime mortgages in CCB and AWM

Partially offsetting these cash outflows was a decrease in securities and securities purchased under resale agreements due to the shift in the deployment of excess

cash to deposits with banks.

Cash used in investing activities during 2016 resulted from:

- an increase in wholesale loans driven by strong originations of commercial and industrial loans and commercial real estate loans

- an increase in consumer loans reflecting the retention of originated high-quality prime mortgages and growth in auto loans

- a net increase in securities purchased under resale agreements due to a higher demand for securities to cover short positions related to client-driven market-making activities in CIB and the deployment of excess cash by Treasury and Chief Investment Office ("CIO").

For both periods, partially offsetting these cash outflows were net proceeds from paydowns, maturities, sales and purchases of investment securities.

Financing activities

Cash provided by financing activities in 2017 resulted from:

- higher wholesale deposits reflecting growth in client activity, partially offset by seasonal factors
- higher consumer deposits reflecting the continuation of strong growth from existing and new customers, and low attrition rates
- an increase in commercial paper due to higher issuance in the wholesale market, reflecting a change in the mix of funding from securities sold under repurchase agreements for CIB Markets activities
- an increase in other borrowed funds driven by a change in the mix of funding from securities sold under repurchase agreements in CIB

Partially offsetting these inflows were net payments of long-term borrowings.

Cash provided by financing activities in 2016 resulted from:

- an increase in consumer deposits reflecting the continued growth from new and existing customers, as well as the impact of low attrition rates
- higher wholesale deposits reflecting growth in client activity in Treasury Services
- an increase in securities loaned or sold under repurchase agreements due to higher secured financing of investment securities in Treasury and CIO, and higher client-driven market-making activities in CIB
- net proceeds from long-term borrowings.

For both periods, cash was used for repurchases of common stock and dividends on common and preferred stock.

For a further discussion of the activities affecting the Firm's cash flows, see Consolidated Balance Sheets Analysis on pages 11–12, Capital Risk Management on pages 42–48, and Liquidity Risk Management on pages 67–71 of this Form 10-Q, and pages 110–115 of JPMorgan Chase's 2016 Annual Report.

OFF-BALANCE
SHEET
ARRANGEMENTS

In the normal course of business, the Firm enters into various contractual obligations that may require future cash payments. Certain obligations are recognized on-balance sheet, while others are off-balance sheet under accounting principles generally accepted in the U.S. (“U.S. GAAP”). The Firm is involved with several types of off-balance sheet arrangements, including through nonconsolidated special-purpose entities (“SPEs”), which are a type of VIE, and through lending-related financial instruments (e.g., commitments and guarantees). For further discussion, see Note 19 of this Form 10-Q and Off-Balance Sheet Arrangements and Contractual Cash Obligations on pages 45–46 and Note 29 of JPMorgan Chase’s 2016 Annual Report.

Special-purpose entities

The most common type of VIE is an SPE. SPEs are commonly used in securitization transactions in order to isolate certain assets and distribute the cash flows from those assets to investors. SPEs are an important part of the financial markets, including the mortgage- and asset-backed securities and commercial paper markets, as they provide market liquidity by facilitating investors’ access to specific portfolios of assets and risks. The Firm holds capital, as deemed appropriate, against all SPE-related transactions and related exposures, such as derivative transactions and lending-related commitments and guarantees. For further information on the types of SPEs, see Note 13 of this Form 10-Q, and Note 1 and Note 16 of JPMorgan Chase’s 2016 Annual Report.

Implications of a credit rating downgrade to JPMorgan Chase Bank, N.A.

For certain liquidity commitments to SPEs, JPMorgan Chase Bank, N.A. could be required to provide funding if its short-term credit rating were downgraded below specific levels, primarily “P-1”, “A-1” and “F1” for Moody’s Investors Service (“Moody’s”), Standard & Poor’s and Fitch, respectively. These liquidity commitments support the issuance of asset-backed commercial paper by Firm-administered consolidated SPEs. In the event of a short-term credit rating downgrade, JPMorgan Chase Bank, N.A., absent other solutions, would be required to provide funding to the SPE if the commercial paper could not be reissued as it matured. The aggregate amounts of commercial paper outstanding held by third parties as of June 30, 2017, and December 31, 2016, was \$2.9 billion and \$2.7 billion, respectively. The aggregate amounts of commercial paper issued by these SPEs could increase in future periods should clients of the Firm-administered consolidated SPEs draw down on certain unfunded lending-related commitments. These unfunded lending-related commitments were \$8.2 billion and \$7.4 billion at June 30, 2017, and December 31, 2016, respectively. The Firm could facilitate the refinancing of some of the clients’ assets in order to reduce the funding obligation. For further

information, see the discussion of Firm-administered multiseller conduits in Note 13.

The Firm also acts as liquidity provider for certain municipal bond vehicles. The Firm’s obligation to perform as liquidity provider is conditional and is limited by certain termination events, which include bankruptcy or failure to pay by the municipal bond issuer and any credit enhancement provider, an event of taxability on the municipal bonds or the immediate downgrade of the municipal bond to below investment grade. See Note 13 for additional information.

Off-balance sheet lending-related financial instruments, guarantees, and other commitments

JPMorgan Chase provides lending-related financial instruments (e.g., commitments and guarantees) to meet the financing needs of its customers. The contractual amount of these financial instruments represents the maximum possible credit risk to the Firm should the counterparty draw upon the commitment or the Firm be required to fulfill its obligation under the guarantee, and should the counterparty subsequently fail to perform according to the terms of the contract. Most of these commitments and guarantees are refinanced, extended, cancelled, or expire without being drawn upon or a default occurring. As a result, the total contractual amount of these instruments is not, in the Firm’s view, representative of its expected future credit exposure or funding requirements. For further discussion of lending-related financial instruments, guarantees and other commitments, and the Firm’s accounting for them, see Lending-related commitments on page 61 and Note 19. For a discussion of liabilities associated with loan sales and securitization-related indemnifications, see Note 19.

EXPLANATION AND RECONCILIATION OF THE FIRM'S USE OF NON-GAAP FINANCIAL MEASURES AND KEY PERFORMANCE MEASURES

Non-GAAP financial measures

The Firm prepares its Consolidated Financial Statements using U.S. GAAP; these financial statements appear on pages 83–87. That presentation, which is referred to as “reported” basis, provides the reader with an understanding of the Firm’s results that can be tracked consistently from year-to-year and enables a comparison of the Firm’s performance with other companies’ U.S. GAAP financial statements.

In addition to analyzing the Firm’s results on a reported basis, management reviews Firmwide results, including the overhead ratio, on a “managed” basis; these Firmwide managed basis results are considered non-GAAP financial measures. The Firm also reviews the results of the lines of business on a managed basis. The Firm’s definition of managed basis starts, in each case, with the reported U.S. GAAP results and includes certain reclassifications to present total net revenue for the Firm (and each of the reportable business segments) on a FTE basis. Accordingly, revenue from investments that receive tax credits and tax-exempt securities is presented in the managed results on a basis comparable to taxable investments and securities. These financial measures allow management to assess the comparability of revenue from year-to-year arising from

both taxable and tax-exempt sources. The corresponding income tax impact related to tax-exempt items is recorded within income tax expense. These adjustments have no impact on net income as reported by the Firm as a whole or by the lines of business.

Management also uses certain non-GAAP financial measures at the Firm and business-segment level, because these other non-GAAP financial measures provide information to investors about the underlying operational performance and trends of the Firm or of the particular business segment, as the case may be, and, therefore, facilitate a comparison of the Firm or the business segment with the performance of its relevant competitors. For additional information on these non-GAAP measures, see Business Segment Results on pages 18–40.

Additionally, certain credit metrics and ratios disclosed by the Firm exclude PCI loans, and are therefore non-GAAP measures. For additional information on these non-GAAP measures, see Credit Risk Management on pages 49–65.

Non-GAAP financial measures used by the Firm may not be comparable to similarly named non-GAAP financial measures used by other companies.

The following summary table provides a reconciliation from the Firm’s reported U.S. GAAP results to managed basis.

(in millions, except ratios)	Three months ended June 30, 2017			2016		
	Reported results	Fully taxable-equivalent adjustments ^(a)	Managed basis	Reported results	Fully taxable-equivalent adjustments ^(a)	Managed basis
Other income	\$ 1,472	\$ 596	\$ 2,068	\$ 1,261	\$ 529	\$ 1,790
Total noninterest revenue	13,262	596	13,858	13,033	529	13,562
Net interest income	12,208	339	12,547	11,347	305	11,652
Total net revenue	25,470	935	26,405	24,380	834	25,214
Pre-provision profit	10,964	935	11,899	10,742	834	11,576
Income before income tax expense	9,749	935	10,684	9,340	834	10,174
Income tax expense	\$ 2,720	\$ 935	\$ 3,655	\$ 3,140	\$ 834	\$ 3,974
Overhead ratio	57 %	NM	55 %	56 %	NM	54 %

(in millions, except ratios)	Six months ended June 30, 2017			2016		
	Reported results	Fully taxable-equivalent adjustments ^(a)	Managed basis	Reported results	Fully taxable-equivalent adjustments ^(a)	Managed basis
Other income	\$ 2,242	\$ 1,178	\$ 3,420	\$ 2,062	\$ 1,080	\$ 3,142
Total noninterest revenue	25,873	1,178	27,051	24,892	1,080	25,972

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Net interest income	24,272	668	24,940	22,727	598	23,325
Total net revenue	50,145	1,846	51,991	47,619	1,678	49,297
Pre-provision profit	20,620	1,846	22,466	20,144	1,678	21,822
Income before income tax expense	18,090	1,846	19,936	16,918	1,678	18,596
Income tax expense	\$4,613	\$ 1,846	\$6,459	\$5,198	\$ 1,678	\$6,876
Overhead ratio	59	% NM	57	% 58	% NM	56 %

(a) Predominantly recognized in CIB and CB business segments and Corporate.

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Net interest income excluding CIB's Markets businesses

In addition to reviewing net interest income on a managed basis, management also reviews net interest income excluding net interest income arising from CIB's Markets businesses to assess the performance of the Firm's lending, investing (including asset-liability management) and deposit-raising activities. This net interest income is referred to as non-markets related net interest income. CIB's Markets businesses represent both Fixed Income Markets and Equity Markets. Management believes that disclosure of non-markets related net interest income

provides investors and analysts with another measure by which to analyze the non-markets-related business trends of the Firm and provides a comparable measure to other financial institutions that are primarily focused on lending, investing and deposit-raising activities.

The data presented below are non-GAAP financial measures due to the exclusion of markets related net interest income arising from CIB.

(in millions, except rates)	Three months ended June 30,			Six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Net interest income – managed basis ^{(a)(b)}	\$12,547	\$11,652	8 %	\$24,940	\$23,325	7 %
Less: CIB Markets net interest income ^(c)	1,075	1,579	(32)	2,439	3,078	(21)
Net interest income excluding CIB Markets ^(a)	\$11,472	\$10,073	14	\$22,501	\$20,247	11
Average interest-earning assets	\$2,177,109	\$2,079,525	5	\$2,169,055	\$2,061,754	5
Less: Average CIB Markets interest-earning assets ^(c)	537,263	522,321	3	530,051	519,054	2
Average interest-earning assets excluding CIB Markets	\$1,639,846	\$1,557,204	5 %	\$1,639,004	\$1,542,700	6 %
Net interest yield on average interest-earning assets – managed basis	2.31%	2.25 %		2.32 %	2.28 %	
Net interest yield on average CIB Markets interest-earning assets ^(c)	0.80	1.22		0.93	1.19	
Net interest yield on average interest-earning assets excluding CIB Markets	2.81%	2.60 %		2.77 %	2.64 %	

(a) Interest includes the effect of related hedges. Taxable-equivalent amounts are used where applicable.

(b) For a reconciliation of net interest income on a reported and managed basis, see reconciliation from the Firm's reported U.S. GAAP results to managed basis on page 15.

(c) The prior period amounts were revised to align with CIB's Markets businesses. For further information on CIB's Markets businesses, see page 29.

Tangible common equity, ROTCE and TBVPS

Tangible common equity (“TCE”), ROTCE and TBVPS are each non-GAAP financial measures. TCE represents the Firm’s common stockholders’ equity (i.e., total stockholders’ equity less preferred stock) less goodwill and identifiable intangible assets (other than MSRs), net of related deferred tax liabilities. ROTCE measures the Firm’s net income

applicable to common equity as a percentage of average TCE. TBVPS represents the Firm’s TCE at period-end divided by common shares at period-end. TCE, ROTCE, and TBVPS are utilized by the Firm, as well as investors and analysts, in assessing the Firm’s use of equity.

The following summary table provides a reconciliation from the Firm’s common stockholders’ equity to TCE.

(in millions, except per share and ratio data)	Period-end		Average				
	Jun 30,	Dec 31,	Three months ended		Six months ended		
	2017	2016	June 30,	June 30,	June 30,	June 30,	
	2017	2016	2017	2016	2017	2016	
Common stockholders’ equity	\$232,415	\$228,122	\$230,200	\$224,429	\$228,959	\$222,995	
Less: Goodwill	47,300	47,288	47,290	47,309	47,292	47,320	
Less: Certain identifiable intangible assets	827	862	838	928	845	957	
Add: Deferred tax liabilities ^(a)	3,252	3,230	3,239	3,213	3,234	3,195	
Tangible common equity	\$187,540	\$183,202	\$185,311	\$179,405	\$184,056	\$177,913	
Return on tangible common equity	NA	NA	14	% 13	% 14	% 12	%
Tangible book value per share	\$53.29	\$51.44	NA	NA	NA	NA	

(a) Represents deferred tax liabilities related to tax-deductible goodwill and to identifiable intangibles created in nontaxable transactions, which are netted against goodwill and other intangibles when calculating TCE.

Key performance measures

The Firm considers the following to be key regulatory capital measures:

Capital, risk-weighted assets (“RWA”), and capital and leverage ratios presented under Basel III Standardized and Advanced Fully Phased-In rules and

SLR calculated under Basel III Advanced Fully Phased-In rules.

The Firm, as well as banking regulators, investors and analysts use these measures to assess the Firm’s regulatory capital position and to compare the Firm’s regulatory capital to that of other financial services companies.

For additional information on these measures, see Capital Risk Management on pages 42–48.

Core loans are also considered a key performance measure. Core loans represent loans considered central to the Firm’s ongoing businesses; and exclude loans classified as trading assets, runoff portfolios, discontinued portfolios and portfolios the Firm has an intent to exit. Core loans is a measure utilized by the Firm and its investors and analysts in assessing actual growth in the loan portfolio.

BUSINESS
SEGMENT
RESULTS

The Firm is managed on a line of business basis. There are four major reportable business segments – Consumer & Community Banking, Corporate & Investment Bank, Commercial Banking and Asset & Wealth Management. In addition, there is a Corporate segment.

The business segments are determined based on the products and services provided, or the type of customer served, and they reflect the manner in which financial information is currently evaluated by management. Results of these lines of business are presented on a managed basis. For a definition of managed basis, see Explanation and Reconciliation of the Firm’s use of Non-GAAP Financial Measures and Key Performance Measures on pages 15–17. Description of business segment reporting methodology

Results of the business segments are intended to reflect each segment as if it were a stand-alone business. The management reporting process that derives business segment results allocates income and expense using market-based methodologies. For further information about line of business capital, see Line of business equity on page 46.

The Firm periodically assesses the assumptions, methodologies and reporting classifications used for segment reporting, and further refinements may be implemented in future periods.

Business segment capital allocation changes

The amount of capital assigned to each business is referred to as equity. On at least an annual basis, the Firm assesses the level of capital required for each line of business as well as the assumptions and methodologies used to allocate capital. Through the end of 2016, capital was allocated to the lines of business based on a single measure, Basel III Advanced Fully Phased-In RWA. Effective January 1, 2017, the Firm’s methodology used to allocate capital to the business segments was updated. Under the new methodology, capital is no longer allocated to each line of business for goodwill and other intangibles associated with acquisitions effected by the line of business. In addition, the new methodology incorporates Basel III Standardized Fully Phased-In RWA (as well as Basel III Advanced Fully Phased-In RWA), leverage, the global systemically important banks (“GSIB”) surcharge, and a simulation of capital in a severe stress environment. The methodology will continue to be weighted towards Basel III Advanced Fully Phased-In RWA because the Firm believes it to be the best proxy for economic risk.

For a further discussion of those methodologies, see Business Segment Results – Description of business segment reporting methodology on pages 51–52 of JPMorgan Chase’s 2016 Annual Report.

The following discussions of the business segment results are based on a comparison of the three and six months ended June 30, 2017 versus the corresponding period in the prior year, unless otherwise specified.

Segment results – managed basis

The following tables summarize the business segment results for the periods indicated.

Three months ended June 30, (in millions)	Total net revenue			Total noninterest expense			Pre-provision profit/(loss)		
	2017	2016	Change	2017	2016	Change	2017	2016	Change
Consumer & Community Banking	\$11,412	\$11,451	—	\$6,500	\$6,004	8%	\$4,912	\$5,447	(10)%
Corporate & Investment Bank	8,889	9,165	(3)	4,841	5,078	(5)	4,048	4,087	(1)
Commercial Banking	2,088	1,817	15	790	731	8	1,298	1,086	20
Asset & Wealth Management	3,212	2,939	9	2,192	2,098	4	1,020	841	21
Corporate	804	(158)	)NM	183	(273)	)NM	621	115	440
Total	\$26,405	\$25,214	5%	\$14,506	\$13,638	6%	\$11,899	\$11,576	3%

Three months ended June 30, (in millions, except ratios)	Provision for credit losses			Net income/(loss)			Return on equity		
	2017	2016	Change	2017	2016	Change	2017	2016	
Consumer & Community Banking	\$1,394	\$1,201	16	\$2,223	\$2,656	(16)%	17	%20	%
Corporate & Investment Bank	(53)	)235	NM	2,710	2,493	9	15	15	
Commercial Banking	(130)	)25	)420	902	696	30	17	16	
Asset & Wealth Management	4	(8)	)NM	624	521	20	27	22	
Corporate	—	(1)	)100%	570	(166)	)NM	NM	NM	
Total	\$1,215	\$1,402	(13)%	\$7,029	\$6,200	13%	12%	10	%

Six months ended June 30, (in millions)	Total net revenue			Total noninterest expense			Pre-provision profit/(loss)		
	2017	2016	Change	2017	2016	Change	2017	2016	Change
Consumer & Community Banking	\$22,382	\$22,568	(1)%	\$12,895	\$12,092	7%	\$9,487	\$10,476	(9)%
Corporate & Investment Bank	18,425	17,300	7	9,962	9,886	1	8,463	7,414	14
Commercial Banking	4,106	3,620	13	1,615	1,444	12	2,491	2,176	14
Asset & Wealth Management	6,299	5,911	7	4,772	4,173	14	1,527	1,738	(12)
Corporate	779	(102)	)NM	281	(120)	)NM	498	18	NM
Total	\$51,991	\$49,297	5%	\$29,525	\$27,475	7%	\$22,466	\$21,822	3%

Six months ended June 30, (in millions, except ratios)	Provision for credit losses			Net income/(loss)			Return on equity		
	2017	2016	Change	2017	2016	Change	2017	2016	
Consumer & Community Banking	\$2,824	\$2,251	25%	\$4,211	\$5,146	(18)%	16	%19	%
Corporate & Investment Bank	(149)	)694	NM	5,951	4,472	33	16	13	
Commercial Banking	(167)	)279	NM	1,701	1,192	43	16	14	
Asset & Wealth Management	22	5	340	1,009	1,108	(9)	)22	24	
Corporate	—	(3)	)100	605	(198)	)NM	NM	NM	
Total	\$2,530	\$3,226	(22)%	\$13,477	\$11,720	15%	11%	10	%

CONSUMER &
COMMUNITY
BANKING

For a discussion of the business profile of CCB, see pages 53–57 of JPMorgan Chase’s 2016 Annual Report and Line of Business Metrics on page 173.

Selected income statement data

(in millions, except ratios)	Three months ended June 30,			Six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Revenue						
Lending- and deposit-related fees	\$850	\$780	9 %	\$1,662	\$1,549	7 %
Asset management, administration and commissions	562	535	5	1,101	1,065	3
Mortgage fees and related income	401	689	(42)	807	1,356	(40)
Card income	1,061	1,253	(15)	1,878	2,444	(23)
All other income	810	881	(8)	1,553	1,530	2
Noninterest revenue	3,684	4,138	(11)	7,001	7,944	(12)
Net interest income	7,728	7,313	6	15,381	14,624	5
Total net revenue	11,412	11,451	—	22,382	22,568	(1)
Provision for credit losses	1,394	1,201	16	2,824	2,251	25
Noninterest expense						
Compensation expense	2,511	2,420	4	5,044	4,802	5
Noncompensation expense ^(a)	3,989	3,584	11	7,851	7,290	8
Total noninterest expense	6,500	6,004	8	12,895	12,092	7
Income before income tax expense	3,518	4,246	(17)	6,663	8,225	(19)
Income tax expense	1,295	1,590	(19)	2,452	3,079	(20)
Net income	\$2,223	\$2,656	(16)	\$4,211	\$5,146	(18)
Revenue by line of business						
Consumer & Business Banking	\$5,233	\$4,616	13	\$10,139	\$9,166	11
Mortgage Banking	1,426	1,921	(26)	2,955	3,797	(22)
Card, Commerce Solutions & Auto	4,753	4,914	(3)	9,288	9,605	(3)
Mortgage fees and related income details:						
Net production revenue	152	261	(42)	293	423	(31)
Net mortgage servicing revenue ^(b)	249	428	(42)	514	933	(45)
Mortgage fees and related income	\$401	\$689	(42)%	\$807	\$1,356	(40)%
Financial ratios						
Return on equity	17	% 20	%	16	% 19	%
Overhead ratio	57	52		58	54	

Note: In the discussion and the tables which follow, CCB presents certain financial measures which exclude the impact of PCI loans; these are non-GAAP financial measures.

Included operating lease depreciation expense of \$638 million and \$460 million for the three months ended June (a) 30, 2017 and 2016, respectively, and \$1.2 billion and \$892 million for the six months ended June 30, 2017 and 2016, respectively.

Included MSR risk management of \$(57) million and \$73 million for the three months ended June 30, 2017 and (b) 2016, respectively, and \$(109) million and \$202 million for the six months ended June 30, 2017 and 2016, respectively.

Quarterly results

Net income was \$2.2 billion, a decrease of 16%, driven by higher noninterest expense and provision for credit losses. Net revenue was \$11.4 billion, flat compared to prior year.

Net interest income was \$7.7 billion, up 6%, driven by higher deposit balances, deposit margin expansion and higher loan balances in Card, partially offset by the impact of higher rates resulting in higher funding costs and an adjustment for capitalized interest on modified loans, both in Mortgage Banking.

Noninterest revenue was \$3.7 billion, down 11%, driven by higher new account origination costs in Card, the absence of a gain on the sale of Visa Europe interests in the current year, lower MSR risk management results and net production revenue reflecting lower mortgage production margins. These factors were largely offset by higher auto lease volume, higher card- and deposit-related fees and the absence of fair-value losses on the investment in Square, Inc. in the current year. See Note 14 for further information regarding changes in value of the MSR asset and related hedges, and mortgage fees and related income.

Noninterest expense was \$6.5 billion, an increase of 8%, driven by higher auto lease depreciation, continued business growth and investments in marketing.

The provision for credit losses was \$1.4 billion, an increase of 16% from the prior year. The increase in the provision was driven by \$118 million of higher net charge-offs, predominantly in the credit card portfolio, and a \$75 million higher addition to the allowance for credit losses when compared to the prior year.

Current quarter results included:

- a \$350 million addition to the allowance for credit losses in the credit card portfolio, due to loan growth and higher loss rates, compared to a \$250 million addition in the prior year;

- a \$50 million addition to the allowance for credit losses in the business banking portfolio; and

- a \$25 million addition to the allowance for credit losses in the auto portfolio, compared to a \$50 million addition in the prior year;

the additions were partially offset by

- a \$175 million reduction in the allowance for credit losses in the residential real estate portfolio, reflecting continued improvement in home prices and delinquencies, compared to a \$100 million reduction in the prior year.

The Firm transferred the student loan portfolio to held-for-sale in the first quarter of 2017. The Firm sold substantially all of the portfolio in the second quarter of 2017, and such sale did not have a material impact on the Firm's

Consolidated Financial Statements.

Year-to-date results

Net income was \$4.2 billion, a decrease of 18%, driven by higher noninterest expense and provision for credit losses.

Net revenue was \$22.4 billion, a decrease of 1%.

Net interest income was \$15.4 billion, up 5%, driven by higher deposit balances, higher loan balances in Card and deposit margin expansion, partially offset by the impact of higher rates resulting in higher funding costs and an adjustment for capitalized interest on modified loans, both in Mortgage Banking.

Noninterest revenue was \$7.0 billion, down 12%, driven by higher new account origination costs in Card, the absence of a gain on the sale of Visa Europe interests in the current year and lower MSR risk management results, partially offset by higher auto lease volume and higher card- and deposit-related fees.

Noninterest expense was \$12.9 billion, an increase of 7%, driven by higher auto lease depreciation, continued business growth and investments in marketing.

The provision for credit losses was \$2.8 billion, an increase of 25% from the prior year, driven by \$280 million higher net charge-offs, predominantly in the credit card portfolio, and a \$75 million higher addition to the allowance for credit losses when compared to the prior year, (both drivers exclude the impact of the student loan portfolio transfer).

Current year results included:

- a \$350 million addition to the allowance for credit losses in the credit card portfolio, due to loan growth and higher loss rates, compared to a \$250 million addition in the prior year;

- a \$50 million addition to the allowance for credit losses in the business banking portfolio; and

a \$25 million addition to the allowance for credit losses in the auto portfolio, compared to a \$50 million addition in the prior year;

the additions were partially offset by

a \$175 million reduction in the allowance for credit losses in the residential real estate portfolio, reflecting continued improvement in home prices and delinquencies, compared to a \$100 million reduction in the prior year.

In addition, there was an increase to the provision related to the first quarter transfer of the student loan portfolio to held-for-sale, resulting in a write-down of the portfolio to the estimated fair value at the time of transfer. This write-down was recognized predominantly as a \$467 million charge-off, resulting in a \$218 million increase in the provision for credit losses after utilization of the allowance for loan losses of \$249 million.

Selected metrics

(in millions, except headcount)	As of or for the three months ended June 30,			As of or for the six months ended June 30,			
	2017	2016	Change	2017	2016	Change	
Selected balance sheet data (period-end)							
Total assets	\$529,859	\$519,187	2	% \$529,859	\$519,187	2	%
Loans:							
Consumer & Business Banking	25,044	23,588	6	25,044	23,588	6	
Home equity	46,330	54,569	(15)	) 46,330	54,569	(15))
Residential mortgage	189,661	178,670	6	189,661	178,670	6	
Mortgage Banking	235,991	233,239	1	235,991	233,239	1	
Card	140,141	131,591	6	140,141	131,591	6	
Auto	65,627	64,056	2	65,627	64,056	2	
Student	75	7,614	(99)	) 75	7,614	(99))
Total loans	466,878	460,088	1	466,878	460,088	1	
Core loans	393,639	364,007	8	393,639	364,007	8	
Deposits	648,369	586,074	11	648,369	586,074	11	
Equity	51,000	51,000	—	51,000	51,000	—	
Selected balance sheet data (average)							
Total assets	\$528,598	\$512,434	3	\$530,338	\$507,833	4	
Loans:							
Consumer & Business Banking	24,725	23,223	6	24,543	22,998	7	
Home equity	47,339	55,615	(15)	) 48,303	56,666	(15))
Residential mortgage	187,201	175,753	7	185,489	172,224	8	
Mortgage Banking	234,540	231,368	1	233,792	228,890	2	
Card	138,132	128,396	8	137,674	127,848	8	
Auto	65,474	63,661	3	65,395	62,456	5	
Student	4,642	7,757	(40)	) 5,772	7,896	(27))
Total loans	467,513	454,405	3	467,176	450,088	4	
Core loans	387,783	356,380	9	384,419	350,042	10	
Deposits	639,873	583,115	10	631,441	572,699	10	
Equity	51,000	51,000	—	51,000	51,000	—	
Headcount	135,453	131,815	3%	135,453	131,815	3	%

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Selected metrics

(in millions, except ratio data)	As of or for the three months ended June 30,			As of or for the six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Credit data and quality statistics						
Nonaccrual loans ^{(a)(b)}	\$4,124	\$4,980	(17)%	\$4,124	\$4,980	(17)%
Net charge-offs/(recoveries) ^(c)						
Consumer & Business Banking	56	53	6	113	109	4
Home equity	7	35	(80)	54	94	(43)
Residential mortgage	(4)	3	NM	(1)	4	NM
Mortgage Banking	3	38	(92)	53	98	(46)
Card	1,037	860	21	2,030	1,690	20
Auto	48	46	4	129	113	14
Student	—	29	NM	498	^(h) 66	NM
Total net charge-offs/(recoveries)	\$1,144	\$1,026	12	\$2,823	^(h) \$2,076	36
Net charge-off/(recovery) rate ^(c)						
Consumer & Business Banking	0.91	% 0.92	%	0.93	% 0.95	%
Home equity ^(d)	0.08	0.34		0.30	0.45	
Residential mortgage ^(d)	(0.01)	0.01		—	0.01	
Mortgage Banking ^(d)	0.01	0.08		0.05	0.10	
Card	3.01	2.70		2.98	2.66	
Auto	0.29	0.29		0.40	0.36	
Student	—	1.50		NM	1.68	
Total net charge-off/(recovery) rate ^(d)	1.07	0.99		1.32	^(h) 1.02	
30+ day delinquency rate						
Mortgage Banking ^{(e)(f)}	1.02	% 1.33	%	1.02	% 1.33	%
Card	1.59	1.40		1.59	1.40	
Auto	0.88	1.16		0.88	1.16	
Student ^(g)	—	1.43		—	1.43	
90+ day delinquency rate — Card	0.80	0.70		0.80	0.70	
Allowance for loan losses						
Consumer & Business Banking	\$796	\$703	13	\$796	\$703	13
Mortgage Banking, excluding PCI loans	1,153	1,488	(23)	1,153	1,488	(23)
Mortgage Banking — PCI loans	2,265	2,654	(15)	2,265	2,654	(15)
Card	4,384	3,684	19	4,384	3,684	19
Auto	499	449	11	499	449	11
Student	—	274	NM	—	274	NM
Total allowance for loan losses ^(c)	\$9,097	\$9,252	(2)%	\$9,097	\$9,252	(2)%

(a) Excludes PCI loans. The Firm is recognizing interest income on each pool of PCI loans as they are all performing.

At June 30, 2017 and 2016, nonaccrual loans excluded loans 90 or more days past due as follows: (1) mortgage loans insured by U.S. government agencies of \$4.1 billion and \$5.2 billion, respectively; and (2) student loans insured by U.S. government agencies under the Federal Family Education Loan Program (“FFELP”) of \$24 million and \$252 million, respectively. These amounts have been excluded based upon the government guarantee.

(c)

Net charge-offs/(recoveries) and the net charge-off/(recovery) rates for the three months ended June 30, 2017 and 2016, excluded \$22 million and \$41 million, respectively, and for six months ended June 30, 2017 and 2016, excluded \$46 million and \$88 million, respectively, of write-offs in the PCI portfolio. These write-offs decreased the allowance for loan losses for PCI loans. For further information on PCI write-offs, see summary of changes in the allowances on page 64.

Excludes the impact of PCI loans. For the three months ended June 30, 2017 and 2016, the net charge-off/(recovery) rates including the impact of PCI loans were as follows: (1) home equity of 0.06% and 0.25%, respectively; (2) residential mortgage of (0.01)% and 0.01%, respectively; (3) Mortgage Banking of 0.01% and 0.07%, respectively; and (4) total CCB of 0.99% and 0.91%, respectively. For the six months ended June 30, 2017 and 2016, the net charge-off/(recovery) rates including the impact of PCI loans were as follows: (1) home equity of 0.23% and 0.33%, respectively; (2) residential mortgage of -% for both periods; (3) Mortgage Banking of 0.05% and 0.09%, respectively; and (4) total CCB of 1.23% and 0.93%, respectively.

(e) At June 30, 2017 and 2016, excluded mortgage loans insured by U.S. government agencies of \$6.0 billion and \$7.2 billion, respectively, that are 30 or more days past due. These amounts have been excluded based upon the government guarantee.

(f) Excludes PCI loans. The 30+ day delinquency rate for PCI loans was 9.06% and 10.09% at June 30, 2017 and 2016, respectively.

(g) Excluded student loans insured by U.S. government agencies under FFELP of \$458 million at June 30, 2016, that are 30 or more days past due. This amount has been excluded based upon the government guarantee.

(h) Excluding net charge-offs of \$467 million related to the student loan portfolio transfer in the first quarter of 2017, the total net charge-off rate for the six months ended June 30, 2017 would have been 1.10%.

Selected metrics

(in billions, except ratios and where otherwise noted)	As of or for the three months ended June 30,			As of or for the six months ended June 30,				
	2017	2016	Change	2017	2016	Change		
Business Metrics								
CCB households (in millions)	60.7	59.2	3	% 60.7	59.2	3	%	
Number of branches	5,217	5,366	(3))	5,217	5,366	(3))
Active digital customers (in thousands) ^(a)	45,876	42,833	7		45,876	42,833	7	
Active mobile customers (in thousands) ^(b)	28,386	24,817	14		28,386	24,817	14	
Debit and credit card sales volume	\$230.1	\$204.6	12		\$438.5	\$391.8	12	
Consumer & Business Banking								
Average deposits	\$625.4	\$567.4	10		\$617.3	\$557.9	11	
Deposit margin	1.96	% 1.80	%		1.92	% 1.83	%	
Business banking origination volume	\$2.2	\$2.2	—		\$3.9	\$3.9	1	
Client investment assets	253.0	224.7	13		253.0	224.7	13	
Mortgage Banking								
Mortgage origination volume by channel								
Retail	\$9.7	\$11.2	(13))	\$18.7	\$19.9	(6))
Correspondent	14.2	13.8	3		27.6	27.5	—	
Total mortgage origination volume ^(c)	\$23.9	\$25.0	(4))	\$46.3	\$47.4	(2))
Total loans serviced (period-end)	\$827.8	\$880.3	(6))	\$827.8	\$880.3	(6))
Third-party mortgage loans serviced (period-end)	568.0	629.9	(10))	568.0	629.9	(10))
MSR carrying value (period-end)	5.8	5.1	14		5.8	5.1	14	
Ratio of MSR carrying value (period-end) to third-party mortgage loans serviced (period-end)	1.02	% 0.81	%		1.02	% 0.81	%	
MSR revenue multiple ^(d)	2.91	x 2.31	x		2.91	x 2.31	x	
Card, excluding Commercial Card								
Credit card sales volume	\$156.8	\$136.0	15		\$296.5	\$257.7	15	
New accounts opened (in millions)	2.1	2.7	(22))	4.6	5.0	(8))
Card Services								
Net revenue rate	10.53	% 12.28	%		10.34	% 12.04	%	
Commerce Solutions								
Merchant processing volume	\$294.4	\$263.8	12		\$568.7	\$511.3	11	
Auto								
Loan and lease origination volume	\$8.3	\$8.5	(2))	\$16.3	\$18.1	(10))
Average Auto operating lease assets	14.7	10.4	41%		14.2	10.0	42%	

(a)Users of all web and/or mobile platforms who have logged in within the past 90 days.

(b)Users of all mobile platforms who have logged in within the past 90 days.

(c)

Firmwide mortgage origination volume was \$26.2 billion and \$28.6 billion for the three months ended June 30, 2017 and 2016, respectively, and \$51.8 billion and \$53.0 billion for the six months ended June 30, 2017 and 2016, respectively.

- (d) Represents the ratio of MSR carrying value (period-end) to third-party mortgage loans serviced (period-end) divided by the ratio of annualized loan servicing-related revenue to third-party mortgage loans serviced (average).

CORPORATE
&
INVESTMENT
BANK

For a discussion of the business profile of CIB, see pages 58–62 of JPMorgan Chase’s 2016 Annual Report and Line of Business Metrics on page 173.

Selected income statement data

(in millions, except ratios)	Three months ended June 30,			Six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Revenue						
Investment banking fees	\$1,803	\$1,636	10 %	\$3,615	\$2,957	22 %
Principal transactions	2,928	2,965	(1)	6,435	5,435	18
Lending- and deposit-related fees	387	385	1	775	779	(1)
Asset management, administration and commissions	1,068	1,025	4	2,120	2,094	1
All other income	258	464	(44)	435	744	(42)
Noninterest revenue	6,444	6,475	—	13,380	12,009	11
Net interest income	2,445	2,690	(9)	5,045	5,291	(5)
Total net revenue ^(a)	8,889	9,165	(3)	18,425	17,300	7
Provision for credit losses	(53)	235	NM	(149)	694	NM
Noninterest expense						
Compensation expense	2,451	2,737	(10)	5,251	5,337	(2)
Noncompensation expense	2,390	2,341	2	4,711	4,549	4
Total noninterest expense	4,841	5,078	(5)	9,962	9,886	1
Income before income tax expense	4,101	3,852	6	8,612	6,720	28
Income tax expense	1,391	1,359	2	2,661	2,248	18
Net income	\$2,710	\$2,493	9%	\$5,951	\$4,472	33 %
Financial ratios						
Return on equity	15 %	15 %		16 %	13 %	
Overhead ratio	54	55		54	57	
Compensation to revenue ratio	28	30		28	31	

Included tax-equivalent adjustments, predominantly due to income tax credits related to alternative energy investments; income tax credits and amortization of the cost of investments in affordable housing projects; and (a) tax-exempt income from municipal bonds of \$554 million and \$476 million for the three months ended June 30, 2017 and 2016, respectively, and \$1.1 billion and \$974 million for the six months ended June 30, 2017 and 2016, respectively.

Selected income statement data

(in millions)	Three months ended June 30,			Six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Revenue by business						
Investment Banking	\$1,695	\$1,492	14%	\$3,346	\$2,723	23 %
Treasury Services	1,055	892	18	2,036	1,776	15
Lending	373	277	35	762	579	32
Total Banking	3,123	2,661	17	6,144	5,078	21
Fixed Income Markets	3,216	3,959	(19)	7,431	7,556	(2)
Equity Markets	1,586	1,600	(1)	3,192	3,176	1
Securities Services	982	907	8	1,898	1,788	6

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Credit Adjustments & Other ^(a)	(18)	38	NM	(240)	(298)	19
Total Markets & Investor Services	5,766	6,504	(11)	12,281	12,222	—
Total net revenue	\$8,889	\$9,165	(3)%	\$18,425	\$17,300	7%

Consists primarily of credit valuation adjustments (“CVA”) managed centrally within CIB, funding valuation adjustments (“FVA”) and debit valuation adjustments (“DVA”) on derivatives. Results are primarily reported in (a) principal transactions revenue. Results are presented net of associated hedging activities and net of CVA and FVA amounts allocated to Fixed Income Markets and Equity Markets. For additional information, see Accounting and Reporting Developments on pages 80–81, and Notes 2, 3 and 17.

Quarterly results

Net income was \$2.7 billion, up 9%, reflecting a lower provision for credit losses and lower noninterest expense on lower net revenue.

Net revenue was \$8.9 billion, down 3%.

Banking revenue was \$3.1 billion, up 17%. Investment banking revenue was \$1.7 billion, up 14%, with strong performance across products. The Firm maintained its #1 ranking for Global Investment Banking fees, according to Dealogic. Equity underwriting fees were \$367 million, up 29%, driven by growth in industry-wide issuance including a strong IPO market. Debt underwriting fees were \$933 million, up 5%, driven by a higher share of fees. Advisory fees were \$503 million, up 8%, driven by a higher level of completed transactions. Treasury Services revenue was \$1.1 billion, up 18%, driven by the impact of higher interest rates and growth in operating deposits. Lending revenue was \$373 million, up 35%, reflecting lower fair value losses on hedges of accrual loans.

Markets & Investor Services revenue was \$5.8 billion, down 11%. Fixed Income Markets revenue was \$3.2 billion, down 19% compared to a strong prior-year quarter, predominantly driven by lower revenue in Rates, Credit, and Commodities. These declines were due to reduced flows driven by sustained low volatility and tighter credit spreads. Equity Markets revenue was \$1.6 billion, down 1% compared to a strong prior-year quarter, driven by lower revenue in other derivatives related to market-making activities offset by higher revenue in corporate derivatives and Prime Services. Securities Services revenue was \$982 million, up 8%, driven by the impact of higher interest rates and higher asset-based fees driven by global markets.

The provision for credit losses was a benefit of \$53 million compared with an expense of \$235 million in the prior year. The prior year primarily reflected an increase in the allowance for credit losses in the Oil & Gas portfolio.

Noninterest expense was \$4.8 billion, down 5%, driven by lower performance-based compensation expense.

Year-to-date results

Net income was \$6.0 billion, up 33%, reflecting higher net revenue, lower provision for credit losses and a tax benefit resulting from the vesting of employee-based stock awards.

Net revenue was \$18.4 billion, up 7%.

Banking revenue was \$6.1 billion, up 21%. Investment banking revenue was \$3.3 billion, up 23%, driven by higher debt and equity underwriting fees, partially offset by lower advisory fees. The Firm maintained its #1 ranking for Global Investment Banking fees, according to Dealogic. Debt underwriting fees were \$1.9 billion, up 31%, driven by a higher share of fees and overall increase in industry-wide fee levels. Equity underwriting fees were \$761 million, up 55%, driven by growth in industry-wide issuance including a stronger IPO market. Advisory fees were \$1.0 billion, down 4%. Treasury Services revenue was \$2.0 billion, up 15%, driven by the impact of higher interest rates and growth in operating deposits. Lending revenue was \$762 million, up 32%, reflecting lower fair value losses on hedges of accrual loans and higher gains on securities received from restructurings.

Markets & Investor Services revenue was \$12.3 billion, flat compared with the prior year. Fixed Income Markets revenue was \$7.4 billion, down 2% from the prior year, driven by lower revenue in Commodities, Rates, and Credit, partially offset by higher revenue in Securitized Products. The lower revenue in Commodities, Rates, and Credit reflected reduced flows driven by low volatility in the second quarter, while higher revenue in Securitized Products was driven by strong demand in the first quarter. Equity Markets revenue was \$3.2 billion, up 1%, driven by higher revenue in corporate derivatives and Prime Services offset by lower revenue from other derivatives related to market-making activities. Securities Services revenue was \$1.9 billion, up 6%, driven by the impact of higher interest rates and higher asset-based fees driven by global markets. Credit Adjustments & Other was a loss of \$240 million, largely driven by valuation adjustments.

The provision for credit losses was a benefit of \$149 million compared with an expense of \$694 million in the prior year. The prior year primarily reflected increases in the allowance for credit losses in the Oil & Gas and Metals & Mining portfolios.

Noninterest expense was \$10.0 billion, up 1%.

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Selected metrics

(in millions, except headcount)	As of or for the three months ended June 30,			As of or for the six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Selected balance sheet data (period-end)						
Assets	\$847,377	\$826,019	3 %	\$847,377	\$826,019	3 %
Loans:						
Loans retained ^(a)	108,935	112,637	(3)	108,935	112,637	(3)
Loans held-for-sale and loans at fair value	7,168	5,600	28	7,168	5,600	28
Total loans	116,103	118,237	(2)	116,103	118,237	(2)
Core loans	115,764	117,821	(2)	115,764	117,821	(2)
Equity	70,000	64,000	9	70,000	64,000	9
Selected balance sheet data (average)						
Assets	\$864,686	\$815,886	6	\$851,425	\$806,717	6
Trading assets-debt and equity instruments	351,678	306,418	15	340,073	295,770	15
Trading assets-derivative receivables	54,937	61,457	(11)	56,931	62,007	(8)
Loans:						
Loans retained ^(a)	110,011	111,668	(1)	109,204	110,190	(1)
Loans held-for-sale and loans at fair value	5,789	3,169	83	5,550	3,187	74
Total loans	115,800	114,837	1	114,754	113,377	1
Core loans	115,434	114,421	1	114,375	112,919	1
Equity	70,000	64,000	9	70,000	64,000	9
Headcount	49,228	48,805	1%	49,228	48,805	1%

^(a) Loans retained includes credit portfolio loans, loans held by consolidated Firm-administered multi-seller conduits, trade finance loans, other held-for-investment loans and overdrafts.

Selected metrics

(in millions, except ratios)	As of or for the three months ended June 30,			As of or for the six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Credit data and quality statistics						
Net charge-offs/(recoveries)	\$47	\$90	(48)%	\$29	\$136	(79)%
Nonperforming assets:						
Nonaccrual loans:						
Nonaccrual loans retained ^(a)	462	623	(26)%	462	623	(26)
Nonaccrual loans held-for-sale and loans at fair value	31	7	343	31	7	343
Total nonaccrual loans	493	630	(22)	493	630	(22)
Derivative receivables	170	220	(23)	170	220	(23)
Assets acquired in loan satisfactions	71	75	(5)	71	75	(5)
Total nonperforming assets	734	925	(21)	734	925	(21)
Allowance for credit losses:						
Allowance for loan losses	1,298	1,669	(22)	1,298	1,669	(22)
Allowance for lending-related commitments	745	715	4	745	715	4
Total allowance for credit losses	2,043	2,384	(14)%	2,043	2,384	(14)%
Net charge-off/(recovery) rate ^(b)	0.17%	0.32%		0.05%	0.25 %	
Allowance for loan losses to period-end loans retained	1.19	1.48		1.19	1.48	
Allowance for loan losses to period-end loans retained, excluding trade finance and conduits ^(c)	1.83	2.23		1.83	2.23	
Allowance for loan losses to nonaccrual loans retained ^(a)	281	268		281	268	
Nonaccrual loans to total period-end loans	0.42%	0.53%		0.42%	0.53 %	

- (a) Allowance for loan losses of \$164 million and \$211 million were held against these nonaccrual loans at June 30, 2017 and 2016, respectively.
- (b) Loans held-for-sale and loans at fair value were excluded when calculating the net charge-off/(recovery) rate.
- (c) Management uses allowance for loan losses to period-end loans retained, excluding trade finance and conduits, a non-GAAP financial measure, to provide a more meaningful assessment of CIB's allowance coverage ratio.

Investment banking fees

(in millions)	Three months ended June 30,			Six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Advisory	\$503	\$466	8%	\$1,004	\$1,051	(4)%
Equity underwriting	367	285	29	761	490	55
Debt underwriting ^(a)	933	885	5	1,850	1,416	31
Total investment banking fees	\$1,803	\$1,636	10%	\$3,615	\$2,957	22%

(a) Includes loans syndication.

League table results – wallet share

	Six months ended June 30, 2017		Full-year 2016	
	Rank	Share	Rank	Share
Based on fees ^(a)				
Debt, equity and equity-related				
Global	#1	7.6%	#1	7.1%
U.S.	1	11.1	1	11.9
Long-term debt ^(b)				
Global	1	7.7	1	6.8
U.S.	2	10.8	2	11.1
Equity and equity-related ^(c)				
Global	1	7.4	1	7.6
U.S.	1	11.6	1	13.4
M&A ^(d)				
Global	2	8.6	2	8.4
U.S.	2	9.1	2	9.9
Loan syndications				
Global	1	9.6	1	9.3
U.S.	1	12.0	2	11.8
Global investment banking fees ^(e)	#1	8.3%	#1	8.0%

(a) Source: Dealogic as of July 2, 2017. Reflects the ranking of revenue wallet and market share.

Long-term debt rankings include investment-grade, high-yield, supranationals, sovereigns, agencies, covered (b) bonds, asset-backed securities (“ABS”) and mortgage-backed securities (“MBS”); and exclude money market, short-term debt, and U.S. municipal securities.

(c) Global equity and equity-related ranking includes rights offerings and Chinese A-Shares.

(d) Global M&A reflect the removal of any withdrawn transactions. U.S. M&A revenue wallet represents wallet from client parents based in the U.S.

(e) Global investment banking fees exclude money market, short-term debt and shelf deals.

Markets revenue

The following table summarizes select income statement data for the Markets businesses. Markets includes both Fixed Income Markets and Equity Markets. Markets revenue comprises principal transactions, fees, commissions and other income, as well as net interest income. The Firm assesses its Markets business performance on a total revenue basis, as offsets may occur across revenue line items. For example, securities that generate net interest income may be risk-managed by derivatives that are recorded in principal transactions. For a description of the composition of these income statement line items, see Notes 5 and 6.

Principal transactions reflects revenue on financial instruments and commodities transactions that arise from client-driven market making activity. Principal transactions revenue includes amounts recognized upon executing new transactions with market participants, as well as “inventory-related revenue”, which is revenue recognized from gains and losses on derivatives and other instruments that the

Firm has been holding in anticipation of, or in response to, client demand, and changes in the fair value of instruments used by the Firm to actively manage the risk exposure arising from such inventory. Principal transactions revenue recognized upon executing new transactions with market participants is driven by many factors including the level of client activity, the bid-offer spread (which is the difference between the price at which a market participant is willing to sell an instrument to the Firm and the price at which another market participant is willing to buy it from the Firm, and vice versa), market liquidity and volatility. These factors are interrelated and sensitive to the same factors that drive inventory-related revenue, which include general market conditions, such as interest rates, foreign exchange rates, credit spreads, and equity and commodity prices, as well as other macroeconomic conditions. For the periods presented below, the predominant source of principal transactions revenue was the amount recognized upon executing new transactions.

(in millions)	Three months ended June 30, 2017			Three months ended June 30, 2016		
	Fixed Income Markets	Equity Markets	Total Markets	Fixed Income Markets	Equity Markets	Total Markets
Principal transactions	\$1,851	\$1,109	\$2,960	\$2,092	\$938	\$3,030
Lending- and deposit-related fees	48	1	49	60	1	61
Asset management, administration and commissions	103	410	513	101	370	471
All other income	207	(2)	205	397	21	418
Noninterest revenue	2,209	1,518	3,727	2,650	1,330	3,980
Net interest income	1,007	68	1,075	1,309	270	1,579
Total net revenue	\$3,216	\$1,586	\$4,802	\$3,959	\$1,600	\$5,559
(in millions)	Six months ended June 30, 2017			Six months ended June 30, 2016		
	Fixed Income Markets	Equity Markets	Total Markets	Fixed Income Markets	Equity Markets	Total Markets
Principal transactions	4,552	\$2,118	\$6,670	\$4,077	\$1,808	\$5,885
Lending- and deposit-related fees	97	2	99	109	1	110
Asset management, administration and commissions	207	833	1,040	204	813	1,017
All other income	384	(9)	375	621	21	642
Noninterest revenue	5,240	2,944	8,184	5,011	2,643	7,654
Net interest income	2,191	248	2,439	2,545	533	3,078
Total net revenue	\$7,431	\$3,192	\$10,623	\$7,556	\$3,176	\$10,732
Selected metrics						

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(in millions, except where otherwise noted)	As of or for the three months ended June 30,			As of or for the six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Assets under custody (“AUC”) by asset class (period-end) (in billions):						
Fixed Income	\$12,662	\$12,539	1%	\$12,662	\$12,539	1%
Equity	7,214	6,138	18	7,214	6,138	18
Other ^(a)	2,258	1,793	26	2,258	1,793	26
Total AUC	\$22,134	\$20,470	8	\$22,134	\$20,470	8
Client deposits and other third party liabilities (average) ^(b)	\$404,920	\$373,671	8	\$398,354	\$366,299	9
Trade finance loans (period-end)	17,356	17,362	—	17,356	17,362	—

(a) Consists of mutual funds, unit investment trusts, currencies, annuities, insurance contracts, options and other contracts.

(b) Client deposits and other third party liabilities pertain to the Treasury Services and Securities Services businesses.

International metrics

(in millions, except where otherwise noted)	As of or for the three months ended June 30,			As of or for the six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Total net revenue ^(a)						
Europe/Middle East/Africa	\$3,034	\$2,823	7 %	\$6,223	\$5,280	18 %
Asia/Pacific	1,034	1,210	(15)	2,273	2,512	(10)
Latin America/Caribbean	244	403	(39)	585	724	(19)
Total international net revenue	4,312	4,436	(3)	9,081	8,516	7
North America	4,577	4,729	(3)	9,344	8,784	6
Total net revenue	\$8,889	\$9,165	(3)	\$18,425	\$17,300	7

Loans retained (period-end)^(a)

Europe/Middle East/Africa	\$26,690	\$29,770	(10)	\$26,690	\$29,770	(10)
Asia/Pacific	14,709	15,198	(3)	14,709	15,198	(3)
Latin America/Caribbean	6,196	9,048	(32)	6,196	9,048	(32)
Total international loans	47,595	54,016	(12)	47,595	54,016	(12)
North America	61,340	58,621	5	61,340	58,621	5
Total loans retained	\$108,935	\$112,637	(3)	\$108,935	\$112,637	(3)

Client deposits and other third-party liabilities
(average)^{(a)(b)}

Europe/Middle East/Africa	\$156,575	\$135,213	16	\$150,436	\$131,655	14
Asia/Pacific	73,327	68,423	7	73,544	65,569	12
Latin America/Caribbean	25,806	22,334	16	24,934	22,431	11
Total international	\$255,708	\$225,970	13	\$248,914	\$219,655	13
North America	149,212	147,701	1	149,440	146,644	2
Total client deposits and other third-party liabilities	\$404,920	\$373,671	8	\$398,354	\$366,299	9

AUC (period-end)^(a)
(in billions)

North America	\$13,207	\$12,310	7	\$13,207	\$12,310	7
All other regions	8,927	8,160	9	8,927	8,160	9
Total AUC	\$22,134	\$20,470	8%	\$22,134	\$20,470	8%

Total net revenue is based predominantly on the domicile of the client or location of the trading desk, as applicable.

(a) Loans outstanding (excluding loans held-for-sale and loans at fair value), client deposits and other third-party liabilities, and AUC are based predominantly on the domicile of the client.

(b) Client deposits and other third party liabilities pertain to the Treasury Services and Securities Services businesses.

COMMERCIAL
BANKING

For a discussion of the business profile of CB, see pages 63–65 of JPMorgan Chase’s 2016 Annual Report and Line of Business Metrics on page 174.

Selected income statement data

(in millions)	Three months ended June 30,			Six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Revenue						
Lending- and deposit-related fees	\$232	\$227	2 %	\$467	\$459	2 %
Asset management, administration and commissions	16	18	(11)	34	40	(15)
All other income ^(a)	335	341	(2)	681	643	6
Noninterest revenue	583	586	(1)	1,182	1,142	4
Net interest income	1,505	1,231	22	2,924	2,478	18
Total net revenue ^(b)	2,088	1,817	15	4,106	3,620	13
Provision for credit losses	(130)	(25)	(420)	(167)	279	NM
Noninterest expense						
Compensation expense	365	322	13	736	656	12
Noncompensation expense	425	409	4	879	788	12
Total noninterest expense	790	731	8	1,615	1,444	12
Income before income tax expense	1,428	1,111	29	2,658	1,897	40
Income tax expense	526	415	27	957	705	36
Net income	\$902	\$696	30%	\$1,701	\$1,192	43%

(a) Includes revenue from investment banking products and commercial card transactions.

Total net revenue included tax-equivalent adjustments from income tax credits related to equity investments in designated community development entities that provide loans to qualified businesses in low-income communities,

(b) as well as tax-exempt income related to municipal financing activities of \$131 million and \$124 million for the three months ended June 30, 2017 and 2016, respectively, and \$252 million and \$244 million for the six months ended June 30, 2017 and 2016, respectively.

Quarterly results

Net income was \$902 million, an increase of 30%, driven by higher net revenue and a lower provision for credit losses, partially offset by higher noninterest expense.

Net revenue was \$2.1 billion, an increase of 15%. Net interest income was \$1.5 billion, an increase of 22%, predominantly driven by higher deposit spreads and loan growth. Noninterest revenue was \$583 million, relatively flat versus the previous year.

Noninterest expense was \$790 million, an increase of 8%, predominantly driven by hiring of bankers and business-related support staff, and investments in technology.

The provision for credit losses was a benefit of \$130 million, driven by net reductions in the allowance for credit losses, including in the Oil & Gas, Natural Gas Pipelines and Metals & Mining portfolios. The prior year provision for credit losses was a benefit of \$25 million.

Year-to-date results

Net income was \$1.7 billion, an increase of 43%, driven by higher net revenue and a lower provision for credit losses, partially offset by higher noninterest expense.

Net revenue was \$4.1 billion, up 13%. Net interest income was \$2.9 billion, up 18%, predominantly driven by higher deposit spreads and loan growth. Noninterest revenue was \$1.2 billion, up 4%, driven by higher investment banking

revenue from loan syndications and equity underwriting.

Noninterest expense was \$1.6 billion, up 12%, largely driven by hiring of bankers and business-related support staff, and investments in technology.

The provision for credit losses was a benefit of \$167 million, driven by net reductions in the allowance for credit losses, including in the Oil & Gas, Natural Gas Pipelines and Metals & Mining portfolios. The prior year provision for credit losses was \$279 million, reflecting downgrades in the Oil & Gas and Natural Gas Pipeline portfolios.

Selected income statement data (continued)

(in millions, except ratios)	Three months ended June 30,			Six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Revenue by product						
Lending	\$1,023	\$917	12 %	\$2,015	\$1,845	9 %
Treasury services	854	680	26	1,650	1,374	20
Investment banking ^(a)	189	207	(9)	405	362	12
Other	22	13	69	36	39	(8)
Total Commercial Banking net revenue	\$2,088	\$1,817	15	\$4,106	\$3,620	13
Investment banking revenue, gross ^(b)	\$524	\$595	(12)	\$1,170	\$1,078	9
Revenue by client segment						
Middle Market Banking ^(c)	\$839	\$689	22	\$1,623	\$1,389	17
Corporate Client Banking ^(c)	662	608	9	1,328	1,162	14
Commercial Term Lending	364	342	6	731	703	4
Real Estate Banking	147	107	37	281	211	33
Other	76	71	7	143	155	(8)
Total Commercial Banking net revenue	\$2,088	\$1,817	15 %	\$4,106	\$3,620	13 %
Financial ratios						
Return on equity	17%	16 %		16%	14 %	
Overhead ratio	38	40		39	40	

(a) Includes total Firm revenue from investment banking products sold to CB clients, net of revenue sharing with the CIB.

(b) Represents total Firm revenue from investment banking products sold to CB clients.

(c) Certain clients were transferred from Middle Market Banking to Corporate Client Banking effective in the second quarter of 2017. Prior period results were revised to conform with the current period presentation.

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Selected metrics

(in millions, except headcount)	As of or for the three months ended June 30,			As of or for the six months ended June 30,			
	2017	2016	Change	2017	2016	Change	
Selected balance sheet data (period-end)							
Total assets	\$220,676	\$208,151	%	\$220,676	\$208,151	%	
Loans:							
Loans retained	197,912	179,164	10	197,912	179,164	10	
Loans held-for-sale and loans at fair value	1,661	134	NM	1,661	134	NM	
Total loans	\$199,573	\$179,298	11	\$199,573	\$179,298	11	
Core loans	199,319	178,809	11	199,319	178,809	11	
Equity	20,000	16,000	25	20,000	16,000	25	
Period-end loans by client segment							
Middle Market Banking ^(a)	\$56,377	\$51,949	9	\$56,377	\$51,949	9	
Corporate Client Banking ^(a)	45,918	42,374	8	45,918	42,374	8	
Commercial Term Lending	73,760	66,499	11	73,760	66,499	11	
Real Estate Banking	16,726	12,872	30	16,726	12,872	30	
Other	6,792	5,604	21	6,792	5,604	21	
Total Commercial Banking loans	\$199,573	\$179,298	11	\$199,573	\$179,298	11	
Selected balance sheet data (average)							
Total assets	\$217,694	\$205,953	6	\$215,750	\$204,222	6	
Loans:							
Loans retained	196,454	176,229	11	193,630	173,033	12	
Loans held-for-sale and loans at fair value	1,402	583	140	1,061	516	106	
Total loans	\$197,856	\$176,812	12	\$194,691	\$173,549	12	
Core loans	197,567	176,251	12	194,391	172,939	12	
Average loans by client segment							
Middle Market Banking ^(a)	\$55,651	\$51,937	7	\$54,963	\$51,246	7	
Corporate Client Banking ^(a)	46,483	41,111	13	45,041	40,231	12	
Commercial Term Lending	73,081	65,262	12	72,484	64,369	13	
Real Estate Banking	16,139	12,936	25	15,834	12,200	30	
Other	6,502	5,566	17	6,369	5,503	16	
Total Commercial Banking loans	\$197,856	\$176,812	12	\$194,691	\$173,549	12	
Client deposits and other third-party liabilities	173,214	170,717	1	174,987	171,898	2	
Equity	20,000	16,000	25	20,000	16,000	25	
Headcount	8,823	8,127	9	% 8,823	8,127	9	%

(a) Certain clients were transferred from Middle Market Banking to Corporate Client Banking effective in the second quarter of 2017. Prior period results were revised to conform with the current period presentation.

Selected metrics (continued)

(in millions, except ratios) Credit data and quality statistics	As of or for the three months ended June 30, 2017			As of or for the six months ended June 30, 2016		
	2017	2016	Change	2017	2016	Change
Net charge-offs/(recoveries)	\$8	\$60	(87)%	\$(2)	\$66	NM
Nonperforming assets						
Nonaccrual loans:						
Nonaccrual loans retained ^(a)	819	1,258	(35)%	819	1,258	(35)
Nonaccrual loans held-for-sale and loans at fair value	—	—	—	—	—	—
Total nonaccrual loans	819	1,258	(35)	819	1,258	(35)
Assets acquired in loan satisfactions	4	1	300	4	1	300
Total nonperforming assets	823	1,259	(35)	823	1,259	(35)
Allowance for credit losses:						
Allowance for loan losses	2,678,041	(12)		2,678,041	(12)	
Allowance for lending-related commitments	331	226	46	331	226	46
Total allowance for credit losses	3,009,326	(8)%		3,009,326	(8)%	
Net charge-off/(recovery) rate ^(b)	0.0%	0.14%		—	0.08%	
Allowance for loan losses to period-end loans retained	1.35	1.70		1.35	1.70	
Allowance for loan losses to nonaccrual loans retained ^(a)	327	242		327	242	
Nonaccrual loans to period-end total loans	0.41	0.70		0.41	0.70	

^(a) Allowance for loan losses of \$112 million and \$292 million was held against nonaccrual loans retained at June 30, 2017 and 2016, respectively.

^(b) Loans held-for-sale and loans at fair value were excluded when calculating the net charge-off/(recovery) rate.

ASSET &
WEALTH
MANAGEMENT

For a discussion of the business profile of AWM, see pages 66–68 of JPMorgan Chase’s 2016 Annual Report and Line of Business Metrics on pages 174–175.

Selected income statement data

(in millions, except ratios)	Three months ended June 30,			Six months ended June 30,			
	2017	2016	Change	2017	2016	Change	
Revenue							
Asset management, administration and commissions	\$2,211	\$2,102	5	% \$4,316	\$4,118	5	%
All other income	155	90	72	318	319	—	
Noninterest revenue	2,366	2,192	8	4,634	4,437	4	
Net interest income	846	747	13	1,665	1,474	13	
Total net revenue	3,212	2,939	9	6,299	5,911	7	
Provision for credit losses	4	(8	) NM	22	5	340	
Noninterest expense							
Compensation expense	1,278	1,249	2	2,609	2,490	5	
Noncompensation expense	914	849	8	2,163	1,683	29	
Total noninterest expense	2,192	2,098	4	4,772	4,173	14	
Income before income tax expense	1,016	849	20	1,505	1,733	(13)
Income tax expense	392	328	20	496	625	(21)
Net income	\$624	\$521	20	\$1,009	\$1,108	(9)
Revenue by line of business							
Asset Management	\$1,561	\$1,424	10	\$3,048	\$2,923	4	
Wealth Management	1,651	1,515	9	3,251	2,988	9	
Total net revenue	\$3,212	\$2,939	9%	\$6,299	\$5,911	7	%
Financial ratios							
Return on equity	27	%22	%	22	%24	%	
Overhead ratio	68	71		76	71		
Pre-tax margin ratio:							
Asset Management	31	30		16	31		
Wealth Management	33	28		31	27		
Asset & Wealth Management	32	29		24	29		

Quarterly results

Net income was \$624 million, an increase of 20%, reflecting higher net revenue partially offset by higher noninterest expense.

Net revenue was \$3.2 billion, an increase of 9%. Net interest income was \$846 million, up 13%, driven predominantly by higher deposit spreads. Noninterest revenue was \$2.4 billion, up 8%, predominantly reflecting higher market levels.

Noninterest expense was \$2.2 billion, an increase of 4%, largely driven by a combination of higher external fees and compensation expense on higher revenue.

Year-to-date results

Net income was \$1.0 billion, a decrease of 9%, reflecting higher noninterest expense, largely offset by higher revenue.

Net revenue was \$6.3 billion, an increase of 7%. Net interest income was \$1.7 billion, up 13%, driven by higher deposit spreads. Noninterest revenue was \$4.6 billion, up 4%, driven by higher market levels and brokerage revenue, partially offset by a reduction in revenue related to the disposal of assets at the beginning of 2016.

Noninterest expense was \$4.8 billion, an increase of 14%, driven by higher legal expense and compensation expense on higher revenue.

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Selected metrics

(in millions, except ranking data, headcount and ratios)	As of or for the three months ended June 30,			As of or for the six months ended June 30,			
	2017	2016	Change	2017	2016	Change	
% of JPM mutual fund assets rated as 4- or 5-star ^{(a)(c)}	65	%51	%	65	%51	%	
% of JPM mutual fund assets ranked in 1 st or 2 nd quartile: ^(b)							
1 year	60	54		60	54		
3 years ^(c)	83	74		83	74		
5 years ^(c)	77	79		77	79		
Selected balance sheet data (period-end)							
Total assets	\$147,508	\$134,380	10	% \$147,508	\$134,380	10	%
Loans	124,517	113,319	10	124,517	113,319	10	
Core loans	124,517	113,319	10	124,517	113,319	10	
Deposits	146,758	148,967	(1)	) 146,758	148,967	(1))
Equity	9,000	9,000	—	9,000	9,000	—	
Selected balance sheet data (average)							
Total assets	\$142,966	\$131,529	9	\$140,585	\$130,659	8	
Loans	122,173	111,704	9	120,252	111,101	8	
Core loans	122,173	111,704	9	120,252	111,101	8	
Deposits	150,786	151,214	—	154,776	150,915	3	
Equity	9,000	9,000	—	9,000	9,000	—	
Headcount	22,289	20,897	7	22,289	20,897	7	
Number of client advisors	2,452	2,622	(6)	) 2,452	2,622	(6))
Credit data and quality statistics							
Net charge-offs	\$2	\$2	—	\$5	\$11	(55))
Nonaccrual loans	400	254	57	400	254	57	
Allowance for credit losses:							
Allowance for loan losses	285	258	10	285	258	10	
Allowance for lending-related commitments	10	4	150	10	4	150	
Total allowance for credit losses	295	262	13	% 295	262	13	%
Net charge-off rate	0.01	%0.01	%	0.01	%0.02	%	
Allowance for loan losses to period-end loans	0.23	0.23		0.23	0.23		
Allowance for loan losses to nonaccrual loans	71	102		71	102		
Nonaccrual loans to period-end loans	0.32	0.22		0.32	0.22		

Represents the “overall star rating” derived from Morningstar for the U.S., the U.K., Luxembourg, Hong Kong and Taiwan domiciled funds; and Nomura “star rating” for Japan domiciled funds. Includes only Asset Management retail open-ended mutual funds that have a rating. Excludes money market funds, Undiscovered Managers Fund, and Brazil and India domiciled funds.

(b) Quartile ranking sourced from: Lipper for the U.S. and Taiwan domiciled funds; Morningstar for the U.K., Luxembourg and Hong Kong domiciled funds; Nomura for Japan domiciled funds and Fund Doctor for South Korea domiciled funds. Includes only Asset Management retail open-ended mutual funds that are ranked by the aforementioned sources. Excludes money market funds, Undiscovered Managers Fund, and Brazil and India

domiciled funds.

(c) Prior period amounts were revised to conform with current period presentation.

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Client assets

Client assets of \$2.6 trillion and assets under management of \$1.9 trillion were both up 11%, reflecting higher market levels, and net inflows into liquidity and long-term products.

Client assets

(in billions)	June 30,			Change	%
	2017	2016			
Assets by asset class					
Liquidity	\$434	\$385	13		
Fixed income	440	424	4		
Equity	390	342	14		
Multi-asset and alternatives	612	542	13		
Total assets under management	1,876	1,693	11		
Custody/brokerage/administration/deposits	722	651	11		
Total client assets	\$2,598	\$2,344	11		

Memo:

Alternatives client assets ^(a)	\$159	\$151	5		
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Assets by client segment

Private Banking	\$488	\$425	15		
Institutional	889	811	10		
Retail	499	457	9		
Total assets under management	\$1,876	\$1,693	11		

Private Banking	\$1,188	\$1,058	12		
Institutional	909	827	10		
Retail	501	459	9		
Total client assets	\$2,598	\$2,344	11%		

(a) Represents assets under management, as well as client balances in brokerage accounts.

Client assets (continued)

(in billions)	Three months		Six months	
	ended June 30,		ended June 30,	
	2017	2016	2017	2016
Assets under management rollforward				
Beginning balance	\$1,841	\$1,676	\$1,771	\$1,723
Net asset flows:				
Liquidity	(7)	)1	(6)	)(29)
Fixed income	2	13	7	27
Equity	(3)	)(5)	(7)	)(10)
Multi-asset and alternatives	10	(2)	17	4
Market/performance/other impacts	33	10	94	(22)
Ending balance, June 30	\$1,876	\$1,693	\$1,876	\$1,693

Client assets rollforward

Beginning balance	\$2,548	\$2,323	\$2,453	\$2,350
Net asset flows	2	2	12	(5)
Market/performance/other impacts	48	19	133	(1)
Ending balance, June 30	\$2,598	\$2,344	\$2,598	\$2,344

International metrics

(in millions)	As of or for the three months ended June 30,			As of or for the six months ended June 30,			
	2017	2016	Change	2017	2016	Change	
	Total net revenue ^(a)						
Europe/Middle East/Africa	\$494	\$463	7%	\$956	\$894	7	%
Asia/Pacific	286	267	7	556	522	7	
Latin America/Caribbean	222	186	19	401	358	12	
Total international net revenue	1,002	916	9	1,913	1,774	8	
North America	2,210	2,023	9	4,386	4,137	6	
Total net revenue	\$3,212	\$2,939	9%	\$6,299	\$5,911	7%	

(a) Regional revenue is based on the domicile of the client.

(in billions)	As of or for the three months ended June 30,			As of or for the six months ended June 30,					
	2017	2016	Change	2017	2016	Change			
	Assets under management								
Europe/Middle East/Africa		\$335	\$293	14	%	\$335	\$293	14	%
Asia/Pacific		136	124	10		136	124	10	
Latin America/Caribbean		57	46	24		57	46	24	
Total international assets under management		528	463	14		528	463	14	
North America		1,348	1,230	10		1,348	1,230	10	
Total assets under management		\$1,876	\$1,693	11		\$1,876	\$1,693	11	

Client assets

Europe/Middle East/Africa	\$387	\$342	13	\$387	\$342	13	
Asia/Pacific	196	176	11	196	176	11	
Latin America/Caribbean	152	115	32	152	115	32	
Total international client assets	735	633	16	735	633	16	
North America	1,863	1,711	9	1,863	1,711	9	
Total client assets	\$2,598	\$2,344	11%	\$2,598	\$2,344	11%	

CORPORATE

For a discussion of Corporate, see pages 69–70 of JPMorgan Chase’s 2016 Annual Report.

Selected income statement and balance sheet data

(in millions, except headcount)	As of or for the three months ended June 30,			As of or for the six months ended June 30,			
	2017	2016	Change	2017	2016	Change	
Revenue							
Principal transactions	\$148	\$29	410	% \$163	\$126	29	%
Securities gains/(losses)	(34	)20	NM	(37	)71	NM	
All other income/(loss) ^(a)	667	122	447	728	243	200	
Noninterest revenue	781	171	357	854	440	94	
Net interest income	23	(329	) NM	(75	) (542	) 86	
Total net revenue ^(b)	804	(158	) NM	779	(102	) NM	
Provision for credit losses	—	(1	) 100	—	(3	) 100	
Noninterest expense ^(c)	183	(273	) NM	281	(120	) NM	
Income/(loss) before income tax expense/(benefit)	621	116	435	498	21	NM	
Income tax expense/(benefit)	51	282	(82	) (107	) 219	NM	
Net income/(loss)	\$570	\$(166	) NM	\$605	\$(198	) NM	
Total net revenue							
Treasury and CIO	86	(226	) NM	79	(320	) NM	
Other Corporate	718	68	NM	700	218	221	
Total net revenue	\$804	\$(158	) NM	\$779	\$(102	) NM	
Net income/(loss)							
Treasury and CIO	(14	) (199	) 93	(81	) (310	) 74	
Other Corporate	584	33	NM	686	112	NM	
Total net income/(loss)	\$570	\$(166	) NM	\$605	\$(198	) NM	
Total assets (period-end)	\$817,754	\$778,359	5	\$817,754	\$778,359	5	
Loans (period-end)	1,696	1,862	(9	) 1,696	1,862	(9)
Core loans ^(d)	1,696	1,857	(9	) 1,696	1,857	(9)
Headcount	33,464	30,402	10	33,464	30,402	10	

(a) Included revenue related to a legal settlement of \$645 million for both the three and six months ended June 30, 2017.

(b) Included tax-equivalent adjustments, predominantly due to tax-exempt income from municipal bond investments of \$237 million and \$227 million for the three months ended June 30, 2017 and 2016, respectively, and \$465 million and \$445 million for the six months ended June 30, 2017 and 2016, respectively.

(c) Included legal expense/(benefit) of \$16 million and \$(467) million for the three months ended June 30, 2017 and 2016, respectively, and \$(212) million and \$(465) million for the six months ended June 30, 2017 and 2016, respectively.

(d) Average core loans were \$1.6 billion and \$2.0 billion for the three months ended June 30, 2017 and 2016, respectively, and \$1.6 billion and \$2.0 billion for the six months ended June 30, 2017 and 2016, respectively.

Quarterly results

Net income was \$570 million, compared with a net loss of \$166 million in the prior-year quarter. Net revenue was a gain of \$804 million, compared with a loss of \$158 million in the prior-year quarter. Current quarter net revenue was driven by a \$645 million benefit from a legal settlement with the FDIC receivership for Washington Mutual and with Deutsche Bank as trustee to certain Washington Mutual trusts and by the net impact of higher rates. Noninterest expense was \$183 million, up \$456 million from the prior year quarter, which included a net legal benefit.

Year-to-date results

Net income was \$605 million, compared with a net loss of \$198 million in the prior year. Net revenue was a gain of \$779 million, compared with a loss of \$102 million in the prior-year. Current period net revenue was driven by a \$645 million benefit from a legal settlement with the FDIC receivership for Washington Mutual and with Deutsche Bank as trustee to certain Washington Mutual trusts and by the net impact of higher rates. Noninterest expense was \$281 million, up \$401 million from prior year, driven by lower legal benefit and higher compensation expense.

Treasury and CIO overview

At June 30, 2017, the average credit rating of the Treasury and CIO investment securities comprising the portfolio in the table below was AA+ (based upon external ratings where available and, where not available, based primarily upon internal ratings that correspond to ratings as defined by S&P and Moody's). See Note 9 for further information on the Firm's investment securities portfolio.

For further information on liquidity and funding risk, see Liquidity Risk Management on pages 67–71. For information on interest rate, foreign exchange and other risks, see Market Risk Management on pages 72–76.

Selected income statement and balance sheet data

(in millions)	As of or for the three months ended June 30,			As of or for the six months ended June 30,		
	2017	2016	Change	2017	2016	Change
Securities gains/(losses)	\$(34)	\$ 20	NM	\$(49)	\$ 71	NM
AFS investment securities (average)	225,053	225,536	—	229,920	230,321	—
HTM investment securities (average)	48,232	53,426	(10)	48,794	50,882	(4)
Investment securities portfolio (average)	273,285	278,962	(2)	278,714	281,203	(1)
AFS investment securities (period-end)	213,292	221,751	(4)	213,292	221,751	(4)
HTM investment securities (period-end)	47,761	53,811	(11)	47,761	53,811	(11)
Investment securities portfolio (period-end)	261,052	275,562	(5)%	261,052	275,562	(5)

ENTERPRISE-WIDE
RISK
MANAGEMENT

Risk is an inherent part of JPMorgan Chase’s business activities. When the Firm extends a consumer or wholesale loan, advises customers on their investment decisions, makes markets in securities, or offers other products or services, the Firm takes on some degree of risk. The Firm’s overall objective is to manage its businesses, and the associated risks, in a manner that balances serving the interests of its clients, customers and investors and protects the safety and soundness of the Firm.

Firmwide Risk Management is overseen and managed on an enterprise-wide basis. The Firm’s approach to risk management covers a broad spectrum of economic and other core risk areas, such as credit, market, liquidity, model, principal, country, operational, compliance, conduct, legal, capital, and reputation risk, with controls and governance established for each area, as appropriate.

The Firm believes that effective risk management requires:

- Acceptance of responsibility, including identification and escalation of risk issues, by all individuals within the Firm;
- Ownership of risk identification, assessment, data and management by each of the lines of business and corporate functions; and
- Firmwide structures for risk governance.

The Firm’s Operating Committee, which consists of the Firm’s Chief Executive Officer (“CEO”), Chief Risk Officer (“CRO”), Chief Financial Officer (“CFO”) and other senior executives, is the ultimate management escalation point in the Firm and may refer matters to the Firm’s Board of Directors. The Operating Committee is responsible and accountable to the Firm’s Board of Directors.

In June 2017, the Firm announced the departure of its Chief Operating Officer. As a result, his responsibilities have transitioned to other members of the Operating Committee. The Chief Investment Officer/Treasurer now reports to the Firm’s CFO, and will continue to chair the Firmwide Asset Liability Committee (“ALCO”). For further discussion on the Firm’s ALCO, see page 75 of JPMorgan Chase’s 2016 Annual Report.

The Firm strives for continual improvement through efforts to enhance controls, ongoing employee training and development, talent retention, and other measures. The Firm follows a disciplined and balanced compensation framework with strong internal governance and independent Board oversight. The impact of risk and control issues are carefully considered in the Firm’s performance evaluation and incentive compensation processes.

The following provides an index of where in this Form 10-Q and in JPMorgan Chase’s 2016 Annual Report information about the Firm’s management of its key risks can be found.

Risk disclosure	Form 10-Q page reference	Annual Report page reference
Enterprise-Wide Risk Management	41–76	71–131
I. Economic risks		
Capital Risk Management	42–48	76–85
Credit Risk Management	49–65	86–107
Country Risk Management	66	108–109
Liquidity Risk Management	67–71	110–115
Market Risk Management	72–76	116–123
Principal Risk Management		124
II. Other core risks		
Compliance Risk Management		125
Conduct Risk Management		126
Legal Risk Management		127
Model Risk Management		128
Operational Risk Management		129–130
Reputation Risk Management		131

CAPITAL RISK MANAGEMENT

Capital risk is the risk the Firm has an insufficient level and composition of capital to support the Firm's business activities and associated risks during both normal economic environments and under stressed conditions. For a discussion of the Firm's Capital Risk Management, see pages 76–85 of JPMorgan Chase's 2016 Annual Report. A strong capital position is essential to the Firm's business strategy and competitive position. Maintaining a strong balance sheet to manage through economic volatility is considered a strategic imperative of the Firm's Board of Directors, CEO and Operating Committee. The Firm's balance sheet philosophy focuses on risk-adjusted returns, strong capital and robust liquidity. The Firm's capital risk management strategy focuses on maintaining long-term stability to enable it to build and invest in market-leading businesses, even in a highly stressed environment. Prior to making any decisions on future business activities, senior management considers the implications on the Firm's capital. In addition to considering the Firm's earnings outlook, senior management evaluates all sources and uses of capital with a view to preserving the Firm's capital strength.

The Firm's capital risk management objectives are achieved through the establishment of minimum capital targets and a strong capital governance framework. Capital risk management is intended to be flexible in order to react to a range of potential events. The Firm's minimum capital targets are based on the most binding of three pillars: an internal assessment of the Firm's capital needs; an estimate of required capital under the Comprehensive Capital Analysis and Review ("CCAR") and Dodd-Frank Act stress testing requirements; and Basel III Fully Phased-In regulatory minimums. Where necessary, each pillar may include a management-established buffer. The capital governance framework requires regular monitoring of the Firm's capital positions, stress testing and escalation protocols, both at the Firm and material legal entity levels.

The following tables present the Firm's Transitional and Fully Phased-In risk-based and leverage-based capital metrics under both the Basel III Standardized and Advanced Approaches. The Firm's Basel III ratios exceed both the Transitional and Fully Phased-In regulatory minimums as of June 30, 2017, and December 31, 2016. For further discussion of these capital metrics and the Standardized and Advanced approaches, refer to Strategy and Governance on pages 78–82 of JPMorgan Chase's 2016 Annual Report.

June 30, 2017 (in millions, except ratios)	Transitional		Minimum capital ratios ^(d)		Fully Phased-In		Minimum capital ratios ^(e)	
	Standardized	Advanced			Standardized	Advanced		
Risk-based capital metrics:								
CET1 capital	\$ 186,942	\$ 186,942			\$ 186,596	\$ 186,596		
Tier 1 capital	212,353	212,353			212,221	212,221		
Total capital	243,061	233,345			241,742	232,026		
Risk-weighted assets	1,478,816	1,459,196			1,488,511	1,469,473		
CET1 capital ratio	12.6	% 12.8	% 7.5	%	12.5	% 12.7	% 10.5	%
Tier 1 capital ratio	14.4	14.6	9.0		14.3	14.4	12.0	
Total capital ratio	16.4	16.0	11.0		16.2	15.8	14.0	
Leverage-based capital metrics								
Adjusted average assets ^(a)	\$2,512,120	\$2,512,120			\$2,512,679	\$2,512,679		
Tier 1 leverage ratio ^(b)	8.5	% 8.5	% 4.0	%	8.4	% 8.4	% 4.0	%
Total leverage exposure	NA	\$3,193,072			NA	\$3,193,632		
SLR ^(c)	NA	6.7	% NA		NA	6.6	% 5.0	% ^(f)
December 31, 2016 (in millions, except ratios)	Transitional		Minimum capital ratios ^(d)		Fully Phased-In		Minimum capital ratios ^(e)	
	Standardized	Advanced			Standardized	Advanced		
Risk-based capital metrics:								
CET1 capital	\$ 182,967	\$ 182,967			\$ 181,734	\$ 181,734		
Tier 1 capital	208,112	208,112			207,474	207,474		
Total capital	239,553	228,592			237,487	226,526		
Risk-weighted assets	1,464,981	1,476,915			1,474,665	1,487,180		
CET1 capital ratio	12.5	% 12.4	% 6.25	%	12.3	% 12.2	% 10.5	%
Tier 1 capital ratio	14.2	14.1	7.75		14.1	14.0	12.0	
Total capital ratio	16.4	15.5	9.75		16.1	15.2	14.0	
Leverage-based capital metrics								
Adjusted average assets ^(a)	\$2,484,631	\$2,484,631			\$2,485,480	\$2,485,480		
Tier 1 leverage ratio ^(b)	8.4	% 8.4	% 4.0	%	8.3	% 8.3	% 4.0	%
Total leverage exposure	NA	\$3,191,990			NA	\$3,192,839		
SLR ^(c)	NA	6.5	% NA		NA	6.5	% 5.0	% ^(f)

Note: As of June 30, 2017, and December 31, 2016, the lower of the Standardized or Advanced capital ratios under each of the Transitional and Fully Phased-In approaches in the table above represents the Firm's Collins Floor, as discussed in Risk-based capital regulatory minimums on page 44.

Adjusted average assets, for purposes of calculating the Tier 1 leverage ratio, includes total quarterly average assets adjusted for unrealized gains/(losses) on available-for-sale ("AFS") securities, less deductions for goodwill and other intangible assets, defined benefit pension plan assets, and deferred tax assets related to net operating loss ("NOL") and tax credit carryforwards.

(a) The Tier 1 leverage ratio is calculated by dividing Tier 1 capital by adjusted average assets.

(b) The SLR leverage ratio is calculated by dividing Tier 1 capital by total leverage exposure. For additional information on total leverage exposure, see SLR on page 46.

(c)

(d)

Represents the Transitional minimum capital ratios applicable to the Firm under Basel III as of June 30, 2017, and December 31, 2016. At June 30, 2017, the CET1 minimum capital ratio includes 1.25% resulting from the phase in of the Firm's 2.5% capital conservation buffer and 1.75%, resulting from the phase in of the Firm's 3.5% GSIB surcharge. At December 31, 2016, the CET1 minimum capital ratio includes 0.625% resulting from the phase in of the Firm's 2.5% capital conservation buffer and 1.125%, resulting from the phase in of the Firm's 4.5% GSIB surcharge.

Represents the minimum capital ratios applicable to the Firm on a Fully Phased-In Basel III basis. At June 30, (e) 2017, and December 31, 2016, the ratios include the Firm's estimate of its Fully Phased-In U.S. GSIB surcharge of 3.5%. The minimum capital ratios will be fully phased-in effective January 1, 2019.

(f) In the case of the SLR, the Fully Phased-In minimum ratio is effective beginning January 1, 2018.

Basel III overview

Capital rules under Basel III establish minimum capital ratios and overall capital adequacy standards for large and internationally active U.S. bank holding companies and banks, including the Firm and its insured depository institution (“IDI”) subsidiaries. Basel III sets forth two comprehensive approaches for calculating RWA: a standardized approach (“Basel III Standardized”), and an advanced approach (“Basel III Advanced”). Certain of the requirements of Basel III are subject to phase-in periods that began on January 1, 2014 and continue through the end of 2018 (“transitional period”).

Basel III establishes capital requirements for calculating credit risk and market risk RWA, and in the case of Basel III Advanced, operational risk RWA. In addition to the RWA calculated under these methodologies, the Firm may supplement such amounts to incorporate management judgment and feedback from its bank regulators. For additional information on Basel III methodology refer to Basel III Overview on pages 78-80 of JPMorgan Chase’s 2016 Annual Report.

Basel III also includes a requirement for Advanced Approach banking organizations, including the Firm, to calculate SLR. For additional information on SLR, see page 46.

Basel III Fully Phased-In

Basel III capital rules will become fully phased-in on January 1, 2019, at which point the Firm will continue to calculate its capital ratios under both the Basel III Standardized and Advanced Approaches. The Firm manages each of the businesses, as well as the corporate functions, primarily on a Basel III Fully Phased-In basis.

For additional information on the Firm, JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A.’s capital, RWA and capital ratios under the Basel III Standardized and Advanced Fully Phased-In rules and SLRs calculated under the Basel III Advanced Fully Phased-In rules, all of which are considered key regulatory capital measures, see Explanation and Reconciliation of the Firm’s Use of Non-GAAP Financial Measures and Key Performance Measures on pages 15–17.

The Firm’s estimates of its Basel III Standardized and Advanced Fully Phased-In capital, RWA and capital ratios and of SLRs for the Firm, JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A. are based on the current published U.S. Basel III rules and on the application of such rules to the Firm’s businesses as currently conducted. The actual impact on the Firm’s capital ratios and SLR as of the effective date of the rules may differ from the Firm’s current estimates depending on changes the Firm may make to its businesses in the future, further implementation guidance from the regulators, and regulatory approval of certain of the Firm’s internal risk models (or, alternatively, regulatory disapproval of the Firm’s internal risk models that have previously been conditionally approved).

Risk-based capital regulatory minimums

The capital adequacy of the Firm and its national bank subsidiaries, both during the transitional period and upon full phase-in, is evaluated against the lower of the two ratios as calculated under the Basel III approaches (Standardized or Advanced) as required by the Collins Amendment of the Dodd-Frank Act (the “Collins Floor”).

At June 30, 2017, the Firm’s Basel III Standardized Fully Phased-In CET1 ratio became the current binding constraint. The Firm anticipates that the Basel III Standardized Fully Phased-In CET1 ratio will remain its binding constraint.

The Basel III rules include minimum capital ratio requirements that are subject to phase-in periods through the end of 2018. In addition to having to maintain the CET1 minimum capital ratio of 4.5%, the Firm is also required to hold additional amounts of capital to serve as a “capital conservation buffer.” As an expansion of the capital conservation buffer, the Firm is also required to hold additional levels of capital in the form of a GSIB surcharge and a countercyclical capital buffer. For additional information on minimum capital ratios, the capital conservation buffer, the countercyclical buffer, and the GSIB surcharge, refer to Risk-based capital regulatory minimums on pages 79-80 of JPMorgan Chase’s 2016 Annual Report.

The Firm believes that it will operate with a Basel III CET1 capital ratio between 11% and 12.5%. It is the Firm’s intention that the Firm’s capital ratios continue to meet regulatory minimums as they are fully implemented in 2019 and thereafter.

The following table represents the ratios the Firm and its IDI subsidiaries must maintain to meet the definition of “well-capitalized” under the regulations issued by the Federal Reserve and the Prompt Corrective Action (“PCA”) requirements of the FDIC Improvement Act (“FDICIA”), respectively.

	Well-capitalized ratios	
	BHC	IDI
Capital ratios		
CET1	—%	6%
Tier 1 capital	6.0	8.0
Total capital	10.0	10.0
Tier 1 leverage	—	5.0

Additional information regarding the Firm's capital ratios, as well as the U.S. federal regulatory capital standards to which the Firm is subject, is presented in Note 18. For further information on the Firm's Basel III measures, see the Firm's Pillar 3 Regulatory Capital Disclosures reports, which are available on the Firm's website (<http://investor.shareholder.com/jpmorganchase/basel.cfm>).

Capital

The following table presents reconciliations of total stockholders' equity to Basel III Fully Phased-In CET1 capital, Tier 1 capital and Basel III Advanced and Standardized Fully Phased-In Total capital as of June 30, 2017 and December 31, 2016.

For additional information on the components of regulatory capital, see Note 18.

Capital components

(in millions)	June 30, 2017	December 31, 2016
Total stockholders' equity	\$258,483	\$ 254,190
Less: Preferred stock	26,068	26,068
Common stockholders' equity	232,415	228,122
Less:		
Goodwill	47,300	47,288
Other intangible assets	827	862
Add:		
Deferred tax liabilities ^(a)	3,252	3,230
Less: Other CET1 capital adjustments	944	1,468
Standardized/Advanced Fully Phased-In CET1 capital	186,596	181,734
Preferred stock	26,068	26,068
Less:		
Other Tier 1 adjustments ^(b)	443	328
Standardized/Advanced Fully Phased-In Tier 1 capital	\$212,221	\$ 207,474
Long-term debt and other instruments qualifying as Tier 2 capital	\$15,157	\$ 15,253
Qualifying allowance for credit losses	14,480	14,854
Other	(116)	(94)
Standardized Fully Phased-In Tier 2 capital	\$29,521	\$ 30,013
Standardized Fully Phased-In Total capital	\$241,742	\$ 237,487
Adjustment in qualifying allowance for credit losses for Advanced Tier 2 capital	(9,716)	(10,961)
Advanced Fully Phased-In Tier 2 capital	\$19,805	\$ 19,052
Advanced Fully Phased-In Total capital	\$232,026	\$ 226,526

(a) Represents deferred tax liabilities related to tax-deductible goodwill and identifiable intangibles created in nontaxable transactions, which are netted against goodwill and other intangibles when calculating TCE.

(b) Includes the deduction associated with the permissible holdings of covered funds (as defined by the Volcker Rule) acquired after December 31, 2013. The deduction was not material as of June 30, 2017 and December 31, 2016.

The following table presents reconciliations of the Firm's Basel III Transitional CET1 capital to the Firm's estimated Basel III Fully Phased-In CET1 capital as of June 30, 2017 and December 31, 2016.

(in millions)	June 30, 2017	December 31, 2016
Transitional CET1 capital	\$186,942	\$182,967
AOCI phase-in ^(a)	70	(156)
CET1 capital deduction phase-in ^(b)	(264)	(695)
Intangibles deduction phase-in ^(c)	(151)	(312)
Other adjustments to CET1 capital ^(d)	(1)	(70)
Fully Phased-In CET1 capital	\$186,596	\$181,734

Includes the remaining balance of accumulated other comprehensive income ("AOCI") related to AFS debt securities (a) and defined benefit pension and other postretirement employee benefit ("OPEB") plans that will qualify as Basel III CET1 capital upon full phase-in.

(b)

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Predominantly includes regulatory adjustments related to changes in DVA, as well as CET1 deductions for defined benefit pension plan assets and deferred tax assets related to NOL and tax credit carryforwards.

(c) Relates to intangible assets, other than goodwill and MSRs, that are required to be deducted from CET1 capital upon full phase-in.

(d) Includes minority interest and the Firm's investments in its own CET1 capital instruments.

Capital rollforward

The following table presents the changes in Basel III Fully Phased-In CET1 capital, Tier 1 capital and Tier 2 capital for the six months ended June 30, 2017.

Six months ended June 30, (in millions)	2017
Standardized/Advanced CET1 capital at December 31, 2016	\$181,734
Net income applicable to common equity	12,654
Dividends declared on common stock	(3,606)
Net purchase of treasury stock	(4,515)
Changes in additional paid-in capital	(1,023)
Changes related to AOCI	682
Adjustment related to DVA ^(a)	140
Other	530
Increase in Standardized/Advanced CET1 capital	4,862
Standardized/Advanced CET1 capital at June 30, 2017	\$186,596
Standardized/Advanced Tier 1 capital at December 31, 2016	\$207,474
Change in CET1 capital	4,862
Net issuance of noncumulative perpetual preferred stock	—
Other	(115)
Increase in Standardized/Advanced Tier 1 capital	4,747
Standardized/Advanced Tier 1 capital at June 30, 2017	\$212,221
Standardized Tier 2 capital at December 31, 2016	\$30,013
Change in long-term debt and other instruments qualifying as Tier 2	(97)
Change in qualifying allowance for credit losses	(374)
Other	(21)
Decrease in Standardized Tier 2 capital	(492)
Standardized Tier 2 capital at June 30, 2017	\$29,521
Standardized Total capital at June 30, 2017	\$241,742
Advanced Tier 2 capital at December 31, 2016	\$19,052
Change in long-term debt and other instruments qualifying as Tier 2	(97)
Change in qualifying allowance for credit losses	871
Other	(21)
Decrease in Advanced Tier 2 capital	753
Advanced Tier 2 capital at June 30, 2017	\$19,805
Advanced Total capital at June 30, 2017	\$232,026

(a) Includes DVA recorded in other comprehensive income ("OCI").

RWA rollforward

The following table presents changes in the components of RWA under Basel III Standardized and Advanced Fully Phased-In for the six months ended June 30, 2017. The amounts in the rollforward categories are estimates, based on the predominant driver of the change.

Six months ended June 30, 2017 (in millions)	Standardized			Advanced			Total RWA
	Credit risk RWA	Market risk RWA		Credit risk RWA	Market risk RWA	Operational risk RWA	
At December 31, 2016	\$ 1,346,986	\$ 127,679	\$ 1,474,665	\$ 959,523	\$ 127,657	\$ 400,000	\$ 1,487,180
Model & data changes ^(a)	(3,900)	)5,039	1,139	(3,120)	)5,039	—	1,919
Portfolio runoff ^(b)	(8,700)	)—	(8,700)	(10,400)	)—	—	(10,400)
Movement in portfolio levels ^(c)	17,180	4,227	21,407	(13,515)	)4,289	—	(9,226)
Changes in RWA	4,580	9,266	13,846	(27,035)	)9,328	—	(17,707)
June 30, 2017	\$ 1,351,566	\$ 136,945	\$ 1,488,511	\$ 932,488	\$ 136,985	\$ 400,000	\$ 1,469,473

(a) Model & data changes refer to movements in levels of RWA as a result of revised methodologies and/or treatment per regulatory guidance (exclusive of rule changes).

(b) Portfolio runoff for credit risk RWA primarily reflects (under both the Standardized and Advanced approaches) reduced risk from position rollofts in legacy portfolios in Mortgage Banking and the sale of substantially all of the student loan portfolio during the second quarter of 2017.

(c) Movement in portfolio levels for credit risk RWA refers to changes in book size, composition, credit quality, and market movements; and for market risk RWA refers to changes in position and market movements.

Supplementary leverage ratio

The SLR is defined as Tier 1 capital under Basel III divided by the Firm's total leverage exposure. For additional information on SLR, see Capital Risk Management on page 82 of JPMorgan Chase's 2016 Annual Report.

The following table presents the components of the Firm's Fully Phased-In SLR as of June 30, 2017 and December 31, 2016.

(in millions, except ratio)	June 30, 2017	December 31, 2016
Tier 1 Capital	\$212,221	\$207,474
Total average assets	2,559,236	2,532,457
Less: Adjustments for deductions from Tier 1 capital	46,557	46,977
Total adjusted average assets ^(a)	2,512,679	2,485,480
Off-balance sheet exposures ^(b)	680,953	707,359
Total leverage exposure	\$3,193,632	\$3,192,839
SLR	6.6	% 6.5 %

Adjusted average assets, for purposes of calculating the SLR, includes total quarterly average assets adjusted for (a) on-balance sheet assets that are subject to deduction from Tier 1 capital, predominantly goodwill and other intangible assets.

(b) Off-balance sheet exposures are calculated as the average of the three month-end spot balances during the quarter. As of June 30, 2017, the Firm estimates that JPMorgan Chase Bank, N.A.'s and Chase Bank USA, N.A.'s Fully Phased-In SLRs are approximately 6.7% and 10.9%, respectively.

Line of business equity

The Firm's framework for allocating capital to its business segments (line of business equity) is based on the following objectives:

- Integrate Firmwide and line of business capital risk management activities;
- Measure performance consistently across all lines of business; and
- Provide comparability with peer firms for each of the lines of business.

Each business segment is allocated capital by taking into consideration stand-alone peer comparisons and regulatory capital requirements. ROE is measured and internal targets for expected returns are established as key measures of a business segment's performance.

Line of business equity

(in billions)	June 30, December 31,	
	2017	2016
Consumer & Community Banking	\$ 51.0	\$ 51.0
Corporate & Investment Bank	70.0	64.0
Commercial Banking	20.0	16.0
Asset & Wealth Management	9.0	9.0
Corporate	82.4	88.1
Total common stockholders' equity	\$ 232.4	\$ 228.1

The amount of capital assigned to each business is referred to as equity. On at least an annual basis, the Firm assesses the level of capital required for each line of business as well as the assumptions and methodologies used to allocate capital. Through the end of 2016, capital was allocated to the lines of business based on a single measure, Basel III Advanced Fully Phased-In RWA. Effective January 1, 2017, the Firm's methodology used to allocate capital to the business segments was updated. For additional information on the new methodology, see Business Segment Results on pages 18–40.

Planning and stress testing

Comprehensive Capital Analysis and Review

The Federal Reserve requires large bank holding companies, including the Firm, to submit a capital plan on an annual basis. Through the CCAR process, the Federal Reserve evaluates each bank holding company's ("BHC") capital adequacy and internal capital adequacy assessment processes, as well as its plans to make capital distributions, such as dividend payments or stock repurchases.

On June 28, 2017, the Federal Reserve informed the Firm that it did not object, on either a quantitative or qualitative basis, to the Firm's 2017 capital plan.

Capital actions

Preferred stock

Preferred stock dividends declared were \$411 million and \$823 million for the three and six months ended June 30, 2017.

For additional information on the Firm's preferred stock, see Note 22 of JPMorgan Chase's 2016 Annual Report.

Common stock dividends

On May 16, 2017, the Firm announced that its Board of Directors had declared a quarterly common stock dividend of \$0.50 per share, effective with the dividend paid on July 31, 2017. On June 28, 2017, the Firm announced that its Board of Directors intends to increase the quarterly common stock dividend to \$0.56 per share, effective the third quarter of 2017. The Firm's dividends are subject to the Board of Directors' approval at the customary times those dividends are to be declared.

Common equity

Effective as of June 28, 2017, the Firm's Board of Directors authorized the repurchase of up to \$19.4 billion of common equity (common stock and warrants) between July 1, 2017 and June 30, 2018.

The following table sets forth the Firm's repurchases of common equity for the three and six months ended June 30, 2017 and 2016. There were no warrants repurchased during the three and six months ended June 30, 2017 and 2016.

	Three months ended June 30,		Six months ended June 30,	
(in millions)	2017	2016	2017	2016
Total shares of common stock repurchased	35.0	45.8	67.1	75.0
Aggregate common stock repurchases	\$3,007	\$2,840	\$5,839	\$4,536

There were 19.3 million warrants outstanding at June 30, 2017 compared with 24.9 million outstanding at December 31, 2016.

The Firm may, from time to time, enter into written trading plans under Rule 10b5-1 of the Securities Exchange Act of 1934 to facilitate repurchases in accordance with the common equity repurchase program. A Rule 10b5-1 repurchase plan allows the Firm to repurchase its equity during periods when it would not otherwise be repurchasing common equity — for example, during internal trading blackout periods. All purchases under a Rule 10b5-1 plan must be made according to a predefined plan established when the Firm is not aware of material nonpublic information. The authorization to repurchase common equity will be utilized at management's discretion, and the timing of purchases and the exact amount of common equity that may be repurchased is subject to various factors, including market conditions; legal and regulatory considerations affecting the amount and timing of repurchase activity; the Firm's capital position (taking into account goodwill and intangibles); internal capital generation; and alternative investment opportunities. The repurchase program does not include specific price targets or timetables; may be executed through open market purchases or privately negotiated transactions, or utilizing Rule 10b5-1 programs; and may be suspended at any time.

For additional information regarding repurchases of the Firm's equity securities, see Part II, Item 5: Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities on page 22 of JPMorgan Chase's 2016 Form 10-K.

Other capital requirements

TLAC

On December 15, 2016, the Federal Reserve issued its final Total Loss Absorbing Capacity (“TLAC”) rule which requires the top-tier holding companies of eight U.S. global systemically important bank holding companies, including the Firm, among other things, to maintain minimum levels of external TLAC and external long-term debt that satisfies certain eligibility criteria (“eligible LTD”) by January 1, 2019. The minimum external TLAC requirement is the greater of (A) 18% of the financial institution’s RWA plus applicable buffers, including its GSIB surcharge as calculated under Method 1 and (B) 7.5% of its total leverage exposure plus a buffer equal to 2.0%. The required minimum level of eligible long-term debt is equal to the greater of (A) 6% of the financial institution’s RWA, plus its U.S. Method 2 GSIB surcharge and (B) 4.5% of the Firm’s total leverage exposure. The final rule permanently grandfathered all long-term debt issued before December 31, 2016, to the extent these securities would be ineligible only due to containing impermissible acceleration rights or being governed by foreign law. While the Firm may have to raise long-term debt to be in full compliance with the rule, management estimates that the remaining net amount to be raised is not material and the timing for raising such funds is manageable.

Broker-dealer regulatory capital

JPMorgan Securities

JPMorgan Chase’s principal U.S. broker-dealer subsidiary is JPMorgan Securities. JPMorgan Securities is subject to Rule 15c3-1 under the Securities Exchange Act of 1934 (the “Net Capital Rule”). JPMorgan Securities is also registered as futures commission merchants and subject to Rule 1.17 of the Commodity Futures Trading Commission (“CFTC”). JPMorgan Securities has elected to compute its minimum net capital requirements in accordance with the “Alternative Net Capital Requirements” of the Net Capital Rule.

In accordance with the market and credit risk standards of Appendix E of the Net Capital Rule, JPMorgan Securities is eligible to use the alternative method of computing net capital if, in addition to meeting its minimum net capital requirement, it maintains tentative net capital of at least \$1.0 billion and is also required to notify the Securities and Exchange Commission (“SEC”) in the event that tentative net capital is less than \$5.0 billion. As of June 30, 2017, JPMorgan Securities maintained tentative net capital in excess of the minimum and notification requirements.

The following table presents JPMorgan Securities’ net capital information:

June 30, 2017 (in billions)	Net Capital Actual	Minimum
JPMorgan Chase’s subsidiary: JPMorgan Securities	\$ 13.9	\$ 2.8

J.P. Morgan Securities plc

J.P. Morgan Securities plc is a wholly-owned subsidiary of JPMorgan Chase Bank, N.A. and is the Firm’s principal operating subsidiary in the U.K. It has authority to engage in banking, investment banking and broker-dealer activities. J.P. Morgan Securities plc is jointly regulated by the U.K. Prudential Regulatory Authority (“PRA”) and the Financial Conduct Authority (“FCA”). J.P. Morgan Securities plc is subject to the European Union Capital Requirements Regulation and the U.K. PRA capital rules, each of which implemented Basel III and thereby subject J.P. Morgan Securities plc to its requirements.

The following table presents J.P.Morgan Securities plc’s capital information:

June 30, 2017 (in billions, except ratios)	Total capital Estimated	CET1 ratio Estimated	Total capital ratio Estimated	Minimum	Minimum
JPMorgan Chase, N.A.’s subsidiary: J.P. Morgan Securities plc	\$ 37.2	13.6%	4.5%	16.8%	8.0%

CREDIT RISK
MANAGEMENT

Credit risk is the risk of loss arising from the default of a customer, client or counterparty. The Firm provides credit to a variety of customers, ranging from large corporate and institutional clients to individual consumers and small businesses. For a further discussion of the Firm's Credit Risk Management framework and organization, and the identification, monitoring and management of credit risks, see Credit Risk Management on pages 86–107 of JPMorgan Chase's 2016 Annual Report.

In the following tables, total loans include loans retained (i.e., held-for-investment); loans held-for-sale (which are carried at the lower of cost or fair value, with valuation changes recorded in the provision for credit losses and/or noninterest revenue); and certain loans accounted for at fair value. The following tables do not include certain loans the Firm accounts for at fair value and classifies as trading assets. For further information regarding these loans, see Notes 2 and 3. For additional information on the Firm's loans, lending-related commitments and derivative receivables, including the Firm's accounting policies, see Notes 11, 19, and 4, respectively.

For further information regarding the credit risk inherent in the Firm's cash placed with banks, see Wholesale credit exposure – industry exposures on pages 58–60; for information regarding the credit risk inherent in the Firm's investment securities portfolio, see Note 9 of this Form 10-Q, and Note 12 of JPMorgan Chase's 2016 Annual Report; and for information regarding the credit risk inherent in the securities financing portfolio, see Note 10 of this Form 10-Q, and Note 13 of JPMorgan Chase's 2016 Annual Report.

Total credit portfolio

(in millions)	Credit exposure		Nonperforming ^{(b)(c)}	
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016
Loans retained	\$899,576	\$889,907	\$ 5,827	\$ 6,721
Loans held-for-sale	7,212	2,628	64	162
Loans at fair value	1,979	2,230	—	—
Total loans	908,767	894,765	5,891	6,883
Derivative receivables	56,506	64,078	170	223
Receivables from customers and other	19,531	17,560	—	—
Total credit-related assets	984,804	976,403	6,061	7,106
Assets acquired in loan satisfactions				
Real estate owned	NA	NA	322	370
Other	NA	NA	49	59
Total assets acquired in loan satisfactions	NA	NA	371	429
Total assets	984,804	976,403	6,432	7,535
Lending-related commitments	1,000,924	976,702	750	506
Total credit portfolio	\$1,985,728	\$1,953,105	\$ 7,182	\$ 8,041
Credit derivatives used in credit portfolio management activities ^(a)	\$(21,723)	\$(22,114)	\$ —	\$ —
Liquid securities and other cash collateral held against derivatives	(18,552)	(22,705)	NA	NA
(in millions, except ratios)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Net charge-offs ^(d)	\$1,204	\$1,181	\$2,858	\$2,291
Average retained loans				
Loans	892,840	855,622	889,229	846,036
Loans – excluding residential real estate PCI loans	859,102	816,572	854,842	806,314
Net charge-off rates ^(d)				
Loans	0.54	%0.56	% 0.65	%0.54

Loans – excluding PCI	0.56	0.58	0.67	0.57
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- Represents the net notional amount of protection purchased and sold through credit derivatives used to manage
- (a) both performing and nonperforming wholesale credit exposures; these derivatives do not qualify for hedge accounting under U.S. GAAP. For additional information, see Credit derivatives on page 62 and Note 4.
 - (b) Excludes PCI loans. The Firm is recognizing interest income on each pool of PCI loans as they are all performing. At June 30, 2017, and December 31, 2016, nonperforming assets excluded: (1) mortgage loans insured by U.S. government agencies of \$4.1 billion and \$5.0 billion, respectively, that are 90 or more days past due; (2) student loans insured by U.S. government agencies under the FFELP of \$24 million and \$263 million, respectively, that are
 - (c) 90 or more days past due; and (3) real estate owned (“REO”) insured by U.S. government agencies of \$105 million and \$142 million, respectively. These amounts have been excluded based upon the government guarantee. In addition, the Firm’s policy is generally to exempt credit card loans from being placed on nonaccrual status as permitted by regulatory guidance issued by the Federal Financial Institutions Examination Council (“FFIEC”). For the six months ended June 30, 2017, excluding net charge-offs of \$467 million related to the student loan
 - (d) portfolio transfer, the net charge-off rate for Loans would have been 0.54% and for Loans – excluding PCI would have been 0.56%. For additional information refer to CCB segment results on page 21.

CONSUMER
CREDIT
PORTFOLIO

The Firm's retained consumer portfolio consists primarily of residential real estate loans, credit card loans, auto loans, and business banking loans, and associated lending-related commitments. The Firm's focus is on serving primarily the prime segment of the consumer credit market. For further

information on consumer loans, see Note 11 of this Form 10-Q and Consumer Credit Portfolio on pages 89–95 and Note 14 of JPMorgan Chase's 2016 Annual Report. For further information on lending-related commitments, see Note 19 of this Form 10-Q.

The following table presents consumer credit-related information with respect to the credit portfolio held by CCB, prime mortgage and home equity loans held by AWM, and prime mortgage loans held by Corporate.

Consumer credit portfolio

(in millions, except ratios)	Credit exposure		Nonaccrual loans ^{(k)(l)}		Three months ended June 30,				Six months ended June 30,				
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Net charge-offs/(recovery)		Average annual net charge-off/(recovery) rate ^{(m)(n)}		Net charge-offs ^{(e)(m)}		Average annual net charge-off rate ^{(e)(m)(n)}		
					2017	2016	2017	2016	2017	2016	2017	2016	
Consumer, excluding credit card Loans, excluding PCI loans and loans held-for-sale													
Home equity	\$36,000	\$39,063	\$1,645	\$1,845	\$9	\$36	0.10	0.34	\$58	\$95	0.31	0.43	%
Residential mortgage ^(a)	205,380	192,486	2,089	2,256	(3)	3	(0.01)	0.01	—	4	—	—	
Auto ^{(b)(c)}	65,627	65,814	158	214	48	46	0.29	0.29	129	113	0.40	0.36	
Consumer & Business Banking ^{(a)(c)(d)}	25,044	24,307	301	287	56	53	0.91	0.92	113	109	0.93	0.95	
Student ^{(a)(e)}	—	7,057	—	165	—	29	—	1.50	498	66	NM	1.68	
Total loans, excluding PCI loans and loans held-for-sale	332,051	328,727	4,193	4,767	110	167	0.13	0.21	798	387	0.49	0.25	
Loans – PCI													
Home equity	11,838	12,902	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Prime mortgage	7,023	7,602	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Subprime mortgage	2,771	2,941	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Option ARMs ^(f)	11,432	12,234	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Total loans – PCB	3,064	35,679	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Total loans – retained	365,115	364,406	4,193	4,767	110	167	0.12	0.19	798	387	0.44	0.22	
Loans held-for-sale	256	⁽ⁱ⁾ 238	⁽ⁱ⁾ 33	53	—	—	—	—	—	—	—	—	

Total consumer, excluding credit card loans	365,371	364,644	4,226	4,820	110	167	0.12	0.19	798	387	0.44	0.22	
Lending-related commitments ^(g)	58,162	54,797											
Receivables from customers ^(h)	136	120											
Total consumer exposure, excluding credit card	423,669	419,561											
Credit card Loans retained ⁽ⁱ⁾	140,035	141,711	—	—	1,037	860	3.01	2.70	2,030	1,690	2.98	2.66	
Loans held-for-sale	106	105	—	—	—	—	—	—	—	—	—	—	
Total credit card loans	140,141	141,816	—	—	1,037	860	3.01	2.70	2,030	1,690	2.98	2.66	
Lending-related commitments ^(g)	576,264	553,891											
Total credit card exposure	716,405	695,707											
Total consumer credit portfolio	\$ 1,140,074	\$ 1,115,268	\$ 4,226	\$ 4,820	\$ 1,147	\$ 1,027	0.92	% 0.85	% \$ 2,828	\$ 2,077	1.14	% 0.87	%
Memo: Total consumer credit portfolio, excluding PCI	\$ 1,107,010	\$ 1,079,589	\$ 4,226	\$ 4,820	\$ 1,147	\$ 1,027	0.99	% 0.92	% \$ 2,828	\$ 2,077	1.22	% 0.95	%

(a) Certain loan portfolios have been reclassified. The prior period amounts have been revised to conform with the current period presentation.

(b) At June 30, 2017, and December 31, 2016, excluded operating lease assets of \$15.2 billion and \$13.2 billion, respectively. These operating lease assets are included in other assets on the Firm's Consolidated balance sheets.

(c) Includes certain business banking and auto dealer risk-rated loans that apply the wholesale methodology for determining the allowance for loan losses; these loans are managed by CCB, and therefore, for consistency in presentation, are included within the consumer portfolio.

(d) Predominantly includes Business Banking loans.

(e) For the six months ended June 30, 2017, excluding net charge-offs of \$467 million related to the student loan portfolio transfer, the net charge-off rate for Total consumer, excluding credit card and PCI loans and loans held-for-sale would have been 0.20%; Total consumer—retained excluding credit card loans would have been 0.18%; Total consumer credit portfolio would have been 0.95%; and Total consumer credit portfolio, excluding PCI loans would have been 1.02%. For additional information refer to CCB segment results on page 21.

(f) At June 30, 2017, and December 31, 2016, approximately 68% and 66%, respectively, of the PCI option adjustable rate mortgage ("ARM") portfolio has been modified into fixed-rate, fully amortizing loans.

(g) Credit card and home equity lending-related commitments represent the total available lines of credit for these products. The Firm has not experienced, and does not anticipate, that all available lines of credit would be used at the same time. For credit card and home equity commitments (if certain conditions are met), the Firm can reduce or cancel these lines of credit by providing the borrower notice or, in some cases as permitted by law, without notice.

Receivables from customers represent margin loans to brokerage customers that are collateralized through assets (h) maintained in the clients' brokerage accounts, as such no allowance is held against these receivables. These receivables are reported within accrued interest and accounts receivable on the Firm's Consolidated balance sheets.

(i) Includes billed interest and fees net of an allowance for uncollectible interest and fees.

(j) Includes residential mortgage loans held-for-sale at both June 30, 2017 and December 31, 2016. Also includes student loans held-for-sale at June 30, 2017.

At June 30, 2017, and December 31, 2016, nonaccrual loans excluded loans 90 or more days past due as follows:

(1) mortgage loans insured by U.S. government agencies of \$4.1 billion and \$5.0 billion, respectively; and (2) student loans insured by U.S. government agencies under the FFELP of \$24 million and \$263 million, respectively.

(k) These amounts have been excluded from nonaccrual loans based upon the government guarantee. In addition, the Firm's policy is generally to exempt credit card loans from being placed on nonaccrual status, as permitted by regulatory guidance issued by the FFIEC.

(l) Excludes PCI loans. The Firm is recognizing interest income on each pool of PCI loans as they are all performing.

Net charge-offs and the net charge-off rates excluded write-offs in the PCI portfolio of \$22 million and \$41

(m) million for the three months ended June 30, 2017 and 2016, respectively, and \$46 million and \$88 million for the six months ended June 30, 2017 and 2016, respectively. These write-offs decreased the allowance for loan losses for PCI loans. See Allowance for Credit Losses on pages 63–65 for further details.

Average consumer loans held-for-sale were \$4.9 billion and \$354 million for the three months ended June 30, 2017

(n) and 2016, respectively, and \$2.6 billion and \$389 million for the six months ended June 30, 2017 and 2016, respectively. These amounts were excluded when calculating net charge-off rates.

Consumer, excluding credit card

Portfolio analysis

Consumer loan balances were relatively flat compared to balances at December 31, 2016 as originations of high-quality prime mortgage loans that have been retained on the balance sheet were offset by the sale of the student loan portfolio as well as paydowns and the charge-off or liquidation of delinquent loans. The credit environment remained favorable as a result of low unemployment levels and increases in home prices.

PCI loans are excluded from the following discussions of individual loan products and are addressed separately below.

For further information about the Firm's consumer portfolio, including information about delinquencies, loan modifications and other credit quality indicators, see

Note 11 of this Form 10-Q.

Home equity: The home equity portfolio declined from December 31, 2016 primarily reflecting loan paydowns and charge-offs. Both early-stage and late-stage delinquencies showed improvement from December 31, 2016. Nonaccrual loans decreased from December 31, 2016 primarily as a result of loss mitigation activities. Net charge-offs for the three and six months ended June 30, 2017 declined when compared with the same periods of the prior year, partially as a result of lower loan balances.

At June 30, 2017, approximately 90% of the Firm's home equity portfolio consists of home equity lines of credit ("HELOCs") and the remainder consists of home equity loans ("HELOANs"). For further information on the Firm's home equity portfolio, see Note 11 of this Form 10-Q and Consumer Credit Portfolio on pages 89–95 of JPMorgan Chase's 2016 Annual Report.

The carrying value of HELOCs outstanding was \$32 billion at June 30, 2017. Of such amounts, \$13 billion have recast from interest-only to fully amortizing payments or have been modified. Of the remaining \$19 billion, approximately:

\$13 billion are scheduled to recast from interest-only to fully amortizing payments in future periods, and

\$6 billion are interest-only balloon HELOCs, which primarily mature after 2030.

The following chart illustrates the payment recast composition of the approximately \$19 billion of HELOCs scheduled to recast in the future, based upon their current contractual terms.

HELOCs scheduled to recast

(at June 30, 2017)

The Firm has considered this payment recast risk in its allowance for loan losses based upon the estimated amount of payment shock (i.e., the excess of the fully-amortizing payment over the interest-only payment in effect prior to recast) resulting from the increase in the monthly payment expected to occur at the payment recast date, along with the corresponding estimated probability of default (“PD”) and loss severity assumptions. As part of its allowance estimate, the Firm also expects, based on observed activity in recent years, that approximately 25% of the carrying value of HELOCs scheduled to recast will voluntarily pre-pay prior to or after the recast. The HELOCs that have previously recast to fully amortizing payments generally have higher delinquency rates than the HELOCs within the revolving period, primarily as a result of the payment shock at the time of recast. Certain other factors, such as future developments in both unemployment rates and home prices, could also have a significant impact on the performance of these loans.

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The Firm manages the risk of HELOCs during their revolving period by closing or reducing the undrawn line to the extent permitted by law when borrowers are exhibiting a material deterioration in their credit risk profile. The Firm will continue to evaluate both the near-term and longer-term recast risks inherent in its HELOC portfolio to ensure that changes in the Firm's estimate of incurred losses are appropriately considered in the allowance for loan losses and that the Firm's account management practices are appropriate given the portfolio's risk profile.

Junior lien loans where the borrower has a senior lien loan that is either delinquent or has been modified are considered high-risk seconds. Such loans are considered to pose a higher risk of default than junior lien loans for which the senior lien is neither delinquent nor modified. At June 30, 2017, the Firm estimated that the carrying value of its home equity portfolio contained approximately \$0.9 billion of current junior lien loans that were considered high risk seconds, compared with \$1.1 billion at December 31, 2016. The Firm estimates the balance of its total exposure to high-risk seconds on a quarterly basis using internal data and loan level credit bureau data (which typically provides the delinquency status of the senior lien). The Firm considers the increased PD associated with these high-risk seconds in estimating the allowance for loan losses and classifies those loans that are subordinated to a first lien loan that is more than 90 days delinquent as nonaccrual loans. The estimated balance of these high-risk seconds may vary from quarter to quarter for reasons such as the movement of related senior liens into and out of the 30+ day delinquency bucket. The Firm continues to monitor the risks associated with these loans. For further information, see Note 11.

Residential mortgage: The residential mortgage portfolio predominantly consists of high-quality prime mortgage loans, with a small component (approximately 1%) of the residential mortgage portfolio in subprime mortgage loans. These subprime mortgage loans continue to run-off and are performing in line with expectations. The residential mortgage portfolio, including loans held-for-sale, increased from December 31, 2016 due to retained originations of primarily high-quality fixed rate prime mortgage loans partially offset by paydowns and the charge-off or liquidation of delinquent loans. Both early-stage and late-stage delinquencies showed improvement from December 31, 2016. Nonaccrual loans decreased from December 31, 2016 primarily as a result of loss mitigation activities. Net charge-offs for the three and six months ended June 30, 2017 remain low, reflecting continued improvement in home prices and delinquencies.

At June 30, 2017, and December 31, 2016, the Firm's residential mortgage portfolio, including loans held-for-sale, included \$8.7 billion and \$9.5 billion, respectively, of mortgage loans insured and/or guaranteed by U.S. government agencies, of which \$6.0 billion and \$7.0 billion, respectively, were 30 days or more past due (of these past due loans, \$4.1 billion and \$5.0 billion, respectively, were

90 days or more past due). The Firm monitors its exposure to certain potential unrecoverable claim payments related to government-insured loans and considers this exposure in estimating the allowance for loan losses.

At June 30, 2017, and December 31, 2016, the Firm's residential mortgage portfolio included \$19.7 billion and \$19.1 billion, respectively, of interest-only loans. These loans have an interest-only payment period generally followed by an adjustable-rate or fixed-rate fully amortizing payment period to maturity and are typically originated as higher-balance loans to higher-income borrowers. To date, losses on this portfolio generally have been consistent with the broader residential mortgage portfolio and the Firm's expectations. The Firm continues to monitor the risks associated with these loans.

Auto: Auto loans were relatively flat compared with December 31, 2016, as paydowns and the charge-off or liquidation of delinquent loans were offset by new originations. Nonaccrual loans decreased compared with December 31, 2016. Net charge-offs for the three and six months ended June 30, 2017 increased compared with the same period in the prior year, as a result of a moderate increase in loss severity. The auto portfolio predominantly consists of prime-quality loans.

Consumer & Business Banking: Consumer & Business Banking loans increased compared with December 31, 2016, as growth in loan originations were partially offset by paydowns and the charge-off or liquidation of delinquent loans. Nonaccrual loans increased slightly compared with December 31, 2016. Net charge-offs for the three and six months ended June 30, 2017 increased compared to the prior year.

Student: The Firm transferred the student loan portfolio to held-for-sale in the first quarter of 2017 and sold substantially all of the portfolio in the second quarter of 2017. Net charge-offs for the six months ended June 30, 2017 increased as a result of the write-down of the portfolio at the time of the transfer.

Purchased credit-impaired loans: PCI loans decreased as the portfolio continues to run off. As of June 30, 2017, approximately 11% of the option ARM PCI loans were delinquent and approximately 68% of the portfolio had been modified into fixed-rate, fully amortizing loans. Substantially all of the remaining loans are making amortizing payments, although such payments are not necessarily fully amortizing. This latter group of loans is subject to the risk of payment shock due to future payment recast. Default rates generally increase on option ARM loans when payment recast results in a payment increase. The expected increase in default rates is considered in the Firm's quarterly impairment assessment.

The following table provides a summary of lifetime principal loss estimates included in either the nonaccretable difference or the allowance for loan losses.

Summary of PCI loans lifetime principal loss estimates

(in billions)	Lifetime loss estimates ^(a)		Life-to-date liquidation losses ^(b)	
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016
Home equity	\$14.0	\$14.4	\$12.8	\$12.8
Prime mortgage	3.9	4.0	3.8	3.7
Subprime mortgage	3.2	3.2	3.1	3.1
Option ARMs	9.9	10.0	9.7	9.7
Total	\$31.0	\$31.6	\$29.4	\$29.3

Includes the original nonaccretable difference established in purchase accounting of \$30.5 billion for

(a) principal losses plus additional principal losses recognized subsequent to acquisition through the provision and allowance for loan losses. The remaining nonaccretable difference for principal losses was \$962 million and \$1.1 billion at June 30, 2017, and December 31, 2016, respectively.

(b) Life-to-date liquidation losses represent both realization of loss upon loan resolution and any principal forgiven upon modification.

Current estimated loan-to-value ratio of residential real estate loans

The current estimated average loan-to-value (“LTV”) ratio for residential real estate loans retained, excluding mortgage loans guaranteed and/or insured by U.S. government agencies and PCI loans, was 57% at June 30, 2017, compared with 58% at December 31, 2016. The current estimated average LTV ratio for residential real estate PCI loans, based on the unpaid principal balances, was 61% at June 30, 2017, compared with 64% at December 31, 2016.

Average LTV ratios have declined consistent with recent improvements in home prices, customer pay downs, and charge-offs or liquidations of higher LTV loans. For further information on current estimated LTVs on residential real estate loans, see Note 11.

Geographic composition of residential real estate loans

For information on the geographic composition of the Firm’s residential real estate loans, see Note 11.

Loan modification activities – residential real estate loans

The performance of modified loans generally differs by product type due to differences in both the credit quality and the types of modifications provided. The performance of modifications completed under both the U.S. Government’s Home Affordable Modification Program (“HAMP”) and the Firm’s proprietary modification programs (primarily the Firm’s modification program that was modeled after HAMP), as measured through cumulative redefault rates, was not materially different from December 31, 2016. For further information on the Firm’s cumulative redefault rates see Consumer Credit Portfolio on pages 89–95 of JPMorgan Chase’s 2016 Annual Report.

Certain loans that were modified under HAMP and the Firm’s proprietary modification programs have interest rate reset provisions (“step-rate modifications”). Interest rates on these loans generally began to increase commencing in 2014 by 1% per year, and will continue to do so, until the rate reaches a specified cap. The cap on these loans is typically at a prevailing market interest rate for a fixed-rate mortgage loan as of the modification date. At June 30, 2017, the carrying value of non-PCI loans and the unpaid principal balance of PCI loans modified in step-rate modifications, which have not yet met their specified caps, were \$3 billion and \$8 billion, respectively. The Firm continues to monitor this risk exposure and the impact of these potential interest rate increases is considered in the Firm’s allowance for loan losses.

The following table presents information as of June 30, 2017, and December 31, 2016, relating to modified retained residential real estate loans for which concessions have been granted to borrowers experiencing financial difficulty. For further information on modifications for the three and six months ended June 30, 2017 and 2016, see Note 11.

Modified residential real estate loans

(in millions)	June 30, 2017		December 31, 2016	
	Retained loans	Non-accrual retained loans ^(d)	Retained loans	Non-accrual retained loans ^(d)
Modified residential real estate loans, excluding PCI loans ^{(a)(b)}				
Home equity	\$2,162	\$ 1,056	\$2,264	\$ 1,116
Residential mortgage	5,804	1,684	6,032	1,755
Total modified residential real estate loans, excluding PCI loans	\$7,966	\$ 2,740	\$8,296	\$ 2,871
Modified PCI loans ^(c)				
Home equity	\$2,369	NA	\$2,447	NA
Prime mortgage	4,767	NA	5,052	NA
Subprime mortgage	2,815	NA	2,951	NA
Option ARMs	8,770	NA	9,295	NA
Total modified PCI loans	\$18,721	NA	\$19,745	NA

(a) Amounts represent the carrying value of modified residential real estate loans.

At June 30, 2017, and December 31, 2016, \$3.9 billion and \$3.4 billion, respectively, of loans modified subsequent to repurchase from Ginnie Mae in accordance with the standards of the appropriate government agency (i.e.,

(b) Federal Housing Administration (“FHA”), U.S. Department of Veterans Affairs (“VA”), Rural Housing Service of the U.S. Department of Agriculture (“RHS”)) are not included in the table above. When such loans perform subsequent to modification in accordance with Ginnie Mae guidelines, they are generally sold back into Ginnie Mae loan pools. Modified loans that do not re-perform become subject to foreclosure. For additional information about sales of loans in securitization transactions with Ginnie Mae, see Note 13.

(c) Amounts represent the unpaid principal balance of modified PCI loans.

At both June 30, 2017, and December 31, 2016, nonaccrual loans included \$2.3 billion of troubled debt

(d) restructurings (“TDRs”) for which the borrowers were less than 90 days past due. For additional information about loans modified in a TDR that are on nonaccrual status, see Note 11.

Nonperforming assets

The following table presents information as of June 30, 2017, and December 31, 2016, about consumer, excluding credit card, nonperforming assets.

Nonperforming assets^(a)

(in millions)	June 30, 2017	December 31, 2016
Nonaccrual loans ^(b)		
Residential real estate ^(c)	\$ 3,763	\$ 4,154
Other consumer ^(c)	463	666
Total nonaccrual loans	4,226	4,820
Assets acquired in loan satisfactions		
Real estate owned	249	292
Other	47	57
Total assets acquired in loan satisfactions	296	349
Total nonperforming assets	\$ 4,522	\$ 5,169

At June 30, 2017, and December 31, 2016, nonperforming assets excluded: (1) mortgage loans insured by U.S. government agencies of \$4.1 billion and \$5.0 billion, respectively, that are 90 or more days past due; (2) student (a) loans insured by U.S. government agencies under the FFELP of \$24 million and \$263 million, respectively, that are 90 or more days past due; and (3) REO insured by U.S. government agencies of \$105 million and \$142 million, respectively. These amounts have been excluded based upon the government guarantee.

Excludes PCI loans which are accounted for on a pool basis. Since each pool is accounted for as a single asset with a single composite interest rate and an aggregate expectation of cash flows, the past-due status of the pools, or that (b) of individual loans within the pools, is not meaningful. The Firm is recognizing interest income on each pool of loans as they are all performing.

(c) Certain loan portfolios have been reclassified. The prior period amounts have been revised to conform with the current period presentation.

Nonaccrual loans in the residential real estate portfolio decreased to \$3.8 billion at June 30, 2017 from \$4.2 billion at December 31, 2016, of which 27% and 29%, respectively, were greater than 150 days past due. In the aggregate, the unpaid principal balance of residential real estate loans greater than 150 days past due was charged down by approximately 43% to the estimated net realizable value of the collateral at both June 30, 2017, and December 31, 2016.

Active and suspended foreclosure: For information on loans that were in the process of active or suspended foreclosure, see Note 11.

Nonaccrual loans: The following table presents changes in consumer, excluding credit card, nonaccrual loans for the six months ended June 30, 2017 and 2016.

Nonaccrual loan activity

Six months ended June 30, (in millions)	2017	2016
Beginning balance	\$4,820	\$5,413
Additions	1,647	1,802
Reductions:		
Principal payments and other ^(a)	888	730
Charge-offs	372	354
Returned to performing status	750	853
Foreclosures and other liquidations	231	193
Total reductions	2,241	2,130
Net changes	(594)	(328)
Ending balance	\$4,226	\$5,085

(a) Other reductions includes loan sales.

Credit card

Total credit card loans decreased from December 31, 2016 due to seasonality. The June 30, 2017 30+ day delinquency rate decreased to 1.59% from 1.61% at December 31, 2016, and remains near record lows. For the three months ended June 30, 2017 and 2016, the net charge-off rates were 3.01% and 2.70%, respectively. For the six months ended June 30, 2017 and 2016, the net charge-off rates were 2.98% and 2.66%, respectively. The credit card portfolio continues to reflect a largely well-seasoned portfolio that has good U.S. geographic diversification. New originations continue to grow as a percentage of the total portfolio; these originations have generated higher loss rates than the more seasoned portion of the portfolio given the higher mix of near-prime accounts being originated, in line with the Firm's credit parameters. These near-prime accounts, once seasoned, have net revenue rates and returns on equity that are higher than the portfolio average. For information on the geographic and FICO composition of the Firm's credit card loans, see Note 11.

Modifications of credit card loans

At both June 30, 2017 and December 31, 2016, the Firm had \$1.2 billion of credit card loans outstanding that have been modified in TDRs. These balances included both credit card loans with modified payment terms and credit card loans that reverted back to their pre-modification payment terms because the cardholder did not comply with the modified payment terms.

Consistent with the Firm's policy, all credit card loans typically remain on accrual status until charged-off. However, the Firm establishes an allowance, which is offset against loans and charged to interest income, for the estimated uncollectible portion of accrued and billed interest and fee income.

For additional information about loan modification programs to borrowers, see Note 11.

WHOLESALE
CREDIT
PORTFOLIO

The Firm's wholesale businesses are exposed to credit risk through underwriting, lending, market-making, and hedging activities with and for clients and counterparties, as well as through various operating services such as cash management and clearing activities. A portion of the loans originated or acquired by the Firm's wholesale businesses is generally retained on the balance sheet. The Firm distributes a significant percentage of the loans it originates into the market as part of its syndicated loan business and to manage portfolio concentrations and credit risk.

The wholesale credit portfolio continued to be generally stable for the six months ended June 30, 2017, characterized by low levels of criticized exposure, nonaccrual loans and charge-offs. See industry discussion on pages 58–60 for further information. Growth in retained loans was predominantly driven by CB. Discipline in underwriting across all areas of lending continues to remain a key point of focus. The wholesale portfolio is actively managed, in part by conducting ongoing, in-depth reviews of client credit quality and transaction structure inclusive of collateral where applicable, as well as reviews of industry, product and client concentrations.

In the following tables, the Firm's wholesale credit portfolio includes exposure held in CIB, CB, AWM and Corporate, and excludes all exposure managed by CCB.

Wholesale credit portfolio

(in millions)	Credit exposure		Nonperforming ^(c)	
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016
Loans retained	\$394,426	\$383,790	\$ 1,634	\$ 1,954
Loans held-for-sale	6,850	2,285	31	109
Loans at fair value	1,979	2,230	—	—
Loans	403,255	388,305	1,665	2,063
Derivative receivables	56,506	64,078	170	223
Receivables from customers and other ^(a)	19,395	17,440	—	—
Total wholesale credit-related assets	479,156	469,823	1,835	2,286
Lending-related commitments	366,498	368,014	750	506
Total wholesale credit exposure	\$845,654	\$837,837	\$ 2,585	\$ 2,792
Credit derivatives used in credit portfolio management activities ^(b)	\$(21,723)	\$(22,114)	\$ —	\$ —
Liquid securities and other cash collateral held against derivatives	(18,552)	(22,705)	NA	NA

Receivables from customers and other include \$19.4 billion and \$17.3 billion of margin loans at June 30, 2017, and (a) December 31, 2016, respectively, to prime brokerage customers; these are classified in accrued interest and accounts receivable on the Consolidated balance sheets.

Represents the net notional amount of protection purchased and sold through credit derivatives used to manage (b) both performing and nonperforming wholesale credit exposures; these derivatives do not qualify for hedge accounting under U.S. GAAP. For additional information, see Credit derivatives on page 62, and Note 4.

(c) Excludes assets acquired in loan satisfactions.

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The following tables present the maturity and ratings profiles of the wholesale credit portfolio as of June 30, 2017, and December 31, 2016. The ratings scale is based on the Firm's internal risk ratings, which generally correspond to the ratings defined by S&P and Moody's. For additional information on wholesale loan portfolio risk ratings, see Note 14 of JPMorgan Chase's 2016 Annual Report.

Wholesale credit exposure – maturity and ratings profile

	Maturity profile ^(d)				Ratings profile			Total % of IG
	Due in 1 year or less	Due after 1 year through 5 years	Due after 5 years	Total	Investment-grade AAA/Aaa to BBB-/Baa3	Non-investment-grade BB+/Ba1 & below	Total	
June 30, 2017 (in millions, except ratios)								
Loans retained	\$ 114,667	\$ 177,751	\$ 102,008	\$ 394,426	\$ 302,686	\$ 91,740	\$ 394,426	77%
Derivative receivables				56,506			56,506	
Less: Liquid securities and other cash collateral held against derivatives				(18,552)			(18,552)	
Total derivative receivables, net of all collateral	8,820	8,372	20,762	37,954	30,010	7,944	37,954	79
Lending-related commitments	88,305	266,467	11,726	366,498	269,686	96,812	366,498	74
Subtotal	211,792	452,590	134,496	798,878	602,382	196,496	798,878	75
Loans held-for-sale and loans at fair value ^(a)				8,829			8,829	
Receivables from customers and other				19,395			19,395	
Total exposure – net of liquid securities and other cash collateral held against derivatives				\$ 827,102			\$ 827,102	
Credit derivatives used in credit portfolio management activities ^{(b)(c)}	\$(1,134)	\$(16,247)	\$(4,342)	\$(21,723)	\$(18,420)	\$ (3,303)	\$(21,723)	85%

	Maturity profile ^(d)				Ratings profile			Total % of IG
	Due in 1 year or less	Due after 1 year through 5 years	Due after 5 years	Total	Investment-grade AAA/Aaa to BBB-/Baa3	Non-investment-grade BB+/Ba1 & below	Total	
December 31, 2016 (in millions, except ratios)								
Loans retained	\$ 117,238	\$ 167,235	\$ 99,317	\$ 383,790	\$ 289,923	\$ 93,867	\$ 383,790	76%
Derivative receivables				64,078			64,078	
Less: Liquid securities and other cash collateral held against derivatives				(22,705)			(22,705)	
Total derivative receivables, net of all collateral	14,019	8,510	18,844	41,373	33,081	8,292	41,373	80
Lending-related commitments	88,399	271,825	7,790	368,014	269,820	98,194	368,014	73
Subtotal	219,656	447,570	125,951	793,177	592,824	200,353	793,177	75
Loans held-for-sale and loans at fair value ^(a)				4,515			4,515	
Receivables from customers and other				17,440			17,440	
Total exposure – net of liquid securities and other cash collateral held against derivatives				\$ 815,132			\$ 815,132	

Total exposure – net of liquid securities and other cash collateral held against derivatives

Credit derivatives used in

credit portfolio management activities^{(b)(c)} \$(1,354) \$(16,537) \$(4,223) \$(22,114) \$(18,710) \$ (3,404) \$(22,114) 85 %

(a) Represents loans held-for-sale, primarily related to syndicated loans and loans transferred from the retained portfolio, and loans at fair value.

(b) These derivatives do not qualify for hedge accounting under U.S. GAAP.

(c) The notional amounts are presented on a net basis by underlying reference entity and the ratings profile shown is based on the ratings of the reference entity on which protection has been purchased. Predominantly all of the credit derivatives entered into by the Firm where it has purchased protection, including credit derivatives used in credit portfolio management activities, are executed with investment-grade counterparties.

(d) The maturity profile of retained loans, lending-related commitments and derivative receivables is based on the remaining contractual maturity. Derivative contracts that are in a receivable position at June 30, 2017, may become payable prior to maturity based on their cash flow profile or changes in market conditions.

Wholesale credit exposure – industry exposures

The Firm focuses on the management and diversification of its industry exposures, and pays particular attention to industries with actual or potential credit concerns. Exposures deemed criticized align with the U.S. banking regulators' definition of criticized exposures, which consist

of the special mention, substandard and doubtful categories. The total criticized component of the portfolio, excluding loans held-for-sale and loans at fair value, was \$16.5 billion at June 30, 2017, compared with \$19.8 billion at December 31, 2016, with the decrease largely driven by Oil & Gas.

Effective in the first quarter of 2017, the Firm revised its methodology for the assignment of industry classifications, to better monitor and manage concentrations. This largely resulted in the re-assignment of holding companies from All other to the industry of risk category based on the primary business activity of the holding company's underlying companies or enterprises. In the tables and industry discussions below, the prior period amounts have been revised to conform with the current period presentation.

Below are summaries of the Firm's exposures as of June 30, 2017, and December 31, 2016. For additional information on industry concentrations, see Note 5 of JPMorgan Chase's 2016 Annual Report.

Wholesale credit exposure – industries^(a)

As of or for the six months ended June 30, 2017 (in millions)	Noninvestment-grade					Selected metrics			
	Credit exposure ^(e)	Investment-grade	Noncriticized	Criticized performing	Criticized nonperforming	30 days or more past due accruing loans	Net charge-offs (recoveries)	Credit derivatives ^(f)	Liquid securities and other cash collateral held against derivative receivables
Real Estate	\$ 137,743	\$ 110,956	\$ 25,652	\$ 983	\$ 152	\$ 140	\$ (2)	\$(40)	\$(6)
Consumer & Retail	90,296	61,168	27,492	1,480	156	155	13	(407)	(22)
Technology, Media & Telecommunications	58,668	36,000	21,370	1,249	49	7	(18)	(445)	(86)
Industrials	57,316	36,582	19,629	932	173	98	6	(379)	(38)
Healthcare	48,697	37,481	10,190	968	58	7	(1)	(245)	(260)
Banks & Finance Cos	46,489	33,160	12,805	493	31	16	(1)	(1,359)	(4,470)
Oil & Gas	38,832	18,967	12,734	5,896	1,235	4	37	(1,127)	(37)
Asset Managers	32,248	27,456	4,763	28	1	66	—	—	(4,853)
Utilities	30,605	24,508	5,762	174	161	—	11	(266)	(106)
State & Municipal Govt ^(b)	27,590	26,990	569	1	30	5	—	(130)	(97)
Central Govt	18,760	18,411	323	26	—	2	—	(10,355)	(3,599)
Transportation	17,677	11,287	5,743	524	123	3	10	(71)	(170)
Automotive	15,895	9,309	6,450	135	1	1	—	(362)	(9)
Chemicals & Plastics	15,494	11,306	4,123	65	—	2	—	(30)	(5)
Metals & Mining	13,455	6,240	6,344	871	—	1	(14)	(374)	(14)
Insurance	11,808	9,684	2,026	—	98	8	—	(232)	(2,064)
Financial Markets	7,872	6,862	1,010	—	—	—	—	—	(358)
Infrastructure	5,200	2,701	2,496	3	—	—	—	(274)	(912)
Securities Firms	142,785	130,104	12,306	89	286	936	(11)	(5,627)	(1,446)
All other ^(c)	817,430	619,172	181,787	13,917	2,554	1,451	30	\$(21,723)	\$(18,552)
Subtotal	\$ 817,430	\$ 619,172	\$ 181,787	\$ 13,917	\$ 2,554	\$ 1,451	\$ 30	\$(21,723)	\$(18,552)
Loans held-for-sale and loans at fair value	8,829								

Receivables from customers and other	19,395
Total ^(d)	\$ 845,654

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(continued from previous page)

As of or for the year ended December 31, 2016 (in millions)	Noninvestment-grade					Selected metrics			Liquid securities and other cash collateral held against derivative receivables
	Credit exposure ^(e)	Investment-grade	Noncriticized	Criticized performing	Criticized nonperforming	30 days or more past due accruing loans	Net charge-offs (recoveries)	Credit reserves ^(f)	
Real Estate	\$ 134,287	\$ 104,869	\$ 28,281	\$ 937	\$ 200	\$ 206	\$ (7)	\$(54)	\$(11)
Consumer & Retail	84,804	54,730	28,255	1,571	248	75	24	(424)	(69)
Technology, Media & Telecommunications	63,324	39,998	21,751	1,559	16	9	2	(589)	(30)
Industrials	55,733	36,710	17,854	1,033	136	128	3	(434)	(40)
Healthcare	49,445	39,244	9,279	882	40	86	37	(286)	(246)
Banks & Finance Cos	48,393	35,385	12,560	438	10	21	(2)	(1,336)	(7,337)
Oil & Gas	40,367	18,629	12,274	8,069	1,395	31	233	(1,532)	(18)
Asset Managers	33,201	29,194	4,006	1	—	17	—	—	(5,737)
Utilities	29,672	24,203	4,959	424	86	8	—	(306)	39
State & Municipal Govt ^(b)	28,263	27,603	624	6	30	107	(1)	(130)	398
Central Govt	20,408	20,123	276	9	—	4	—	(11,691)	(4,183)
Transportation	19,096	12,178	6,421	444	53	9	10	(93)	(188)
Automotive	16,736	9,235	7,299	201	1	7	—	(401)	(14)
Chemicals & Plastics	15,043	10,405	4,452	156	30	3	—	(35)	(3)
Metals & Mining	13,419	5,523	6,744	1,133	19	—	36	(621)	(62)
Insurance	13,510	10,918	2,459	—	133	9	—	(275)	(2,538)
Financial Markets Infrastructure	8,732	7,980	752	—	—	—	—	—	(390)
Securities Firms	4,211	1,812	2,399	—	—	—	—	(273)	(491)
All other ^(c)	137,238	124,661	11,988	303	286	598	6	(3,634)	(1,785)
Subtotal	\$ 815,882	\$ 613,400	\$ 182,633	\$ 17,166	\$ 2,683	\$ 1,318	\$ 341	\$(22,114)	\$(22,705)
Loans held-for-sale and loans at fair value	4,515								
Receivables from customers and other	17,440								
Total ^(d)	\$ 837,837								

(a)

The industry rankings presented in the table as of December 31, 2016, are based on the industry rankings of the corresponding exposures at June 30, 2017, not actual rankings of such exposures at December 31, 2016.

In addition to the credit risk exposure to states and municipal governments (both U.S. and non-U.S.) at June 30, 2017, and December 31, 2016, noted above, the Firm held: \$8.8 billion and \$9.1 billion, respectively, of trading (b) securities; \$32.5 billion and \$31.6 billion, respectively, of AFS securities; and \$14.4 billion and \$14.5 billion, respectively, of held-to-maturity (“HTM”) securities, issued by U.S. state and municipal governments. For further information, see Note 2 and Note 9.

(c) All other includes: individuals; SPEs; and private education and civic organizations; representing approximately 59%, 37%, and 4%, respectively, at both June 30, 2017 and December 31, 2016.

(d) Excludes cash placed with banks of \$440.8 billion and \$380.2 billion, at June 30, 2017, and December 31, 2016, respectively, which is predominantly placed with various central banks, primarily Federal Reserve Banks.

(e) Credit exposure is net of risk participations and excludes the benefit of credit derivatives used in credit portfolio management activities held against derivative receivables or loans and liquid securities and other cash collateral held against derivative receivables.

(f) Represents the net notional amounts of protection purchased and sold through credit derivatives used to manage the credit exposures; these derivatives do not qualify for hedge accounting under U.S. GAAP. The All other category includes purchased credit protection on certain credit indices.

Presented below is a discussion of certain industries to which the Firm has significant exposures and/or which present actual or potential credit concerns.

Real Estate

Exposure to the Real Estate industry increased \$3.5 billion during the six months ended June 30, 2017, to \$137.7 billion, predominantly driven by multifamily lending within CB. Of the \$137.7 billion as of June 30, 2017, 81% was investment-grade, and 84% was secured. As of June 30, 2017, \$84.2 billion of the \$137.7 billion was multifamily, largely in California; of the \$84.2 billion, 85% was investment-grade and 96% was secured. Other Real Estate exposure was \$53.5 billion, of which 73% was investment-grade, and 64% was secured; unsecured exposure was 85% investment-grade. For further information on commercial real estate loans, see Note 11.

Oil & Gas and Natural Gas Pipelines

The following table presents Oil & Gas and Natural Gas Pipeline exposures as of June 30, 2017, and December 31, 2016.

(in millions, except ratios)	June 30, 2017					
	Loans and Lending-Related Commitments	Derivative Receivables	Credit exposure	% Investment-grade	% Drawn ^(d)	
Exploration & Production (“E&P”) and Oilfield Services ^(a)	\$20,416	\$ 417	\$ 20,833	30	%	31 %
Other Oil & Gas ^(b)	17,722	277	17,999	71		31
Total Oil & Gas	38,138	694	38,832	49		31
Natural Gas Pipelines ^(c)	4,740	60	4,800	60		16
Total Oil & Gas and Natural Gas Pipelines	\$42,878	\$ 754	\$ 43,632	50		30
	December 31, 2016					
(in millions, except ratios)	Loans and Lending-Related Commitments	Derivative Receivables	Credit exposure	% Investment-grade	% Drawn ^(d)	
E&P and Oilfield Services ^(a)	\$20,971	\$ 1,256	\$ 22,227	27	%	35 %
Other Oil & Gas ^(b)	17,518	622	18,140	70		31
Total Oil & Gas	38,489	1,878	40,367	46		33
Natural Gas Pipelines ^(c)	4,253	106	4,359	66		30
Total Oil & Gas and Natural Gas Pipelines	\$42,742	\$ 1,984	\$ 44,726	48		33

(a) Noninvestment-grade exposure to E&P and Oilfield Services is largely secured.

(b) Other Oil & Gas includes Integrated Oil & Gas companies, Midstream/Oil Pipeline companies and refineries.

(c) Natural Gas Pipelines is reported within the Utilities industry.

(d) Represents drawn exposure as a percentage of credit exposure.

Exposure to the Oil & Gas and Natural Gas Pipelines portfolios was approximately 5.2% and 5.3% of the Firm’s total wholesale exposure as of June 30, 2017 and December 31, 2016, respectively. Exposure to these industries decreased by \$1.1 billion during the six months ended June 30, 2017 to \$43.6 billion; of the \$43.6 billion, approximately \$12.9 billion was drawn as of June 30, 2017. As of June 30, 2017, approximately \$21.9 billion of the exposure was investment grade, of which \$4.6 billion was drawn, and approximately \$21.8 billion of the exposure was noninvestment-grade, of which \$8.3 billion was drawn; 16% of the exposure to the Oil & Gas and Natural Gas Pipelines industries was criticized. Secured lending, of which approximately half is reserve-based lending to the Exploration & Production sub-sector of the Oil & Gas industry, was \$14.7 billion as of June 30, 2017; 42% of the secured lending exposure was drawn. Exposure to commercial real estate, which is reported within the Real Estate industry, in certain areas of Texas, California and Colorado that are deemed sensitive to the Oil & Gas industry, was approximately \$4.5 billion as of June 30, 2017. While the overall trends and sentiment have been stabilizing, the Firm continues to actively monitor and manage its exposure to these portfolios.

Loans

In the normal course of its wholesale business, the Firm provides loans to a variety of customers, ranging from large corporate and institutional clients to high-net-worth individuals. For further discussion on loans, including information on credit quality indicators and sales of loans, see Note 11.

The following table presents the change in the nonaccrual loan portfolio for the six months ended June 30, 2017 and 2016.

Wholesale nonaccrual loan activity^(a)

Six months ended June 30,

(in millions)	2017	2016
Beginning balance	\$2,063	\$1,016
Additions	747	1,902
Reductions:		
Paydowns and other	666	419
Gross charge-offs	93	226
Returned to performing status	183	149
Sales	203	24
Total reductions	1,145	818
Net changes	(398)	1,084
Ending balance	\$1,665	\$2,100

Loans are placed on nonaccrual status when management believes full payment of principal or interest is not (a) expected, regardless of delinquency status, or when principal or interest have been in default for a period of 90 days or more, unless the loan is both well-secured and in the process of collection.

The following table presents net charge-offs/recoveries, which are defined as gross charge-offs less recoveries, for the three and six months ended June 30, 2017 and 2016. The amounts in the table below do not include gains or losses from sales of nonaccrual loans.

Wholesale net charge-offs/(recoveries)

(in millions, except ratios)	Three months ended		Six months ended		
	June 30, 2017	2016	June 30, 2017	2016	
Loans – reported					
Average loans retained	\$392,257	\$369,706	\$387,339	\$365,006	
Gross charge-offs	73	159	99	228	
Gross recoveries	(16)	(5)	(69)	(14)	
Net charge-offs/(recoveries)	57	154	30	214	
Net charge-off/(recovery) rate	0.06	%0.17	%0.02	%0.12	%

Lending-related commitments

The Firm uses lending-related financial instruments, such as commitments (including revolving credit facilities) and guarantees, to meet the financing needs of its customers. The contractual amounts of these financial instruments represent the maximum possible credit risk should the counterparties draw down on these commitments or the Firm fulfills its obligations under these guarantees, and the counterparties subsequently fail to perform according to the terms of these contracts. Most of these commitments and guarantees are refinanced, extended, cancelled, or expire without being drawn upon or a default occurring. In the Firm's view, the total contractual amount of these wholesale lending-related commitments is not representative of the Firm's expected future credit exposure or funding requirements. For further information on wholesale lending-related commitments, see Note 19.

Derivative contracts

In the normal course of business, the Firm uses derivative instruments predominantly for market-making activities. Derivatives enable clients to manage exposures to fluctuations in interest rates, currencies and other markets. The Firm also uses derivative instruments to manage its own credit and other market risk exposure. For further discussion of derivative contracts, see Note 4.

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The following table summarizes the net derivative receivables for the periods presented.

Derivative receivables

(in millions)	Derivative receivables	
	June 30, 2017	December 31, 2016
Interest rate	\$26,912	\$ 28,302
Credit derivatives	1,014	1,294
Foreign exchange	16,662	23,271
Equity	6,273	4,939
Commodity	5,645	6,272
Total, net of cash collateral	56,506	64,078
Liquid securities and other cash collateral held against derivative receivables ^(a)	(18,552)	(22,705)
Total, net of collateral	\$37,954	\$ 41,373

^(a) Includes collateral related to derivative instruments where an appropriate legal opinion has not been either sought or obtained.

The fair value of derivative receivables reported on the Consolidated balance sheets were \$56.5 billion and \$64.1 billion at June 30, 2017, and December 31, 2016, respectively. These amounts represent the fair value of the derivative contracts after giving effect to legally enforceable master netting agreements and cash collateral held by the Firm. However, in management's view, the appropriate measure of current credit risk should also take into consideration additional liquid securities (primarily U.S. government and agency securities and other group of seven nations ("G7") government bonds) and other cash collateral held by the Firm aggregating \$18.6 billion and \$22.7 billion at June 30, 2017, and December 31, 2016, respectively, that may be used as security when the fair value of the client's exposure is in the Firm's favor. The decrease in derivative receivables at June 30, 2017 from December 31, 2016, is predominantly related to client-driven market-making activities in CIB Markets, reflecting lower foreign exchange and interest rate derivative receivables, driven by maturities and market movements.

In addition to the collateral described in the preceding paragraph, the Firm also holds additional collateral (primarily cash, G7 government securities, other liquid government-agency and guaranteed securities, and corporate debt and equity securities) delivered by clients at the initiation of transactions, as well as collateral related to contracts that have a non-daily call frequency and collateral that the Firm has agreed to return but has not yet settled as of the reporting date. Although this collateral does not reduce the balances and is not included in the table above, it is available as security against potential exposure that could arise should the fair value of the client's derivative transactions move in the Firm's favor.

The derivative receivables fair value, net of all collateral, also does not include other credit enhancements, such as letters of credit. For additional information on the Firm's use of collateral agreements, see Note 4.

The following table summarizes the ratings profile by derivative counterparty of the Firm's derivative receivables, including credit derivatives, net of all collateral, at the dates indicated. The ratings scale is based on the Firm's internal ratings, which generally correspond to the ratings as defined by S&P and Moody's.

Ratings profile of derivative receivables

Rating equivalent (in millions, except ratios)	June 30, 2017		December 31, 2016	
	Exposure net of collateral	% of exposure net of collateral	Exposure net of collateral	% of exposure net of collateral
AAA/Aaa to AA-/Aa3	\$9,472	25 %	\$11,449	28 %
A+/A1 to A-/A3	8,252	22	8,505	20
BBB+/Baa1 to BBB-/Baa3	12,286	32	13,127	32
BB+/Ba1 to B-/B3	7,295	19	7,308	18
CCC+/Caa1 and below	649	2	984	2
Total	\$37,954	100 %	\$41,373	100 %

As previously noted, the Firm uses collateral agreements to mitigate counterparty credit risk. The percentage of the Firm's derivatives transactions subject to collateral agreements — excluding foreign exchange spot trades, which are not typically covered by collateral agreements due to their short maturity — was 91% and 90% at June 30, 2017 and December 31, 2016, respectively.

Credit derivatives

The Firm uses credit derivatives for two primary purposes: first, in its capacity as a market-maker, and second, as an end-user, to manage the Firm's own credit risk associated with various exposures.

Credit portfolio management activities

Included in the Firm's end-user activities are credit derivatives used to mitigate the credit risk associated with traditional lending activities (loans and unfunded commitments) and derivatives counterparty exposure in the Firm's wholesale businesses (collectively, "credit portfolio management" activities). Information on credit portfolio management activities is provided in the table below.

Credit derivatives used in credit portfolio management activities

(in millions)	Notional amount of protection purchased and sold ^(a) June 30, December 31, 2017 2016	
Credit derivatives used to manage:		
Loans and lending-related commitments	\$1,681	\$ 2,430
Derivative receivables	20,042	19,684
Credit derivatives used in credit portfolio management activities	\$21,723	\$ 22,114

^(a) Amounts are presented net, considering the Firm's net protection purchased or sold with respect to each underlying reference entity or index.

For further information on credit derivatives and derivatives used in credit portfolio management activities, see Credit derivatives in Note 4 of this Form 10-Q, and Note 6 of JPMorgan Chase's 2016 Annual Report.

ALLOWANCE
FOR CREDIT
LOSSES

JPMorgan Chase's allowance for loan losses covers both the consumer (primarily scored) portfolio and wholesale (risk-rated) portfolio. Management also determines an allowance for wholesale and certain consumer lending-related commitments.

For a further discussion of the components of the allowance for credit losses and related management judgments, see Critical Accounting Estimates Used by the Firm on pages 77–79 and Note 12 of this Form 10-Q, and Critical Accounting Estimates Used by the Firm on pages 132–134 and Note 15 of JPMorgan Chase's 2016 Annual Report. At least quarterly, the allowance for credit losses is reviewed by the CRO, the CFO and the Controller of the Firm, and discussed with the Board of Directors' Risk Policy Committee ("DRPC") and Audit Committee. As of June 30, 2017, JPMorgan Chase deemed the allowance for credit losses to be appropriate and sufficient to absorb probable credit losses inherent in the portfolio.

Overall, the consumer allowance for credit losses remained relatively unchanged from December 31, 2016. Changes to the allowance for credit losses included:

- the utilization of the allowance for loan losses in connection with the transfer of the student loan portfolio to held-for-sale;

- a reduction in the residential real estate portfolio, predominantly reflecting continued improvements in home prices and delinquencies;

predominantly offset by

- additions to the allowance for loan losses in the credit card, business banking and auto portfolios driven by loan growth as well as higher loss rates in credit card.

For additional information about delinquencies and nonaccrual loans in the consumer, excluding credit card, loan portfolio, see Consumer Credit Portfolio on pages 50–55 and Note 11.

The wholesale allowance for credit losses decreased from December 31, 2016, primarily driven by a net reduction in the allowance related to the Oil & Gas, Natural Gas Pipelines, and Metals & Mining portfolios. For additional information on the wholesale portfolio, see Wholesale Credit Portfolio on pages 56–62 and Note 11.

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Summary of changes in the allowance for credit losses

Six months ended June 30, (in millions, except ratios)	2017				2016				
	Consumer, excluding credit card	Credit card	Wholesale	Total	Consumer, excluding credit card	Credit card	Wholesale	Total	
Allowance for loan losses									
Beginning balance at January 1,	\$5,198	\$4,034	\$4,544	\$13,776	\$5,806	\$3,434	\$4,315	\$13,555	
Gross charge-offs	1,105	2,223	99	3,427	688	1,874	228	2,790	
Gross recoveries	(307)	(193)	(69)	(569)	(301)	(184)	(14)	(499)	
Net charge-offs/(recoveries) ^(a)	798	2,030	30	2,858	387	1,690	214	2,291	
Write-offs of PCI loans ^(b)	46	—	—	46	88	—	—	88	
Provision for loan losses	448	2,380	(337)	2,491	316	1,940	796	3,052	
Other	(2)	—	2	—	(1)	—	—	(1)	
Ending balance at June 30,	\$4,800	\$4,384	\$4,179	\$13,363	\$5,646	\$3,684	\$4,897	\$14,227	
Impairment methodology									
Asset-specific ^(c)	\$296	\$370	\$345	\$1,011	\$365	\$361	\$525	\$1,251	
Formula-based	2,239	4,014	3,834	10,087	2,627	3,323	4,372	10,322	
PCI	2,265	—	—	2,265	2,654	—	—	2,654	
Total allowance for loan losses	\$4,800	\$4,384	\$4,179	\$13,363	\$5,646	\$3,684	\$4,897	\$14,227	
Allowance for lending-related commitments									
Beginning balance at January 1,	\$26	\$—	\$1,052	\$1,078	\$14	\$—	\$772	\$786	
Provision for lending-related commitments	6	—	33	39	—	—	174	174	
Other	—	—	—	—	—	—	—	—	
Ending balance at June 30,	\$32	\$—	\$1,085	\$1,117	\$14	\$—	\$946	\$960	
Impairment methodology									
Asset-specific	\$—	\$—	\$211	\$211	\$—	\$—	\$143	\$143	
Formula-based	32	—	874	906	14	—	803	817	
Total allowance for lending-related commitments ^(d)	\$32	\$—	\$1,085	\$1,117	\$14	\$—	\$946	\$960	
Total allowance for credit losses	\$4,832	\$4,384	\$5,264	\$14,480	\$5,660	\$3,684	\$5,843	\$15,187	
Memo:									
Retained loans, end of period	\$365,115	\$140,035	\$394,426	\$899,576	\$361,050	\$131,507	\$374,174	\$866,731	
Retained loans, average	364,316	137,574	387,339	889,229	353,259	127,771	365,006	846,036	
PCI loans, end of period	33,064	—	3	33,067	38,360	—	4	38,364	
Credit ratios									
Allowance for loan losses to retained loans	1.31	%3.13	%1.06	%1.49	%1.56	%2.80	%1.31	%1.64	%
Allowance for loan losses to retained nonaccrual	114	NM	256	229	111	NM	234	198	

loans ^(e)									
Allowance for loan losses to retained nonaccrual loans excluding credit card	114	NM	256	154	111	NM	234	147	
Net charge-off/(recovery) rates ^(a)	0.44	2.98	0.02	0.65	0.22	2.66	0.12	0.54	
Credit ratios, excluding residential real estate PCI loans									
Allowance for loan losses to retained loans	0.76	3.13	1.06	1.28	0.93	2.80	1.31	1.40	
Allowance for loan losses to retained nonaccrual loans ^(e)	60	NM	256	190	59	NM	234	161	
Allowance for loan losses to retained nonaccrual loans excluding credit card	60	NM	256	115	59	NM	234	110	
Net charge-off/(recovery) rates ^(a)	0.49	%2.98	%0.02	%0.67	%0.25	%2.66	%0.12	%0.57	%

Note In the table above, the financial measures which exclude the impact of PCI loans are non-GAAP financial measures.

For the six months ended June 30, 2017, excluding net charge-offs of \$467 million related to the student loan portfolio transfer, the net charge-off rate for Consumer, excluding credit card would have been 0.18%; total Firm would have been 0.54%; Consumer, excluding credit card and PCI loans would have been 0.20%; and total Firm, excluding PCI would have been 0.56%. For additional information refer to CCB segment results on page 21.

Write-offs of PCI loans are recorded against the allowance for loan losses when actual losses for a pool exceed estimated losses that were recorded as purchase accounting adjustments at the time of acquisition. A write-off of a PCI loan is recognized when the underlying loan is removed from a pool (e.g., upon liquidation).

Includes risk-rated loans that have been placed on nonaccrual status and loans that have been modified in a TDR. The asset-specific credit card allowance for loan losses modified in a TDR is calculated based on the loans' original contractual interest rates and does not consider any incremental penalty rates.

The allowance for lending-related commitments is reported in accounts payable and other liabilities on the Consolidated balance sheets.

The Firm's policy is generally to exempt credit card loans from being placed on nonaccrual status as permitted by regulatory guidance.

Provision for credit losses

For the three and six months ended June 30, 2017, the provision for credit losses was \$1.2 billion and \$2.5 billion, respectively, compared with \$1.4 billion and \$3.2 billion, respectively, in the prior year periods. The decrease in the provision for both periods was driven by a decline in the wholesale provision, partially offset by an increase in the consumer provision.

The wholesale provision for credit losses for the three months and six months ended June 30, 2017 was a benefit, primarily driven by reductions in the allowance for credit losses related to the Oil & Gas, Natural Gas Pipelines, and Metals & Mining portfolios. The prior year reflected increases due to the impact of downgrades in the Oil & Gas, Natural Gas Pipelines, and Metals & Mining portfolios.

The increase in the consumer provision for the three months ended June 30, 2017 was primarily driven by \$120 million of higher net charge-offs, predominantly in the credit card portfolio, and a \$74 million higher addition to the allowance for credit losses when compared to the prior year.

Current quarter results included:

- a \$350 million addition to the allowance for credit losses in the credit card portfolio, due to loan growth and higher loss rates, compared to a \$250 million addition in the prior year;

- a \$50 million addition to the allowance for credit losses in the business banking portfolio; and

- a \$25 million addition to the allowance for credit losses in the auto portfolio, compared to a \$50 million addition in the prior year;

the additions were partially offset by

- a \$173 million reduction in the allowance for credit losses in the residential real estate portfolio, reflecting continued improvement in home prices and delinquencies, compared to a \$97 million reduction in

the prior year.

The increase in the consumer provision for the six months ended June 30, 2017 was primarily driven by \$284 million of higher net charge-offs, predominantly in the credit card portfolio, \$218 million related to the transfer of the student loan portfolio to held-for-sale, and a \$76 million higher addition to the allowance for credit losses when compared to the prior year.

Current year results included:

- a \$350 million addition to the allowance for credit losses in the credit card portfolio, due to loan growth and higher loss rates, compared to a \$250 million addition in the prior year;

- a \$50 million addition to the allowance for credit losses in the business banking portfolio; and

- a \$25 million addition to the allowance for credit losses in the auto portfolio, compared to a \$50 million addition in the prior year;

the additions were partially offset by

- a \$170 million reduction in the allowance for credit losses in the residential real estate portfolio, reflecting continued improvement in home prices and delinquencies, compared to a \$96 million reduction in

the prior year.

	Three months ended June 30,						Six months ended June 30,					
	Provision for loan losses		Provision for lending-related commitments		Total provision for credit losses		Provision for loan losses		Provision for lending-related commitments		Total provision for credit losses	
(in millions)	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
Consumer, excluding credit card	\$6	\$95	\$6	\$—	\$12	\$95	\$448	\$316	\$6	\$—	\$454	\$316
Credit card	1,387	1,110	—	—	1,387	1,110	2,380	1,940	—	—	2,380	1,940
Total consumer	1,393	1,205	6	—	1,399	1,205	2,828	2,256	6	—	2,834	2,256
Wholesale	(218)	251	34	(54)	(184)	197	(337)	796	33	174	(304)	970
Total	\$1,175	\$1,456	\$40	\$(54)	\$1,215	\$1,402	\$2,491	\$3,052	\$39	\$174	\$2,530	\$3,226

COUNTRY RISK MANAGEMENT

Country risk is the risk that a sovereign event or action alters the value or terms of contractual obligations of obligors, counterparties and issuers or adversely affects markets related to a particular country. The Firm has a country risk management framework for assessing country risks, determining risk tolerance, and measuring and monitoring its direct country exposures. The Country Risk Management group is responsible for developing guidelines and policies for managing country risk in both emerging and developed countries. The Country Risk Management group actively monitors the various portfolios giving rise to country risk to ensure the Firm's country risk exposures are diversified and that exposure levels are appropriate given the Firm's strategy and risk tolerance relative to a country.

Country Risk Management periodically defines and runs stress scenarios for individual countries or groups of countries in response to specific or potential market events, sector performance concerns and geopolitical risks.

For a discussion of the Firm's Country Risk Management organization; identification and measurement; stress testing; monitoring and control; and reporting, see pages 108–109 of JPMorgan Chase's 2016 Annual Report.

The following table presents the Firm's top 20 exposures by country (excluding the U.S.) as of June 30, 2017. The selection of countries is based solely on the Firm's largest total exposures by country, based on the Firm's internal country risk management approach, and does not represent the Firm's view of any actual or potentially adverse credit conditions. Country exposures may fluctuate from period to period due to client activity and market flows.

Top 20 country exposures (excluding the U.S.)

(in billions)	June 30, 2017			Total exposure
	Lending and deposits ^(a)	Trading and investing ^{(b)(c)}	Other ^(d)	
Germany	\$42.3	\$ 13.7	\$ 0.3	\$ 56.3
United Kingdom	27.9	13.9	0.6	42.4
Japan	23.5	6.8	0.1	30.4
France	11.6	7.1	0.3	19.0
China	9.2	5.0	0.8	15.0
Canada	11.1	3.0	0.1	14.2
Switzerland	8.0	0.8	3.7	12.5
Australia	6.3	5.1	—	11.4
India	3.8	5.1	0.8	9.7
Luxembourg	7.7	1.0	—	8.7
Netherlands	5.9	1.9	0.4	8.2
Korea	4.9	1.8	0.7	7.4
Brazil	3.8	2.9	—	6.7
Italy	5.8	0.8	0.1	6.7
Mexico	4.1	1.8	—	5.9
Hong Kong	2.5	1.4	1.6	5.5
Spain	4.2	1.0	—	5.2
Singapore	2.6	1.1	1.1	4.8
Saudi Arabia	3.7	1.0	—	4.7
Ireland	1.1	0.3	2.5	3.9

Lending and deposits includes loans and accrued interest receivable (net of collateral and the allowance for loan losses), deposits with banks (including central banks), acceptances, other monetary assets, issued letters of credit net of participations, and unused commitments to extend credit. Excludes intra-day and operating exposures, such as from settlement and clearing activities.

(b)

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Includes market-making inventory, AFS securities, counterparty exposure on derivative and securities financings net of collateral and hedging.

- (c) Includes single reference entity (“single-name”), index and tranching credit derivatives for which one or more of the underlying reference entities is in a country listed in the above table.
- (d) Includes capital invested in local entities and physical commodity inventory.

LIQUIDITY
RISK
MANAGEMENT

Liquidity risk is the risk that the Firm will be unable to meet its contractual and contingent obligations or that it does not have the appropriate amount, composition and tenor of funding and liquidity to support its assets and liabilities. The following discussion of JPMorgan Chase's Liquidity Risk Management should be read in conjunction with pages 110–115 of JPMorgan Chase's 2016 Annual Report.

LCR and NSFR

The LCR rule requires the Firm to maintain an amount of HQLA that is sufficient to meet its estimated total net cash outflows over a prospective 30 calendar-day period of significant stress. Under the LCR rule, the amount of HQLA held by JPMorgan Chase Bank N.A. and Chase Bank USA, N.A. that is in excess of each entity's standalone 100% minimum LCR requirement, and that is not available for transfer to non-bank affiliates, must be excluded from the Firm's reported HQLA. The LCR was required to be a minimum of 100% commencing January 1, 2017. At June 30, 2017, the Firm was compliant with the LCR.

On December 19, 2016, the Federal Reserve published final LCR public disclosure requirements for certain bank holding companies and nonbank financial companies. Effective the second quarter of 2017, the Firm is required to disclose quarterly its consolidated LCR, including the Firm's average LCR for the quarter and the key quantitative components of the average LCR in a standardized template, along with a qualitative discussion of material drivers of the ratio, changes over time, and causes of such changes. The initial public disclosure is required to be provided within 60 days of the end of the second quarter of 2017 and, thereafter, no later than the applicable filing deadline for the Firm's 10-Q or 10-K.

The Basel Committee final standard for the net stable funding ratio ("Basel NSFR") is intended to measure the adequacy of "available" and "required" amounts of stable funding over a one-year horizon. Basel NSFR will become a minimum standard by January 1, 2018 and requires that this ratio be equal to at least 100% on an ongoing basis.

On April 26, 2016, the U.S. NSFR proposal was released for large banks and bank holding companies and was largely consistent with Basel NSFR. The proposed requirement would apply beginning on January 1, 2018, consistent with the Basel NSFR timeline.

The Firm estimates it was compliant with the proposed U.S. NSFR based on data as of March 31, 2017, and on its current understanding of the proposed rule.

HQLA

HQLA is the amount of assets that qualify for inclusion in the LCR. HQLA primarily consists of unencumbered cash and certain high quality liquid securities as defined in the final LCR rule.

As of June 30, 2017, the Firm's HQLA was \$577 billion, compared with \$524 billion as of December 31, 2016. The increase was largely driven by a reduction in the amount of excess HQLA in JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A. that is excluded from the Firm's HQLA. The reduction in the amount of excluded excess HQLA was primarily due to (a) an increase in the amount of cash and securities held by the banks that became available to transfer to non-bank affiliates in accordance with Section 23A and Section 23B of the Federal Reserve Act and (b) an increase in deposits which funded loans, resulting in less excess HQLA at the banks. The Firm's HQLA may fluctuate from period to period primarily due to normal flows from client activity.

The following table presents the Firm's HQLA included in the LCR, broken out by HQLA-eligible cash and securities as of June 30, 2017.

	June
(in billions)	30,
	2017
HQLA	
Eligible cash ^(a)	\$ 366
Eligible securities ^(b)	211
Total HQLA ^(c)	\$ 577

(a) Cash on deposit at central banks, primarily Federal Reserve Banks.

- (b) Predominantly includes U.S. agency MBS, U.S. Treasuries, and sovereign bonds net of applicable haircuts under the LCR rules.
- (c) Excludes excess HQLA at JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A. that is not transferable to non-bank affiliates.

As of June 30, 2017, in addition to HQLA reported above, the Firm had approximately \$233 billion of unencumbered marketable securities, such as equity securities and fixed income debt securities, available to raise liquidity, if required. This includes HQLA-eligible securities included as part of the excess liquidity at JPMorgan Chase Bank, N.A. that is not transferable to non-bank affiliates. The Firm also maintains borrowing capacity at various Federal Home Loan Banks (“FHLBs”), the Federal Reserve Bank discount window and various other central banks as a result of collateral pledged by the Firm to such banks. Although available, the Firm does not view the borrowing capacity at the Federal Reserve Bank discount window and the various other central banks as a primary source of liquidity. As of June 30, 2017, the Firm’s remaining borrowing capacity at various FHLBs and the Federal Reserve Bank discount window was approximately \$258 billion. This remaining borrowing capacity excludes the benefit of securities included in HQLA or other unencumbered securities that are currently pledged at the Federal Reserve Bank discount window, but for which the Firm has not drawn liquidity.

Funding

Sources of funds

Management believes that the Firm's secured and unsecured funding capacity is sufficient to meet its on- and off-balance sheet obligations.

The Firm funds its global balance sheet through diverse sources of funding including a stable deposit franchise as well as secured and unsecured funding in the capital markets. The Firm's loan portfolio (\$908.8 billion at June 30, 2017) is funded with a portion of the Firm's deposits (\$1,439.5 billion at June 30, 2017), and through securitizations and, with respect to a portion of the Firm's real estate-related loans, with secured borrowings from the FHLBs. Deposits in excess of the amount utilized to fund loans are primarily invested in the Firm's investment securities portfolio or deployed in cash or other short-term liquid investments based on their interest

rate and liquidity risk characteristics. Securities borrowed or purchased under resale agreements and trading assets-debt and equity instruments are primarily funded by the Firm's securities loaned or sold under agreements to repurchase, trading liabilities-debt and equity instruments, and a portion of the Firm's long-term debt and stockholders' equity. In addition to funding securities borrowed or purchased under resale agreements and trading assets-debt and equity instruments, proceeds from the Firm's debt and equity issuances are used to fund certain loans and other financial and non-financial assets, or may be invested in the Firm's investment securities portfolio. See the discussion below for additional information relating to Deposits, Short-term funding, and Long-term funding and issuance.

Deposits

The table below summarizes, by line of business, the deposits balances as of June 30, 2017, and December 31, 2016, and the average deposits balances for the three and six months ended June 30, 2017 and 2016, respectively.

Deposits (in millions)	June 30, 2017	December 31, 2016	Three months ended		Six months ended June	
			June 30, Average 2017	2016	30, Average 2017	2016
Consumer & Community Banking	\$648,369	\$ 618,337	\$639,873	\$583,115	\$631,441	\$572,699
Corporate & Investment Bank	467,858	412,434	442,387	407,084	434,968	399,853
Commercial Banking	173,964	179,532	173,081	169,090	174,843	170,105
Asset & Wealth Management	146,758	161,577	150,786	151,214	154,776	150,915
Corporate	2,524	3,299	4,002	5,463	4,870	6,046
Total Firm	\$1,439,473	\$ 1,375,179	\$1,410,129	\$1,315,966	\$1,400,898	\$1,299,618

A key strength of the Firm is its diversified deposit franchise, through each of its lines of business, which provides a stable source of funding and limits reliance on the wholesale funding markets. A significant portion of the Firm's deposits are consumer deposits, which are considered a stable source of liquidity. Additionally, the majority of the Firm's wholesale operating deposits are also considered to be stable sources of liquidity because they are generated from customers that maintain operating service relationships with the Firm.

As of June 30, 2017, the Firm's loans-to-deposits ratio was 63%, compared with 65% at December 31, 2016.

Total deposits for the Firm were \$1,439.5 billion as of June 30, 2017, compared with \$1,375.2 billion at December 31, 2016 (62% and 61% of total liabilities at June 30, 2017, and December 31, 2016, respectively). Deposits increased due to both higher wholesale and consumer deposits. The higher wholesale deposits were

driven by growth in client activity in CIB's Securities Services and Treasury Services businesses, partially offset by lower balances in AWM reflecting balance migration into the Firm's investment-related products, and the impact of seasonality in both CB and AWM. The higher consumer deposits reflected the continuation of strong growth from existing and new customers, and low attrition rates.

The Firm believes average deposit balances are generally more representative of deposit trends. The increase in average deposits for the three and six months ended June 30, 2017, compared with the three and six months ended June 30, 2016, was driven by an increase in both consumer and wholesale deposits. For further discussions of deposit

and liability balance trends, see the discussion of the Firm's Business Segment Results and the Consolidated Balance Sheets Analysis on pages 18–40 and pages 11–12, respectively.

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The following table summarizes short-term and long-term funding, excluding deposits, as of June 30, 2017, and December 31, 2016, and average balances for the three and six months ended June 30, 2017 and 2016, respectively. For additional information, see the Consolidated Balance Sheets Analysis on pages 11–12 and Note 10.

Sources of funds (excluding deposits) (in millions)	June 30, 2017	December 31, 2016	Three months ended June 30, Average		Six months ended June 30, Average	
			2017	2016	2017	2016
Commercial paper	\$22,207	\$ 11,738	\$19,466	\$17,462	\$16,432	\$17,499
Obligations of Firm-administered multi-seller conduits ^(a)	\$2,928	\$ 2,719	\$2,750	\$5,327	\$3,557	\$5,914
Other borrowed funds	\$30,936	\$ 22,705	\$23,693	\$20,107	\$23,427	\$20,169
Securities loaned or sold under agreements to repurchase:						
Securities sold under agreements to repurchase ^(b)	\$149,406	\$149,826	\$178,624	\$158,142	\$175,963	\$154,330
Securities loaned ^{(c)(d)}	11,217	12,137	13,505	13,832	13,342	14,445
Total securities loaned or sold under agreements to repurchase ^{(d)(e)}	\$160,623	\$161,963	\$192,129	\$171,974	\$189,305	\$168,775
Senior notes	\$156,637	\$151,042	\$153,661	\$152,246	\$151,557	\$150,657
Trust preferred securities	2,338	2,345	2,340	3,969	2,342	3,970
Subordinated debt	18,994	21,940	20,546	25,176	20,857	25,271
Structured notes	43,077	37,292	42,957	35,602	40,941	34,576
Total long-term unsecured funding	\$221,046	\$212,619	\$219,504	\$216,993	\$215,697	\$214,474
Credit card securitization ^(a)	\$25,732	\$31,181	\$27,034	\$27,014	\$28,226	\$27,356
Other securitizations ^{(a)(f)}	—	1,527	1,003	1,700	1,262	1,729
Federal Home Loan Bank (“FHLB”) advances	68,464	79,519	73,053	69,528	75,155	70,384
Other long-term secured funding ^(g)	3,463	3,107	3,311	5,205	3,204	5,085
Total long-term secured funding	\$97,659	\$115,334	\$104,401	\$103,447	\$107,847	\$104,554
Preferred stock ^(h)	\$26,068	\$26,068	\$26,068	\$26,068	\$26,068	\$26,068
Common stockholders’ equity ^(h)	\$232,415	\$228,122	\$230,200	\$224,429	\$228,959	\$222,995

(a) Included in beneficial interests issued by consolidated variable interest entities on the Firm’s Consolidated balance sheets.

(b) Excluded long-term structured repurchase agreements of \$2.1 billion and \$1.8 billion as of June 30, 2017, and December 31, 2016, respectively, average balances of \$1.9 billion and \$2.7 billion for the three months ended June 30, 2017 and 2016, respectively, and \$1.4 billion and \$3.1 billion for the six months ended June 30, 2017 and 2016, respectively.

(c) Excludes long-term securities loaned of \$1.3 billion and \$1.2 billion as of June 30, 2017, and December 31, 2016, respectively, average balances of \$1.2 billion and \$1.3 billion for the three months ended June 30, 2017 and 2016, respectively, and \$1.3 billion for both the six months ended June 30, 2017 and 2016.

(d) The prior period amounts have been revised to conform with the current period presentation.

(e) Excludes federal funds purchased.

(f) Other securitizations include securitizations of student loans. The Firm deconsolidated the student loan securitization entities in the second quarter of 2017 as it no longer had a controlling financial interest in these entities as a result of the sale of the student loan portfolio. For additional information about the sale of the student loan portfolio, see CCB Business Segment Results on pages 20–24. The Firm’s wholesale businesses also securitize loans for client-driven transactions, which are not considered to be a source of funding for the Firm and are not

included in the table.

(g) Includes long-term structured notes which are secured.

For additional information on preferred stock and common stockholders' equity see Capital Risk Management on (h) pages 42–48 and the Consolidated statements of changes in stockholders' equity on page 86; and Note 22 and Note 23 of JPMorgan Chase's 2016 Annual Report.

Short-term funding

The Firm's sources of short-term secured funding primarily consist of securities loaned or sold under agreements to repurchase. Securities loaned or sold under agreements to repurchase are secured predominantly by high-quality securities collateral, including government-issued debt and agency MBS, and constitute a significant portion of the federal funds purchased and securities loaned or sold under repurchase agreements on the Consolidated balance sheets.

The increase in the average balance of securities loaned or sold under agreements to repurchase for the three and six months ended June 30, 2017, compared with June 30, 2016, was largely due to higher secured financing of trading assets-debt and equity instruments in the CIB related to client-driven market-making activities. The

balances associated with securities loaned or sold under agreements to repurchase fluctuate over time due to customers' investment and financing activities; the Firm's demand for financing; the ongoing management of the mix of the Firm's liabilities, including its secured and unsecured financing (for both the investment securities and market-making portfolios); and other market and portfolio factors.

The Firm's sources of short-term unsecured funding primarily consist of issuance of wholesale commercial paper and other borrowed funds. The increase in commercial paper and other borrowed funds as of June 30, 2017, compared to December 31, 2016, was due to a change in the mix of funding from securities sold under repurchase agreements.

Long-term funding and issuance

Long-term funding provides additional sources of stable funding and liquidity for the Firm. The Firm's long-term funding plan is driven primarily by expected client activity, liquidity considerations, and regulatory requirements, including TLAC requirements. Long-term funding objectives include maintaining diversification, maximizing market access and optimizing funding costs. The Firm evaluates various funding markets, tenors and currencies in creating its optimal long-term funding plan.

The significant majority of the Firm's long-term unsecured funding is issued by the Parent Company to provide maximum flexibility in support of both bank and nonbank subsidiary funding needs. The Parent Company advances substantially all net funding proceeds to the Intermediate Holding Company ("IHC"). The IHC does not issue debt to external counterparties. The following table summarizes long-term unsecured issuance and maturities or redemptions for the three and six months ended June 30, 2017 and 2016. For additional information on long-term debt and the IHC, see Note 21 and Executive Overview of JPMorgan Chase's 2016 Annual Report.

Long-term unsecured funding

(in millions)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Issuance				
Senior notes issued in the U.S. market	\$8,308	\$5,968	\$14,773	\$13,187
Senior notes issued in non-U.S. markets	2,210	4,891	2,210	4,891
Total senior notes	10,518	10,859	16,983	18,078
Subordinated debt	—	—	—	—
Structured notes	8,160	5,278	16,594	13,611
Total long-term unsecured funding – issuance	\$18,678	\$16,137	\$33,577	\$31,689
Maturities/redemptions				
Senior notes	\$3,615	\$6,499	\$14,042	\$16,310
Trust preferred securities	—	—	—	—
Subordinated debt	2,011	2,000	3,006	2,002
Structured notes	7,043	4,437	12,373	8,541
Total long-term unsecured funding – maturities/redemptions	\$12,669	\$12,936	\$29,421	\$26,853

The Firm raises secured long-term funding primarily through securitization of consumer credit card loans and advances from the FHLBs. The following table summarizes the securitization issuance and FHLB advances and their respective maturities or redemptions for the three and six months ended June 30, 2017 and 2016, respectively.

Long-term secured funding

(in millions)	Three months ended June 30,				Six months ended June 30,			
	Issuance		Maturities/Redemptions		Issuance		Maturities/Redemptions	
	2017	2016	2017	2016	2017	2016	2017	2016
Credit card securitization	\$—	\$3,814	\$3,016	\$2,350	\$1,545	\$3,814	\$7,006	\$2,775
Other securitizations ^(a)	—	—	—	61	—	—	55	119
FHLB advances	—	—	5,852	3	—	—	11,054	2,054
Other long-term secured funding ^(b)	344	236	80	46	447	326	124	89
Total long-term secured funding	\$344	\$4,050	\$8,948	\$2,460	\$1,992	\$4,140	\$18,239	\$5,037

Other securitizations includes securitizations of student loans. The Firm deconsolidated the student loan securitization entities in the second quarter of 2017 as it no longer had a controlling financial interest in these entities as a result of the sale of the student loan portfolio. For additional information about the sale of the student loan portfolio, see CCB Business Segment Results on pages 20–24.

(a) Includes long-term structured notes which are secured.

The Firm's wholesale businesses also securitize loans for client-driven transactions; those client-driven loan securitizations are not considered to be a source of funding for the Firm and are not included in the table above. For further description of the client-driven loan securitizations, see Note 16 of JPMorgan Chase's 2016 Annual Report.

Credit ratings

The cost and availability of financing are influenced by credit ratings. Reductions in these ratings could have an adverse effect on the Firm's access to liquidity sources, increase the cost of funds, trigger additional collateral or funding requirements and decrease the number of investors and counterparties willing to lend to the Firm.

Additionally, the Firm's funding requirements for VIEs and other third-party commitments may be adversely affected by a decline in credit ratings. For additional information on the impact of a credit ratings downgrade on the funding requirements for VIEs, and on derivatives and collateral agreements, see SPEs on page 14, and Liquidity risk and credit-related contingent features in Note 4.

The credit ratings of the Parent Company and the Firm's principal bank and nonbank subsidiaries as of June 30, 2017, were as follows.

June 30, 2017	JPMorgan Chase & Co.			JPMorgan Chase Bank, N.A. Chase Bank USA, N.A.			J.P. Morgan Securities LLC J.P. Morgan Securities plc		
	Long-term issuer	Short-term issuer	Outlook	Long-term issuer	Short-term issuer	Outlook	Long-term issuer	Short-term issuer	Outlook
Moody's	A3	P-2	Stable	Aa3	P-1	Stable	A1	P-1	Stable
Standard & Poor's	A-	A-2	Stable	A+	A-1	Stable	A+	A-1	Stable
Fitch Ratings	A+	F1	Stable	AA-	F1+	Stable	AA-	F1+	Stable

On June 1, 2017, JPMorgan Chase Bank, N.A. terminated its guarantee of the payment of all obligations of J.P.

Morgan Securities plc arising after such termination. J.P. Morgan Securities plc, whose credit ratings previously reflected the benefit of this guarantee, is now rated on a stand-alone non-guaranteed basis.

Downgrades of the Firm's long-term ratings by one or two notches could result in an increase in its cost of funds, and access to certain funding markets could be reduced. The nature and magnitude of the impact of ratings downgrades depends on numerous contractual and behavioral factors (which the Firm believes are incorporated in its liquidity risk and stress testing metrics). The Firm believes that it maintains sufficient liquidity to withstand a potential decrease in funding capacity due to ratings downgrades.

JPMorgan Chase's unsecured debt does not contain requirements that would call for an acceleration of payments, maturities or changes in the structure of the existing debt, provide any limitations on future borrowings or require additional collateral, based on unfavorable changes in the Firm's credit ratings, financial ratios, earnings, or stock price.

Critical factors in maintaining high credit ratings include a stable and diverse earnings stream, strong capital ratios, strong credit quality and risk management controls, diverse funding sources, and disciplined liquidity monitoring procedures. Rating agencies continue to evaluate economic and geopolitical trends, regulatory developments, future profitability, risk management practices, and litigation matters, as well as their broader ratings methodologies.

Changes in any of these factors could lead to changes in the Firm's credit ratings.

Although the Firm closely monitors and endeavors to manage, to the extent it is able, factors influencing its credit ratings, there is no assurance that its credit ratings will not be changed in the future.

MARKET RISK MANAGEMENT

Market risk is the risk of loss arising from potential adverse changes in the value of the Firm's assets and liabilities resulting from changes in market variables such as interest rates, foreign exchange rates, equity prices, commodity prices, implied volatilities or credit spreads. For a discussion of the Firm's Market Risk Management organization, tools used to measure risk, risk monitoring and control and risk identification and classification, see Market Risk Management on pages 116–123 of JPMorgan Chase's 2016 Annual Report.

Value-at-risk

JPMorgan Chase utilizes value-at-risk ("VaR"), a statistical risk measure, to estimate the potential loss from adverse market moves in a normal market environment. The Firm has a single VaR framework used as a basis for calculating Risk Management VaR and Regulatory VaR.

Since VaR is based on historical data, it is an imperfect measure of market risk exposure and potential losses, and it is not used to estimate the impact of stressed market conditions or to manage any impact from potential stress events. In addition, based on their reliance on available historical data, limited time horizons, and other factors, VaR measures are inherently limited in their ability to measure certain risks and to predict losses, particularly those associated with market illiquidity and sudden or severe shifts in market conditions.

For certain products, specific risk parameters are not captured in VaR due to the lack of inherent liquidity and availability of appropriate historical data. The Firm uses proxies to estimate the VaR for these and other products when daily time series are not available. It is likely that using an actual price-based time series for these products, if available, would affect the VaR results presented. The Firm therefore considers other measures such as stress testing and nonstatistical measures, in addition to VaR, to capture and manage its market risk positions. For further information, see Other risk measures on pages 121–123 of JPMorgan Chase's 2016 Annual Report.

The Firm's VaR model calculations are periodically evaluated and enhanced in response to changes in the composition of the Firm's portfolios, changes in market conditions, improvements in the Firm's modeling techniques and measurements, and other factors. Such changes may affect historical comparisons of VaR results. For information regarding model reviews and approvals, see Model Risk Management on page 128 of JPMorgan Chase's 2016 Annual Report.

The Firm's Risk Management VaR is calculated assuming a one-day holding period and an expected tail-loss methodology which approximates a 95% confidence level. For risk management purposes, the Firm believes this methodology provides a stable measure of VaR that closely aligns to the day-to-day risk management decisions made by the lines of business, and provides the necessary and appropriate information to respond to risk events on a daily basis. The Firm calculates separately a daily aggregated VaR in accordance with regulatory rules ("Regulatory VaR"), which is used to derive the Firm's regulatory VaR-based capital requirements under Basel III. For further information regarding the key differences between Risk Management VaR and Regulatory VaR, see page 118 of JPMorgan Chase's 2016 Annual Report. For additional information on Regulatory VaR and the other components of market risk regulatory capital for the Firm (e.g., VaR-based measure, stressed VaR-based measure and the respective backtesting), see JPMorgan Chase's Basel III Pillar 3 Regulatory Capital Disclosures reports, which are available on the Firm's website at:

(<http://investor.shareholder.com/jpmorganchase/basel.cfm>).

The table below shows the results of the Firm's Risk Management VaR measure using a 95% confidence level.

Total VaR

(in millions)	Three months ended,								
	June 30, 2017			March 31, 2017			June 30, 2016		
	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
CIB trading VaR by risk type									
Fixed income	\$28	\$25	\$31	\$28	\$20	\$40	\$46	\$37	\$62
Foreign exchange	8	5	12	10	6	16	12	7	17
Equities	12	9	16	11	8	14	14	10	20
Commodities and other	8	6	10	8	5	10	9	7	10
Diversification benefit to CIB trading VaR	(30) ^(a)	NM ^(b)	NM ^(b)	(34) ^(a)	NM ^(b)	NM ^(b)	(37) ^(a)	NM ^(b)	NM ^(b)
CIB trading VaR	26	20	31	23	14	34	44	35	59
Credit portfolio VaR	9	6	10	10	9	12	12	11	13
Diversification benefit to CIB VaR	(8) ^(a)	NM ^(b)	NM ^(b)	(8) ^(a)	NM ^(b)	NM ^(b)	(12) ^(a)	NM ^(b)	NM ^(b)
CIB VaR	27	22	32	25	17	38	44	34	59
CCB VaR	2	2	3	2	1	3	3	1	5
Corporate VaR	3	2	3	2	2	3	11	7	13
AWM VaR	—	—	—	—	—	—	4	3	4
Diversification benefit to other VaR	(2) ^(a)	NM ^(b)	NM ^(b)	(1) ^(a)	NM ^(b)	NM ^(b)	(5) ^(a)	NM ^(b)	NM ^(b)
Other VaR	3	3	4	3	3	4	13	10	16
Diversification benefit to CIB and other VaR	(3) ^(a)	NM ^(b)	NM ^(b)	(3) ^(a)	NM ^(b)	NM ^(b)	(12) ^(a)	NM ^(b)	NM ^(b)
Total VaR	\$27	\$22	\$33	\$25	\$17	\$37	\$45	\$36	\$56

(a) Average portfolio VaR is less than the sum of the VaR of the components described above, which is due to portfolio diversification. The diversification effect reflects the fact that the risks are not perfectly correlated.

(b) Designated as NM, because the minimum and maximum may occur on different days for different risk components, and hence it is not meaningful to compute a portfolio-diversification effect.

Quarter over Quarter results

Average total VaR increased by \$2 million for the three months ended June 30, 2017 as compared with the prior quarter, reflecting a change in exposure profile for the Equities risk type which also contributed to a reduction in the diversification benefit to CIB trading VaR.

Year over Year results

Average total VaR decreased by \$18 million for the three months ended June 30, 2017, compared with the same period in the prior year. The decrease in average total VaR is primarily in the Fixed income, Foreign Exchange and Equities risk types. The reduction reflected enhancements to VaR models for certain asset backed products, refinement of the scope of positions included in risk management VaR, and reduced volatility in the one-year historical look-back period.

The Firm refined the scope of positions included in risk management VaR during the third quarter of 2016 and refined the historical proxy time series inputs to certain VaR models during the first quarter of 2017. In the absence of these refinements, the average Total VaR for the three months ended June 30, 2017 would have been higher by \$10 million and each of the components would have been higher by the amounts reported in the following table:

(in millions)	Amount
	by
	which
	reported
	VaR
	would
	have
	been

higher
for the
three
months
ended
June 30,
2017

CIB fixed income VaR	\$ 6
CIB equities VaR	3
CIB trading VaR	8
CIB VaR	10
Corporate VaR	8
AWM VaR	5
Other VaR	8

VaR can vary significantly as positions change, market volatility fluctuates, and diversification benefits change.

VaR back-testing

The Firm evaluates the effectiveness of its VaR methodology by back-testing, which compares the daily Risk Management VaR results with the daily gains and losses actually recognized on market-risk related revenue. The Firm's definition of market risk-related gains and losses is consistent with the definition used by the banking regulators under Basel III. Under this definition market risk-related gains and losses are defined as: gains and losses on the positions included in the Firm's Risk Management VaR excluding fees, commissions, certain valuation adjustments (e.g., liquidity and DVA), net interest income, and gains and losses arising from intraday trading. The following chart compares actual daily market risk-related gains and losses with the Firm's Risk Management VaR for the six months ended June 30, 2017. As the chart presents market risk-related gains and losses related to those positions included in the Firm's Risk Management VaR, the results in the table below differ from the results of back-testing disclosed in the Market Risk section of the Firm's Basel III Pillar 3 Regulatory Capital Disclosures reports, which are based on Regulatory VaR applied to covered positions. The chart shows that for the six months ended June 30, 2017, the Firm observed seven VaR back-testing exceptions and posted gains on 80 of the 129 days. The Firm observed four VaR back-testing exceptions and posted gains on 36 of the 65 days for the three months ended June 30, 2017.

Daily Market Risk-Related Gains and Losses
vs. Risk Management VaR (1-day, 95% Confidence level)
Six months ended June 30, 2017

Market Risk-Related Gains and Losses

Risk Management VaR
January February March April May June

Earnings-at-risk

The VaR and sensitivity measures illustrate the economic sensitivity of the Firm's Consolidated balance sheets to changes in market variables. The effect of interest rate exposure on the Firm's reported net income is also important as interest rate risk represents one of the Firm's significant market risks. Interest rate risk arises not only from trading activities but also from the Firm's traditional banking activities, which include extension of loans and credit facilities, taking deposits and issuing debt. The Firm evaluates its structural interest rate risk exposure through earnings-at-risk, which measures the extent to which changes in interest rates will affect the Firm's net interest income and interest rate-sensitive fees. For a summary by line of business, identifying positions included in earnings-at-risk, see the table on page 117 of JPMorgan Chase's 2016 Annual Report.

The Firm generates a baseline for net interest income and certain interest rate sensitive fees, and then conducts simulations of changes for interest rate-sensitive assets and liabilities denominated in U.S. dollars and other currencies ("non-U.S. dollar" currencies). Earnings-at-risk scenarios estimate the potential change in this baseline, over the following 12 months utilizing multiple assumptions. These scenarios consider the impact on exposures as a result of changes in interest rates from baseline rates, as well as pricing sensitivities of deposits, optionality and changes in product mix. The scenarios include forecasted balance sheet changes, as well as modeled prepayment and reinvestment behavior, but do not include assumptions about actions that could be taken by the Firm in response to any such instantaneous rate changes. Mortgage prepayment assumptions are based on scenario interest rates compared with underlying contractual rates, the time since origination, and other factors which are updated periodically based on historical experience. The pricing sensitivity of deposits in the baseline and scenarios use modeled rates paid which may differ from actual rates paid due to timing lags and other factors. The Firm's earnings-at-risk scenarios are periodically evaluated and enhanced in response to changes in the composition of the Firm's balance sheet, changes in market conditions, improvements in the Firm's simulation and other factors.

The Firm's U.S. dollar sensitivities are presented in the table below.

JPMorgan Chase's 12-month earnings-at-risk sensitivity profiles

U.S. dollar (in billions)	Instantaneous change in rates		
	+200bps	-100bps	-200bps
June 30, 2017	\$ 3.6	\$ 2.2	\$(4.5) ^(a) NM ^(b)
December 31, 2016	\$ 4.0	\$ 2.4	NM ^(b) NM ^(b)

(a) As a result of the June 2017 increase in the Fed Funds target rate to between 1.00% and 1.25%, the -100 bps sensitivity has been included.

(b) Given the level of market interest rates, these downward parallel earnings-at-risk scenarios are not considered to be meaningful.

The non-U.S. dollar sensitivities for an instantaneous increase in rates by 200 and 100 basis points results in a 12-month benefit to net interest income of approximately \$800 million and \$500 million, respectively, at June 30, 2017. The non-U.S. dollar sensitivity for an instantaneous decrease in rates by 200 and 100 basis points is not material to the Firm's earnings-at-risk at June 30, 2017.

The Firm's sensitivity to rates is largely a result of assets re-pricing at a faster pace than deposits.

Separately, another U.S. dollar interest rate scenario used by the Firm — involving a steeper yield curve with long-term rates rising by 100 basis points and short-term rates staying at current levels — results in a 12-month benefit to net interest income of approximately \$800 million. The increase in net interest income under this scenario reflects the Firm reinvesting at the higher long-term rates, with funding costs remaining unchanged. The result of the comparable non-U.S. dollar scenario was not material to the Firm.

Other sensitivity-based measures

The Firm quantifies the market risk of certain investment and funding activities by assessing the potential impact on net revenue and OCI due to changes in relevant market variables. For additional information on the positions

captured in other sensitivity-based measures, please refer to the Risk identification and classification table on page 117 of JPMorgan Chase's 2016 Annual Report.

The table below represents the potential impact to net revenue or OCI for market risk-sensitive instruments that are not included in VaR or earnings-at-risk. Where appropriate, instruments used for hedging purposes are reported along with the positions being hedged. The sensitivities disclosed in the table below may not be representative of the actual gain or loss that would have been realized at June 30, 2017 and December 31, 2016, as the movement in market parameters across maturities may vary and are not intended to imply management's expectation of future deterioration in these sensitivities.

Gain/(loss) (in millions)			June	December
Activity	Description	Sensitivity measure	30, 2017	31, 2016
Investment activities				
Investment management activities	Consists of seed capital and related hedges; and fund co-investments	10% decline in market value	\$(142)	\$(166)
Other investments	Consists of private equity and other investments held at fair value	10% decline in market value	(401)	(358)
Funding activities				
Non-USD LTD cross-currency basis	Represents the basis risk on derivatives used to hedge the foreign exchange risk on the non-USD LTD	1 basis point parallel tightening of cross currency basis	(10)	(7)
Non-USD LTD hedges foreign currency ("FX") exposure	Primarily represents the foreign exchange revaluation on the fair value of the derivative hedges	10% depreciation of currency	(6)	(23)
Funding spread risk – derivatives	Impact of changes in the spread related to derivatives DVA/FVA	1 basis point parallel increase in spread	(5)	(4)
Funding spread risk – fair value option elected liabilities ^(a)	Impact of changes in the spread related to fair value option elected liabilities DVA	1 basis point parallel increase in spread	19	17

(a) Impact recognized through OCI.

CRITICAL
ACCOUNTING
ESTIMATES
USED BY THE
FIRM

JPMorgan Chase's accounting policies and use of estimates are integral to understanding its reported results. The Firm's most complex accounting estimates require management's judgment to ascertain the appropriate carrying value of assets and liabilities. The Firm has established policies and control procedures intended to ensure that estimation methods, including any judgments made as part of such methods, are well-controlled, independently reviewed and applied consistently from period to period. The methods used and judgments made reflect, among other factors, the nature of the assets or liabilities and the related business and risk management strategies, which may vary across the Firm's businesses and portfolios. In addition, the policies and procedures are intended to ensure that the process for changing methodologies occurs in an appropriate manner. The Firm believes its estimates for determining the carrying value of its assets and liabilities are appropriate. The following is a brief description of the Firm's critical accounting estimates involving significant judgments.

Allowance for credit losses

JPMorgan Chase's allowance for credit losses covers the retained consumer and wholesale loan portfolios, as well as the Firm's wholesale and certain consumer lending-related commitments. The allowance for loan losses is intended to adjust the carrying value of the Firm's loan assets to reflect probable credit losses inherent in the loan portfolio as of the balance sheet date. Similarly, the allowance for lending-related commitments is established to cover probable credit losses inherent in the lending-related commitments portfolio as of the balance sheet date.

The allowance for credit losses includes a formula-based component, an asset-specific component, and a component related to PCI loans. The determination of each of these components involves significant judgment on a number of matters. For further discussion of these components, areas of judgment and methodologies used in establishing the Firm's allowance for credit losses, see pages 105–107, pages 132–133 and Note 15 of JPMorgan Chase's 2016 Annual Report; and see Allowance for credit losses on pages 63–65 and Note 12 of this Form 10-Q.

As noted in the discussion on pages 132–133 of JPMorgan Chase's 2016 Annual Report, the Firm's allowance for credit losses is sensitive to numerous factors, which may differ depending on the portfolio. Changes in economic conditions or in the Firm's assumptions and estimates could affect its estimate of probable credit losses inherent in the portfolio at the balance sheet date. The Firm uses its best judgment to assess these economic conditions and loss data in estimating the allowance for credit losses and these estimates are subject to periodic refinement based on changes to underlying external or Firm-specific historical data. During the second quarter of 2017, the Firm refined its loss estimates relating to the wholesale portfolio. See Note 12 of this Form 10-Q for further discussion. The use of

alternate estimates, data sources, adjustments to modeled loss estimates for model imprecision and other factors would result in a different estimated allowance for credit losses, as well as impact any related sensitivities described below. To illustrate the potential magnitude of certain alternate judgments, the Firm estimates that changes in the following inputs would have the following effects on the Firm's modeled credit loss estimates as of June 30, 2017, without consideration of any offsetting or correlated effects of other inputs in the Firm's allowance for loan losses:

- A combined 5% decline in housing prices and a 100 basis point increase in unemployment rates from current levels could imply:

- an increase to modeled credit loss estimates of approximately \$550 million for PCI loans.

- an increase to modeled annual credit loss estimates of approximately \$100 million for the residential real estate, excluding PCI loans.

- For credit card loans, a 100 basis point increase in unemployment rates from current levels could imply an increase to modeled annual credit loss estimates of approximately \$925 million.

- An increase in PD factors consistent with a one-notch downgrade in the Firm's internal risk ratings for its entire wholesale loan portfolio could imply an increase in the Firm's modeled credit loss estimates of approximately \$1.6 billion.

-

A 100 basis point increase in estimated loss given default (“LGD”) for the Firm’s entire wholesale loan portfolio could imply an increase in the Firm’s modeled credit loss estimates of approximately \$175 million.

The purpose of these sensitivity analyses is to provide an indication of the isolated impacts of hypothetical alternative assumptions on modeled loss estimates. The changes in the inputs presented above are not intended to imply management’s expectation of future deterioration of those risk factors. In addition, these analyses are not intended to estimate changes in the overall allowance for loan losses, which would also be influenced by the judgment management applies to the modeled loss estimates to reflect the uncertainty and imprecision of these modeled loss estimates based on then-current circumstances and conditions.

It is difficult to estimate how potential changes in specific factors might affect the overall allowance for credit losses because management considers a variety of factors and inputs in estimating the allowance for credit losses. Changes in these factors and inputs may not occur at the same rate and may not be consistent across all geographies or product types, and changes in factors may be directionally inconsistent, such that improvement in one factor may

offset deterioration in other factors. In addition, it is difficult to predict how changes in specific economic conditions or assumptions could affect borrower behavior or other factors considered by management in estimating the allowance for credit losses. Given the process the Firm follows and the judgments made in evaluating the risk factors related to its loss estimates, management believes that its current estimate of the allowance for credit losses is appropriate.

Fair value of financial instruments, MSRs and commodities inventory

Assets measured at fair value

The following table includes the Firm's assets measured at fair value and the portion of such assets that are classified within level 3 of the valuation hierarchy. For further information, see Note 2.

June 30, 2017 (in billions, except ratios)	Total assets at fair value	Total level 3 assets
Trading—debt and equity instruments	\$350.5	\$7.3
Derivative receivables ^(a)	56.5	4.6
Trading assets	407.0	11.9
AFS securities	215.7	0.5
Loans	2.0	0.3
MSRs	5.8	5.8
Other	26.2	1.9
Total assets measured at fair value on a recurring basis	\$656.7	\$20.4
Total assets measured at fair value on a nonrecurring basis	1.0	0.7
Total assets measured at fair value	\$657.7	\$21.1
Total Firm assets	\$2,563.2	
Level 3 assets as a percentage of total Firm assets ^(a)		0.8 %
Level 3 assets as a percentage of total Firm assets at fair value ^(a)		3.2 %

For purposes of the table above, the derivative receivables total reflects the impact of netting adjustments; however, the \$4.6 billion of derivative receivables classified as level 3 does not reflect the netting adjustment as such netting is not relevant to a presentation based on the transparency of inputs to the valuation of an asset. The level 3 balances would be reduced if netting were applied, including the netting benefit associated with cash collateral.

Valuation

Estimating fair value requires the application of judgment. The type and level of judgment required is largely dependent on the amount of observable market information available to the Firm. For instruments valued using internally developed models that use significant unobservable inputs and are therefore classified within level 3 of the valuation hierarchy, judgments used to estimate fair value are more significant than those required when estimating the fair value of instruments classified within levels 1 and 2.

In arriving at an estimate of fair value for an instrument within level 3, management must first determine the appropriate valuation technique to use. Second, the lack of observability of certain significant inputs requires management to assess all relevant empirical data in deriving valuation inputs — including, for example,

transaction details, yield curves, interest rates, prepayment rates, default rates, volatilities, correlations, equity or debt prices, valuations of comparable instruments, foreign exchange rates and credit curves. For further discussion of the valuation of level 3 instruments, including unobservable inputs used, see Note 2.

For instruments classified in levels 2 and 3, management judgment must be applied to assess the appropriate level of valuation adjustments to reflect counterparty credit quality, the Firm's creditworthiness, market funding rates, liquidity considerations, unobservable parameters, and for portfolios that meet specified criteria, the size of the net open risk position. The judgments made are typically affected by the type of product and its specific contractual terms, and the level of liquidity for the product or within the market as a whole. For further discussion of valuation adjustments applied by the Firm see Note 2.

Imprecision in estimating unobservable market inputs or other factors can affect the amount of gain or loss recorded for a particular position. Furthermore, while the Firm believes its valuation methods are appropriate and consistent with those of other market participants, the methods and assumptions used reflect management judgment and may

vary across the Firm's businesses and portfolios.

The Firm uses various methodologies and assumptions in the determination of fair value. The use of methodologies or assumptions different than those used by the Firm could result in a different estimate of fair value at the reporting date. For a detailed discussion of the Firm's valuation process and hierarchy, and its determination of fair value for individual financial instruments, see Note 2.

Goodwill impairment

Management applies significant judgment when testing goodwill for impairment. For a description of the significant valuation judgments associated with goodwill impairment, see Goodwill impairment on pages 133–134 of JPMorgan Chase's 2016 Annual Report.

For the three months ended June 30, 2017, the Firm reviewed current conditions (including the estimated effects of regulatory and legislative changes and the current estimated market cost of equity) and prior projections of business performance for all its businesses. Based upon such reviews, the Firm concluded that the goodwill allocated to its reporting units was not impaired as of June 30, 2017.

Declines in business performance, increases in credit losses, increases in equity capital requirements, as well as deterioration in economic or market conditions, adverse regulatory or legislative changes or increases in the estimated market cost of equity, could cause the estimated fair values of the Firm's reporting units or their associated goodwill to decline in the future, which could result in a material impairment charge to earnings in a future period related to some portion of the associated goodwill.

For additional information on goodwill, see Note 14.

Income taxes

For a description of the significant assumptions, judgments and interpretations associated with the accounting for income taxes, see Income taxes on page 134 of JPMorgan Chase's 2016 Annual Report.

Litigation reserves

For a description of the significant estimates and judgments associated with establishing litigation reserves, see Note 21 of this Form 10-Q, and Note 31 of JPMorgan Chase's 2016 Annual Report.

ACCOUNTING
AND REPORTING
DEVELOPMENTS

Financial Accounting Standards Board (“FASB”) Standards Issued but not yet Adopted

Standard	Summary of guidance	Effects on financial statements
Revenue recognition – revenue from contracts with customers Issued May 2014	<ul style="list-style-type: none"> Requires that revenue from contracts with customers be recognized upon transfer of control of a good or service in the amount of consideration expected to be received. Changes the accounting for certain contract costs, including whether they may be offset against revenue in the Consolidated statements of income, and requires additional disclosures about revenue and contract costs. May be adopted using a full retrospective approach or a modified, cumulative effect approach wherein the guidance is applied only to existing contracts as of the date of initial application, and to new contracts transacted after that date. 	<ul style="list-style-type: none"> Required effective date: January 1, 2018^(a) Because the guidance does not apply to revenue associated with financial instruments, including loans and securities that are accounted for under other U.S. GAAP, the Firm does not expect the new revenue recognition guidance to have a material impact on the elements of its Consolidated statements of income most closely associated with financial instruments, including securities gains, interest income and interest expense. The Firm plans to adopt the revenue recognition guidance in the first quarter of 2018 using the modified retrospective method of adoption. <p>The Firm’s implementation efforts include the identification of revenue within the scope of the guidance, as well as the evaluation of revenue contracts and related accounting policies. While the Firm has not yet identified any material changes in the timing of revenue recognition, the Firm’s review is ongoing, and it continues to evaluate the presentation of certain contract costs (whether presented gross or offset against noninterest revenue). The Firm plans to expand its qualitative disclosures within the noninterest revenue and noninterest expense note to the Consolidated Financial Statements.</p> <ul style="list-style-type: none"> Required effective date: January 1, 2018^(a) The Firm early adopted the provisions of this guidance related to
Recognition and measurement of financial assets and financial liabilities Issued January 2016	<ul style="list-style-type: none"> Requires that certain equity instruments be measured at fair value, with changes in fair value recognized in earnings. Generally requires a cumulative-effect adjustment to retained earnings as of the beginning of the reporting period of adoption. 	<ul style="list-style-type: none"> Required effective date: January 1, 2016. The Firm plans to adopt the portions of the guidance that were not eligible for early adoption in the first quarter of 2018. The Firm is currently evaluating the additional impacts on the Consolidated Financial Statements. The Firm’s implementation efforts include the identification of securities within the scope of the guidance, the evaluation of the measurement alternative available for equity securities without a readily determinable fair value, and the related impact to accounting policies, presentation, and disclosures.
Leases Issued February 2016	<ul style="list-style-type: none"> Requires lessees to recognize all leases longer than twelve months on the Consolidated balance sheets as lease liabilities with corresponding right-of-use assets. Requires lessees and lessors to classify most leases using principles similar to existing lease accounting, 	<ul style="list-style-type: none"> Required effective date: January 1, 2019^(a) The Firm is currently evaluating the potential impact on the Consolidated Financial Statements by reviewing its existing lease contracts and service contracts that may include embedded leases. The Firm expects to recognize lease liabilities and corresponding right-of-use assets (at their present value) related to predominantly all of the \$10 billion of future minimum payments required under operating leases as

Financial
instruments -
credit losses
Issued June
2016

but eliminates the “bright line” classification tests.

- Expands qualitative and quantitative disclosures regarding leasing arrangements.
- Requires adoption using a modified cumulative effect approach wherein the guidance is applied to all periods presented.
- Replaces existing incurred loss impairment guidance and establishes a single allowance framework for financial assets carried at amortized cost (including HTM securities), which will reflect management’s estimate of credit losses over the full remaining expected life of the financial assets.
- Eliminates existing guidance for PCI loans, and requires recognition of an allowance for expected credit losses on financial assets purchased with more than insignificant credit deterioration since origination.
- Amends existing impairment guidance for AFS securities to incorporate an allowance, which will allow for reversals of impairment losses in the event that the credit of an issuer improves.
- Requires a cumulative-effect adjustment to retained earnings as of the beginning of the reporting period of adoption.

disclosed in Note 30 of JPMorgan Chase’s 2016 Annual report. However, the population of contracts subject to balance sheet recognition and their initial measurement remains under evaluation. The Firm does not expect material changes to the recognition of operating lease expense in its Consolidated statements of income.

- The Firm plans to adopt the new guidance in the first quarter of 2019.
- Required effective date: January 1, 2020^(a)
- The Firm has begun its implementation efforts by establishing a Firmwide, cross-discipline governance structure. The Firm is currently identifying key interpretive issues, and is assessing existing credit loss forecasting models and processes against the new guidance to determine what modifications may be required. The Firm is also evaluating the timing of adoption, as early adoption is permitted as of January 1, 2019.
- The Firm expects that the new guidance will result in an increase in its allowance for credit losses due to several factors, including:
 1. The allowance related to the Firm’s loans and commitments will increase to cover credit losses over the full remaining expected life of the portfolio, and will consider expected future changes in macroeconomic conditions
 2. The nonaccretable difference on PCI loans will be recognized as an allowance, offset by an increase in the carrying value of the related loans
 3. An allowance will be established for estimated credit losses on HTM securities
- The extent of the increase is under evaluation, but will depend upon the nature and characteristics of the Firm’s portfolio at the adoption date, and the macroeconomic conditions and forecasts at that date.

FASB Standards Issued but not yet Adopted (continued)

Standard	Summary of guidance	Effects on financial statements
Classification of certain cash receipts and cash payments in the statement of cash flows Issued August 2016	<ul style="list-style-type: none"> • Provides targeted amendments to the classification of certain cash flows, including treatment of cash payments for settlement of zero-coupon debt instruments and distributions received from equity method investments. • Requires retrospective application to all periods presented. • Requires inclusion of restricted cash in 	<ul style="list-style-type: none"> • Required effective date: January 1, 2018^(a) • No material impact is expected because the Firm is either already in compliance with the new guidance or the balances to which it would be applied are immaterial. The Firm plans to adopt the new guidance in the first quarter of 2018.
Treatment of restricted cash on the statement of cash flows Issued November 2016	<ul style="list-style-type: none"> the cash and cash equivalents balances in the Consolidated statements of cash flows. • Requires additional disclosures to supplement the Consolidated statements of cash flows. • Requires retrospective application to all periods presented. 	<ul style="list-style-type: none"> • Required effective date: January 1, 2018^(a) • The guidance will have no impact on the Firm's Consolidated statements of income or Consolidated balance sheets, but will result in reclassification of restricted cash balances and associated changes on the Consolidated statements of cash flows. • The Firm plans to adopt the new guidance in the first quarter of 2018.
Definition of a business Issued January 2017	<ul style="list-style-type: none"> • Narrows the definition of a business and clarifies that, to be considered a business, the fair value of the gross assets acquired (or disposed of) may not be substantially all concentrated in a single identifiable asset or a group of similar assets. • In addition, in order to be considered a business, a set of activities and assets must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs. 	<ul style="list-style-type: none"> • Required effective date: January 1, 2018^(a) • No material impact is expected because the guidance is to be applied prospectively, although it is anticipated that after adoption, fewer transactions will be treated as acquisitions or dispositions of a business. The Firm plans to adopt the new guidance in the first quarter of 2018.
Goodwill Issued January 2017	<ul style="list-style-type: none"> • Requires an impairment loss to be recognized when the estimated fair value of a reporting unit falls below its carrying value. • Eliminates the second condition in the current guidance that requires an impairment loss to be recognized only if the estimated implied fair value of the goodwill is below its carrying value. 	<ul style="list-style-type: none"> • Required effective date: January 1, 2020^(a) • Based on current impairment test results, the Firm does not expect a material effect on the Consolidated Financial Statements. • After adoption, the guidance may result in more frequent goodwill impairment losses due to the removal of the second condition. • The Firm is evaluating the timing of adoption.
Presentation of net periodic pension cost and net periodic postretirement	<ul style="list-style-type: none"> • Requires the service cost component of net periodic pension and postretirement benefit cost to be reported separately in the consolidated 	<ul style="list-style-type: none"> • Required effective date: January 1, 2018^(a) • The guidance will have no impact on the Firm's net income, but based on recent trends, the Firm expects that the guidance will result in an increase in

<p>benefit cost Issued March 2017</p>	<p>results of operations from the other components (e.g., expected return on assets, interest costs, amortization of gains/losses and prior service costs).</p> <ul style="list-style-type: none"> • Requires presentation in the consolidated results of operations of the service cost component in the same line item as other employee compensation costs and presentation of the other components in a different line item from the service cost component. 	<p>compensation expense and a reduction in other expense. The Firm plans to adopt the new guidance in the first quarter of 2018.</p>
<p>Premium amortization on purchased callable debt securities Issued March 2017</p>	<ul style="list-style-type: none"> • Requires amortization of premiums to the earliest call date on debt securities with call features that are explicit, noncontingent and callable at fixed prices and on preset dates. • Does not impact securities held at a discount; the discount continues to be amortized to the contractual maturity. • Requires adoption on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. 	<ul style="list-style-type: none"> • Required effective date: January 1, 2019^(a) • The Firm is currently evaluating the impact on the Consolidated Financial Statements as well as the timing of adoption. At adoption, the guidance is expected to result in a cumulative effect adjustment which will reduce retained earnings with a corresponding increase to AOCI for AFS securities. Post-adoption, it will result in reduced interest income prior to the call date on callable debt securities held at a premium because those premiums will be amortized over a shorter time period. • The Firm's implementation efforts include identifying the population of debt securities subject to the new guidance (primarily obligations of U.S. states and municipalities) and quantifying the expected impact.

(a) Early adoption is permitted.

FORWARD-LOOKING STATEMENTS

From time to time, the Firm has made and will make forward-looking statements. These statements can be identified by the fact that they do not relate strictly to historical or current facts. Forward-looking statements often use words such as “anticipate,” “target,” “expect,” “estimate,” “intend,” “plan,” “goal,” “believe,” or other words of similar meaning. Forward-looking statements provide JPMorgan Chase’s current expectations or forecasts of future events, circumstances, results or aspirations. JPMorgan Chase’s disclosures in this Form 10-Q contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. The Firm also may make forward-looking statements in its other documents filed or furnished with the SEC. In addition, the Firm’s senior management may make forward-looking statements orally to investors, analysts, representatives of the media and others.

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

- Local, regional and global business, economic and political conditions and geopolitical events;
- Changes in laws and regulatory requirements, including capital and liquidity requirements affecting the Firm’s businesses, and the ability of the Firm to address those requirements;
- Heightened regulatory and governmental oversight and scrutiny of JPMorgan Chase’s business practices, including dealings with retail customers;
- Changes in trade, monetary and fiscal policies and laws;
- Changes in income tax laws and regulations;
- Securities and capital markets behavior, including changes in market liquidity and volatility;
- Changes in investor sentiment or consumer spending or savings behavior;
- Ability of the Firm to manage effectively its capital and liquidity, including approval of its capital plans by banking regulators;
- Changes in credit ratings assigned to the Firm or its subsidiaries;
- Damage to the Firm’s reputation;
- Ability of the Firm to deal effectively with an economic slowdown or other economic or market disruption;
- Technology changes instituted by the Firm, its counterparties or competitors;
- The success of the Firm’s business simplification initiatives and the effectiveness of its control agenda;
- Ability of the Firm to develop new products and services, and the extent to which products or services previously sold by the Firm (including but not limited to mortgages and asset-backed securities) require the Firm to incur liabilities or absorb losses not contemplated at their initiation or origination;
- Acceptance of the Firm’s new and existing products and services by the marketplace and the ability of the Firm to innovate and to increase market share;
- Ability of the Firm to attract and retain qualified employees;
- Ability of the Firm to control expense;
- Competitive pressures;
- Changes in the credit quality of the Firm’s customers and counterparties;
- Adequacy of the Firm’s risk management framework, disclosure controls and procedures and internal control over financial reporting;
- Adverse judicial or regulatory proceedings;
- Changes in applicable accounting policies, including the introduction of new accounting standards;
- Ability of the Firm to determine accurate values of certain assets and liabilities;
- Occurrence of natural or man-made disasters or calamities or conflicts and the Firm’s ability to deal effectively with disruptions caused by the foregoing;
-

Ability of the Firm to maintain the security and integrity of its financial, accounting, technology, data processing and other operating systems and facilities;

- Ability of the Firm to effectively defend itself against cyberattacks and other attempts by unauthorized parties to access the Firm's information or disrupt its systems; and

¶The other risks and uncertainties detailed in Part I,

Item 1A: Risk Factors in JPMorgan Chase's 2016 Annual Report on Form 10-K for the year ended December 31, 2016.

Any forward-looking statements made by or on behalf of the Firm speak only as of the date they are made, and JPMorgan Chase 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. The reader should, however, consult any further disclosures of a forward-looking nature the Firm may make in any subsequent Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, or Current Reports on Form 8-K.

JPMorgan Chase & Co.

Consolidated statements of income (unaudited)

(in millions, except per share data)	Three months ended		Six months ended	
	June 30, 2017	June 30, 2016	June 30, 2017	June 30, 2016
Revenue				
Investment banking fees	\$1,810	\$1,644	\$3,627	\$2,977
Principal transactions	3,137	2,976	6,719	5,655
Lending- and deposit-related fees	1,482	1,403	2,930	2,806
Asset management, administration and commissions	3,824	3,681	7,501	7,305
Securities gains/(losses)	(34)	21	(37)	72
Mortgage fees and related income	404	689	810	1,356
Card income	1,167	1,358	2,081	2,659
Other income	1,472	1,261	2,242	2,062
Noninterest revenue	13,262	13,033	25,873	24,892
Interest income	15,650	13,813	30,692	27,365
Interest expense	3,442	2,466	6,420	4,638
Net interest income	12,208	11,347	24,272	22,727
Total net revenue	25,470	24,380	50,145	47,619
Provision for credit losses	1,215	1,402	2,530	3,226
Noninterest expense				
Compensation expense	7,706	7,778	15,907	15,438
Occupancy expense	912	899	1,873	1,782
Technology, communications and equipment expense	1,870	1,665	3,698	3,283
Professional and outside services	1,644	1,700	3,187	3,248
Marketing	756	672	1,469	1,375
Other expense	1,618	924	3,391	2,349
Total noninterest expense	14,506	13,638	29,525	27,475
Income before income tax expense	9,749	9,340	18,090	16,918
Income tax expense	2,720	3,140	4,613	5,198
Net income	\$7,029	\$6,200	\$13,477	\$11,720
Net income applicable to common stockholders ^(a)	\$6,555	\$5,728	\$12,531	\$10,773
Net income per common share data				
Basic earnings per share	\$1.83	\$1.56	\$3.49	\$2.92
Diluted earnings per share	1.82	1.55	3.47	2.89
Weighted-average basic shares ^(a)	3,574.1	3,675.5	3,587.9	3,693.0
Weighted-average diluted shares ^(a)	3,599.0	3,706.2	3,614.7	3,721.9
Cash dividends declared per common share	\$0.50	\$0.48	\$1.00	\$0.92

^(a) The prior period amounts have been revised to conform with the current period presentation. The revision had no impact on the Firm's reported earnings per share.

The Notes to Consolidated Financial Statements (unaudited) are an integral part of these statements.

JPMorgan Chase & Co.

Consolidated statements of comprehensive income (unaudited)

(in millions)	Three months ended		Six months ended	
	June 30,		June 30,	
	2017	2016	2017	2016
Net income	\$7,029	\$6,200	\$13,477	\$11,720
Other comprehensive income/(loss), after-tax				
Unrealized gains on investment securities	457	867	695	1,292
Translation adjustments, net of hedges	—	3	7	1
Cash flow hedges	53	(87)	) 144	(157)
Defined benefit pension and OPEB plans	19	56	4	81
DVA on fair value option elected liabilities	2	(3)	) (67)	) 55
Total other comprehensive income, after-tax	531	836	783	1,272
Comprehensive income	\$7,560	\$7,036	\$14,260	\$12,992

The Notes to Consolidated Financial Statements (unaudited) are an integral part of these statements.

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JPMorgan Chase & Co.

Consolidated balance sheets (unaudited)

(in millions, except share data)	Jun 30, 2017	Dec 31, 2016
Assets		
Cash and due from banks	\$21,781	\$23,873
Deposits with banks	427,380	365,762
Federal funds sold and securities purchased under resale agreements (included \$18,026 and \$21,506 at fair value)	218,570	229,967
Securities borrowed (included \$1,590 and \$0 at fair value)	90,654	96,409
Trading assets (included assets pledged of \$136,213 and \$115,847)	407,064	372,130
Securities (included \$215,697 and \$238,891 at fair value and assets pledged of \$16,608 and \$16,115)	263,458	289,059
Loans (included \$1,979 and \$2,230 at fair value)	908,767	894,765
Allowance for loan losses	(13,363)	(13,776)
Loans, net of allowance for loan losses	895,404	880,989
Accrued interest and accounts receivable	64,038	52,330
Premises and equipment	14,206	14,131
Goodwill	47,300	47,288
Mortgage servicing rights	5,753	6,096
Other intangible assets	827	862
Other assets (included \$7,412 and \$7,557 at fair value and assets pledged of \$1,493 and \$1,603)	106,739	112,076
Total assets^(a)	\$2,563,174	\$2,490,972
Liabilities		
Deposits (included \$17,754 and \$13,912 at fair value)	\$1,439,473	\$1,375,179
Federal funds purchased and securities loaned or sold under repurchase agreements (included \$721 and \$687 at fair value)	165,621	165,666
Commercial paper	22,207	11,738
Other borrowed funds (included \$8,515 and \$9,105 at fair value)	30,936	22,705
Trading liabilities	133,423	136,659
Accounts payable and other liabilities (included \$11,543 and \$9,120 at fair value)	189,160	190,543
Beneficial interests issued by consolidated VIEs (included \$72 and \$120 at fair value)	30,898	39,047
Long-term debt (included \$43,484 and \$37,686 at fair value)	292,973	295,245
Total liabilities^(a)	2,304,691	2,236,782
Commitments and contingencies (see Notes 19, 20 and 21)		
Stockholders' equity		
Preferred stock (\$1 par value; authorized 200,000,000 shares; issued 2,606,750 shares)	26,068	26,068
Common stock (\$1 par value; authorized 9,000,000,000 shares; issued 4,104,933,895 shares)	4,105	4,105
Additional paid-in capital	90,604	91,627
Retained earnings	171,488	162,440
Accumulated other comprehensive (loss)	(392)	(1,175)
Shares held in restricted stock units ("RSU") Trust, at cost (472,953 shares)	(21)	(21)
Treasury stock, at cost (585,969,485 and 543,744,003 shares)	(33,369)	(28,854)
Total stockholders' equity	258,483	254,190
Total liabilities and stockholders' equity	\$2,563,174	\$2,490,972

The following table presents information on assets and liabilities related to VIEs that are consolidated by the Firm (a) at June 30, 2017, and December 31, 2016. The difference between total VIE assets and liabilities represents the Firm's interests in those entities, which are eliminated in consolidation.

(in millions)	Jun 30, 2017	Dec 31, 2016
Assets		
Trading assets	\$2,688	\$3,185
Loans	71,012	75,614
All other assets	2,819	3,321
Total assets	\$76,519	\$82,120
Liabilities		
Beneficial interests issued by consolidated VIEs	\$30,898	\$39,047
All other liabilities	427	490
Total liabilities	\$31,325	\$39,537

The assets of the consolidated VIEs are used to settle the liabilities of those entities. The holders of the beneficial interests do not have recourse to the general credit of JPMorgan Chase. At both June 30, 2017, and December 31, 2016, the Firm provided limited program-wide credit enhancements of 2.4 billion related to its Firm-administered multi-seller conduits, which are eliminated in consolidation. For further discussion, see Note 13.

The Notes to Consolidated Financial Statements (unaudited) are an integral part of these statements.

JPMorgan Chase & Co.

Consolidated statements of changes in stockholders' equity (unaudited)

(in millions, except per share data)	Six months ended	
	2017	2016
Preferred stock		
Balance at January 1 and June 30	\$26,068	\$26,068
Common stock		
Balance at January 1 and June 30	4,105	4,105
Additional paid-in capital		
Balance at January 1	91,627	92,500
Shares issued and commitments to issue common stock for employee stock-based compensation awards, and related tax effects	(865)	(539)
Other	(158)	13
Balance at June 30	90,604	91,974
Retained earnings		
Balance at January 1	162,440	146,420
Cumulative effect of change in accounting principle	—	(154)
Net income	13,477	11,720
Dividends declared:		
Preferred stock	(823)	(823)
Common stock (\$1.00 and \$0.92 per share)	(3,606)	(3,414)
Balance at June 30	171,488	153,749
Accumulated other comprehensive income		
Balance at January 1	(1,175)	192
Cumulative effect of change in accounting principle	—	154
Other comprehensive income/(loss)	783	1,272
Balance at June 30	(392)	1,618
Shares held in RSU Trust, at cost		
Balance at January 1 and June 30	(21)	(21)
Treasury stock, at cost		
Balance at January 1	(28,854)	(21,691)
Purchase of treasury stock	(5,839)	(4,536)
Reissuance from treasury stock	1,324	1,157
Balance at June 30	(33,369)	(25,070)
Total stockholders' equity	\$258,483	\$252,423

The Notes to Consolidated Financial Statements (unaudited) are an integral part of these statements.

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JPMorgan Chase & Co.

Consolidated statements of cash flows (unaudited)

(in millions)	Six months ended	
	2017	2016
Net income	\$13,477	\$11,720
Adjustments to reconcile net income to net cash provided by operating activities:		
Provision for credit losses	2,530	3,226
Depreciation and amortization	2,968	2,625
Deferred tax expense	(161)	577
Other	1,163	1,001
Originations and purchases of loans held-for-sale	(58,119)	(24,963)
Proceeds from sales, securitizations and paydowns of loans held-for-sale	53,053	22,356
Net change in:		
Trading assets	(22,914)	(52,501)
Securities borrowed	5,845	(4,505)
Accrued interest and accounts receivable	(11,940)	(18,407)
Other assets	11,366	(10,764)
Trading liabilities	(12,827)	42,738
Accounts payable and other liabilities	(5,189)	3,714
Other operating adjustments	7,724	276
Net cash used in operating activities	(13,024)	(22,907)
Investing activities		
Net change in:		
Deposits with banks	(61,618)	(5,580)
Federal funds sold and securities purchased under resale agreements	11,364	(24,624)
Held-to-maturity securities:		
Proceeds from paydowns and maturities	2,289	2,718
Purchases	—	(134)
Available-for-sale securities:		
Proceeds from paydowns and maturities	29,481	33,070
Proceeds from sales	42,972	22,559
Purchases	(45,613)	(42,002)
Proceeds from sales and securitizations of loans held-for-investment	7,762	5,599
Other changes in loans, net	(24,266)	(43,094)
All other investing activities, net	550	(576)
Net cash used in investing activities	(37,079)	(52,064)
Financing activities		
Net change in:		
Deposits	53,122	68,209
Federal funds purchased and securities loaned or sold under repurchase agreements	(43)	13,346
Commercial paper and other borrowed funds	18,222	311
Beneficial interests issued by consolidated VIEs	(1,067)	(2,668)
Proceeds from long-term borrowings	35,530	36,064
Payments of long-term borrowings	(47,743)	(32,022)
Treasury stock purchased	(5,839)	(4,536)
Dividends paid	(4,386)	(4,120)
All other financing activities, net	115	(425)
Net cash provided by financing activities	47,911	74,159
Effect of exchange rate changes on cash and due from banks	100	32

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Net decrease in cash and due from banks	(2,092)	(780)
Cash and due from banks at the beginning of the period	23,873	20,490
Cash and due from banks at the end of the period	\$21,781	\$19,710
Cash interest paid	\$6,322	\$4,283
Cash income taxes paid, net	1,736	1,261

The Notes to Consolidated Financial Statements (unaudited) are an integral part of these statements.

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See the Glossary of Terms and Acronyms on pages 168–175 for definitions of terms and acronyms used throughout the Notes to Consolidated Financial Statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (unaudited)

Note 1 – Basis of presentation

JPMorgan Chase & Co. (“JPMorgan Chase” or “the Firm”), a financial holding company incorporated under Delaware law in 1968, is a leading global financial services firm and one of the largest banking institutions in the U.S., with operations worldwide. The Firm is a leader in investment banking, financial services for consumers and small business, commercial banking, financial transaction processing and asset management. For a discussion of the Firm’s business segments, see Note 22.

The accounting and financial reporting policies of JPMorgan Chase and its subsidiaries conform to U.S. GAAP. Additionally, where applicable, the policies conform to the accounting and reporting guidelines prescribed by regulatory authorities.

The unaudited Consolidated Financial Statements prepared in conformity with U.S. GAAP require management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expense, and the disclosures of contingent assets and liabilities. Actual results could be different from these estimates. In the opinion of management, all normal, recurring adjustments have been included for a fair statement of this interim financial information.

These unaudited Consolidated Financial Statements should be read in conjunction with the audited Consolidated Financial Statements, and related notes thereto, included in JPMorgan Chase’s 2016 Annual Report.

Certain amounts reported in prior periods have been reclassified to conform with the current presentation.

Consolidation

The Consolidated Financial Statements include the accounts of JPMorgan Chase and other entities in which the Firm has a controlling financial interest. All material intercompany balances and transactions have been eliminated.

Assets held for clients in an agency or fiduciary capacity by the Firm are not assets of JPMorgan Chase and are not included on the Consolidated balance sheets.

The Firm determines whether it has a controlling financial interest in an entity by first evaluating whether the entity is a voting interest entity or a variable interest entity.

For a further description of JPMorgan Chase’s accounting policies regarding consolidation, see Notes 1 and 16 of JPMorgan Chase’s 2016 Annual Report.

Offsetting assets and liabilities

U.S. GAAP permits entities to present derivative receivables and derivative payables with the same counterparty and the related cash collateral receivables and payables on a net basis on the Consolidated balance sheets when a legally enforceable master netting agreement exists. U.S. GAAP also permits securities sold and purchased under repurchase agreements to be presented net when specified conditions are met, including the existence of a legally enforceable master netting agreement. The Firm has elected to net such balances when the specified conditions are met. For further information on offsetting assets and liabilities, see Note 1 of JPMorgan Chase’s 2016 Annual Report.

Note 2 – Fair value measurement

For a discussion of the Firm’s valuation methodologies for assets, liabilities and lending-related commitments measured at fair value and the fair value hierarchy, see Note 3 of JPMorgan Chase’s 2016 Annual Report.

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The following table presents the assets and liabilities reported at fair value as of June 30, 2017, and December 31, 2016, by major product category and fair value hierarchy.

Assets and liabilities measured at fair value on a recurring basis

June 30, 2017 (in millions)	Fair value hierarchy			Derivative netting adjustments	Total fair value
	Level 1	Level 2	Level 3		
Federal funds sold and securities purchased under resale agreements	\$—	\$18,026	\$—	\$—	\$18,026
Securities borrowed	—	1,590	—	—	1,590
Trading assets:					
Debt instruments:					
Mortgage-backed securities:					
U.S. government agencies ^(a)	1	37,058	365	—	37,424
Residential – nonagency	—	1,530	98	—	1,628
Commercial – nonagency	—	1,388	65	—	1,453
Total mortgage-backed securities	1	39,976	528	—	40,505
U.S. Treasury and government agencies ^(a)	33,996	5,041	—	—	39,037
Obligations of U.S. states and municipalities	—	8,136	681	—	8,817
Certificates of deposit, bankers' acceptances and commercial paper	—	1,699	—	—	1,699
Non-U.S. government debt securities	31,827	31,689	37	—	63,553
Corporate debt securities	—	27,068	461	—	27,529
Loans ^(b)	—	31,697	4,488	—	36,185
Asset-backed securities	—	2,739	83	—	2,822
Total debt instruments	65,824	148,045	6,278	—	220,147
Equity securities	113,460	251	284	—	113,995
Physical commodities ^(c)	3,326	1,262	—	—	4,588
Other	—	11,045	731	—	11,776
Total debt and equity instruments ^(d)	182,610	160,603	7,293	—	350,506
Derivative receivables:					
Interest rate	463	521,260	1,713	(496,524)	)26,912
Credit	—	24,610	1,289	(24,885)	)1,014
Foreign exchange	841	173,433	522	(158,134)	)16,662
Equity	—	36,584	963	(31,274)	)6,273
Commodity	—	14,015	119	(8,489)	)5,645
Total derivative receivables ^(e)	1,304	769,902	4,606	(719,306)	)56,506
Total trading assets ^(f)	183,914	930,505	11,899	(719,306)	)407,012
Available-for-sale securities:					
Mortgage-backed securities:					
U.S. government agencies ^(a)	4	67,913	—	—	67,917
Residential – nonagency	—	13,877	1	—	13,878
Commercial – nonagency	—	6,667	—	—	6,667
Total mortgage-backed securities	4	88,457	1	—	88,462
U.S. Treasury and government agencies ^(a)	28,158	—	—	—	28,158
Obligations of U.S. states and municipalities	—	32,539	—	—	32,539
Certificates of deposit	—	57	—	—	57
Non-U.S. government debt securities	19,291	11,280	—	—	30,571
Corporate debt securities	—	4,132	—	—	4,132
Asset-backed securities:					
Collateralized loan obligations	—	23,780	547	—	24,327

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Other	—	6,526	—	—	6,526
Equity securities	925	—	—	—	925
Total available-for-sale securities	48,378	166,771	548	—	215,697
Loans	—	1,674	305	—	1,979
Mortgage servicing rights	—	—	5,753	—	5,753
Other assets ^(f)	4,721	—	1,934	—	6,655
Total assets measured at fair value on a recurring basis	\$237,013	\$1,118,566	\$20,439	\$(719,306)	\$656,712
Deposits	\$—	\$15,623	\$2,131	\$—	\$17,754
Federal funds purchased and securities loaned or sold under repurchase agreements	—	721	—	—	721
Other borrowed funds	—	7,201	1,314	—	8,515
Trading liabilities:					
Debt and equity instruments ^(d)	68,035	23,557	36	—	91,628
Derivative payables:					
Interest rate	341	484,248	1,001	(477,384)	8,206
Credit	—	24,789	1,334	(24,498)	1,625
Foreign exchange	933	175,931	1,208	(164,051)	14,021
Equity	—	39,670	3,407	(33,721)	9,356
Commodity	—	17,145	177	(8,735)	8,587
Total derivative payables ^(e)	1,274	741,783	7,127	(708,389)	41,795
Total trading liabilities	69,309	765,340	7,163	(708,389)	133,423
Accounts payable and other liabilities	11,533	—	10	—	11,543
Beneficial interests issued by consolidated VIEs	—	71	1	—	72
Long-term debt	—	26,824	16,660	—	43,484
Total liabilities measured at fair value on a recurring basis	\$80,842	\$815,780	\$27,279	\$(708,389)	\$215,512

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December 31, 2016 (in millions)	Fair value hierarchy			Derivative netting adjustments	Total fair value
	Level 1	Level 2	Level 3		
Federal funds sold and securities purchased under resale agreements	\$—	\$21,506	\$—	\$—	\$21,506
Securities borrowed	—	—	—	—	—
Trading assets:					
Debt instruments:					
Mortgage-backed securities:					
U.S. government agencies ^(a)	13	40,586	392	—	40,991
Residential – nonagency	—	1,552	83	—	1,635
Commercial – nonagency	—	1,321	17	—	1,338
Total mortgage-backed securities	13	43,459	492	—	43,964
U.S. Treasury and government agencies ^(a)	19,554	5,201	—	—	24,755
Obligations of U.S. states and municipalities	—	8,403	649	—	9,052
Certificates of deposit, bankers' acceptances and commercial paper	—	1,649	—	—	1,649
Non-U.S. government debt securities	28,443	23,076	46	—	51,565
Corporate debt securities	—	22,751	576	—	23,327
Loans ^(b)	—	28,965	4,837	—	33,802
Asset-backed securities	—	5,250	302	—	5,552
Total debt instruments	48,010	138,754	6,902	—	193,666
Equity securities	96,759	281	231	—	97,271
Physical commodities ^(c)	5,341	1,620	—	—	6,961
Other	—	9,341	761	—	10,102
Total debt and equity instruments ^(d)	150,110	149,996	7,894	—	308,000
Derivative receivables:					
Interest rate	715	602,747	2,501	(577,661)	28,302
Credit	—	28,256	1,389	(28,351)	1,294
Foreign exchange	812	231,743	870	(210,154)	23,271
Equity	—	34,032	908	(30,001)	4,939
Commodity	158	18,360	125	(12,371)	6,272
Total derivative receivables ^(e)	1,685	915,138	5,793	(858,538)	64,078
Total trading assets ^(f)	151,795	1,065,134	13,687	(858,538)	372,078
Available-for-sale securities:					
Mortgage-backed securities:					
U.S. government agencies ^(a)	—	64,005	—	—	64,005
Residential – nonagency	—	14,442	1	—	14,443
Commercial – nonagency	—	9,104	—	—	9,104
Total mortgage-backed securities	—	87,551	1	—	87,552
U.S. Treasury and government agencies ^(a)	44,072	29	—	—	44,101
Obligations of U.S. states and municipalities	—	31,592	—	—	31,592
Certificates of deposit	—	106	—	—	106
Non-U.S. government debt securities	22,793	12,495	—	—	35,288
Corporate debt securities	—	4,958	—	—	4,958
Asset-backed securities:					
Collateralized loan obligations	—	26,738	663	—	27,401
Other	—	6,967	—	—	6,967
Equity securities	926	—	—	—	926
Total available-for-sale securities	67,791	170,436	664	—	238,891

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Loans	—	1,660	570	—	2,230
Mortgage servicing rights	—	—	6,096	—	6,096
Other assets ^(f)	4,357	—	2,223	—	6,580
Total assets measured at fair value on a recurring basis	\$223,943	\$1,258,736	\$23,240	\$(858,538)	\$647,381
Deposits	\$—	\$11,795	\$2,117	\$—	\$13,912
Federal funds purchased and securities loaned or sold under repurchase agreements	—	687	—	—	687
Other borrowed funds	—	7,971	1,134	—	9,105
Trading liabilities:					
Debt and equity instruments ^(d)	68,304	19,081	43	—	87,428
Derivative payables:					
Interest rate	539	569,001	1,238	(559,963)	10,815
Credit	—	27,375	1,291	(27,255)	1,411
Foreign exchange	902	231,815	2,254	(214,463)	20,508
Equity	—	35,202	3,160	(30,222)	8,140
Commodity	173	20,079	210	(12,105)	8,357
Total derivative payables ^(e)	1,614	883,472	8,153	(844,008)	49,231
Total trading liabilities	69,918	902,553	8,196	(844,008)	136,659
Accounts payable and other liabilities	9,107	—	13	—	9,120
Beneficial interests issued by consolidated VIEs	—	72	48	—	120
Long-term debt	—	23,792	13,894	—	37,686
Total liabilities measured at fair value on a recurring basis	\$79,025	\$946,870	\$25,402	\$(844,008)	\$207,289

(a) At June 30, 2017, and December 31, 2016, included total U.S. government-sponsored enterprise obligations of \$84.8 billion and \$80.6 billion, respectively, which were predominantly mortgage-related.

At June 30, 2017, and December 31, 2016, included within trading loans were \$15.6 billion and \$16.5 billion, respectively, of residential first-lien mortgages, and \$3.1 billion and \$3.3 billion, respectively, of commercial (b) first-lien mortgages. Residential mortgage loans include conforming mortgage loans originated with the intent to sell to U.S. government agencies of \$9.5 billion and \$11.0 billion, respectively, and reverse mortgages of \$2.0 billion for both periods.

Physical commodities inventories are generally accounted for at the lower of cost or net realizable value. “Net realizable value” is a term defined in U.S. GAAP as not exceeding fair value less costs to sell (“transaction costs”). Transaction costs for the Firm’s physical commodities inventories are either not applicable or immaterial to the value of the inventory. Therefore, net realizable value approximates fair value for the Firm’s physical commodities (c) inventories. When fair value hedging has been applied (or when net realizable value is below cost), the carrying value of physical commodities approximates fair value, because under fair value hedge accounting, the cost basis is adjusted for changes in fair value. For a further discussion of the Firm’s hedge accounting relationships, see Note 4. To provide consistent fair value disclosure information, all physical commodities inventories have been included in each period presented.

(d) Balances reflect the reduction of securities owned (long positions) by the amount of identical securities sold but not yet purchased (short positions).

As permitted under U.S. GAAP, the Firm has elected to net derivative receivables and derivative payables and the related cash collateral received and paid when a legally enforceable master netting agreement exists.

- (e) For purposes of the tables above, the Firm does not reduce derivative receivables and derivative payables balances for this netting adjustment, either within or across the levels of the fair value hierarchy, as such netting is not relevant to a presentation based on the transparency of inputs to the valuation of an asset or liability. The level 3 balances would be reduced if netting were applied, including the netting benefit associated with cash collateral.

- (f) Certain investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not required to be classified in the fair value hierarchy. At June 30, 2017, and December 31, 2016, the fair values of these investments, which include certain hedge funds, private equity funds, real estate and other funds, were \$809 million and \$1.0 billion, respectively. Included in these balances at June 30, 2017, and December 31, 2016, were trading assets of \$52 million for both periods, and other assets of \$757 million and \$977 million, respectively.

Transfers between levels for instruments carried at fair value on a recurring basis

For the three and six months ended June 30, 2017 and 2016, there were no individually significant transfers. All transfers are based on changes in the observability of the valuation inputs and are assumed to occur at the beginning of the quarterly reporting period in which they occur.

Level 3 valuations

For further information on the Firm's valuation process and a detailed discussion of the determination of fair value for individual financial instruments, see Note 3 of JPMorgan Chase's 2016 Annual Report.

The following table presents the Firm's primary level 3 financial instruments, the valuation techniques used to measure the fair value of those financial instruments, the significant unobservable inputs, the range of values for those inputs and, for certain instruments, the weighted averages of such inputs. While the determination to classify an instrument within level 3 is based on the significance of the unobservable inputs to the overall fair value measurement, level 3 financial instruments typically include observable components (that is, components that are actively quoted and can be validated to external sources) in addition to the unobservable components. The level 1 and/or level 2 inputs are not included in the table. In addition, the Firm manages the risk of the observable components of level 3 financial instruments using securities and derivative positions that are classified within levels 1 or 2 of the fair value hierarchy. The range of values presented in the table is representative of the highest and lowest level input used to value the significant groups of instruments within a product/instrument classification. Where provided, the weighted averages of the input values presented in the table are calculated based on the fair value of the instruments that the input is being used to value.

In the Firm's view, the input range and the weighted average value do not reflect the degree of input uncertainty or an assessment of the reasonableness of the Firm's estimates and assumptions. Rather, they reflect the characteristics of the various instruments held by the Firm and the relative distribution of instruments within the range of characteristics. For example, two option contracts may have similar levels of market risk exposure and valuation uncertainty, but may have significantly different implied volatility levels because the option contracts have different underlyings, tenors, or strike prices. The input range and weighted average values will therefore vary from period-to-period and parameter-to-parameter based on the characteristics of the instruments held by the Firm at each balance sheet date. For the Firm's derivatives and structured notes positions classified within level 3 at June 30, 2017, interest rate correlation inputs used in estimating fair value were concentrated towards the upper end of the range presented; equity correlation and equity-FX and equity-IR correlation inputs were concentrated in the middle of the range; commodity correlation inputs were concentrated towards the lower end of the range; credit correlation inputs were distributed across the range; and the interest rate-foreign exchange ("IR-FX") correlation inputs were concentrated towards the lower end of the range. In addition, the interest rate spread volatility inputs used in estimating fair value were distributed across the range presented; equity volatilities and commodity volatilities were concentrated towards the lower end of the range; and forward commodity prices used in estimating the fair value of commodity derivatives

were concentrated in the middle of the range presented. Recovery rate, yield, prepayment speed, conditional default rate and loss severity inputs used in estimating the fair value of credit derivatives were distributed across the range; and credit spreads were concentrated towards the lower end of the range.

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Level 3 inputs^(a)

June 30, 2017 (in millions, except for ratios and basis points)

Product/Instrument	Fair value	Principal valuation technique	Unobservable inputs ^(g)	Range of input values	Weighted average
Residential mortgage-backed securities and loans ^(b)	\$2,641	Discounted cash flows	Yield	5% -18%	5%
			Prepayment speed	0% -26%	8%
			Conditional default rate	0% -7%	2%
			Loss severity	0% -100%	6%
Commercial mortgage-backed securities and loans ^(c)	956	Market comparables	Price	\$0 - \$114	\$ 94
Obligations of U.S. states and municipalities	681	Market comparables	Price	\$58 - \$100	\$ 97
Corporate debt securities	461	Market comparables	Price	\$0 - \$108	\$ 87
Loans ^(d)	1,725	Market comparables	Price	\$5 - \$103	\$ 84
Asset-backed securities	547	Discounted cash flows	Credit spread	246bps-461 bps	260 bps
			Prepayment speed	20%	20%
			Conditional default rate	2%	2%
			Loss severity	30%	30%
			Price	\$0 - \$169	\$ 85
Net interest rate derivatives	648	Option pricing	Interest rate spread	3% -38%	
			volatility		
			Interest rate correlation	(50)%-97%	
			IR-FX correlation	60%-70%	
Net credit derivatives	64 (45)	Discounted cash flows	Prepayment speed	4% -15%	
			Credit correlation	35%-85%	
			Credit spread	6bps-1,557bps	
			Recovery rate	20%-65%	
			Yield	5% -8%	
			Prepayment speed	2% -14%	
			Conditional default rate	2% -100%	
Net foreign exchange derivatives	(490)	Option pricing	IR-FX correlation	(50)%-70%	
			Prepayment speed	7%	
Net equity derivatives	(2,444)	Option pricing	Equity volatility	15%-55%	
			Equity correlation	(5)%-90%	
			Equity-FX correlation	(55)%-25%	
			Equity-IR correlation	20%-35%	
			Forward commodity price	\$41 - \$ 54 per barrel	
Net commodity derivatives	(58)	Option pricing	Commodity volatility	22%-50%	
			Commodity correlation	15%-97%	
			Refer to Note 14		
MSRs	5,753	Discounted cash flows	Refer to Note 14		
Other assets	1,124	Discounted cash flows	Credit spread	40bp-90bps	65bps
			Yield	8% -40%	32%
			EBITDA multiple	6.6x-10.3x	7.6x

20,105 Option pricing Long-term debt, other borrowed funds, and deposits ^(e) Other level 3 assets and liabilities, net ^(f) 274	Interest rate spread volatility 3% -38% Interest rate correlation (50) 97% IR-FX correlation (50) 70 % Equity correlation (5) 90 % Equity-FX correlation (55) 25% Equity-IR correlation 20% 35 %
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(a) The categories presented in the table have been aggregated based upon the product type, which may differ from their classification on the Consolidated balance sheets. Furthermore, the inputs presented for each valuation technique in the table are, in some cases, not applicable to every instrument valued using the technique as the characteristics of the instruments can differ.

(b) Includes U.S. government agency securities of \$348 million, nonagency securities of \$99 million and trading loans of \$2.2 billion.

(c) Includes U.S. government agency securities of \$17 million, nonagency securities of \$65 million, trading loans of \$570 million and non-trading loans of \$304 million.

(d) Includes trading loans of \$1.7 billion and non-trading loans of \$1 million.

(e) Long-term debt, other borrowed funds and deposits include structured notes issued by the Firm that are predominantly financial instruments containing embedded derivatives. The estimation of the fair value of structured notes includes the derivative features embedded within the instrument. The significant unobservable inputs are broadly consistent with those presented for derivative receivables.

(f) Includes level 3 assets and liabilities that are insignificant both individually and in aggregate.

(g) Price is a significant unobservable input for certain instruments. When quoted market prices are not readily available, reliance is generally placed on price-based internal valuation techniques. The price input is expressed assuming a par value of \$100.

Changes in and ranges of unobservable inputs

For a discussion of the impact on fair value of changes in unobservable inputs and the relationships between unobservable inputs as well as a description of attributes of the underlying instruments and external market factors that affect the range of inputs used in the valuation of the Firm's positions see Note 3 of JPMorgan Chase's 2016 Annual Report.

Changes in level 3 recurring fair value measurements

The following tables include a rollforward of the Consolidated balance sheets amounts (including changes in fair value) for financial instruments classified by the Firm within level 3 of the fair value hierarchy for the three and six months ended June 30, 2017 and 2016. When a determination is made to classify a financial instrument within level 3, the determination is based on the significance of the unobservable parameters to the overall

fair value measurement. However, level 3 financial instruments typically include, in addition to the unobservable or level 3 components, observable components (that is, components that are actively quoted and can be validated to external sources); accordingly, the gains and losses in the table below include changes in fair value due in part to observable factors that are part of the valuation methodology. Also, the Firm risk-manages the observable components of level 3 financial instruments using securities and derivative positions that are classified within level 1 or 2 of the fair value hierarchy; as these level 1 and level 2 risk management instruments are not included below, the gains or losses in the following tables do not reflect the effect of the Firm's risk management activities related to such level 3 instruments.

Fair value measurements using significant unobservable inputs

Three months ended June 30, 2017 (in millions)	Fair value at April 1, 2017	Total realized/unrealized gains/(losses)	Purchases	Sales	Settlements	Transfers into level 3 ^(h)	Transfers (out of) level 3 ^(h)	Fair value at June 30, 2017	Change in unrealized gains/(losses) related to financial instruments held at June 30, 2017
Assets:									
Trading assets:									
Debt instruments:									
Mortgage-backed securities:									
U.S. government agencies	\$353	\$ (11)	\$ 82	\$(54)	\$ (19)	\$ 20	\$(6)	\$365	\$(14)
Residential – nonagency	35	(1)	31	(3)	(5)	46	(5)	98	(4)
Commercial – nonagency	45	(1)	10	(6)	(2)	30	(11)	65	(1)
Total mortgage-backed securities	433	(13)	123	(63)	(26)	96	(22)	528	(19)
Obligations of U.S. states and municipalities	668	4	9	—	—	—	—	681	3
Non-U.S. government debt securities	47	3	102	(95)	—	1	(21)	37	2
Corporate debt securities	738	2	74	(38)	(254)	27	(88)	461	1
Loans	4,588	68	729	(323)	(390)	122	(306)	4,488	83
Asset-backed securities	245	8	11	(30)	(25)	6	(132)	83	6
Total debt instruments	6,719	72	1,048	(549)	(695)	252	(569)	6,278	76
Equity securities	271	21	57	(41)	—	1	(25)	284	10
Other	763	43	3	(7)	(65)	2	(8)	731	31
Total trading assets – debt and equity instruments	7,753	136	(c) 1,108	(597)	(760)	255	(602)	7,293	117 (c)
Net derivative receivables: ^(a)									
Interest rate	1,009	37	21	(30)	(348)	30	(7)	712	(90)
Credit	17	(48)	1	(1)	(20)	6	—	(45)	(37)
Foreign exchange	(1,490)	95	3	(2)	656	12	40	(686)	101
Equity	(1,896)	(35)	149	(83)	(504)	(108)	33	(2,444)	(38)
Commodity	(56)	(22)	—	—	23	(2)	(1)	(58)	(32)
Total net derivative receivables	(2,416)	27	(c) 174	(116)	(193)	(62)	65	(2,521)	(96) (c)
Available-for-sale securities:									
Asset-backed securities	622	2	—	—	(77)	—	—	547	2
Other	1	—	—	—	—	—	—	1	—
Total available-for-sale securities	623	2	(d) —	—	(77)	—	—	548	2 (d)
Loans	404	18	(c) —	—	(117)	—	—	305	13 (c)
Mortgage servicing rights	6,079	(200)	(e) 154	(67)	(213)	—	—	5,753	(200) (e)
Other assets	2,077	193	(c) 28	(78)	(286)	—	—	1,934	120 (c)

Fair value measurements using significant unobservable inputs

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Three months ended June 30, 2017 (in millions)	Fair value at April 1, 2017	Total realized/unrealized (gains)/losses	Purchases	Sales	Issuance	Settlement	Transfers into level 3 ^(h)	Transfers (out of) level 3 ^(h)	Fair value at June 30, 2017	Change in unrealized (gains)/losses related to financial instruments held at June 30, 2017
Liabilities:^(b)										
Deposits	\$2,133	\$ 30 ^(c)	\$ —	\$—	\$ 292	\$ (31)	\$ —	\$ (293)	\$2,131	\$ 27 ^(c)
Federal funds purchased and securities loaned or sold under repurchase agreements	—	—	—	—	—	—	—	—	—	—
Other borrowed funds	1,261	46 ^(c)	—	—	683	(657)	23	(42)	1,314	53 ^(c)
Trading liabilities – debt and equity instruments	45	(1) ^(c)	(7)	2	—	—	1	(4)	36	—
Accounts payable and other liabilities	11	—	(1)	—	—	—	—	—	10	—
Beneficial interests issued by consolidated VIEs	51	—	(44)	—	—	(6)	—	—	1	—
Long-term debt	15,895	207 ^(c)	—	—	2,931	(2,274)	53	(152)	16,660	152 ^(c)

Fair value measurements using significant unobservable inputs

Three months ended June 30, 2016 (in millions)	Fair value at April 1, 2016	Total realized/unrealized gains/(losses)	Purchases (f)	Sales (f)	Settlements (g)	Transfers into level 3(h)	Transfers out of level 3(h)	Fair value at June 30, 2016	Change in unrealized gains/(losses) related to financial instruments held at June 30, 2016
Assets:									
Federal funds sold and securities purchased under resale agreements	\$4	\$ —	\$ —	\$ —	\$ —	\$ —	\$(4)	\$ —	\$ —
Trading assets:									
Debt instruments:									
Mortgage-backed securities:									
U.S. government agencies	650	(24)	1	(50)	(28)	6	(82)	473	(27)
Residential – nonagency	186	(1)	143	(148)	(6)	30	(4)	200	(1)
Commercial – nonagency	195	(1)	15	(23)	—	8	(164)	30	(2)
Total mortgage-backed securities	1,031	(26)	159	(221)	(34)	44	(250)	703	(30)
Obligations of U.S. states and municipalities	620	4	—	(41)	(32)	—	—	551	4
Non-U.S. government debt securities	40	(8)	25	(19)	—	—	(1)	37	(5)
Corporate debt securities	654	(54)	80	(89)	(68)	16	(23)	516	(50)
Loans	6,776	(217)	421	(733)	(338)	240	(133)	6,016	(234)
Asset-backed securities	1,190	16	255	(334)	(42)	37	(163)	959	4
Total debt instruments	10,311	(285)	940	(1,437)	(514)	337	(570)	8,782	(311)
Equity securities	279	(9)	2	(24)	(3)	1	—	246	(6)
Other	723	(37)	169	(144)	(29)	3	(15)	670	(36)
Total trading assets – debt and equity instruments	11,313	(331) (c)	1,111	(1,605)	(546)	341	(585)	9,698	(353) (c)
Net derivative receivables:(a)									
Interest rate	846	334	62	(12)	(180)	(1)	58	1,107	190
Credit	402	(202)	—	(1)	48	37	(5)	279	(76)
Foreign exchange	(1,032)	53	58	(103)	(158)	(43)	20	(1,205)	75
Equity	(2,055)	(12)	72	(215)	(5)	252	71	(1,892)	9
Commodity	(952)	235	—	18	(29)	3	6	(719)	291
Total net derivative receivables	(2,791)	408 (c)	192	(313)	(324)	248	150	(2,430)	489 (c)
Available-for-sale securities:									
Asset-backed securities	809	7	—	—	(7)	—	—	809	7
Other	1	—	—	—	—	—	—	1	—
Total available-for-sale securities	810	7 (d)	—	—	(7)	—	—	810	7 (d)
Loans	1,009	(36) (c)	184	—	(372)	—	—	785	(16) (c)
Mortgage servicing rights	5,658	(457) (e)	113	(3)	(239)	—	—	5,072	(457) (e)
Other assets	2,351	114 (c)	457	(422)	(131)	—	—	2,369	53 (c)

Fair value measurements using significant unobservable inputs

Three months ended June 30, 2016 (in millions)	Fair value at April 1, 2016	Total realized/unrealized (gains)/losses	Purchases	Sales	Issuances	Settlements	Transfers into level 3 ^(h)	Transfers (out of) level 3 ^(h)	Fair value at June 30, 2016	Change in unrealized (gains)/losses related to financial instruments held at June 30, 2016
Liabilities:^(b)										
Deposits	\$2,419	\$ 33 ^(c)	\$ —	\$ —	\$ 317	\$ (168)	\$ —	\$ (192)	\$2,409	\$ 40 ^(c)
Federal funds purchased and securities loaned or sold under repurchase agreements	6	—	—	—	—	(2)	—	(4)	—	—
Other borrowed funds	568	(31) ^(c)	—	—	515	(170)	42	(17)	907	(12) ^(c)
Trading liabilities – debt and equity instruments	52	(3) ^(c)	—	17	—	(12)	3	—	57	(1) ^(c)
Accounts payable and other liabilities	16	—	—	—	—	(1)	—	—	15	—
Beneficial interests issued by consolidated VIEs	649	(30) ^(c)	—	—	—	(35)	—	—	584	(30) ^(c)
Long-term debt	12,587	(47) ^(c)	—	—	2,714	(1,498)	168	(777)	13,147	186 ^(c)

Fair value measurements using significant unobservable inputs

Six months ended June 30, 2017 (in millions)	Fair value at January 1, 2017	Total realized/unrealized gains/(losses)	Purchases	Sales	Settlements	Transfers into level 3 ^(h)	Transfers (out of) level 3 ^(h)	Fair value at June 30, 2017	Change in unrealized gains/(losses) related to financial instruments held at June 30, 2017
Assets:									
Trading assets:									
Debt instruments:									
Mortgage-backed securities:									
U.S. government agencies	\$392	\$ (7)	\$ 161	\$(151)	\$ (35)	\$ 27	\$(22)	\$365	\$ (16)
Residential – nonagency	83	8	36	(20)	(9)	61	(61)	98	1
Commercial – nonagency	17	2	17	(14)	(5)	60	(12)	65	(1)
Total mortgage-backed securities	492	3	214	(185)	(49)	148	(95)	528	(16)
Obligations of U.S. states and municipalities	649	12	95	(70)	(5)	—	—	681	11
Non-U.S. government debt securities	46	3	174	(178)	—	27	(35)	37	3
Corporate debt securities	576	(7)	497	(146)	(376)	60	(143)	461	1
Loans	4,837	178	1,491	(1,067)	(765)	318	(504)	4,488	98
Asset-backed securities	302	22	109	(168)	(36)	14	(160)	83	7
Total debt instruments	6,902	211	2,580	(1,814)	(1,231)	567	(937)	6,278	104
Equity securities	231	34	113	(47)	—	2	(49)	284	20
Other	761	65	22	(7)	(112)	10	(8)	731	49
Total trading assets – debt and equity instruments	7,894	310	(c) 2,715	(1,868)	(1,343)	579	(994)	7,293	173 (c)
Net derivative receivables: ^(a)									
Interest rate	1,263	81	37	(53)	(651)	34	1	712	(151)
Credit	98	(94)	1	(3)	(62)	17	(2)	(45)	(50)
Foreign exchange	(1,384)	70	4	(4)	565	23	40	(686)	60
Equity	(2,252)	34	485	(128)	(528)	(181)	126	(2,444)	(37)
Commodity	(85)	(4)	—	—	25	4	2	(58)	30
Total net derivative receivables	(2,360)	87	(c) 527	(188)	(651)	(103)	167	(2,521)	(148) (c)
Available-for-sale securities:									
Asset-backed securities	663	12	—	(50)	(78)	—	—	547	10
Other	1	—	—	—	—	—	—	1	—
Total available-for-sale securities	664	12	(d) —	(50)	(78)	—	—	548	10 (d)
Loans	570	24	(c) —	—	(289)	—	—	305	16 (c)
Mortgage servicing rights	6,096	(157) (e)	371	(138)	(419)	—	—	5,753	(157) (e)

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Other assets 2,223 230 (c) 32 (155) (396) — — 1,934 132 (c)

Fair value measurements using significant unobservable inputs

Six months ended June 30, 2017 (in millions)	Fair value at January 1, 2017	Total realized/unrealized (gains)/losses	Purchases	Sales	Issuances	Settlements	Transfers into level 3 ^(h)	Transfers (out of) level 3 ^(h)	Fair value at June 30, 2017	Change in unrealized (gains)/losses related to financial instruments held at June 30, 2017
Liabilities: ^(b)										
Deposits	\$2,117	\$ 6 (c)	\$ —	\$ —	\$ 601	\$ (111)	\$ —	\$ (482)	\$2,131	\$ 45 (c)
Federal funds purchased and securities loaned or sold under repurchase agreements	—	—	—	—	—	—	—	—	—	—
Other borrowed funds	1,134	47 (c)	—	—	1,390	(1,242)	40	(55)	1,314	49 (c)
Trading liabilities – debt and equity instruments	43	(1) (c)	(8)	4	—	1	3	(6)	36	—
Accounts payable and other liabilities	13	—	(1)	—	—	(2)	—	—	10	—
Beneficial interests issued by consolidated VIEs	48	3 (c)	(44)	—	—	(6)	—	—	1	—
Long-term debt	13,894	633 (c)	—	—	7,583	(5,085)	88	(453)	16,660	432 (c)

Fair value measurements using significant unobservable inputs

Six months ended June 30, 2016 (in millions)	Fair value at January 1, 2016	Total realized/unrealized gains/(losses)	Purchases Sales ^(f)	Settlements	Transfers into level 3 ^(h)	Transfers (out of) level 3 ^(h)	Fair value at June 30, 2016	Change in unrealized gains/(losses) related to financial instruments held at June 30, 2016
Assets:								
Federal funds sold and securities purchased under resale agreements	\$—	\$ —	\$ —	\$ —	\$ 4	\$(4)	\$—	\$—
Trading assets:								
Debt instruments:								
Mortgage-backed securities:								
U.S. government agencies	715	(74)	129	(208)	(58)	87	(118)	473 (78)
Residential – nonagency	194	(1)	177	(184)	(11)	44	(19)	200 (6)
Commercial – nonagency	115	(6)	65	(28)	—	135	(251)	30 (2)
Total mortgage-backed securities	1,024	(81)	371	(420)	(69)	266	(388)	703 (86)
Obligations of U.S. states and municipalities	651	9	36	(107)	(38)	—	—	551 9
Non-U.S. government debt securities	74	2	29	(51)	—	—	(17)	37 (14)
Corporate debt securities	736	(32)	159	(144)	(125)	55	(133)	516 (1)
Loans	6,604	(188)	865	(1,144)	(642)	763	(242)	6,016 (195)
Asset-backed securities	1,832	17	432	(470)	(917)	241	(176)	959 3
Total debt instruments	10,921	(273)	1,892	(2,336)	(1,791)	1,325	(956)	8,782 (284)
Equity securities	265	(3)	33	(33)	(22)	7	(1)	246 17
Other	744	(46)	353	(287)	(35)	25	(84)	670 (12)
Total trading assets – debt and equity instruments	11,930	(322)	2,278	(2,656)	(1,848)	1,357	(1,041)	9,698 (279)
Net derivative receivables: ^(a)								
Interest rate	876	540	106	(20)	(442)	5	42	1,107 153
Credit	549	(448)	—	(2)	117	48	15	279 (402)
Foreign exchange	(725)	(194)	58	(118)	(200)	(45)	19	(1,205) (72)
Equity	(1,514)	(364)	142	(322)	73	38	55	(1,892) (3)
Commodity	(935)	227	—	18	(40)	3	8	(719) 230
Total net derivative receivables	(1,749)	(239)	306	(444)	(492)	49	139	(2,430) (94)
Available-for-sale securities:								
Asset-backed securities	823	(1)	—	—	(13)	—	—	809 (14)
Other	1	—	—	—	—	—	—	1 —
Total available-for-sale securities	824	(1)	—	—	(13)	—	—	810 (14)
Loans	1,518	(14)	184	—	(590)	—	(313)	785 (16)
Mortgage servicing rights	6,608	(1,209)	220	(67)	(480)	—	—	5,072 (1,209)
Other assets	2,401	146	471	(438)	(211)	—	—	2,369 (22)

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Fair value measurements using significant unobservable inputs

Six months ended June 30, 2016 (in millions)	Fair value at January 1, 2016	Total realized/unrealized (gains)/losses	Purchases	Sales	Issuances	Settlements	Transfers into Level 3 ^(h)	Transfers (out of) level 3 ^(h)	Fair value at June 30, 2016	Change in unrealized (gains)/losses related to financial instruments held at June 30, 2016
Liabilities:^(b)										
Deposits	\$2,950	\$ 75 ^(c)	\$ —	\$ —	\$ 483	\$ (677)	\$ —	\$ (422)	\$2,409	\$ 318 ^(c)
Federal funds purchased and securities loaned or sold under repurchase agreements	—	—	—	—	—	(2)	6	(4)	—	—
Other borrowed funds	639	(156) ^(c)	—	—	772	(369)	50	(29)	907	4 ^(c)
Trading liabilities – debt and equity instruments	63	(7) ^(c)	—	18	—	(15)	3	(5)	57	—
Accounts payable and other liabilities	19	—	—	—	—	(4)	—	—	15	—
Beneficial interests issued by consolidated VIEs	549	(22) ^(c)	—	—	143	(86)	—	—	584	(35) ^(c)
Long-term debt	11,613	392 ^(c)	—	—	4,875	(2,895)	259	(1,097)	13,147	1,154 ^(c)

- (a) All level 3 derivatives are presented on a net basis, irrespective of the underlying counterparty.
- (b) Level 3 liabilities as a percentage of total Firm liabilities accounted for at fair value (including liabilities measured at fair value on a nonrecurring basis) were 13% and 12% at June 30, 2017 and December 31, 2016, respectively. Predominantly reported in principal transactions revenue, except for changes in fair value for CCB mortgage loans
- (c) and lending-related commitments originated with the intent to sell, and mortgage loan purchase commitments, which are reported in mortgage fees and related income. Realized gains/(losses) on AFS securities, as well as other-than-temporary impairment (“OTTI”) losses that are recorded in earnings, are reported in securities gains. Unrealized gains/(losses) are reported in OCI. Realized gains/(losses) and foreign exchange hedge accounting adjustments recorded in income on AFS securities were zero
- (d) for the three and six months ended June 30, 2017 and 2016, respectively. Unrealized gains/(losses) recorded on AFS securities in OCI were \$2 million and \$7 million for the three months ended June 30, 2017 and 2016, respectively and \$12 million and \$(2) million for the six months ended June 30, 2017 and 2016, respectively.
- (e) Changes in fair value for CCB MSRs are reported in mortgage fees and related income.
- (f) Loan originations are included in purchases.
- (g) Includes financial assets and liabilities that have matured, been partially or fully repaid, impacts of modifications, deconsolidation associated with beneficial interests in VIEs and other items.
- (h) All transfers into and/or out of level 3 are based on changes in the observability of the valuation inputs and are assumed to occur at the beginning of the quarterly reporting period in which they occur.

Level 3 analysis

Consolidated balance sheets changes

Level 3 assets (including assets measured at fair value on a nonrecurring basis) were 0.8% of total Firm assets at June 30, 2017. The following describes significant changes to level 3 assets since December 31, 2016, for those items measured at fair value on a recurring basis. For further information on changes impacting items measured at fair value on a nonrecurring basis, see Assets and liabilities measured at fair value on a nonrecurring basis on page 99.

Three months ended June 30, 2017

Level 3 assets were \$20.4 billion at June 30, 2017, reflecting a decrease of \$1.4 billion from March 31, 2017 with no movements that were individually significant.

Six months ended June 30, 2017

Level 3 assets at June 30, 2017 decreased by \$2.8 billion from December 31, 2016, largely due to the following: \$1.8 billion decrease in trading assets driven by lower levels of interest rate and foreign exchange derivative receivables, largely due to settlements and transfers from level 3 to level 2 as a result of increased observability of certain valuation inputs.

Gains and losses

The following describes significant components of total realized/unrealized gains/(losses) for instruments measured at fair value on a recurring basis for the periods indicated. For further information on these instruments, see Changes in level 3 recurring fair value measurements rollforward tables on pages 94–98.

Three months ended June 30, 2017

\$176 million of net gains on assets and \$282 million of net losses on liabilities, none of which were individually significant.

Three months ended June 30, 2016

\$295 million of net losses on assets and \$78 million of net gains on liabilities, none of which were individually significant.

Six months ended June 30, 2017

\$506 million of net gains on assets and \$688 million of net losses on liabilities, none of which were individually significant.

Six months ended June 30, 2016

\$1.6 billion of net losses on assets largely driven by \$1.2 billion loss on MSRs. For further details see Note 14.

Credit and funding adjustments — derivatives

The following table provides the impact of credit and funding adjustments on principal transactions revenue in the respective periods, excluding the effect of any associated hedging activities. The DVA and FVA reported below include the impact of the Firm's own credit quality on the inception value of liabilities as well as the impact of changes in the Firm's own credit quality over time.

	Three months ended June 30,		Six months ended June 30,	
(in millions)	2017	2016	2017	2016
Credit and funding adjustments:				
Derivatives CVA	\$249	\$(168)	\$470	\$(756)
Derivatives DVA and FVA	(60)	43	(67)	(123)

For further information about both credit and funding adjustments, as well as information about valuation adjustments on fair value option elected liabilities, see Note 3 of JPMorgan Chase's 2016 Annual Report.

Assets and liabilities measured at fair value on a nonrecurring basis

The following table presents the assets and liabilities reported on a nonrecurring basis at fair value as of June 30, 2017 and 2016, by major product category and fair value hierarchy.

	Fair value hierarchy		Total fair value
	Level 1	Level 2	
June 30, 2017 (in millions)			
Loans	\$292	\$430 ^(a)	\$722
Other assets	—10	245	255
Total assets measured at fair value on a nonrecurring basis	—302	675	^(a) 977
Accounts payable and other liabilities	—1	2	3
Total liabilities measured at fair value on a nonrecurring basis	\$1	\$2	\$3
June 30, 2016 (in millions)			
Loans	\$280	\$366	\$646
Other assets	—11	93	104
Total assets measured at fair value on a nonrecurring basis	—291	459	750
Accounts payable and other liabilities	—2	7	9
Total liabilities measured at fair value on a nonrecurring basis	\$2	\$7	\$9

Of the \$675 million in level 3 assets measured at fair value on a nonrecurring basis as of June 30, 2017, \$146 million related to residential real estate loans carried at the net realizable value of the underlying collateral (i.e., collateral-dependent loans and other loans charged off in accordance with regulatory guidance). These amounts are classified as level 3 as they are valued using a broker's price opinion and discounted based upon the Firm's experience with actual liquidation values. These discounts to the broker price opinions ranged from 20% to 48% with a weighted average of 29%.

Nonrecurring fair value changes

The following table presents the total change in value of assets and liabilities for which a fair value adjustment has been included in the Consolidated statements of income for the three and six months ended June 30, 2017 and 2016, related to financial instruments held at those dates.

	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Loans	\$(60)	\$(53)	\$(109)	\$(103)
Other Assets	(17)	(18)	(44)	(22)
Accounts payable and other liabilities	(1)	(5)	(1)	(5)
Total nonrecurring fair value gains/(losses)	\$(78)	\$(76)	\$(154)	\$(130)

For further information about the measurement of impaired collateral-dependent loans, and other loans where the carrying value is based on the fair value of the underlying collateral (e.g., residential mortgage loans charged off in accordance with regulatory guidance), see Note 14 of JPMorgan Chase's 2016 Annual Report.

Additional disclosures about the fair value of financial instruments that are not carried on the Consolidated balance sheets at fair value

The following table presents by fair value hierarchy classification the carrying values and estimated fair values at June 30, 2017, and December 31, 2016, of financial assets and liabilities, excluding financial instruments that are carried at fair value on a recurring basis, and their classification within the fair value hierarchy. For additional information regarding the financial instruments within the scope of this disclosure, and the methods and significant assumptions used to estimate their fair value, see Note 3 of JPMorgan Chase's 2016 Annual Report.

(in billions)	June 30, 2017					December 31, 2016				
	Carrying value	Estimated fair value hierarchy				Carrying value	Estimated fair value hierarchy			
		Level 1	Level 2	Level 3	Total estimated fair value		Level 1	Level 2	Level 3	Total estimated fair value
Financial assets										
Cash and due from banks	\$21.8	\$21.8	\$—	\$—	\$21.8	\$23.9	\$23.9	\$—	\$—	\$23.9
Deposits with banks	427.4	426.0	1.4	—	427.4	365.8	362.0	3.8	—	365.8
Accrued interest and accounts receivable	64.0	—	62.7	0.2	62.9	52.3	—	52.2	0.1	52.3
Federal funds sold and securities purchased under resale agreements	200.5	—	200.5	—	200.5	208.5	—	208.3	0.2	208.5
Securities borrowed	89.1	—	89.1	—	89.1	96.4	—	96.4	—	96.4
Securities, held-to-maturity	47.8	—	48.8	—	48.8	50.2	—	50.9	—	50.9
Loans, net of allowance for loan losses ^(a)	893.4	—	30.8	862.8	892.9	878.8	—	24.1	851.0	875.1
Other	64.7	—	54.6	14.8	69.4	71.4	0.1	60.8	14.3	75.2
Financial liabilities										
Deposits	\$1,421.7	\$—	\$1,421.8	\$—	\$1,421.8	\$1,361.3	\$—	\$1,361.3	\$—	\$1,361.3
Federal funds purchased and securities loaned or sold under repurchase agreements	164.9	—	164.9	—	164.9	165.0	—	165.0	—	165.0
Commercial paper	22.2	—	22.2	—	22.2	11.7	—	11.7	—	11.7
Other borrowed funds	22.4	—	22.4	—	22.4	13.6	—	13.6	—	13.6
Accounts payable and other liabilities	150.5	—	146.9	3.0	149.9	148.0	—	144.8	3.4	148.2
Beneficial interests issued by consolidated VIEs	30.8	—	30.8	—	30.8	38.9	—	38.9	—	38.9
Long-term debt and junior subordinated deferrable interest debentures	249.5	—	252.5	2.5	255.0	257.5	—	260.0	2.0	262.0

Fair value is typically estimated using a discounted cash flow model that incorporates the characteristics of the underlying loans (including principal, contractual interest rate and contractual fees) and other key inputs, including expected lifetime credit losses, interest rates, prepayment rates, and primary origination or secondary market spreads. For certain loans, the fair value is measured based on the value of the underlying collateral. The difference between the estimated fair value and carrying value of a financial asset or liability is the result of the different methodologies used to determine fair value as compared with carrying value. For example, credit losses are estimated for a financial asset's remaining life in a fair value calculation but are estimated for a loss emergence period in the allowance for loan loss calculation; future loan income (interest and fees) is incorporated in a fair value calculation but is generally not considered in the allowance for loan losses. For a further discussion of the Firm's methodologies for estimating the fair value of loans and lending-related commitments, see Valuation hierarchy on pages 150–153 of JPMorgan Chase's 2016 Annual Report.

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The majority of the Firm's lending-related commitments are not carried at fair value on a recurring basis on the Consolidated balance sheets, nor are they actively traded. The carrying value of the wholesale allowance for lending-related commitments and the estimated fair value of these wholesale lending-related commitments were as follows for the periods indicated.

(in billions)	June 30, 2017				December 31, 2016			
	Estimated fair value hierarchy				Estimated fair value hierarchy			
	Carrying value ^(a)	Level 2	Level 3	Total estimated fair value	Carrying value ^(a)	Level 2	Level 3	Total estimated fair value
Wholesale lending-related commitments	\$1.1	\$-	\$-1.6	\$ 1.6	\$1.1	\$-	\$-2.1	\$ 2.1

(a) Excludes the current carrying values of the guarantee liability and the offsetting asset, each of which is recognized at fair value at the inception of the guarantees.

The Firm does not estimate the fair value of consumer lending-related commitments. In many cases, the Firm can reduce or cancel these commitments by providing the borrower notice or, in some cases as permitted by law, without notice. For a further discussion of the valuation of lending-related commitments, see page 151 of JPMorgan Chase's 2016 Annual Report.

Note 3 – Fair value option

For a discussion of the primary financial instruments for which the fair value option was elected, including the basis for those elections and the determination of instrument-specific credit risk, where relevant, see Note 4 of JPMorgan Chase's 2016 Annual Report.

Changes in fair value under the fair value option election

The following tables present the changes in fair value included in the Consolidated statements of income for the three and six months ended June 30, 2017 and 2016, for items for which the fair value option was elected. The profit and loss information presented below only includes the financial instruments that were elected to be measured at fair value; related risk management instruments, which are required to be measured at fair value, are not included in the table.

(in millions)	Three months ended June 30,					
	2017			2016		
	Principal transactions	All other income	Total changes in fair value recorded	Principal transactions	All other income	Total changes in fair value recorded
Federal funds sold and securities purchased under resale agreements	\$(12)	\$ —	\$ (12)	\$ —	\$ —	\$ —
Securities borrowed	13	—	13	3	—	3
Trading assets:						
Debt and equity instruments, excluding loans	334	2 (c)	336	(14)	11 (c)	(140)
Loans reported as trading assets:						
Changes in instrument-specific credit risk	69	9 (c)	78	34	16 (c)	50
Other changes in fair value	43	229 (c)	272	70	206 (c)	276
Loans:						
Changes in instrument-specific credit risk	—	—	—	—	—	—
Other changes in fair value	1	3	4	(3)	—	(3)
Other assets	3	(16) (d)	(13)	2	102 (d)	104
Deposits (a)	(86)	—	(86)	(22)	6	(226)
Federal funds purchased and securities loaned or sold under repurchase agreements	(3)	—	(3)	(3)	—	(3)
Other borrowed funds (a)	43	—	43	(52)	9	(529)
Trading liabilities	—	—	—	(2)	—	(2)
Beneficial interests issued by consolidated VIEs	—	—	—	16	—	16
Long-term debt (a)(b)	(170)	—	(170)	(60)	—	(600)

(in millions)	Six months ended June 30,					
	2017			2016		
	Principal transactions	All other income	Total changes in fair value recorded	Principal transactions	All other income	Total changes in fair value recorded
Federal funds sold and securities purchased under resale agreements	\$(33)	\$ —	\$ (33)	\$68	\$ —	\$ 68
Securities borrowed	90	—	90	1	—	1
Trading assets:						
Debt and equity instruments, excluding loans	695	2 (c)	697	(113)	—	(113)
Loans reported as trading assets:						
Changes in instrument-specific credit risk	243	15 (c)	258	98	14(c)	112
Other changes in fair value	77	352(c)	429	186	529 ^{b)}	709
Loans:						
Changes in instrument-specific credit risk	(1)	—	(1)	13	—	13
Other changes in fair value	1	3	4	4	—	4
Other assets	7	(2) ^(d)	(15)	14	82 ^(d)	96
Deposits ^(a)	(245)	—	(245)	(569)	—	(569)
Federal funds purchased and securities loaned or sold under repurchase agreements	2	—	2	(20)	—	(20)
Other borrowed funds ^(a)	(431)	—	(431)	(1)	—	(1)
Trading liabilities	(1)	—	(1)	2	—	2
Beneficial interests issued by consolidated VIEs	—	—	—	23	—	23
Long-term debt ^{(a)(b)}	(923)	—	(923)	(918)	—	(918)

Unrealized gains/(losses) due to instrument-specific credit risk (DVA) for liabilities for which the fair value option has been elected is recorded in OCI, while realized gains/(losses) are recorded in principal transactions revenue.

(a) Realized gains/(losses) due to instrument-specific credit risk recorded in principal transaction revenue were not material for the three and six months ended June 30, 2017 and 2016, respectively.

Long-term debt measured at fair value predominantly relates to structured notes. Although the risk associated with (b) the structured notes is actively managed, the gains/(losses) reported in this table do not include the income statement impact of the risk management instruments used to manage such risk.

(c) Reported in mortgage fees and related income.

(d) Reported in other income.

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Difference between aggregate fair value and aggregate remaining contractual principal balance outstanding
The following table reflects the difference between the aggregate fair value and the aggregate remaining contractual principal balance outstanding as of June 30, 2017, and December 31, 2016, for loans, long-term debt and long-term beneficial interests for which the fair value option has been elected.

(in millions)	June 30, 2017			December 31, 2016		
	Contractual principal outstanding	Fair value	Fair value over/(under) contractual principal outstanding	Contractual principal outstanding	Fair value	Fair value over/(under) contractual principal outstanding
Loans ^(a)						
Nonaccrual loans						
Loans reported as trading assets	\$3,933	\$1,193	\$ (2,740)	\$3,338	\$748	\$ (2,590)
Loans	39	—	(39)	—	—	—
Subtotal	3,972	1,193	(2,779)	3,338	748	(2,590)
All other performing loans						
Loans reported as trading assets	36,505	34,992	(1,513)	35,477	33,054	(2,423)
Loans	1,995	1,978	(17)	2,259	2,228	(31)
Total loans	\$42,472	\$38,163	\$ (4,309)	\$41,074	\$36,030	\$ (5,044)
Long-term debt						
Principal-protected debt	\$25,339 ^(c)	\$22,502	\$ (2,837)	\$21,602 ^(c)	\$19,195	\$ (2,407)
Nonprincipal-protected debt ^(b)	NA	20,982	NA	NA	18,491	NA
Total long-term debt	NA	\$43,484	NA	NA	\$37,686	NA
Long-term beneficial interests						
Nonprincipal-protected debt	NA	\$72	NA	NA	\$120	NA
Total long-term beneficial interests	NA	\$72	NA	NA	\$120	NA

^(a) There were no performing loans that were ninety days or more past due as of June 30, 2017, and December 31, 2016, respectively.

Remaining contractual principal is not applicable to nonprincipal-protected notes. Unlike principal-protected structured notes, for which the Firm is obligated to return a stated amount of principal at the maturity of the note, nonprincipal-protected structured notes do not obligate the Firm to return a stated amount of principal at maturity, ^(b) but to return an amount based on the performance of an underlying variable or derivative feature embedded in the note. However, investors are exposed to the credit risk of the Firm as issuer for both nonprincipal-protected and principal protected notes.

^(c) Where the Firm issues principal-protected zero-coupon or discount notes, the balance reflects the contractual principal payment at maturity or, if applicable, the contractual principal payment at the Firm's next call date. At June 30, 2017, and December 31, 2016, the contractual amount of lending-related commitments for which the fair value option was elected was \$4.5 billion and \$4.6 billion, with a corresponding fair value of \$(100) million and \$(118) million, respectively. For further information regarding off-balance sheet lending-related financial instruments, see Note 29 of JPMorgan Chase's 2016 Annual Report, and Note 19 of this Form 10-Q.

Structured note products by balance sheet classification and risk component

The following table presents the fair value of the structured notes issued by the Firm, by balance sheet classification and the primary risk type.

(in millions)	June 30, 2017				December 31, 2016			
	Long-term debt	Other borrowed funds	Deposits	Total	Long-term debt	Other borrowed funds	Deposits	Total
Risk exposure								
Interest rate	\$20,170	\$107	\$5,875	\$26,152	\$16,296	\$184	\$4,296	\$20,776
Credit	3,546	80	—	3,626	3,267	225	—	3,492

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Foreign exchange	2,491	172	6	2,669	2,365	135	6	2,506
Equity	16,351	7,488	5,995	29,834	14,831	8,234	5,481	28,546
Commodity	425	27	3,544	3,996	488	37	1,811	2,336
Total structured notes	\$42,983	\$ 7,874	\$ 15,420	\$66,277	\$37,247	\$ 8,815	\$ 11,594	\$57,656

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Note 4 – Derivative instruments

JPMorgan Chase makes markets in derivatives for clients and also uses derivatives to hedge or manage its own risk exposures. For a further discussion of the Firm's use of and accounting policies regarding derivative instruments, see Note 6 of JPMorgan Chase's 2016 Annual Report.

The Firm's disclosures are based on the accounting treatment and purpose of these derivatives. A limited number of the Firm's derivatives are designated in hedge

accounting relationships and are disclosed according to the type of hedge (fair value hedge, cash flow hedge, or net investment hedge). Derivatives not designated in hedge accounting relationships include certain derivatives that are used to manage certain risks associated with specified assets or liabilities ("specified risk management" positions) as well as derivatives used in the Firm's market-making businesses or for other purposes.

The following table outlines the Firm's primary uses of derivatives and the related hedge accounting designation or disclosure category.

Type of Derivative	Use of Derivative	Designation and disclosure	Affected segment or unit	10-Q page reference
Manage specifically identified risk exposures in qualifying hedge accounting relationships:				
Interest rate	Hedge fixed rate assets and liabilities	Fair value hedge	Corporate	110
Interest rate	Hedge floating-rate assets and liabilities	Cash flow hedge	Corporate	111
Foreign exchange	Hedge foreign currency-denominated assets and liabilities	Fair value hedge	Corporate	110
Foreign exchange	Hedge forecasted revenue and expense	Cash flow hedge	Corporate	111
Foreign exchange	Hedge the value of the Firm's investments in non-U.S. dollar functional currency entities	Net investment hedge	Corporate	112
Commodity	Hedge commodity inventory	Fair value hedge	CIB	110
Manage specifically identified risk exposures not designated in qualifying hedge accounting relationships:				
Interest rate	Manage the risk of the mortgage pipeline, warehouse loans and MSRs	Specified risk management	CCB	112
Credit	Manage the credit risk of wholesale lending exposures	Specified risk management	CIB	112
Commodity	Manage the risk of certain commodities-related contracts and investments	Specified risk management	CIB	112
Interest rate and foreign exchange	Manage the risk of certain other specified assets and liabilities	Specified risk management	Corporate	112
Market-making derivatives and other activities:				
Various	Market-making and related risk management	Market-making and other	CIB	112
Various	Other derivatives	Market-making and other	CIB, Corporate	112

Notional amount of derivative contracts

The following table summarizes the notional amount of derivative contracts outstanding as of June 30, 2017, and December 31, 2016.

(in billions)	Notional amounts ^(b)	
	June 30, 2017	December 31, 2016
Interest rate contracts		
Swaps	\$22,112	\$ 22,000
Futures and forwards	5,805	5,289
Written options	3,610	3,091
Purchased options	4,038	3,482
Total interest rate contracts	35,565	33,862
Credit derivatives ^(a)	1,819	2,032
Foreign exchange contracts		
Cross-currency swaps	3,829	3,359
Spot, futures and forwards	6,374	5,341
Written options	824	734
Purchased options	820	721
Total foreign exchange contracts	11,847	10,155
Equity contracts		
Swaps	301	258
Futures and forwards	89	59
Written options	543	417
Purchased options	468	345
Total equity contracts	1,401	1,079
Commodity contracts		
Swaps	105	102
Spot, futures and forwards	145	130
Written options	82	83
Purchased options	87	94
Total commodity contracts	419	409
Total derivative notional amounts	\$51,051	\$ 47,537

(a) For more information on volumes and types of credit derivative contracts, see the Credit derivatives discussion on page 113.

(b) Represents the sum of gross long and gross short third-party notional derivative contracts.

While the notional amounts disclosed above give an indication of the volume of the Firm's derivatives activity, the notional amounts significantly exceed, in the Firm's view, the possible losses that could arise from such transactions. For most derivative transactions, the notional amount is not exchanged; it is used simply as a reference to calculate payments.

Impact of derivatives on the Consolidated balance sheets

The following table summarizes information on derivative receivables and payables (before and after netting adjustments) that are reflected on the Firm's Consolidated balance sheets as of June 30, 2017, and December 31, 2016, by accounting designation (e.g., whether the derivatives were designated in qualifying hedge accounting relationships or not) and contract type.

Free-standing derivative receivables and payables^(a)

June 30, 2017 (in millions)	Gross derivative receivables				Gross derivative payables			
	Not designated as hedges	Designated as hedges	Total derivative receivables	Net derivative receivables ^(b)	Not designated as hedges	Designated as hedges	Total derivative payables	Net derivative payables ^(b)
Trading assets and liabilities								
Interest rate	\$519,565	\$ 3,872	\$ 523,437	\$ 26,912	\$483,494	\$ 2,096	\$ 485,590	\$ 8,206
Credit	25,898	—	25,898	1,014	26,123	—	26,123	1,625
Foreign exchange	174,034	763	174,797	16,662	176,681	1,391	178,072	14,021
Equity	37,546	—	37,546	6,273	43,077	—	43,077	9,356
Commodity	14,114	20	14,134	5,645	17,208	114	17,322	8,587
Total fair value of trading assets and liabilities	\$771,157	\$ 4,655	\$ 775,812	\$ 56,506	\$746,583	\$ 3,601	\$ 750,184	\$ 41,795

December 31, 2016 (in millions)	Gross derivative receivables				Gross derivative payables			
	Not designated as hedges	Designated as hedges	Total derivative receivables	Net derivative receivables ^(b)	Not designated as hedges	Designated as hedges	Total derivative payables	Net derivative payables ^(b)
Trading assets and liabilities								
Interest rate	\$601,557	\$ 4,406	\$ 605,963	\$ 28,302	\$567,894	\$ 2,884	\$ 570,778	\$ 10,815
Credit	29,645	—	29,645	1,294	28,666	—	28,666	1,411
Foreign exchange	232,137	1,289	233,426	23,271	233,823	1,148	234,971	20,508
Equity	34,940	—	34,940	4,939	38,362	—	38,362	8,140
Commodity	18,505	137	18,642	6,272	20,283	179	20,462	8,357
Total fair value of trading assets and liabilities	\$916,784	\$ 5,832	\$ 922,616	\$ 64,078	\$889,028	\$ 4,211	\$ 893,239	\$ 49,231

(a) Balances exclude structured notes for which the fair value option has been elected. See Note 3 for further information.

(b) As permitted under U.S. GAAP, the Firm has elected to net derivative receivables and derivative payables and the related cash collateral receivables and payables when a legally enforceable master netting agreement exists.

Derivatives netting

The following tables present, as of June 30, 2017, and December 31, 2016, gross and net derivative receivables and payables by contract and settlement type. Derivative receivables and payables, as well as the related cash collateral from the same counterparty have been netted on the Consolidated balance sheets where the Firm has obtained an appropriate legal opinion with respect to the master netting agreement. Where such a legal opinion has not been either sought or obtained, amounts are not eligible for netting on the Consolidated balance sheets, and those derivative receivables and payables are shown separately in the tables below.

In addition to the cash collateral received and transferred that is presented on a net basis with derivative receivables and payables, the Firm receives and transfers additional collateral (financial instruments and cash). These amounts mitigate counterparty credit risk associated with the Firm’s derivative instruments, but are not eligible for net presentation:

collateral that consists of non-cash financial instruments (generally U.S. government and agency securities and other G7 government bonds) and cash collateral held at third party custodians, which are shown separately as “Collateral not nettable on the Consolidated balance sheets” in the tables below, up to the fair value exposure amount.

the amount of collateral held or transferred that exceeds the fair value exposure at the individual counterparty level, as of the date presented, which is excluded from the tables below; and

collateral held or transferred that relates to derivative receivables or payables where an appropriate legal opinion has not been either sought or obtained with respect to the master netting agreement, which is excluded from the tables below.

June 30, 2017			December 31, 2016			
Gross (in derivative receivables millions)	Amounts netted on the Consolidated balance sheets	Net derivative receivables	Gross derivative receivables	Amounts netted on the Consolidated balance sheets	Net derivative receivables	
U.S. GAAP nettable derivative receivables						
Interest rate contracts:						
Over-the-counter (“OTC”)	\$ 320,828	\$ (299,119)	\$ 21,709	\$ 365,227	\$ (342,173)	\$ 23,054
OTC cleared	(17,297)	62	235,399	(235,261)	138	
Exchange-traded	(108)	59	241	(227)	14	
Total interest rate contracts	(185)	121	236,341	(237,658)	150	
Credit contracts:						
OTC	(17,862)	307	23,130	(22,612)	518	
OTC cleared	(7,023)	65	5,746	(5,739)	7	
Total credit contracts	(24,885)	372	28,876	(28,351)	525	
Foreign exchange						

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contracts:

OTC-cleared	171,428 (156,701)	13,125	226,271	(208,962)	17,309
Exchange-traded ^(a)	86	104	1,238	(1,165)	73
Total			104	(27)	77

foreign

exchange	171,428 (158,134)	13,294	227,613	(210,154)	17,459
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contracts

Equity

contracts:

OTC-cleared	20,072 (19,794)	278	20,868	(20,570)	298
Exchange-traded ^(a)	2,982	11,439	11,439	(9,431)	2,008
Total					

OTC-cleared	34,654 (31,274)	3,260	32,307	(30,001)	2,306
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contracts

Commodity

contracts:

OTC-cleared	8,005 (3,775)	4,320	11,571	(5,605)	5,966
Exchange-traded ^(a)	451	6,794	6,794	(6,766)	28
Total					

OTC-cleared	13,260 (8,489)	4,771	18,365	(12,371)	5,994
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contracts

Derivative

receivables

with appropriate legal opinion	762,833 (719,306) ^(b)	43,527	908,028	(858,538) ^(b)	49,490
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legal

opinion

Derivative

receivables

where

an

appropriate

legal

opinion

has

not

been

either

sought

or

obtained

OTC-cleared	771,812	\$ 56,506	\$ 922,616		\$ 64,078
-------------	---------	-----------	------------	--	-----------

derivative

receivables

recognized

on

the

Consolidated

balance sheets Collateral not nettable on the Consolidated balance sheets ^{(c)(d)} Net amounts	(15,383)	(18,638)
	\$ 41,123	\$ 45,440

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June 30, 2017			December 31, 2016		
Gross (in millions) payables	Amounts netted on the Consolidated balance sheets	Net derivative payables	Gross derivative payables	Amounts netted on the Consolidated balance sheets	Net derivative payables
U.S.					
GAAP					
nettable					
derivative					
payables					
Interest					
rate					
contracts:					
OTC-cleared	\$290,398 \$(284,262)	\$ 6,136	\$338,502	\$(329,325)	\$ 9,177
OTC-cleared	154,193,011)	143	230,464	(230,463)	1
Exchange-traded ^(a)	16	196	196	(175)	21
Total	483,679 (477,384)	6,295	569,162	(559,963)	9,199
contracts					
Credit					
contracts:					
OTC-cleared	1293 (17,532)	761	22,366	(21,614)	752
OTC-cleared	6,966 (6,966)	—	5,641	(5,641)	—
Total	26,259 (24,498)	761	28,007	(27,255)	752
contracts					
Foreign					
exchange					
contracts:					
OTC-cleared	12,444 (162,674)	9,770	228,300	(213,296)	15,004
OTC-cleared	1,369)	1	1,158	(1,158)	—
Exchange-traded ^(a)	79	328	328	(9)	319
Total	173,901 (164,051)	9,850	229,786	(214,463)	15,323
contracts					
Equity					
contracts:					
OTC-cleared	26,415 (22,241)	4,204	24,688	(20,808)	3,880
OTC-cleared	1,480)	—	—	—	—
Exchange-traded ^(a)	1,799	799	10,004	(9,414)	590
Total	38,704 (33,721)	5,003	34,692	(30,222)	4,470
contracts					
Commodity					
contracts:					
OTC-cleared	1,864 (4,023)	7,841	12,885	(5,252)	7,633
OTC-cleared	—	—	—	—	—

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Exchange-traded (a))	89	7,099	(6,853)	246
Total				
OTC (b))	7,930	19,984	(12,105)	7,879
contracts				
Derivative				
payables				
with				
appropriate	738,228 (708,389) ^(b)	29,839	881,631	(844,008) ^(b)
legal				
opinions				
Derivative				
payables				
where				
an				
appropriate				
legal				
opinion				
has	11,956	11,608		11,608
not				
been				
either				
sought				
or				
obtained				
Total				
derivative				
payables				
recognized				
\$	750,184	\$ 41,795	\$ 893,239	\$ 49,231
the				
Consolidated				
balance				
sheets				
Collateral				
not				
nettable				
on				
the	(5,701)			(8,925)
Consolidated				
balance				
sheets ^{(c)(d)(e)}				
Net				
amounts	\$ 36,094			\$ 40,306

(a) Exchange-traded derivative balances that relate to futures contracts are settled daily.

Net derivatives receivable included cash collateral netted of \$59.7 billion and \$71.9 billion at June 30, 2017, and December 31, 2016, respectively. Net derivatives payable included cash collateral netted of \$48.8

(b) billion and \$57.3 billion related to OTC and OTC-cleared derivatives at June 30, 2017, and December 31, 2016, respectively.

(c) Excludes all collateral related to derivative instruments where an appropriate legal opinion has not been either sought or obtained.

(d)

Represents liquid security collateral as well as cash collateral held at third party custodians related to derivative instruments where an appropriate legal opinion has been obtained. For some counterparties, the collateral amounts of financial instruments may exceed the derivative receivables and derivative payables balances. Where this is the case, the total amount reported is limited to the net derivative receivables and net derivative payables balances with that counterparty.

- (e) Derivative payables collateral relates only to OTC and OTC-cleared derivative instruments. Amounts exclude collateral transferred related to exchange-traded derivative instruments.

Liquidity risk and credit-related contingent features

For a more detailed discussion of liquidity risk and credit-related contingent features related to the Firm's derivative contracts, see Note 6 of JPMorgan Chase's 2016 Annual Report.

The following table shows the aggregate fair value of net derivative payables related to OTC and OTC-cleared derivatives that contain contingent collateral or termination features that may be triggered upon a ratings downgrade, and the associated collateral the Firm has posted in the normal course of business, at June 30, 2017, and December 31, 2016.

OTC and OTC-cleared derivative payables containing downgrade triggers

(in millions)	June 30, December 31,	
	2017	2016
Aggregate fair value of net derivative payables	\$ 13,737	\$ 21,550
Collateral posted	11,219	19,383

The following table shows the impact of a single-notch and two-notch downgrade of the long-term issuer ratings of JPMorgan Chase & Co. and its subsidiaries, predominantly JPMorgan Chase Bank, National Association ("JPMorgan Chase Bank, N.A."),

at June 30, 2017, and December 31, 2016, related to OTC and OTC-cleared derivative contracts with contingent collateral or termination features that may be triggered upon a ratings downgrade. Derivatives contracts generally require additional collateral to be posted or terminations to be triggered when the predefined threshold rating is breached. A downgrade by a single rating agency that does not result in a rating lower than a preexisting corresponding rating provided by another major rating agency will generally not result in additional collateral, (except in certain instances in which additional initial margin may be required upon a ratings downgrade), nor in termination payments requirements. The liquidity impact in the table is calculated based upon a downgrade below the lowest current rating of the rating agencies referred to in the derivative contract.

Liquidity impact of downgrade triggers on OTC and OTC-cleared derivatives

(in millions)	June 30, 2017		December 31, 2016	
	Single-notch downgrade	Two-notch downgrade	Single-notch downgrade	Two-notch downgrade
Amount of additional collateral to be posted upon downgrade ^(a)	\$ 104	\$ 1,996	\$ 560	\$ 2,497
Amount required to settle contracts with termination triggers upon downgrade ^(b)	247	752	606	1,049

(a) Includes the additional collateral to be posted for initial margin.

(b) Amounts represent fair values of derivative payables, and do not reflect collateral posted.

Derivatives executed in contemplation of a sale of the underlying financial asset

In certain instances the Firm enters into transactions in which it transfers financial assets but maintains the economic exposure to the transferred assets by entering into a derivative with the same counterparty in contemplation of the initial transfer. The Firm generally accounts for such transfers as collateralized financing transactions as described in Note 10, but in limited circumstances they may qualify to be accounted for as a sale and a derivative under U.S. GAAP. There were no such transfers accounted for as a sale where the associated derivative was outstanding at June 30, 2017, and such transfers at December 31, 2016 were not material.

Impact of derivatives on the Consolidated statements of income

The following tables provide information related to gains and losses recorded on derivatives based on their hedge accounting designation or purpose.

Fair value hedge gains and losses

The following tables present derivative instruments, by contract type, used in fair value hedge accounting relationships, as well as pre-tax gains/(losses) recorded on such derivatives and the related hedged items for the three and six months ended June 30, 2017 and 2016, respectively. The Firm includes gains/(losses) on the hedging derivative and the related hedged item in the same line item in the Consolidated statements of income.

Three months ended June 30, 2017 (in millions)	Gains/(losses) recorded in income			Income statement impact due to:	
	Derivatives	Hedged items	Total income statement impact	Hedge ineffective components	Excluded components
Contract type					
Interest rate ^{(a)(b)}	\$128	\$46	\$ 174	\$ (13)	\$ 187
Foreign exchange ^(c)	(1,497)	1,493	(4)	—	(4)
Commodity ^(d)	97	(64)	33	3	30
Total	\$(1,272)	\$1,475	\$ 203	\$ (10)	\$ 213

Three months ended June 30, 2016 (in millions)	Gains/(losses) recorded in income			Income statement impact due to:	
	Derivatives	Hedged items	Total income statement impact	Hedge ineffective components	Excluded components
Contract type					
Interest rate ^{(a)(b)}	\$903	\$(709)	\$ 194	\$ 1	\$ 193
Foreign exchange ^(c)	1,487	(1,472)	15	—	15
Commodity ^(d)	(215)	216	1	(10)	11
Total	\$2,175	\$(1,965)	\$ 210	\$ (9)	\$ 219

Six months ended June 30, 2017 (in millions)	Gains/(losses) recorded in income			Income statement impact due to:	
	Derivatives	Hedged items	Total income statement impact	Hedge ineffective components	Excluded components
Contract type					
Interest rate ^{(a)(b)}	\$(153)	\$577	\$ 424	\$ (14)	\$ 438
Foreign exchange ^(c)	(2,272)	2,233	(39)	—	(39)
Commodity ^(d)	(366)	400	34	19	15
Total	\$(2,791)	\$3,210	\$ 419	\$ 5	\$ 414

Six months ended June 30, 2016 (in millions)	Gains/(losses) recorded in income			Income statement impact due to:	
	Derivatives	Hedged items	Total income statement impact	Hedge ineffective components	Excluded components
Contract type					
Interest rate ^{(a)(b)}	\$153	\$(577)	\$(424)	\$(14)	\$(438)
Foreign exchange ^(c)	(2,272)	2,233	(39)	—	(39)
Commodity ^(d)	(366)	400	34	19	15
Total	\$(2,791)	\$3,210	\$ 419	\$ 5	\$ 414

Contract type					
Interest rate ^{(a)(b)}	\$2,281	\$(1,908)	\$ 373	\$ 29	\$ 344
Foreign exchange ^(c)	189	(90)	99	—	99
Commodity ^(d)	(73)	78	5	(12)	17
Total	\$2,397	\$(1,920)	\$ 477	\$ 17	\$ 460

(a) Primarily consists of hedges of the benchmark (e.g., London Interbank Offered Rate (“LIBOR”)) interest rate risk of fixed-rate long-term debt and AFS securities. Gains and losses were recorded in net interest income.

Excludes the amortization expense associated with the inception hedge accounting adjustment applied to the (b) hedged item. This expense is recorded in net interest income and substantially offsets the income statement impact of the excluded components.

(c) Primarily consists of hedges of the foreign currency risk of long-term debt and AFS securities for changes in spot foreign currency rates. Gains and losses related to the derivatives and the hedged items, due to changes in foreign currency rates, were recorded primarily in principal transactions revenue and net interest income.

(d) Consists of overall fair value hedges of physical commodities inventories that are generally carried at the lower of cost or net realizable value (net realizable value approximates fair value). Gains and losses were recorded in principal transactions revenue.

(e) Hedge ineffectiveness is the amount by which the gain or loss on the designated derivative instrument does not exactly offset the gain or loss on the hedged item attributable to the hedged risk.

(f) The assessment of hedge effectiveness excludes certain components of the changes in fair values of the derivatives and hedged items such as forward points on foreign exchange forward contracts and time values.

Cash flow hedge gains and losses

The following tables present derivative instruments, by contract type, used in cash flow hedge accounting relationships, and the pre-tax gains/(losses) recorded on such derivatives, for the three and six months ended June 30, 2017 and 2016, respectively. The Firm includes the gain/(loss) on the hedging derivative and the change in cash flows on the hedged item in the same line item in the Consolidated statements of income.

Three months ended June 30, 2017 (in millions)	Gains/(losses) recorded in income and other comprehensive income/(loss)		Derivatives	
	– effective portion reclassified from AOCI to income	Hedge ineffectiveness recorded directly in income ^(c)	Total income statement impact	Derivatives Total – effective change in OCI recorded in for period
Contract type				
Interest rate ^(a)	\$ (6)	\$	–\$ (6)	\$ 1) \$ 7
Foreign exchange ^(b)	(59)	—	(59)	22) 81
Total	\$ (65)	\$	–\$ (65)	\$ 23) \$ 88

Three months ended June 30, 2016 (in millions)	Gains/(losses) recorded in income and other comprehensive income/(loss)		Derivatives	
	– effective portion reclassified from AOCI to income	Hedge ineffectiveness recorded directly in income ^(c)	Total income statement impact	Derivatives Total – effective change in OCI recorded in for period
Contract type				
Interest rate ^(a)	\$ (20)	\$	–\$ (20)	\$ (26)) \$ (6)
Foreign exchange ^(b)	(28)	—	(28)	(161)) (133)
Total	\$ (48)	\$	–\$ (48)	\$ (187)) \$ (139)

Six months ended June 30, 2017 (in millions)	Gains/(losses) recorded in income and other comprehensive income/(loss)		Derivatives	
	– effective portion reclassified from AOCI to income	Hedge ineffectiveness recorded directly in income ^(c)	Total income statement impact	Derivatives Total – effective change in OCI recorded in for period
Contract type				
Interest rate ^(a)	\$ (17)	\$	–\$ (17)	\$ 12) \$ 29
Foreign exchange ^(b)	(133)	—	(133)	70) 203
Total	\$ (150)	\$	–\$ (150)	\$ 82) \$ 232

Six months ended June 30, 2016 (in millions)	Gains/(losses) recorded in income and other comprehensive income/(loss)			
	Derivatives – effective portion reclassified from AOCI to income	Hedge ineffectiveness recorded directly in income ^(c)	Total income statement impact	Derivatives Total – effective change portion in OCI recorded in for OCI period
Contract type				
Interest rate ^(a)	\$ (40)	\$	—\$ (40)	\$ (100) \$ (60)
Foreign exchange ^(b)	(63)	—	(63)	(254) (191)
Total	\$ (103)	\$	—\$ (103)	\$ (354) \$ (251)

(a) Primarily consists of benchmark interest rate hedges of LIBOR-indexed floating-rate assets and floating-rate liabilities. Gains and losses were recorded in net interest income.

(b) Primarily consists of hedges of the foreign currency risk of non-U.S. dollar-denominated revenue and expense. The income statement classification of gains and losses follows the hedged item – primarily noninterest revenue and compensation expense.

(c) Hedge ineffectiveness is the amount by which the cumulative gain or loss on the designated derivative instrument exceeds the present value of the cumulative expected change in cash flows on the hedged item attributable to the hedged risk.

The Firm did not experience any forecasted transactions that failed to occur for the three and six months ended June 30, 2017 and 2016.

Over the next 12 months, the Firm expects that approximately \$22 million (after-tax) of net gains recorded in AOCI at June 30, 2017, related to cash flow hedges will be recognized in income. For terminated cash flow hedges, the maximum length of time over which forecasted transactions are remaining is approximately 6 years.

For open cash flow hedges, the maximum length of time over which forecasted transactions are hedged is approximately 1 year. The Firm's longer-dated forecasted transactions relate to core lending and borrowing activities.

Net investment hedge gains and losses

The following table presents hedging instruments, by contract type, that were used in net investment hedge accounting relationships, and the pre-tax gains/(losses) recorded on such instruments for the three and six months ended June 30, 2017 and 2016.

	Gains/(losses) recorded in income and other comprehensive income/(loss)			
	2017		2016	
Three months ended June 30, (in millions)	Excluded	Effective	Excluded	Effective
	component recorded directly in income ^(a)	portion recorded in OCI	component recorded directly in income ^(a)	portion recorded in OCI
Foreign exchange derivatives	\$(50)	\$(319)	\$(65)	\$17

	Gains/(losses) recorded in income and other comprehensive income/(loss)			
	2017		2016	
Six months ended June 30, (in millions)	Excluded	Effective	Excluded	Effective
	component recorded directly in income ^(a)	portion recorded in OCI	component recorded directly in income ^(a)	portion recorded in OCI
Foreign exchange derivatives	\$(112)	\$(875)	\$(150)	\$(573)

Certain components of hedging derivatives are permitted to be excluded from the assessment of hedge effectiveness, such as forward points on foreign exchange forward contracts. Amounts related to excluded components are recorded in other income. The Firm measures the ineffectiveness of net investment hedge accounting relationships based on changes in spot foreign currency rates, and, therefore, there was no significant ineffectiveness for net investment hedge accounting relationships during the three and six months ended June 30, 2017 and 2016.

Gains and losses on derivatives used for specified risk management purposes

The following table presents pre-tax gains/(losses) recorded on a limited number of derivatives, not designated in hedge accounting relationships, that are used to manage risks associated with certain specified assets and liabilities, including certain risks arising from the mortgage pipeline, warehouse loans, MSRs, wholesale lending exposures, foreign currency-denominated assets and liabilities, and commodities-related contracts and investments.

	Derivatives gains/(losses) recorded in income			
	Three months ended June 30,		Six months ended June 30,	
(in millions)	2017	2016	2017	2016
Contract type				
Interest rate ^(a)	\$238	\$661	\$221	\$1,644
Credit ^(b)	(7)	(99)	(52)	(160)
Foreign exchange ^(c)	(14)	10	(34)	—
Total	\$217	\$572	\$135	\$1,484

Primarily represents interest rate derivatives used to hedge the interest rate risk inherent in the mortgage pipeline, (a) warehouse loans and MSR, as well as written commitments to originate warehouse loans. Gains and losses were recorded predominantly in mortgage fees and related income.

Relates to credit derivatives used to mitigate credit risk associated with lending exposures in the Firm's wholesale (b) businesses. These derivatives do not include credit derivatives used to mitigate counterparty credit risk arising from derivative receivables, which is included in gains and losses on derivatives related to market-making activities and other derivatives. Gains and losses were recorded in principal transactions revenue.

Primarily relates to derivatives used to mitigate foreign exchange risk of specified foreign (c) currency-denominated assets and liabilities. Gains and losses were recorded in principal transactions revenue.

Gains and losses on derivatives related to market-making activities and other derivatives

The Firm makes markets in derivatives in order to meet the needs of customers and uses derivatives to manage certain risks associated with net open risk positions from its market-making activities, including the counterparty credit risk arising from derivative receivables. All derivatives not included in the hedge accounting or specified risk management categories above are included in this category. Gains and losses on these derivatives are primarily recorded in principal transactions revenue. See Note 5 for information on principal transactions revenue.

Credit derivatives

For a more detailed discussion of credit derivatives, see Note 6 of JPMorgan Chase's 2016 Annual Report. The Firm does not use notional amounts of credit derivatives as the primary measure of risk management for such derivatives, because the notional amount does not take into account the probability of the occurrence of a credit event, the recovery value of the reference obligation, or related cash instruments and economic hedges, each of which reduces, in the Firm's view, the risks associated with such derivatives.

Total credit derivatives and credit-related notes

June 30, 2017 (in millions)	Maximum payout/Notional amount			Other protection purchased ^(d)
	Protection sold	Protection purchased with identical underlyings ^(b)	Net protection (sold)/purchased ^(c)	
Credit derivatives				
Credit default swaps	\$(844,731)	\$ 863,398	\$ 18,667	\$ 9,650
Other credit derivatives ^(a)	(44,420)	37,644	(6,776)	18,846
Total credit derivatives	(889,151)	901,042	11,891	28,496
Credit-related notes	(37)	—	(37)	5,486
Total	\$(889,188)	\$ 901,042	\$ 11,854	\$ 33,982

December 31, 2016 (in millions)	Maximum payout/Notional amount			Other protection purchased ^(d)
	Protection sold	Protection purchased with identical underlyings ^(b)	Net protection (sold)/purchased ^(c)	
Credit derivatives				
Credit default swaps	\$(961,003)	\$ 974,252	\$ 13,249	\$ 7,935
Other credit derivatives ^(a)	(36,829)	31,859	(4,970)	19,991
Total credit derivatives	(997,832)	1,006,111	8,279	27,926
Credit-related notes	(41)	—	(41)	4,505
Total	\$(997,873)	\$ 1,006,111	\$ 8,238	\$ 32,431

(a) Other credit derivatives largely consists of credit swap options.

Represents the total notional amount of protection purchased where the underlying reference instrument is identical

(b) to the reference instrument on protection sold; the notional amount of protection purchased for each individual identical underlying reference instrument may be greater or lower than the notional amount of protection sold.

(c) Does not take into account the fair value of the reference obligation at the time of settlement, which would generally reduce the amount the seller of protection pays to the buyer of protection in determining settlement value.

(d) Represents protection purchased by the Firm on referenced instruments (single-name, portfolio or index) where the Firm has not sold any protection on the identical reference instrument.

The following tables summarize the notional amounts by the ratings, maturity profile, and total fair value, of credit derivatives and credit-related notes as of June 30, 2017, and December 31, 2016, where JPMorgan Chase is the seller of protection. The maturity profile is based on the remaining contractual maturity of the credit derivative contracts. The ratings profile is based on the rating of the reference entity on which the credit derivative contract is based. The ratings and maturity profile of credit derivatives and credit-related notes where JPMorgan Chase is the purchaser of protection are comparable to the profile reflected below.

Protection sold — credit derivatives and credit-related notes ratings/maturity profile

June 30, 2017 (in millions)	Maturity profile			Total notional amount	Fair value of receivables ^(b)	Fair value of payables ^(b)	Net fair value
	<1 year	1–5 years	>5 years				

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Risk rating of reference entity

Investment-grade	\$(232,819)	\$(316,114)	\$(38,734)	\$(587,667)	\$ 8,789	\$ (1,272)	\$7,517
Noninvestment-grade	(104,209)	(174,787)	(22,525)	(301,521)	8,750	(6,334)	2,416
Total	\$(337,028)	\$(490,901)	\$(61,259)	\$(889,188)	\$ 17,539	\$ (7,606)	\$9,933

December 31, 2016
(in millions)

<1 year	1–5 years	>5 years	Total notional amount	Fair value of receivables ^(b)	Fair value of payables ^(b)	Net fair value
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Risk rating of reference entity

Investment-grade	\$(273,688)	\$(383,586)	\$(39,281)	\$(696,555)	\$ 7,841	\$ (3,055)	\$4,786
Noninvestment-grade	(107,955)	(170,046)	(23,317)	(301,318)	8,184	(8,570)	(386)
Total	\$(381,643)	\$(553,632)	\$(62,598)	\$(997,873)	\$ 16,025	\$ (11,625)	\$4,400

(a) The ratings scale is primarily based on external credit ratings defined by S&P and Moody's.

(b) Amounts are shown on a gross basis, before the benefit of legally enforceable master netting agreements and cash collateral received by the Firm.

Note 5 – Noninterest revenue and noninterest expense

Noninterest revenue

For a discussion of the components of and accounting policies for the Firm’s noninterest revenue, see Note 7 of JPMorgan Chase’s 2016 Annual Report.

Investment banking fees

The following table presents the components of investment banking fees.

(in millions)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Underwriting				
Equity	\$364	\$283	\$757	\$485
Debt	947	896	1,875	1,446
Total underwriting	1,311	1,179	2,632	1,931
Advisory	499	465	995	1,046
Total investment banking fees	\$1,810	\$1,644	\$3,627	\$2,977

Principal transactions

The following table presents all realized and unrealized gains and losses recorded in principal transactions revenue. This table excludes interest income and interest expense on trading assets and liabilities, which are an integral part of the overall performance of the Firm’s client-driven market-making activities. See Note 6 for further information on interest income and interest expense. Trading revenue is presented primarily by instrument type. The Firm’s client-driven market-making businesses generally utilize a variety of instrument types in connection with their market-making and related risk-management activities; accordingly, the trading revenue presented in the table below is not representative of the total revenue of any individual line of business.

(in millions)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Trading revenue by instrument type				
Interest rate	\$588	\$635	\$1,383	\$1,018
Credit	278	728	958	1,103
Foreign exchange	901	576	1,682	1,283
Equity	1,118	861	2,238	1,691
Commodity	120	224	305	450
Total trading revenue	3,005	3,024	6,566	5,545
Private equity gains	132	(48)	153	110
Principal transactions	\$3,137	\$2,976	\$6,719	\$5,655

Lending- and deposit-related fees

The following table presents the components of lending- and deposit-related fees.

(in millions)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Lending-related fees	\$269	\$275	\$544	\$547
Deposit-related fees	1,213	1,128	2,386	2,259
Total lending- and deposit-related fees	\$1,482	\$1,403	\$2,930	\$2,806

Asset management, administration and commissions

The following table presents the components of Firmwide asset management, administration and commissions.

	Three months ended June 30,	Six months ended June 30,
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(in millions)	2017	2016	2017	2016
Asset management fees				
Investment management fees ^(a)	\$2,329	\$2,210	\$4,545	\$4,338
All other asset management fees ^(b)	83	97	162	187
Total asset management fees	2,412	2,307	4,707	4,525
Total administration fees ^(c)	504	488	986	966
Commission and other fees				
Brokerage commissions	567	535	1,145	1,123
All other commissions and fees	341	351	663	691
Total commissions and fees	908	886	1,808	1,814
Total asset management, administration and commissions	\$3,824	\$3,681	\$7,501	\$7,305

(a) Represents fees earned from managing assets on behalf of the Firm's clients, including investors in Firm-sponsored funds and owners of separately managed investment accounts.

(b) Represents fees for services that are ancillary to investment management services, such as commissions earned on the sales or distribution of mutual funds to clients.

(c) Predominantly includes fees for custody, securities lending, funds services and securities clearance.

Other income

Other income on the Firm's Consolidated statements of income included the following:

	Three months ended June 30,	Six months ended June 30,		
(in millions)	2017	2016	2017	2016
Operating lease income	\$873	\$651	\$1,697	\$1,266

Other income also included a legal benefit of \$645 million recorded in Corporate related to a settlement with the FDIC receivership for Washington Mutual and with Deutsche Bank as trustee to certain Washington Mutual trusts.

Noninterest expense

Other expense

Other expense on the Firm's Consolidated statements of income included the following:

	Three months ended June 30,	Six months ended June 30,		
(in millions)	2017	2016	2017	2016
Legal expense/(benefit)	\$61	\$(430)	\$279	\$(476)
FDIC-related expense	376	283	757	552

Note 6 – Interest income and Interest expense

For a description of JPMorgan Chase's accounting policies regarding interest income and interest expense, see Note 8 of JPMorgan Chase's 2016 Annual Report.

The following table presents the components of interest income and interest expense.

(in millions)	Three months ended		Six months ended	
	June 30, 2017	2016	June 30, 2017	2016
Interest income				
Loans ^(a)	\$9,996	\$8,974	\$19,746	\$17,828
Taxable securities	1,410	1,380	2,840	2,822
Nontaxable securities ^(b)	479	442	937	885
Total securities	1,889	1,822	3,777	3,707
Trading assets	1,806	1,860	3,664	3,558
Federal funds sold and securities purchased under resale agreements	528	576	1,054	1,130
Securities borrowed ^(c)	(21)	(96)	(65)	(188)
Deposits with banks	1,008	466	1,730	926
Other assets ^(d)	444	211	786	404
Total interest income	15,650	13,813	30,692	27,365
Interest expense				
Interest-bearing deposits	629	321	1,112	641
Federal funds purchased and securities loaned or sold under repurchase agreements	387	282	680	542
Commercial paper	63	38	103	71
Trading liabilities – debt, short-term and other liabilities ^(e)	548	314	986	541
Beneficial interests issued by consolidated VIEs	128	118	263	231
Long-term debt	1,687	1,393	3,276	2,612
Total interest expense	3,442	2,466	6,420	4,638
Net interest income	12,208	11,347	24,272	22,727
Provision for credit losses	1,215	1,402	2,530	3,226
Net interest income after provision for credit losses	\$10,993	\$9,945	\$21,742	\$19,501

(a) Includes the amortization of purchase price discounts or premiums, as well as net deferred loan fees or costs.

(b) Represents securities which are tax-exempt for U.S. federal income tax purposes.

Negative interest income for the three and six months ended June 30, 2017 and 2016, is related to client-driven

(c) demand for certain securities combined with the impact of low interest rates. This is matched book activity and the negative interest expense on the corresponding securities loaned is recognized in interest expense.

(d) Largely margin loans.

(e) Includes brokerage customer payables.

Note 7 – Pension and other postretirement employee benefit plans

For a discussion of JPMorgan Chase's pension and OPEB plans, see Note 9 of JPMorgan Chase's 2016 Annual Report. The following table presents the components of net periodic benefit costs reported in the Consolidated statements of income for the Firm's U.S. and non-U.S. defined benefit pension, defined contribution and OPEB plans.

	Pension plans				OPEB plans	
	U.S.		Non-U.S.			
	2017	2016	2017	2016	2017	2016
Three months ended June 30, (in millions)						
Components of net periodic benefit cost						
Benefits earned during the period	\$74	\$74	\$8	\$9	\$—	\$—
Interest cost on benefit obligations	130	133	20	24	7	7
Expected return on plan assets	(208)	(223)	(34)	(34)	(24)	(26)
Amortization:						
Net (gain)/loss	55	58	7	6	—	—
Prior service cost/(credit)	(8)	(8)	(1)	(1)	—	—
Net periodic defined benefit cost	43	34	—	4	(17)	(19)
Other defined benefit pension plans ^(a)	3	4	3	3	NA	NA
Total defined benefit plans	46	38	3	7	(17)	(19)
Total defined contribution plans	125	123	85	83	NA	NA
Total pension and OPEB cost included in compensation expense	\$171	\$161	\$88	\$90	\$(17)	\$(19)

	Pension plans				OPEB plans	
	U.S.		Non-U.S.			
	2017	2016	2017	2016	2017	2016
Six months ended June 30, (in millions)						
Components of net periodic benefit cost						
Benefits earned during the period	\$149	\$147	\$15	\$18	\$—	\$—
Interest cost on benefit obligations	260	266	39	50	14	15
Expected return on plan assets	(416)	(445)	(67)	(70)	(48)	(52)
Amortization:						
Net (gain)/loss	110	117	14	11	—	—
Prior service cost/(credit)	(17)	(17)	(1)	(1)	—	—
Settlement (gain)/loss	—	—	(3)	—	—	—
Net periodic defined benefit cost	86	68	(3)	8	(34)	(37)
Other defined benefit pension plans ^(a)	6	7	4	5	NA	NA
Total defined benefit plans	92	75	1	13	(34)	(37)
Total defined contribution plans	227	222	169	169	NA	NA
Total pension and OPEB cost included in compensation expense	\$319	\$297	\$170	\$182	\$(34)	\$(37)

(a) Includes various defined benefit pension plans which are individually immaterial.

The following table presents the fair values of plan assets for the U.S. defined benefit pension and OPEB plans and for the material non-U.S. defined benefit pension plans:

(in billions)	June 30, 2017	December 31, 2016
Fair value of plan assets		
U.S. defined benefit pension and OPEB plans	\$17.2	\$16.2
Material non-U.S. defined benefit pension plans	3.7	3.4

There are no expected contributions to the U.S. defined benefit pension plan for 2017.

Note 8 – Employee stock-based incentives

For a discussion of the accounting policies and other information relating to employee stock-based incentives, see Note 10 of JPMorgan Chase’s 2016 Annual Report.

The Firm recognized the following noncash compensation expense related to its various employee stock-based incentive plans in its Consolidated statements of income.

	Three months ended June 30,		Six months ended June 30,	
(in millions)	2017	2016	2017	2016
Cost of prior grants of RSUs, stock appreciation rights (“SARs”) and performance share units (“PSUs”) that are amortized over their applicable vesting periods	\$290	\$267	\$600	\$551
Accrual of estimated costs of stock-based awards to be granted in future periods including those to full-career eligible employees	235	287	526	522
Total noncash compensation expense related to employee stock-based incentive plans	\$525	\$554	\$1,126	\$1,073

In the first quarter of 2017, in connection with its annual incentive grant for the 2016 performance year, the Firm granted 23 million RSUs and 675 thousand PSUs, all with a weighted-average grant date fair value of \$84.25.

Note 9 – Securities

Securities are classified as trading, AFS or HTM. Securities classified as trading assets are discussed in Note 2. Predominantly all of the Firm's AFS and HTM securities are held by Treasury and CIO within the investment securities portfolio in connection with the Firm's asset-liability management objectives. At June 30, 2017, the investment securities portfolio consisted of debt securities with an average credit rating of AA+ (based upon external ratings

where available, and where not available, based primarily upon internal ratings which correspond to ratings as defined by S&P and Moody's). For additional information regarding the investment securities portfolio, see Note 12 of JPMorgan Chase's 2016 Annual Report.

The amortized costs and estimated fair values of the investment securities portfolio were as follows for the dates indicated.

(in millions)	June 30, 2017				December 31, 2016			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair value
Available-for-sale debt securities								
Mortgage-backed securities:								
U.S. government agencies ^(a)	\$67,253	\$ 1,053	\$ 389	\$67,917	\$63,367	\$ 1,112	\$ 474	\$64,005
Residential:								
U.S. ^(b)	9,418	193	15	9,596	8,171	100	28	8,243
Non-U.S.	4,134	149	1	4,282	6,049	158	7	6,200
Commercial	6,562	111	6	6,667	9,002	122	20	9,104
Total mortgage-backed securities	87,367	1,506	411	88,462	86,589	1,492	529	87,552
U.S. Treasury and government agencies ^(a)	28,247	192	281	28,158	44,822	75	796	44,101
Obligations of U.S. states and municipalities	30,735	1,870	66	32,539	30,284	1,492	184	31,592
Certificates of deposit	57	—	—	57	106	—	—	106
Non-U.S. government debt securities	30,007	591	27	30,571	34,497	836	45	35,288
Corporate debt securities	4,047	91	6	4,132	4,916	64	22	4,958
Asset-backed securities:								
Collateralized loan obligations	24,285	47	5	24,327	27,352	75	26	27,401
Other	6,460	79	13	6,526	6,950	62	45	6,967
Total available-for-sale debt securities	211,205	4,376	809	214,772	235,516	4,096	1,647	237,965
Available-for-sale equity securities	925	—	—	925	914	12	—	926
Total available-for-sale securities	212,130	4,376	809	215,697	236,430	4,108	1,647	238,891
Held-to-maturity debt securities								
Mortgage-backed securities:								
U.S. government agencies ^(c)	27,558	655	35	28,178	29,910	638	37	30,511
Commercial	5,766	2	70	5,698	5,783	—	129	5,654
Total mortgage-backed securities	33,324	657	105	33,876	35,693	638	166	36,165
Obligations of U.S. states and municipalities	14,437	556	73	14,920	14,475	374	125	14,724
Total held-to-maturity debt securities	47,761	1,213	178	48,796	50,168	1,012	291	50,889
Total securities	\$259,891	\$ 5,589	\$ 987	\$264,493	\$286,598	\$ 5,120	\$ 1,938	\$289,780

^(a) Included total U.S. government-sponsored enterprise obligations with fair values of \$51.3 billion and \$45.8 billion at June 30, 2017, and December 31, 2016, respectively, which were predominantly mortgage-related.

(b) Prior period amounts have been revised to conform with current period presentation.

(c) Included total U.S. government-sponsored enterprise obligations with amortized cost of \$23.7 billion and \$25.6 billion at June 30, 2017, and December 31, 2016, respectively, which were mortgage-related.

Securities impairment

The following tables present the fair value and gross unrealized losses for investment securities by aging category at June 30, 2017, and December 31, 2016.

June 30, 2017 (in millions)	Securities with gross unrealized losses					
	Less than 12 months		12 months or more		Total fair value	Total gross unrealized losses
	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses		
Available-for-sale debt securities						
Mortgage-backed securities:						
U.S. government agencies	\$27,165	\$ 378	\$609	\$ 11	\$27,774	\$ 389
Residential:						
U.S. (a)	620	3	944	12	1,564	15
Non-U.S.	—	—	505	1	505	1
Commercial	1,009	2	848	4	1,857	6
Total mortgage-backed securities	28,794	383	2,906	28	31,700	411
U.S. Treasury and government agencies	5,464	260	2,485	21	7,949	281
Obligations of U.S. states and municipalities	3,528	64	38	2	3,566	66
Certificates of deposit	—	—	—	—	—	—
Non-U.S. government debt securities	3,317	25	198	2	3,515	27
Corporate debt securities	640	2	165	4	805	6
Asset-backed securities:						
Collateralized loan obligations	—	—	801	5	801	5
Other	—	—	1,614	13	1,614	13
Total available-for-sale debt securities	41,743	734	8,207	75	49,950	809
Available-for-sale equity securities	—	—	—	—	—	—
Held-to-maturity securities						
Mortgage-backed securities						
U.S. government agencies	2,477	35	—	—	2,477	35
Commercial	5,274	70	—	—	5,274	70
Total mortgage-backed securities	7,751	105	—	—	7,751	105
Obligations of U.S. states and municipalities	2,758	65	199	8	2,957	73
Total held-to-maturity securities	10,509	170	199	8	10,708	178
Total securities with gross unrealized losses	\$52,252	\$ 904	\$8,406	\$ 83	\$60,658	\$ 987

(a) Prior period amounts have been revised to conform with current period presentation.

December 31, 2016 (in millions)	Securities with gross unrealized losses					
	Less than 12 months		12 months or more		Total fair value	Total gross unrealized losses
	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses		
Available-for-sale debt securities						
Mortgage-backed securities:						
U.S. government agencies	\$29,856	\$ 463	\$506	\$ 11	\$30,362	\$ 474
Residential:						
U.S. (a)	1,373	6	1,073	22	\$2,446	28
Non-U.S.	—	—	886	7	886	7
Commercial	2,328	17	1,078	3	3,406	20
Total mortgage-backed securities	33,557	486	3,543	43	37,100	529
U.S. Treasury and government agencies	23,543	796	—	—	23,543	796
Obligations of U.S. states and municipalities	7,215	181	55	3	7,270	184
Certificates of deposit	—	—	—	—	—	—
Non-U.S. government debt securities	4,436	36	421	9	4,857	45
Corporate debt securities	797	2	829	20	1,626	22
Asset-backed securities:						
Collateralized loan obligations	766	2	5,263	24	6,029	26
Other	739	6	1,992	39	2,731	45
Total available-for-sale debt securities	71,053	1,509	12,103	138	83,156	1,647
Available-for-sale equity securities	—	—	—	—	—	—
Held-to-maturity debt securities						
Mortgage-backed securities						
U.S. government agencies	3,129	37	—	—	3,129	37
Commercial	5,163	114	441	15	5,604	129
Total mortgage-backed securities	8,292	151	441	15	8,733	166
Obligations of U.S. states and municipalities	4,702	125	—	—	4,702	125
Total Held-to-maturity securities	12,994	276	441	15	13,435	291
Total securities with gross unrealized losses	\$84,047	\$ 1,785	\$12,544	\$ 153	\$96,591	\$ 1,938

(a) Prior period amounts have been revised to conform with current period presentation.

Gross unrealized losses

The Firm has recognized unrealized losses on securities it intends to sell as OTTI. The Firm does not intend to sell any of the remaining securities with an unrealized loss in AOCI as of June 30, 2017, and it is not likely that the Firm will be required to sell these securities before recovery of their amortized cost basis. Except for the securities for which credit losses have been recognized in income, the Firm believes that the securities with an unrealized loss in AOCI as of June 30, 2017, are not other-than-temporarily impaired. For additional information on other-than-temporary impairment, see Note 12 of the JPMorgan Chase's 2016 Annual Report.

Securities gains and losses

The following table presents realized gains and losses and OTTI losses from AFS securities that were recognized in income.

(in millions)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016

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Realized gains	\$393	\$80	\$542	\$189
Realized losses	(427)	(27)	(572)	(79)
OTTI losses ^(a)	—	(32)	(7)	(38)
Net securities gains/(losses)	\$(34)	\$21	\$(37)	\$72

OTTI losses

Credit-related losses recognized in income	\$—	\$—	\$—	\$(1)
Securities the Firm intends to sell ^(a)	—	(32)	(7)	(37)
Total OTTI losses recognized in income	\$—	\$(32)	\$(7)	\$(38)

^(a) Excludes realized losses on securities sold of \$5 million for both the six months ended June 30, 2017 and 2016 that had been previously reported as an OTTI loss due to the intention to sell the securities.

Changes in the credit loss component of credit-impaired debt securities

The cumulative credit loss component, including any changes therein, of OTTI losses that have been recognized in income related to AFS debt securities that the Firm does not intend to sell was not material as of and during the three and six month periods ended June 30, 2017 and 2016.

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Contractual maturities and yields

The following table presents the amortized cost and estimated fair value at June 30, 2017, of JPMorgan Chase's investment securities portfolio by contractual maturity.

By remaining maturity June 30, 2017 (in millions)	Due in one year or less	Due after one year through five years	Due after five years through 10 years	Due after 10 years ^(c)	Total	
Available-for-sale debt securities						
Mortgage-backed securities ^(a)						
Amortized cost	961	1,681	6,427	78,298	\$87,367	
Fair value	966	1,714	6,617	79,165	\$88,462	
Average yield ^(b)	1.40	%2.33	%3.14	%3.30	%3.24	%
U.S. Treasury and government agencies						
Amortized cost	146	—	25,005	3,096	\$28,247	
Fair value	146	—	24,895	3,117	\$28,158	
Average yield ^(b)	0.59	%—	%1.52	%1.50	%1.51	%
Obligations of U.S. states and municipalities						
Amortized cost	73	781	1,184	28,697	\$30,735	
Fair value	73	803	1,254	30,409	\$32,539	
Average yield ^(b)	2.61	%3.61	%6.56	%6.60	%6.51	%
Certificates of deposit						
Amortized cost	57	—	—	—	\$57	
Fair value	57	—	—	—	\$57	
Average yield ^(b)	0.50	%—	%—	%—	%0.50	%
Non-U.S. government debt securities						
Amortized cost	4,593	14,229	11,133	52	\$30,007	
Fair value	4,597	14,480	11,444	50	\$30,571	
Average yield ^(b)	2.64	%1.61	%1.04	%0.79	%1.55	%
Corporate debt securities						
Amortized cost	1,402	1,105	1,441	99	\$4,047	
Fair value	1,404	1,136	1,487	105	\$4,132	
Average yield ^(b)	2.78	%3.31	%3.39	%3.58	%3.16	%
Asset-backed securities						
Amortized cost	—	813	20,777	9,155	\$30,745	
Fair value	—	814	20,811	9,228	\$30,853	
Average yield ^(b)	—	%1.34	%2.54	%2.14	%2.39	%
Total available-for-sale debt securities						
Amortized cost	\$7,232	\$18,609	\$65,967	\$119,397	\$211,205	
Fair value	\$7,243	\$18,947	\$66,508	\$122,074	\$214,772	
Average yield ^(b)	2.44	%1.85	%2.05	%3.95	%3.12	%
Available-for-sale equity securities						
Amortized cost	—	—	—	925	925	
Fair value	—	—	—	925	925	
Average yield ^(b)	—	%—	%—	%0.41	%0.41	%
Total available-for-sale securities						
Amortized cost	\$7,232	\$18,609	\$65,967	\$120,322	\$212,130	
Fair value	\$7,243	\$18,947	\$66,508	\$122,999	\$215,697	
Average yield ^(b)	2.44	%1.85	%2.05	%3.93	%3.11	%
Held-to-maturity debt securities						
Mortgage-backed securities ^(a)						

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Amortized cost	—	—	—	33,324	\$33,324	
Fair value	—	—	—	33,876	\$33,876	
Average yield ^(b)	—	%—	%—	%3.29	% 3.29	%
Obligations of U.S. states and municipalities						
Amortized cost	—	29	1,664	12,744	\$14,437	
Fair value	—	29	1,727	13,164	\$14,920	
Average yield ^(b)	—	%6.77	%5.12	%5.69	% 5.63	%
Total held-to-maturity securities						
Amortized cost	\$—	\$29	\$1,664	\$46,068	\$47,761	
Fair value	\$—	\$29	\$1,727	\$47,040	\$48,796	
Average yield ^(b)	—	%6.77	%5.12	%3.95	% 4.00	%

As of June 30, 2017, mortgage-backed securities issued by Fannie Mae exceeded 10% of JPMorgan Chase's total (a) stockholders' equity; the amortized cost and fair value of such securities was \$59.9 billion and \$61.1 billion, respectively.

Average yield is computed using the effective yield of each security owned at the end of the period, weighted based on the amortized cost of each security. The effective yield considers the contractual coupon, amortization of premiums and accretion of discounts, and the effect of related hedging derivatives. Taxable-equivalent amounts are used where applicable. The effective yield excludes unscheduled principal prepayments; and accordingly, actual maturities of securities may differ from their contractual or expected maturities as certain securities may be prepaid.

Includes securities with no stated maturity. Substantially all of the Firm's U.S. residential MBS and collateralized mortgage obligations are due in 10 years or more, based on contractual maturity. The estimated weighted-average life, which reflects anticipated future prepayments, is approximately 7 years for agency residential MBS, 3 years for agency residential collateralized mortgage obligations and 3 years for nonagency residential collateralized mortgage obligations.

Note 10 – Securities financing activities

For a discussion of accounting policies relating to securities financing activities, see Note 13 of JPMorgan Chase's 2016 Annual Report. For further information regarding securities borrowed and securities lending agreements for which the fair value option has been elected, see Note 3. For further information regarding assets pledged and collateral received in securities financing agreements, see Note 20.

The table below summarizes the gross and net amounts of the Firm's securities financing agreements as of June 30, 2017 and December 31, 2016. When the Firm has obtained an appropriate legal opinion with respect to the master netting agreement with a counterparty and where other relevant netting criteria under U.S. GAAP are met, the Firm nets, on the Consolidated balance sheets, the balances outstanding under its securities financing agreements with the same counterparty. In addition, the Firm exchanges securities and/or cash collateral with its counterparties; this collateral also reduces, in the Firm's view, the economic exposure with the counterparty. Such collateral, along with securities financing balances that do not meet all these relevant netting criteria under U.S. GAAP, is presented as "Amounts not nettable on the Consolidated balance sheets," and reduces the "Net amounts" presented below, if the Firm has an appropriate legal opinion with respect to the master netting agreement with the counterparty. Where a legal opinion has not been either sought or obtained, the securities financing balances are presented gross in the "Net amounts" below, and related collateral does not reduce the amounts presented.

		June 30, 2017			
(in millions)	Gross amounts	Amounts netted on the Consolidated balance sheets	Amounts presented on the Consolidated balance sheets ^(b)	Amounts not nettable on the Consolidated balance sheets ^(c)	Net amounts ^(d)
Assets					
Securities purchased under resale agreements	\$494,707	\$(276,359)	\$ 218,348	\$ (209,548)	\$ 8,800
Securities borrowed	93,224	(2,570)	90,654	(64,626)	26,028
Liabilities					
Securities sold under repurchase agreements	\$427,884	\$(276,359)	\$ 151,525	\$ (135,810)	\$ 15,715
Securities loaned and other ^(a)	26,608	(2,570)	24,038	(23,690)	348
		December 31, 2016			
(in millions)	Gross amounts	Amounts netted on the Consolidated balance sheets	Amounts presented on the Consolidated balance sheets ^(b)	Amounts not nettable on the Consolidated balance sheets ^(c)	Net amounts ^(d)
Assets					
Securities purchased under resale agreements	\$480,735	\$(250,832)	\$ 229,903	\$ (222,413)	\$ 7,490
Securities borrowed	96,409	—	96,409	(66,822)	29,587

Liabilities

Securities sold under repurchase agreements	\$402,465	\$(250,832)	)\$ 151,633	\$ (133,300	) \$ 18,333
Securities loaned and other ^(a)	22,451	—	22,451	(22,177	) 274

(a) Includes securities-for-securities lending transactions of \$11.5 billion and \$9.1 billion at June 30, 2017 and December 31, 2016, respectively, accounted for at fair value, where the Firm is acting as lender.

These amounts are presented within other liabilities in the Consolidated balance sheets.

(b) Includes securities financing agreements accounted for at fair value. At June 30, 2017 and December 31, 2016, included securities purchased under resale agreements of \$18.0 billion and \$21.5 billion, respectively and securities sold under agreements to repurchase of \$721 million and \$687 million, respectively. There were \$1.6 billion of securities borrowed at June 30, 2017 and there were no securities borrowed at December 31, 2016. There were no securities loaned accounted for at fair value in either period.

(c) In some cases, collateral exchanged with a counterparty exceeds the net asset or liability balance with that counterparty. In such cases, the amounts reported in this column are limited to the related asset or liability with that counterparty.

(d) Includes securities financing agreements that provide collateral rights, but where an appropriate legal opinion with respect to the master netting agreement has not been either sought or obtained. At June 30, 2017 and December 31, 2016, included \$6.3 billion and \$4.8 billion, respectively, of securities purchased under resale agreements; \$22.9 billion and \$27.1 billion, respectively, of securities borrowed; \$12.1 billion and \$15.9 billion, respectively, of securities sold under agreements to repurchase; and \$200 million and \$90 million, respectively, of securities loaned and other.

The tables below present as of June 30, 2017, and December 31, 2016 the types of financial assets pledged in securities financing agreements and the remaining contractual maturity of the securities financing agreements.

(in millions)	Gross liability balance			
	June 30, 2017		December 31, 2016	
	Securities sold under repurchase agreements	Securities loaned and other ^(a)	Securities sold under repurchase agreements	Securities loaned and other ^(a)
Mortgage-backed securities	\$9,745	\$ —	\$10,546	\$ —
U.S. Treasury and government agencies	202,102	942	199,030	—
Obligations of U.S. states and municipalities	1,355	—	2,491	—
Non-U.S. government debt	180,773	3,607	149,008	1,279
Corporate debt securities	14,677	53	18,140	108
Asset-backed securities	4,137	103	7,721	—
Equity securities	15,095	21,903	15,529	21,064
Total	\$427,884	\$26,608	\$402,465	\$22,451

June 30, 2017 (in millions)	Remaining contractual maturity of the agreements				
	Overnight and continuous	Up to 30 days	30 – 90 days	Greater than 90 days	Total
Total securities sold under repurchase agreements	\$154,721	\$178,772	\$53,376	\$41,015	\$427,884
Total securities loaned and other ^(a)	20,989	1,192	1,687	2,740	26,608

December 31, 2016 (in millions)	Remaining contractual maturity of the agreements				
	Overnight and continuous	Up to 30 days	30 – 90 days	Greater than 90 days	Total
Total securities sold under repurchase agreements	\$140,318	\$157,860	\$55,621	\$48,666	\$402,465
Total securities loaned and other ^(a)	13,586	1,371	2,877	4,617	22,451

Includes securities-for-securities lending transactions of \$11.5 billion and \$9.1 billion at June 30, 2017 and (a) December 31, 2016, respectively, accounted for at fair value, where the Firm is acting as lender. These amounts are presented within other liabilities on the Consolidated balance sheets.

Transfers not qualifying for sale accounting

At June 30, 2017, and December 31, 2016, the Firm held \$4.9 billion and \$5.9 billion respectively, of financial assets for which the rights have been transferred to third parties; however, the transfers did not qualify as a sale in accordance with U.S. GAAP. These transfers have been recognized as collateralized financing transactions. The transferred assets are recorded in trading assets and loans, and the corresponding liabilities are recorded predominantly in other borrowed funds on the Consolidated balance sheets.

Note 11 – Loans

Loan accounting framework

The accounting for a loan depends on management’s strategy for the loan, and on whether the loan was credit-impaired at the date of acquisition. The Firm accounts for loans based on the following categories:

- Originated or purchased loans held-for-investment (i.e., “retained”), other than PCI loans
- Loans held-for-sale
- Loans at fair value
- PCI loans held-for-investment

For a detailed discussion of loans, including accounting policies, see Note 14 of JPMorgan Chase’s 2016 Annual Report. See Note 3 of this Form 10-Q for further information on the Firm’s elections of fair value accounting under the fair value option. See Note 2 of this Form 10-Q for information on loans carried at fair value and classified as trading assets.

Loan portfolio

The Firm’s loan portfolio is divided into three portfolio segments, which are the same segments used by the Firm to determine the allowance for loan losses: Consumer, excluding credit card; Credit card; and Wholesale. Within each portfolio segment the Firm monitors and assesses the credit risk in the following classes of loans, based on the risk characteristics of each loan class.

Consumer, excluding credit card ^(a)	Credit card	Wholesale ^(f)
Residential real estate – excluding PCI		
• Home equity ^(b)		
• Residential mortgage ^(c)		
Other consumer loans		
• Auto ^(d)		• Commercial and industrial
• Consumer & Business Banking ^{(d)(e)}	• Credit card loans	• Real estate
• Student		• Financial institutions
Residential real estate – PCI		
• Home equity		• Government agencies
• Prime mortgage		• Other ^(g)
• Subprime mortgage		
• Option ARMs		

(a) Includes loans held in CCB, prime mortgage and home equity loans held in AWM and prime mortgage loans held in Corporate.

(b) Includes senior and junior lien home equity loans.

(c) Predominantly includes prime (including option ARMs) and subprime loans.

Includes certain business banking and auto dealer risk-rated loans that apply the wholesale methodology for

(d) determining the allowance for loan losses; these loans are managed by CCB, and therefore, for consistency in presentation, are included with the other consumer loan classes.

(e) Predominantly includes Business Banking loans.

Includes loans held in CIB, CB, AWM and Corporate. Excludes prime mortgage and home equity loans held in

(f) AWM and prime mortgage loans held in Corporate. Classes are internally defined and may not align with regulatory definitions.

(g) Includes loans to: individuals; SPEs; and private education and civic organizations. For more information on SPEs, see Note 16 of JPMorgan Chase’s 2016 Annual Report.

The following tables summarize the Firm’s loan balances by portfolio segment.

June 30, 2017 (in millions)	Consumer, excluding credit card	Credit card ^(a)	Wholesale	Total
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Retained	\$ 365,115	\$ 140,035	\$ 394,426	\$ 899,576 ^(b)
Held-for-sale	256	106	6,850	7,212
At fair value	—	—	1,979	1,979
Total	\$ 365,371	\$ 140,141	\$ 403,255	\$ 908,767

December 31, 2016 (in millions)	Consumer, excluding credit card	Credit card ^(a)	Wholesale	Total
Retained	\$ 364,406	\$ 141,711	\$ 383,790	\$ 889,907 ^(b)
Held-for-sale	238	105	2,285	2,628
At fair value	—	—	2,230	2,230
Total	\$ 364,644	\$ 141,816	\$ 388,305	\$ 894,765

(a) Includes accrued interest and fees net of an allowance for the uncollectible portion of accrued interest and fee income.

Loans (other than PCI loans and loans for which the fair value option has been elected) are presented net of (b) unearned income, unamortized discounts and premiums, and net deferred loan costs. These amounts were not material as of June 30, 2017, and December 31, 2016.

The following table provides information about the carrying value of retained loans purchased, sold and reclassified to held-for-sale during the periods indicated. This table excludes loans recorded at fair value. The Firm manages its exposure to credit risk on an ongoing basis. Selling loans is one way that the Firm reduces its credit exposures.

Three months ended June 30, (in millions)	2017			2016		
	Consumer, excluding credit card	Credit card	Wholesale Total	Consumer, excluding credit card	Credit card	Wholesale Total
Purchases	\$626 ^{(a)(b)}	\$ 594	\$1,220	\$824 ^{(a)(b)}	\$ 405	\$1,229
Sales	763	—	3,140	905	—	2,987
Retained loans reclassified to held-for-sale	31	—	338	18	—	145

Six months ended June 30, (in millions)	2017			2016		
	Consumer, excluding credit card	Credit card	Wholesale Total	Consumer, excluding credit card	Credit card	Wholesale Total
Purchases	\$1,566 ^{(a)(b)}	\$ 878	\$2,444	\$2,089 ^{(a)(b)}	\$ 693	\$2,782
Sales	1,353	—	6,177	1,665	—	5,411
Retained loans reclassified to held-for-sale	6,340 ^(c)	—	7,108	83	—	699

Purchases predominantly represent the Firm's voluntary repurchase of certain delinquent loans from loan pools as permitted by Government National Mortgage Association ("Ginnie Mae") guidelines. The Firm typically elects to repurchase these delinquent loans as it continues to service them and/or manage the foreclosure process in accordance with applicable requirements of Ginnie Mae, FHA, RHS, and/or VA.

Excludes purchases of retained loans sourced through the correspondent origination channel and underwritten in accordance with the Firm's standards. Such purchases were \$5.9 billion and \$8.4 billion for the three months ended June 30, 2017 and 2016, respectively, and \$11.3 billion and \$17.1 billion for the six months ended June 30, 2017 and 2016, respectively.

Includes the Firm's student loan portfolio, which was transferred to held-for-sale in the first quarter of 2017. For additional information see Note 23.

The following table provides information about gains and losses on loan sales, including lower of cost or fair value adjustments, by portfolio segment.

(in millions)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Net gains/(losses) on sales of loans (including lower of cost or fair value adjustments) ^(a)				
Consumer, excluding credit card ^(b)	\$12	\$64	\$(214)	\$117
Credit card	(3)	(4)	(2)	(4)
Wholesale	17	—	22	(2)
Total net gains on sales of loans (including lower of cost or fair value adjustments)	\$26	\$60	\$(194)	\$111

(a) Excludes sales related to loans accounted for at fair value.

(b) Includes the Firm's student loan portfolio, which was transferred to held-for-sale in the first quarter of 2017. For additional information see Note 23.

Consumer, excluding credit card loan portfolio

Consumer loans, excluding credit card loans, consist primarily of residential mortgages, home equity loans and lines of credit, auto loans, consumer and business banking loans, and student loans, with a focus on serving the prime consumer credit market. The portfolio also includes home equity loans secured by junior liens, prime mortgage loans with an interest-only payment period, and certain payment-option loans that may result in negative amortization.

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The table below provides information about retained consumer loans, excluding credit card, by class. In the first quarter of 2017, the Firm transferred the student loan portfolio to held-for-sale. For additional information see Note 23.

(in millions)	June 30, 2017	December 31, 2016
Residential real estate – excluding PCI		
Home equity	\$36,000	\$ 39,063
Residential mortgage ^(a)	205,380	192,486
Other consumer loans		
Auto	65,627	65,814
Consumer & Business Banking ^(a)	25,044	24,307
Student ^(a)	—	7,057
Residential real estate – PCI		
Home equity	11,838	12,902
Prime mortgage	7,023	7,602
Subprime mortgage	2,771	2,941
Option ARMs	11,432	12,234
Total retained loans	\$365,115	\$ 364,406

^(a) Certain loan portfolios have been reclassified. The prior period amounts have been revised to conform with the current period presentation.

For further information on consumer credit quality indicators, see Note 14 of JPMorgan Chase's 2016 Annual Report.

Residential real estate – excluding PCI loans

The following table provides information by class for residential real estate – excluding retained PCI loans in the consumer, excluding credit card, portfolio segment.

Residential real estate – excluding PCI loans

(in millions, except ratios)	Home equity		Residential mortgage ^(g)		Total residential real estate – excluding PCI	
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016
Loan delinquency ^(a)						
Current	\$35,061	\$37,941	\$198,261	\$184,133	\$233,322	\$222,074
30–149 days past due	535	646	3,284	3,828	3,819	4,474
150 or more days past due	404	476	3,835	4,525	4,239	5,001
Total retained loans	\$36,000	\$39,063	\$205,380	\$192,486	\$241,380	\$231,549
% of 30+ days past due to total retained loans ^(b)	2.61	%2.87	%0.63	%0.75	%0.92	%1.11
90 or more days past due and government guaranteed ^(c)	\$—	\$—	\$3,959	\$4,858	\$3,959	\$4,858
Nonaccrual loans	1,645	1,845	2,089	2,256	3,734	4,101
Current estimated LTV ratios ^{(d)(e)}						
Greater than 125% and refreshed FICO scores:						
Equal to or greater than 660	\$18	\$70	\$25	\$30	\$43	\$100
Less than 660	7	15	39	48	46	63
101% to 125% and refreshed FICO scores:						
Equal to or greater than 660	370	668	58	135	428	803
Less than 660	120	221	128	177	248	398
80% to 100% and refreshed FICO scores:						
Equal to or greater than 660	2,138	2,961	3,330	4,026	5,468	6,987
Less than 660	692	945	555	718	1,247	1,663
Less than 80% and refreshed FICO scores:						
Equal to or greater than 660	26,400	27,317	184,119	169,579	210,519	196,896
Less than 660	4,135	4,380	6,993	6,759	11,128	11,139
No FICO/LTV available	2,120	2,486	1,548	1,650	3,668	4,136
U.S. government-guaranteed	—	—	8,585	9,364	8,585	9,364
Total retained loans	\$36,000	\$39,063	\$205,380	\$192,486	\$241,380	\$231,549
Geographic region						
California	\$7,053	\$7,644	\$64,827	\$59,802	\$71,880	\$67,446
New York	7,377	7,978	26,479	24,916	33,856	32,894
Illinois	2,705	2,947	13,884	13,126	16,589	16,073
Texas	2,124	2,225	11,693	10,772	13,817	12,997
Florida	1,973	2,133	9,176	8,395	11,149	10,528
New Jersey	2,091	2,253	6,735	6,374	8,826	8,627
Colorado	630	677	6,865	6,306	7,495	6,983
Washington	1,122	1,229	6,177	5,451	7,299	6,680
Massachusetts	332	371	6,060	5,834	6,392	6,205
Arizona	1,598	1,772	3,899	3,595	5,497	5,367
All other ^(f)	8,995	9,834	49,585	47,915	58,580	57,749
Total retained loans	\$36,000	\$39,063	\$205,380	\$192,486	\$241,380	\$231,549

(a) Individual delinquency classifications include mortgage loans insured by U.S. government agencies as follows:

current included \$2.8 billion and \$2.5 billion; 30–149 days past due included \$2.6 billion and \$3.1 billion; and 150

- or more days past due included \$3.2 billion and \$3.8 billion at June 30, 2017, and December 31, 2016, respectively. At June 30, 2017, and December 31, 2016, residential mortgage loans excluded mortgage loans insured by U.S. government agencies of \$5.8 billion and \$6.9 billion, respectively, that are 30 or more days past due. These amounts have been excluded based upon the government guarantee.
- These balances, which are 90 days or more past due, were excluded from nonaccrual loans as the loans are guaranteed by U.S. government agencies. Typically the principal balance of the loans is insured and interest is guaranteed at a specified reimbursement rate subject to meeting agreed-upon servicing guidelines. At June 30, 2017, and December 31, 2016, these balances included \$1.9 billion and \$2.2 billion, respectively, of loans that are no longer accruing interest based on the agreed-upon servicing guidelines. For the remaining balance, interest is being accrued at the guaranteed reimbursement rate. There were no loans that were not guaranteed by U.S. government agencies that are 90 or more days past due and still accruing interest at June 30, 2017, and December 31, 2016.
- Represents the aggregate unpaid principal balance of loans divided by the estimated current property value. Current property values are estimated, at a minimum, quarterly, based on home valuation models using nationally recognized home price index valuation estimates incorporating actual data to the extent available and forecasted data where actual data is not available. These property values do not represent actual appraised loan level collateral values; as such, the resulting ratios are necessarily imprecise and should be viewed as estimates. Current estimated combined LTV for junior lien home equity loans considers all available lien positions, as well as unused lines, related to the property.
- Refreshed FICO scores represent each borrower's most recent credit score, which is obtained by the Firm on at least a quarterly basis.
- At June 30, 2017, and December 31, 2016, included mortgage loans insured by U.S. government agencies of \$8.6 billion and \$9.4 billion, respectively.
- Certain loan portfolios have been reclassified. The prior period amounts have been revised to conform with the current period presentation.

The following table represents the Firm's delinquency statistics for junior lien home equity loans and lines as of June 30, 2017, and December 31, 2016.

(in millions, except ratios)	Total loans		Total 30+ day delinquency rate		
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	
HELOCs: ^(a)					
Within the revolving period ^(b)	\$7,951	\$10,304	0.79	% 1.27	%
Beyond the revolving period	13,572	13,272	2.76	3.05	
HELOANs	1,599	1,861	2.69	2.85	
Total	\$23,122	\$25,437	2.08	% 2.32	%

(a) These HELOCs are predominantly revolving loans for a 10-year period, after which time the HELOC converts to a loan with a 20-year amortization period, but also include HELOCs that allow interest-only payments beyond the revolving period.

(b) The Firm manages the risk of HELOCs during their revolving period by closing or reducing the undrawn line to the extent permitted by law when borrowers are experiencing financial difficulty.

HELOCs beyond the revolving period and HELOANs have higher delinquency rates than HELOCs within the revolving period. That is primarily because the fully-amortizing payment that is generally required for those products is higher than the minimum payment options available for HELOCs within the revolving period. The higher delinquency rates associated with amortizing HELOCs and HELOANs are factored into the Firm's allowance for loan losses.

Impaired loans

The table below sets forth information about the Firm's residential real estate impaired loans, excluding PCI loans. These loans are considered to be impaired as they have been modified in a TDR. All impaired loans are evaluated for an asset-specific allowance as described in Note 15 of JPMorgan Chase's 2016 Annual Report.

(in millions)	Home equity		Residential mortgage		Total residential real estate – excluding PCI	
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016
Impaired loans						
With an allowance	\$1,241	\$1,266	\$4,529	\$4,689	\$5,770	\$5,955
Without an allowance ^(a)	921	998	1,275	1,343	2,196	2,341
Total impaired loans ^{(b)(c)}	\$2,162	\$2,264	\$5,804	\$6,032	\$7,966	\$8,296
Allowance for loan losses related to impaired loans	\$126	\$121	\$67	\$68	\$193	\$189
Unpaid principal balance of impaired loans ^(d)	3,805	3,847	7,996	8,285	11,801	12,132
Impaired loans on nonaccrual status ^(e)	1,056	1,116	1,684	1,755	2,740	2,871

(a) Represents collateral-dependent residential real estate loans that are charged off to the fair value of the underlying collateral less cost to sell. The Firm reports, in accordance with regulatory guidance, residential real estate loans that have been discharged under Chapter 7 bankruptcy and not reaffirmed by the borrower ("Chapter 7 loans") as collateral-dependent nonaccrual TDRs, regardless of their delinquency status. At June 30, 2017, Chapter 7 residential real estate loans included approximately 11% of home equity and 13% of residential mortgages that were 30 days or more past due.

(b) At June 30, 2017, and December 31, 2016, \$3.9 billion and \$3.4 billion, respectively, of loans modified subsequent to repurchase from Ginnie Mae in accordance with the standards of the appropriate government agency (i.e., FHA, VA, RHS) are not included in the table above. When such loans perform subsequent to modification in accordance with Ginnie Mae guidelines, they are generally sold back into Ginnie Mae loan pools. Modified loans that do not

re-perform become subject to foreclosure.

(c) Predominantly all residential real estate impaired loans, excluding PCI loans, are in the U.S.

Represents the contractual amount of principal owed at June 30, 2017, and December 31, 2016. The unpaid

(d) principal balance differs from the impaired loan balances due to various factors including charge-offs, net deferred loan fees or costs, and unamortized discounts or premiums on purchased loans.

At both June 30, 2017 and December 31, 2016, nonaccrual loans included \$2.3 billion of TDRs for which the

(e) borrowers were less than 90 days past due. For additional information about loans modified in a TDR that are on nonaccrual status refer, to the Loan accounting framework in Note 14 of JPMorgan Chase's 2016 Annual Report.

The following tables present average impaired loans and the related interest income reported by the Firm.

Three months ended June 30, (in millions)	Average impaired loans		Interest income on impaired loans ^(a)		Interest income on impaired loans on a cash basis ^(a)	
					2017	2016
	Home equity	\$2,241	\$2,340	\$30	\$32	\$18	$20
Residential mortgage	5,865	6,453	68	77	14	20
Total residential real estate – excluding PCI	\$8,106	\$8,793	\$98	\$109	\$32	\$40

Six months ended June 30, (in millions)	Average impaired loans		Interest income on impaired loans ^(a)		Interest income on impaired loans on a cash basis ^(a)	
					2017	2016
	Home equity	\$2,245	\$2,350	\$61	\$63	\$38	$41
Residential mortgage	5,921	6,534	141	155	33	39
Total residential real estate – excluding PCI	\$8,166	\$8,884	\$202	\$218	\$71	\$80

^(a) Generally, interest income on loans modified in TDRs is recognized on a cash basis until such time as the borrower has made a minimum of six payments under the new terms, unless the loan is deemed to be collateral-dependent.

Loan modifications

Modifications of residential real estate loans, excluding PCI loans, are generally accounted for and reported as TDRs. There were no additional commitments to lend to borrowers whose residential real estate loans, excluding PCI loans, have been modified in TDRs.

The following table presents new TDRs reported by the Firm.

(in millions)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
	Home equity	\$69	\$70	\$150	$196
Residential mortgage	96	59	168	122
Total residential real estate – excluding PCI	\$165	\$129	\$318	\$318

Nature and extent of modifications

The U.S. Treasury's Making Home Affordable programs, as well as the Firm's proprietary modification programs, generally provide various concessions to financially troubled borrowers including, but not limited to, interest rate reductions, term or payment extensions and deferral of principal and/or interest payments that would otherwise have been required under the terms of the original agreement.

The following tables provide information about how residential real estate loans, excluding PCI loans, were modified under the Firm's loss mitigation programs described above during the periods presented. These tables exclude Chapter 7 loans where the sole concession granted is the discharge of debt.

Three months ended June 30,	Home equity		Residential mortgage		Total residential real estate – excluding PCI		
	2017	2016	2017	2016	2017	2016	
Number of loans approved for a trial modification	565	688	390	555	955	1,243	
Number of loans permanently modified	1,583	949	659	979	2,242	1,928	
Concession granted: ^(a)							
Interest rate reduction	59	%80	% 69	%71	% 62	%75	%
Term or payment extension	78	84	82	90	79	87	
Principal and/or interest deferred	9	20	20	16	13	18	
Principal forgiveness	9	11	18	29	12	20	
Other ^(b)	15	1	23	23	18	12	

Six months ended June 30,	Home equity		Residential mortgage		Total residential real estate – excluding PCI		
	2017	2016	2017	2016	2017	2016	
Number of loans approved for a trial modification	1,308	1,737	846	1,135	2,154	2,872	
Number of loans permanently modified	2,800	2,641	1,442	1,711	4,242	4,352	
Concession granted: ^(a)							
Interest rate reduction	71	%71	% 76	%72	% 72	%71	%
Term or payment extension	84	88	86	90	84	89	
Principal and/or interest deferred	13	18	14	19	14	18	
Principal forgiveness	9	10	19	27	12	17	
Other ^(b)	13	1	27	21	18	9	

Represents concessions granted in permanent modifications as a percentage of the number of loans permanently modified. The sum of the percentages exceeds 100% because predominantly all of the modifications include more than one type of concession. A significant portion of trial modifications include interest rate reductions and/or term or payment extensions.

(b) Predominantly represents variable interest rate to fixed interest rate modifications.

Financial effects of modifications and redefaults

The following tables provide information about the financial effects of the various concessions granted in modifications of residential real estate loans, excluding PCI, under the loss mitigation programs described above and about redefaults of certain loans modified in TDRs for the periods presented. Because the specific types and amounts of concessions offered to borrowers frequently change between the trial modification and the permanent modification, the following tables present only the financial effects of permanent modifications. These tables also exclude Chapter 7 loans where the sole concession granted is the discharge of debt.

Three months ended June 30, (in millions, except weighted-average data and number of loans)	Home equity		Residential mortgage		Total residential real estate – excluding PCI	
	2017	2016	2017	2016	2017	2016
Weighted-average interest rate of loans with interest rate reductions – before TDR	5.04%	5.28%	5.13%	5.67%	5.09%	5.54%
Weighted-average interest rate of loans with interest rate reductions – after TDR	2.39	2.52	3.12	2.98	2.79	2.83
Weighted-average remaining contractual term (in years) of loans with term or payment extensions – before TDR	26	17	23	25	25	22
Weighted-average remaining contractual term (in years) of loans with term or payment extensions – after TDR	38	38	37	38	38	38
Charge-offs recognized upon permanent modification	\$—	\$	\$	\$1	\$	\$1
Principal deferred	2	4	4	9	6	13
Principal forgiven	3	1	6	13	9	14
Balance of loans that redefaulted within one year of permanent modification ^(a)	\$12	\$11	\$30	\$26	\$42	\$37

Six months ended June 30, (in millions, except weighted-average data and number of loans)	Home equity		Residential mortgage		Total residential real estate – excluding PCI	
	2017	2016	2017	2016	2017	2016
Weighted-average interest rate of loans with interest rate reductions – before TDR	4.82%	5.13%	5.25%	5.60%	5.06%	5.40%
Weighted-average interest rate of loans with interest rate reductions – after TDR	2.42	2.46	3.00	2.92	2.74	2.73
Weighted-average remaining contractual term (in years) of loans with term or payment extensions – before TDR	23	18	24	25	24	22
Weighted-average remaining contractual term (in years) of loans with term or payment extensions – after TDR	39	38	38	38	38	38
Charge-offs recognized upon permanent modification	\$1	\$1	\$1	\$2	\$2	\$3
Principal deferred	7	12	7	19	14	31
Principal forgiven	5	4	11	25	16	29
Balance of loans that redefaulted within one year of permanent modification ^(a)	\$21	\$20	\$58	\$48	\$79	\$68

(a) Represents loans permanently modified in TDRs that experienced a payment default in the periods presented, and for which the payment default occurred within one year of the modification. The dollar amounts presented represent the balance of such loans at the end of the reporting period in which such loans defaulted. For residential real estate loans modified in TDRs, payment default is deemed to occur when the loan becomes two contractual

payments past due. In the event that a modified loan redefaults, it is probable that the loan will ultimately be liquidated through foreclosure or another similar type of liquidation transaction. Redefaults of loans modified within the last 12 months may not be representative of ultimate redefault levels.

At June 30, 2017, the weighted-average estimated remaining lives of residential real estate loans, excluding PCI loans, permanently modified in TDRs were 10 years for home equity and 13 years for residential mortgage. The estimated remaining lives of these loans reflect estimated prepayments, both voluntary and involuntary (i.e., foreclosures and other forced liquidations).

Active and suspended foreclosure

At June 30, 2017, and December 31, 2016, the Firm had non-PCI residential real estate loans, excluding those insured by U.S. government agencies, with a carrying value of \$796 million and \$932 million, respectively, that were not included in REO, but were in the process of active or suspended foreclosure.

Other consumer loans

The table below provides information for other consumer retained loan classes, including auto and business banking loans. This table excludes student loans as a result of the transfer of the student loan portfolio to held-for-sale in the first quarter of 2017 and its subsequent sale in the second quarter of 2017.

(in millions, except ratios)	Auto		Consumer & Business Banking ^(c)	
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016
Loan delinquency				
Current	\$65,050	\$65,029	\$24,746	\$23,920
30–119 days past due	568	773	150	247
120 or more days past due	9	12	148	140
Total retained loans	\$65,627	\$65,814	\$25,044	\$24,307
% of 30+ days past due to total retained loans	0.88	% 1.19	% 1.19	% 1.59
Nonaccrual loans ^(a)	158	214	301	287
Geographic region				
California	\$8,347	\$7,975	\$4,731	\$4,426
Texas	6,807	7,041	2,929	2,954
New York	3,974	4,078	4,066	3,979
Illinois	4,052	3,984	1,867	1,758
Florida	3,369	3,374	1,263	1,195
Ohio	2,126	2,194	1,412	1,402
Arizona	2,132	2,209	1,305	1,307
Michigan	1,552	1,567	1,350	1,343
New Jersey	2,044	2,031	658	623
Louisiana	1,712	1,814	951	979
All other	29,512	29,547	4,512	4,341
Total retained loans	\$65,627	\$65,814	\$25,044	\$24,307
Loans by risk ratings ^(b)				
Noncriticized	\$14,863	\$13,899	\$17,465	\$16,858
Criticized performing	119	201	750	816
Criticized nonaccrual	56	94	227	217

(a) There were no loans that were 90 or more days past due and still accruing interest at June 30, 2017, and December 31, 2016.

(b) For risk-rated business banking and auto loans, the primary credit quality indicator is the risk rating of the loan, including whether the loans are considered to be criticized and/or nonaccrual.

(c) Certain loan portfolios have been reclassified. The prior period amounts have been revised to conform with the current period presentation.

Other consumer impaired loans and loan modifications

The table below sets forth information about the Firm's other consumer impaired loans, including risk-rated business banking and auto loans that have been placed on nonaccrual status, and loans that have been modified in TDRs.

(in millions)	June 30, December 31,	
	2017	2016
Impaired loans		
With an allowance	\$ 345	\$ 614
Without an allowance ^(a)	29	30
Total impaired loans ^{(b)(c)}	\$ 374	\$ 644
Allowance for loan losses related to impaired loans	\$ 103	\$ 119
Unpaid principal balance of impaired loans ^(d)	462	753
Impaired loans on nonaccrual status	331	508

When discounted cash flows, collateral value or market price equals or exceeds the recorded investment in the (a) loan, the loan does not require an allowance. This typically occurs when the impaired loans have been partially charged off and/or there have been interest payments received and applied to the loan balance.

(b) Predominantly all other consumer impaired loans are in the U.S.

(c) Other consumer average impaired loans were \$381 million and \$622 million for the three months ended June 30, 2017 and 2016, respectively, and \$501 million and \$596 million for the six months ended June 30, 2017 and 2016, respectively. The related interest income on impaired loans, including those on a cash basis, was not material for the three and six months ended June 30, 2017 and 2016.

(d) Represents the contractual amount of principal owed at June 30, 2017, and December 31, 2016. The unpaid principal balance differs from the impaired loan balances due to various factors, including charge-offs, interest payments received and applied to the principal balance, net deferred loan fees or costs, and unamortized discounts or premiums on purchased loans.

Loan modifications

Certain other consumer loan modifications are considered to be TDRs as they provide various concessions to borrowers who are experiencing financial difficulty. All of these TDRs are reported as impaired loans in the table above. See Note 14 of JPMorgan Chase's 2016 Annual Report for further information on other consumer loans modified in TDRs.

The following table provides information about the Firm's other consumer loans modified in TDRs. New TDRs were not material for the three and six months ended June 30, 2017 and 2016.

(in millions)	June 30, December 31,	
	2017	2016
Loans modified in TDRs ^{(a)(b)}	\$ 119	\$ 362
TDRs on nonaccrual status	76	226

(a) The impact of these modifications were not material to the Firm for the three and six months ended June 30, 2017 and 2016.

(b) Additional commitments to lend to borrowers whose loans have been modified in TDRs as of June 30, 2017, and December 31, 2016, were immaterial.

Purchased credit-impaired loans

For a detailed discussion of PCI loans, including the related accounting policies, see Note 14 of JPMorgan Chase's 2016 Annual Report.

Residential real estate – PCI loans

The table below sets forth information about the Firm's consumer, excluding credit card, PCI loans.

(in millions, except ratios)	Home equity		Prime mortgage		Subprime mortgage		Option ARMs		Total PCI	
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016
Carrying value ^(a)	\$11,838	\$12,902	\$7,023	\$7,602	\$2,771	\$2,941	\$11,432	\$12,234	\$33,064	\$35,679
Related allowance for loan losses ^(b)	1,133	1,433	903	829	150	—	79	49	2,265	2,311
Loan delinquency (based on unpaid principal balance)										
Current	\$11,396	\$12,423	\$6,367	\$6,840	\$2,914	\$3,005	\$10,443	\$11,074	\$31,120	\$33,342
30–149 days past due	268	291	296	336	292	361	466	555	1,322	1,543
150 or more days past due	434	478	384	451	188	240	774	917	1,780	2,086
Total loans	\$12,098	\$13,192	\$7,047	\$7,627	\$3,394	\$3,606	\$11,683	\$12,546	\$34,222	\$36,971
% of 30+ days past due to total loans	5.80	%5.83	%9.65	%10.32	%14.14	%16.67	%10.61	%11.73	%9.06	%9.82
Current estimated LTV ratios (based on unpaid principal balance) ^{(c)(d)}										
Greater than 125% and refreshed FICO scores:										
Equal to or greater than 660	\$44	\$69	\$6	\$6	\$5	\$7	\$6	\$12	\$61	\$94
Less than 660	23	39	16	17	25	31	13	18	77	105
101% to 125% and refreshed FICO scores:										
Equal to or greater than 660	365	555	27	52	26	39	61	83	479	729
Less than 660	175	256	56	84	94	135	91	144	416	619
80% to 100% and refreshed FICO scores:										
Equal to or greater than 660	1,480	1,860	292	442	146	214	376	558	2,294	3,074
Less than 660	678	804	289	381	356	439	463	609	1,786	2,233

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Lower than 80% and refreshed FICO scores:											
Equal to or greater than 660	6,461	6,676	3,781	3,967	936	919	6,438	6,754	17,616	18,316	
Less than 660	2,159	2,183	2,209	2,287	1,641	1,645	3,691	3,783	9,700	9,898	
No FICO/LTV available	713	750	371	391	165	177	544	585	1,793	1,903	
Total unpaid principal balance	\$12,098	\$13,192	\$7,047	\$7,627	\$3,394	\$3,606	\$11,683	\$12,546	\$34,222	\$36,971	
Geographic region (based on unpaid principal balance)											
California	\$7,218	\$7,899	\$4,034	\$4,396	\$846	\$899	\$6,626	\$7,128	\$18,724	\$20,322	
Florida	1,224	1,306	465	501	313	332	971	1,026	2,973	3,165	
New York	653	697	487	515	347	363	660	711	2,147	2,286	
Washington	603	673	151	167	64	68	263	290	1,081	1,198	
New Jersey	259	280	196	210	119	125	373	401	947	1,016	
Illinois	294	314	215	226	169	178	269	282	947	1,000	
Massachusetts	88	94	159	173	104	110	321	346	672	723	
Maryland	60	64	138	144	138	145	248	267	584	620	
Arizona	219	241	113	124	63	68	167	181	562	614	
Virginia	71	77	132	142	53	56	296	314	552	589	
All other	1,409	1,547	957	1,029	1,178	1,262	1,489	1,600	5,033	5,438	
Total unpaid principal balance	\$12,098	\$13,192	\$7,047	\$7,627	\$3,394	\$3,606	\$11,683	\$12,546	\$34,222	\$36,971	

(a) Carrying value includes the effect of fair value adjustments that were applied to the consumer PCI portfolio at the date of acquisition.

Management concluded as part of the Firm's regular assessment of the PCI loan pools that it was probable that (b) higher expected credit losses would result in a decrease in expected cash flows. As a result, an allowance for loan losses for impairment of these pools has been recognized.

Represents the aggregate unpaid principal balance of loans divided by the estimated current property value. Current property values are estimated, at a minimum, quarterly, based on home valuation models using nationally recognized home price index valuation estimates incorporating actual data to the extent available and forecasted (c) data where actual data is not available. These property values do not represent actual appraised loan level collateral values; as such, the resulting ratios are necessarily imprecise and should be viewed as estimates. Current estimated combined LTV for junior lien home equity loans considers all available lien positions, as well as unused lines, related to the property.

(d) Refreshed FICO scores represent each borrower's most recent credit score, which is obtained by the Firm on at least a quarterly basis.

Approximately 24% of the PCI home equity portfolio are senior lien loans; the remaining balance are junior lien HELOANs or HELOCs. The following table sets forth delinquency statistics for PCI junior lien home equity loans and lines of credit based on the unpaid principal balance as of June 30, 2017, and December 31, 2016.

(in millions, except ratios)	Total loans		Total 30+ day delinquency rate		
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	
HELOCs: ^(a)					
Within the revolving period ^(b)	\$787	\$2,126	3.94	%3.67	%
Beyond the revolving period ^(c)	7,957	7,452	3.97	4.03	
HELOANs	409	465	4.65	5.38	
Total	\$9,153	\$10,043	4.00	%4.01	%

(a) In general, these HELOCs are revolving loans for a 10-year period, after which time the HELOC converts to an interest-only loan with a balloon payment at the end of the loan's term.

(b) Substantially all undrawn HELOCs within the revolving period have been closed.

(c) Includes loans modified into fixed rate amortizing loans.

The table below sets forth the accretable yield activity for the Firm's PCI consumer loans for the three and six months ended June 30, 2017 and 2016, and represents the Firm's estimate of gross interest income expected to be earned over the remaining life of the PCI loan portfolios. The table excludes the cost to fund the PCI portfolios, and therefore the accretable yield does not represent net interest income expected to be earned on these portfolios.

(in millions, except ratios)	Total PCI			
	Three months ended		Six months ended	
	June 30, 2017	June 30, 2016	June 30, 2017	June 30, 2016
Beginning balance	\$13,122	\$12,674	\$11,768	\$13,491
Accretion into interest income	(357)	(395)	(716)	(802)
Changes in interest rates on variable-rate loans	51	25	167	101
Other changes in expected cash flows ^(a)	(177)	(3)	1,420	(489)
Balance at June 30	\$12,639	\$12,301	\$12,639	\$12,301
Accretable yield percentage	4.55	%4.37	%4.45	%4.36

Other changes in expected cash flows may vary from period to period as the Firm continues to refine its cash flow (a) model, for example cash flows expected to be collected due to the impact of modifications and changes in prepayment assumptions.

Active and suspended foreclosure

At June 30, 2017, and December 31, 2016, the Firm had PCI residential real estate loans with an unpaid principal balance of \$1.5 billion and \$1.7 billion, respectively, that were not included in REO, but were in the process of active or suspended foreclosure.

Credit card loan portfolio

The table below sets forth information about the Firm's credit card loans.

(in millions, except ratios)	June 30, 2017	December 31, 2016
Loan delinquency		
Current and less than 30 days	\$137,811	\$139,434
past due and still accruing		
30-89 days past due and still accruing	1,099	1,134
90 or more days past due and still accruing	1,125	1,143

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Total retained credit card loans	\$ 140,035	\$ 141,711	
Loan delinquency ratios			
% of 30+ days past due to total retained loans	1.59	% 1.61	%
% of 90+ days past due to total retained loans	0.80	0.81	
Credit card loans by geographic region			
California	\$ 20,592	\$ 20,571	
Texas	13,256	13,220	
New York	12,236	12,249	
Florida	8,481	8,585	
Illinois	8,080	8,189	
New Jersey	6,134	6,271	
Ohio	4,745	4,906	
Pennsylvania	4,624	4,787	
Colorado	3,752	3,699	
Michigan	3,621	3,741	
All other	54,514	55,493	
Total retained credit card loans	\$ 140,035	\$ 141,711	
Percentage of portfolio based on carrying value with estimated refreshed FICO scores			
Equal to or greater than 660	84.2	% 84.4	%
Less than 660	14.4	14.2	
No FICO available	1.4	1.4	

Credit card impaired loans and loan modifications

For a detailed discussion of impaired credit card loans, including credit card loan modifications, see Note 14 of JPMorgan Chase's 2016 Annual Report.

The table below sets forth information about the Firm's impaired credit card loans. All of these loans are considered to be impaired as they have been modified in TDRs.

(in millions)	June 30, December 31,	
	2017	2016
Impaired credit card loans with an allowance ^{(a)(b)}		
Credit card loans with modified payment terms ^(c)	\$ 1,078	\$ 1,098
Modified credit card loans that have reverted to pre-modification payment terms ^(d)	126	142
Total impaired credit card loans ^(e)	\$ 1,204	\$ 1,240
Allowance for loan losses related to impaired credit card loans	\$ 370	\$ 358

(a) The carrying value and the unpaid principal balance are the same for credit card impaired loans.

(b) There were no impaired loans without an allowance.

(c) Represents credit card loans outstanding to borrowers enrolled in a credit card modification program as of the date presented.

(d) Represents credit card loans that were modified in TDRs but that have subsequently reverted back to the loans' pre-modification payment terms.

At June 30, 2017, and December 31, 2016, \$85 million and \$94 million, respectively, of loans have reverted back to the pre-modification payment terms of the loans due to noncompliance with the terms of the modified loans. The remaining \$41 million and \$48 million at June 30, 2017, and December 31, 2016, respectively, of these loans are to borrowers who have successfully completed a short-term modification program. The Firm continues to report these loans as TDRs since the borrowers' credit lines remain closed.

(e) Predominantly all impaired credit card loans are in the U.S.

The following table presents average balances of impaired credit card loans and interest income recognized on those loans.

(in millions)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Average impaired credit card loans	\$ 1,212	\$ 1,345	\$ 1,220	\$ 1,390
Interest income on impaired credit card loans	15	16	29	33

Loan modifications

The Firm may modify loans to credit card borrowers who are experiencing financial difficulty. Most of these loans have been modified under programs that involve placing the customer on a fixed payment plan with a reduced interest rate, generally for 60 months. All of these credit card loan modifications are considered to be TDRs. New enrollments in these loan modification programs were \$176 million and \$141 million, for the three months ended June 30, 2017 and 2016, respectively, and \$361 million and \$300 million for the six months ended June 30, 2017 and 2016, respectively. For additional information about credit card loan modifications, see Note 14 of JPMorgan Chase's 2016 Annual Report.

Financial effects of modifications and redefaults

The following table provides information about the financial effects of the concessions granted on credit card loans modified in TDRs and redefaults for the periods presented.

(in millions, except weighted-average data)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Weighted-average interest rate of loans – before TDR	16.5%	15.61%	16.3%	15.54%

Weighted-average interest rate of loans – after TDR	4.80	4.85	4.78	4.82
Loans that redefaulted within one year of modification ^(a)	\$24	\$ 18	\$45	\$ 37

Represents loans modified in TDRs that experienced a payment default in the periods presented, and for which the (a) payment default occurred within one year of the modification. The amounts presented represent the balance of such loans as of the end of the quarter in which they defaulted.

For credit card loans modified in TDRs, payment default is deemed to have occurred when the loans become two payments past due. A substantial portion of these loans is expected to be charged-off in accordance with the Firm's standard charge-off policy. Based on historical experience, the estimated weighted-average default rate for modified credit card loans was expected to be 30.70% and 28.87% as of June 30, 2017, and December 31, 2016, respectively.

Wholesale loan portfolio

Wholesale loans include loans made to a variety of customers, ranging from large corporate and institutional clients to high-net-worth individuals. The primary credit quality indicator for wholesale loans is the risk rating

assigned to each loan. For further information on these risk ratings, see Note 14 and Note 15 of JPMorgan Chase's 2016 Annual Report.

The table below provides information by class of receivable for the retained loans in the Wholesale portfolio segment. Effective in the first quarter of 2017, the Firm revised its methodology for the assignment of industry classifications, to better monitor and manage concentrations. This largely resulted in the re-assignment of holding companies from Other to the industry of risk category based on the primary business activity of the holding company's underlying companies or enterprises. In the tables below, the prior period amounts have been revised to conform with the current period presentation.

(in millions, except ratios)	Commercial and industrial		Real estate		Financial institutions		Government agencies		Other ^(d)
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017
Loans by risk ratings									
Investment-grade	\$68,142	\$65,687	\$93,465	\$88,649	\$23,705	\$24,294	\$15,601	\$15,935	\$101,773
Noninvestment-grade:									
Noncriticized	46,729	47,531	15,461	16,155	11,630	11,075	393	439	9,383
Criticized performing	5,270	6,186	826	798	320	200	—	6	94
Criticized nonaccrual	1,176	1,491	152	200	30	9	—	—	276
Total noninvestment-grade	53,175	55,208	16,439	17,153	11,980	11,284	393	445	9,753
Total retained loans	\$121,317	\$120,895	\$109,904	\$105,802	\$35,685	\$35,578	\$15,994	\$16,380	\$111,526
% of total criticized exposure to total retained loans	5.31	%6.35	% 0.89	%0.94	% 0.98	%0.59	%—	%0.04	% 0.33
% of criticized nonaccrual to total retained loans	0.97	1.23	0.14	0.19	0.08	0.03	—	—	0.25
Loans by geographic distribution^(a)									
Total non-U.S.	\$29,631	\$30,563	\$2,936	\$3,302	\$15,165	\$15,147	\$3,634	\$3,726	\$41,987
Total U.S.	91,686	90,332	106,968	102,500	20,520	20,431	12,360	12,654	69,539
Total retained loans	\$121,317	\$120,895	\$109,904	\$105,802	\$35,685	\$35,578	\$15,994	\$16,380	\$111,526
Loan delinquency^(b)									
Current and less than 30 days past due and still accruing	\$119,863	\$119,050	\$109,612	\$105,396	\$35,565	\$35,523	\$15,988	\$16,269	\$110,313
30–89 days past due and still accruing	192	268	130	204	74	25	1	107	932
90 or more days past due and still accruing ^(c)	86	86	10	2	16	21	5	4	5
Criticized nonaccrual	1,176	1,491	152	200	30	9	—	—	276
Total retained loans	\$121,317	\$120,895	\$109,904	\$105,802	\$35,685	\$35,578	\$15,994	\$16,380	\$111,526

- (a) The U.S. and non-U.S. distribution is determined based predominantly on the domicile of the borrower.
The credit quality of wholesale loans is assessed primarily through ongoing review and monitoring of an obligor's
- (b) ability to meet contractual obligations rather than relying on the past due status, which is generally a lagging indicator of credit quality. For further discussion, see Note 14 of JPMorgan Chase's 2016 Annual Report.
- (c) Represents loans that are considered well-collateralized and therefore still accruing interest.
- (d) Includes loans to: individuals; SPEs; and private education and civic organizations. For more information on SPEs, see Note 16 of JPMorgan Chase's 2016 Annual Report.

The following table presents additional information on the real estate class of loans within the Wholesale portfolio segment for the periods indicated. For further information on real estate loans, see Note 14 of JPMorgan Chase's 2016 Annual Report.

(in millions, except ratios)	Multifamily		Other commercial		Total real estate loans		
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	
Real estate retained loans	\$75,542	\$72,143	\$34,362	\$33,659	\$109,904	\$105,802	
Criticized exposure	457	539	521	459	978	998	
% of total criticized exposure to total real estate retained loans	0.60	%0.75	% 1.52	%1.36	% 0.89	%0.94	%
Criticized nonaccrual	\$45	\$57	\$107	\$143	\$152	\$200	
% of criticized nonaccrual loans to total real estate retained loans	0.06	%0.08	% 0.31	%0.42	% 0.14	%0.19	%

Wholesale impaired loans and loan modifications

Wholesale impaired loans consist of loans that have been placed on nonaccrual status and/or that have been modified in a TDR. All impaired loans are evaluated for an asset-specific allowance as described in Note 15 of JPMorgan Chase's 2016 Annual Report.

The table below sets forth information about the Firm's wholesale impaired loans.

(in millions)	Commercial and industrial		Real estate		Financial institutions		Government agencies		Other		Total retained loans	
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016
Impaired loans												
With an allowance	\$942	\$1,127	\$84	\$124	\$5	\$9	\$-	-\$211	\$180	\$180	\$1,242	\$1,440
Without an allowance ^(a)	369	414	75	87	9	—	—	65	76	76	518	577
Total impaired loans	\$1,311	\$1,541	\$159	\$211	\$14	\$9	\$-	-\$276	\$256	\$256	\$1,760 ^(c)	\$2,017 ^(c)
Allowance for loan losses related to impaired loans	\$259	\$260	\$9	\$18	\$14	\$3	\$-	-\$63	\$61	\$61	\$345	\$342
Unpaid principal balance of impaired loans ^(b)	1,566	1,754	237	295	14	12	—	—	214	284	2,031	2,345

When the discounted cash flows, collateral value or market price equals or exceeds the recorded investment in the (a) loan, the loan does not require an allowance. This typically occurs when the impaired loans have been partially charged-off and/or there have been interest payments received and applied to the loan balance.

Represents the contractual amount of principal owed at June 30, 2017, and December 31, 2016. The unpaid principal balance differs from the impaired loan balances due to various factors, including charge-offs; interest payments received and applied to the carrying value; net deferred loan fees or costs; and unamortized discount or premiums on purchased loans.

(c) Based upon the domicile of the borrower, largely consists of loans in the U.S.

The following table presents the Firm's average impaired loans for the periods indicated.

(in millions)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Commercial and industrial	\$868	\$1,704	\$982	\$1,413
Real estate	149	235	161	234
Financial institutions	4	11	4	11
Government agencies	—	—	—	—
Other	209	194	205	189
Total ^(a)	\$1,230	\$2,144	\$1,352	\$1,847

(a) The related interest income on accruing impaired loans and interest income recognized on a cash basis were not material for the three and six months ended June 30, 2017 and 2016.

Certain loan modifications are considered to be TDRs as they provide various concessions to borrowers who are experiencing financial difficulty. All TDRs are reported as impaired loans in the tables above. TDRs were \$745 million and \$733 million as of June 30, 2017, and December 31, 2016, respectively.

Note 12 – Allowance for credit losses

For detailed discussion of the allowance for credit losses and the related accounting policies, see Note 15 of JPMorgan Chase's 2016 Annual Report. During the second quarter of 2017, the Firm refined its loss estimates relating to the wholesale portfolio by incorporating the use of internal historical data versus external credit rating agency default statistics to estimate PD. In addition, an adjustment to the modeled loss estimates for wholesale lending-related commitments was incorporated similar to the adjustment applied for wholesale loans. The impacts of these refinements were not material to the allowance for credit losses.

Allowance for credit losses and related information

The table below summarizes information about the allowances for loan losses and lending-related commitments, and includes a breakdown of loans and lending-related commitments by impairment methodology.

Six months ended June 30, (in millions)	2017				2016			
	Consumer, excluding credit card	Credit card	Wholesale Total		Consumer, excluding credit card	Credit card	Wholesale Total	
Allowance for loan losses								
Beginning balance at January 1,	\$5,198	\$4,034	\$4,544	\$13,776	5,806	\$3,434	\$4,315	\$13,555
Gross charge-offs	1,105	2,223	99	3,427	688	1,874	228	2,790
Gross recoveries	(307)	(193)	(69)	(569)	(301)	(184)	(14)	(499)
Net charge-offs/(recoveries)	798	2,030	30	2,858	387	1,690	214	2,291
Write-offs of PCI loans ^(a)	46	—	—	46	88	—	—	88
Provision for loan losses	448	2,380	(337)	2,491	316	1,940	796	3,052
Other	(2)	—	2	—	(1)	—	—	(1)
Ending balance at June 30,	\$4,800	\$4,384	\$4,179	\$13,363	\$5,646	\$3,684	\$4,897	\$14,227
Allowance for loan losses by impairment methodology								
Asset-specific ^(b)	\$296	\$370	^(c) \$345	\$1,011	\$365	\$361	^(c) \$525	\$1,251
Formula-based	2,239	4,014	3,834	10,087	2,627	3,323	4,372	10,322
PCI	2,265	—	—	2,265	2,654	—	—	2,654
Total allowance for loan losses	\$4,800	\$4,384	\$4,179	\$13,363	\$5,646	\$3,684	\$4,897	\$14,227
Loans by impairment methodology								
Asset-specific	\$8,340	\$1,204	\$1,760	\$11,304	\$9,370	\$1,307	\$2,149	\$12,826
Formula-based	323,711	138,831	392,663	855,205	313,320	130,200	372,021	815,541
PCI	33,064	—	3	33,067	38,360	—	4	38,364
Total retained loans	\$365,115	\$140,035	\$394,426	\$899,576	\$361,050	\$131,507	\$374,174	\$866,731
Impaired collateral-dependent loans								
Net charge-offs	\$36	\$—	\$16	\$52	\$43	\$—	\$5	\$48
	2,234	—	296	2,530	2,431	—	295	2,726

Loans measured at fair value of collateral less cost to sell

Allowance for lending-related commitments

Beginning balance at January 1,	\$26	\$—	\$1,052	\$1,078	\$14	\$—	\$772	\$786
Provision for lending-related commitments	6	—	33	39	—	—	174	174
Other	—	—	—	—	—	—	—	—
Ending balance at June 30,	\$32	\$—	\$1,085	\$1,117	\$14	\$—	\$946	\$960

Allowance for lending-related commitments by impairment methodology

Asset-specific	\$—	\$—	\$211	\$211	\$—	\$—	\$143	\$143
Formula-based	32	—	874	906	14	—	803	817
Total allowance for lending-related commitments	\$32	\$—	\$1,085	\$1,117	\$14	\$—	\$946	\$960

Lending-related commitments by impairment methodology

Asset-specific	\$—	\$—	\$750	\$750	\$—	\$—	\$460	\$460
Formula-based	58,162	576,264	365,748	1,000,174	59,224	539,105	356,685	955,014
Total lending-related commitments	\$58,162	\$576,264	\$366,498	\$1,000,924	\$59,224	\$539,105	\$357,145	\$955,474

Note: In the first quarter of 2017, the Firm transferred the student loan portfolio to held-for-sale. For additional information see Note 23.

Write-offs of PCI loans are recorded against the allowance for loan losses when actual losses for a pool exceed (a) estimated losses that were recorded as purchase accounting adjustments at the time of acquisition. A write-off of a PCI loan is recognized when the underlying loan is removed from a pool (e.g., upon liquidation).

(b) Includes risk-rated loans that have been placed on nonaccrual status and loans that have been modified in a TDR.

The asset-specific credit card allowance for loan losses is related to loans that have been modified in a TDR; such (c) allowance is calculated based on the loans' original contractual interest rates and does not consider any incremental penalty rates.

Note 13 – Variable interest entities

For a further description of JPMorgan Chase's accounting policies regarding consolidation of VIEs, see Note 1 of JPMorgan Chase's 2016 Annual Report.

The following table summarizes the most significant types of Firm-sponsored VIEs by business segment.

Line of Business	Transaction Type	Activity	Form 10-Q page reference
CCB	Credit card securitization trusts	Securitization of both originated and purchased credit card receivables	139
	Mortgage securitization trusts	Servicing and securitization of both originated and purchased residential mortgages	139–141
CIB	Mortgage and other securitization trusts	Securitization of both originated and purchased residential and commercial mortgages, and student loans	139–141
	Multi-seller conduits Investor intermediation activities	Assist clients in accessing the financial markets in a cost-efficient manner and structures transactions to meet investor needs	141

The Firm also invests in and provides financing and other services to VIEs sponsored by third parties, as described on page 141 of this Note.

Significant Firm-sponsored VIEs

Credit card securitizations

For a more detailed discussion of JPMorgan Chase's involvement with credit card securitizations, see Note 16 of JPMorgan Chase's 2016 Annual Report.

As a result of the Firm's continuing involvement, the Firm is considered to be the primary beneficiary of its Firm-sponsored credit card securitization trusts, including its primary vehicle, the Chase Issuance Trust. See the table on page 142 of this Note for further information on consolidated VIE assets and liabilities.

Firm-sponsored mortgage and other securitization trusts

The Firm securitizes (or has securitized) originated and purchased residential mortgages, commercial mortgages and other consumer loans (including student loans) primarily in its CCB and CIB businesses. Depending on the particular transaction, as well as the respective business involved, the Firm may act as the servicer of the loans and/or retain certain beneficial interests in the securitization trusts.

For a detailed discussion of the Firm's involvement with Firm-sponsored mortgage and other securitization trusts, as well as the accounting treatment relating to such trusts, see Note 16 of JPMorgan Chase's 2016 Annual Report.

The following table presents the total unpaid principal amount of assets held in Firm-sponsored private-label securitization entities, including those in which the Firm has continuing involvement, and those that are consolidated by the Firm. Continuing involvement includes servicing the loans, holding senior interests or subordinated interests, recourse or guarantee arrangements, and derivative transactions. In certain instances, the Firm's only continuing involvement is servicing the loans. See Securitization activity on page 143 of this Note for further information regarding the Firm's cash flows with and interests retained in nonconsolidated VIEs, and page 143 of this Note for information on the Firm's loan sales to U.S. government agencies.

	Principal amount outstanding			JPMorgan Chase interest in securitized assets in nonconsolidated VIEs ^{(c)(d)(e)}	
	Total assets held by securitization VIEs	Assets held in consolidated securitization VIEs	Assets held in nonconsolidated securitization VIEs with continuing involvement	Trading assets	Total interests held by JPMorgan Chase
June 30, 2017 (in millions)					
Securitization-related ^(a)					
Residential mortgage:					
Prime/Alt-A and option ARMs	\$71,894	\$ 3,927	\$ 54,473	\$209\$ 1,121	\$ 1,330
Subprime	20,241	—	18,758	99 —	99
Commercial and other ^(b)	93,625	95	65,915	605 1,553	2,158
Total	\$185,760	\$ 4,022	\$ 139,146	\$913\$ 2,674	\$ 3,587

	Principal amount outstanding			JPMorgan Chase interest in securitized assets in nonconsolidated VIEs ^{(c)(d)(e)}	
	Total assets held by securitization VIEs	Assets held in consolidated securitization VIEs	Assets held in nonconsolidated securitization VIEs with continuing involvement	Trading assets	Total interests held by JPMorgan Chase
December 31, 2016 (in millions)					
Securitization-related ^(a)					
Residential mortgage:					
Prime/Alt-A and option ARMs	\$76,789	\$ 4,209	\$ 57,543	\$226\$ 1,334	\$ 1,560
Subprime	21,542	—	19,903	76 —	76
Commercial and other ^(b)	101,265	107	71,464	509 2,064	2,573
Total	\$199,596	\$ 4,316	\$ 148,910	\$811\$ 3,398	\$ 4,209

(a) Excludes U.S. government agency securitizations and re-securitizations, which are not Firm-sponsored. See page 143 of this Note for information on the Firm's loan sales to U.S. government agencies.

(b) Consists of securities backed by commercial loans (predominantly real estate) and non-mortgage-related consumer receivables purchased from third parties.

(c) Excludes the following: retained servicing (see Note 14 for a discussion of MSRs); securities retained from loan sales to U.S. government agencies; interest rate and foreign exchange derivatives primarily used to manage interest rate and foreign exchange risks of securitization entities (See Note 4 for further information on derivatives); senior and subordinated securities of \$119 million and \$44 million, respectively, at June 30, 2017, and \$180 million and \$49 million, respectively, at December 31, 2016, which the Firm purchased in connection with CIB's secondary market-making activities.

(d) Includes interests held in re-securitization transactions.

As of June 30, 2017, and December 31, 2016, 63% and 61%, respectively, of the Firm's retained securitization interests, which are carried at fair value and include amounts required to be held pursuant to credit risk retention rules, were risk-rated "A" or better, on an S&P-equivalent basis. The retained interests in prime residential mortgages consisted of \$1.3 billion and \$1.5 billion of investment-grade and \$37 million and \$77 million of noninvestment-grade retained interests at June 30, 2017, and December 31, 2016, respectively. The retained interests in commercial and other securitizations trusts consisted of \$1.9 billion and \$2.4 billion of investment-grade and \$242 million and \$210 million of noninvestment-grade retained interests at June 30, 2017, and December 31, 2016, respectively.

Residential mortgage

The Firm securitizes residential mortgage loans originated by CCB, as well as residential mortgage loans purchased from third parties by either CCB or CIB. For a more detailed description of the Firm's involvement with residential mortgage securitizations, see Note 16 of JPMorgan Chase's 2016 Annual Report. See the table on page 142 of this Note for more information on the consolidated residential mortgage securitizations, and the table on the previous page of this Note for further information on interests held in nonconsolidated residential mortgage securitizations.

Commercial mortgages and other consumer securitizations

CIB originates and securitizes commercial mortgage loans, and engages in underwriting and trading activities involving the securities issued by securitization trusts. For a more detailed description of the Firm's involvement with commercial mortgage and other consumer securitizations, see Note 16 of JPMorgan Chase's 2016 Annual Report. See the table on page 142 of this Note for more information on the consolidated commercial mortgage securitizations, and the table on the previous page of this Note for further information on interests held in nonconsolidated securitizations.

Re-securitizations

For a more detailed description of JPMorgan Chase's participation in certain re-securitization transactions, see Note 16 of JPMorgan Chase's 2016 Annual Report.

The following table represents the transfers of securities to re-securitization VIEs.

(in millions)	Three months ended		Six months ended	
	June 30,		June 30,	
	2017	2016	2017	2016
Transfers of securities to VIEs				
Firm-sponsored private-label	\$—	\$144	\$—	\$144
Agency	\$1,462	\$3,494	\$4,686	\$6,350

The following table represents information on nonconsolidated re-securitization VIEs.

(in millions)	Nonconsolidated re-securitization VIEs	
	June 30, 2017	December 31, 2016
	Firm-sponsored private-label	
Assets held in VIEs with continuing involvement ^(a)	\$ 651	\$ 875
Interest in VIEs	31	43
Agency		
Interest in VIEs	1,876	1,986

(a) Includes the notional amount of interest-only securities.

As of June 30, 2017, and December 31, 2016, the Firm did not consolidate any Firm-sponsored private-label re-securitizations and agency re-securitizations.

Multi-seller conduits

For a more detailed description of JPMorgan Chase's principal involvement with Firm-administered multi-seller conduits, see Note 16 of JPMorgan Chase's 2016 Annual Report.

In the normal course of business, JPMorgan Chase makes markets in and invests in commercial paper issued by the Firm-administered multi-seller conduits. The Firm held \$22.1 billion and \$21.2 billion of the commercial paper issued by the Firm-administered multi-seller conduits at June 30, 2017, and December 31, 2016 respectively, which have been eliminated in consolidation. The Firm's investments reflect the Firm's funding needs and capacity and were not driven by market illiquidity. Other than the amounts required to be held pursuant to credit risk retention rules, the Firm is not obligated under any agreement to purchase the commercial paper issued by the Firm-administered

multi-seller conduits.

Deal-specific liquidity facilities, program-wide liquidity and credit enhancement provided by the Firm have been eliminated in consolidation. The Firm or the Firm-administered multi-seller conduits provide lending-related commitments to certain clients of the Firm-administered multi-seller conduits. The unfunded commitments were \$8.2 billion and \$7.4 billion at June 30, 2017, and December 31, 2016, respectively, and are reported as off-balance sheet lending-related commitments. For more information on off-balance sheet lending-related commitments, see Note 19.

VIEs associated with investor intermediation activities

Municipal bond vehicles

For a more detailed description of JPMorgan Chase's investor intermediation activities, see Note 16 of JPMorgan Chase's 2016 Annual Report.

The Firm's maximum exposure as a liquidity provider to nonconsolidated Firm-sponsored municipal bond VIEs at June 30, 2017 and December 31, 2016, was \$161 million and \$662 million, respectively.

VIEs sponsored by third parties

The Firm enters into transactions with VIEs structured by other parties. These include, for example, acting as a derivative counterparty, liquidity provider, investor, underwriter, placement agent, remarketing agent, trustee or custodian. These transactions are conducted at arm's-length, and individual credit decisions are based on the analysis of the specific VIE, taking into consideration the quality of the underlying assets. Where the Firm does not have the power to direct the activities of the VIE that most significantly impact the VIE's economic performance, or a variable interest that could potentially be significant, the Firm records and reports these positions on its Consolidated balance sheets in the same manner it would record and report positions in respect of any other third-party transaction.

Consolidated VIE assets and liabilities

The following table presents information on assets and liabilities related to VIEs consolidated by the Firm as of June 30, 2017, and December 31, 2016.

June 30, 2017 (in millions)	Assets			Total assets ^(e)	Liabilities		Total liabilities
	Trading assets	Loans	Other ^(d)		Beneficial interests in VIE assets ^(f)	Other ^(g)	
VIE program type ^(a)							
Firm-sponsored credit card trusts	\$—	\$41,997	\$ 711	\$42,708	\$25,732	\$ 17	\$ 25,749
Firm-administered multi-seller conduits	2	25,039	43	25,084	2,928	29	2,957
Municipal bond vehicles	2,534	—	6	2,540	1,693	2	1,695
Mortgage securitization entities ^(b)	90	3,976	72	4,138	406	273	679
Student loan securitization entities ^(c)	—	—	—	—	—	—	—
Other	62	—	1,987	2,049	139	106	245
Total	\$2,688	\$71,012	\$ 2,819	\$76,519	\$30,898	\$ 427	\$ 31,325

December 31, 2016 (in millions)	Assets			Total assets ^(e)	Liabilities		Total liabilities
	Trading assets	Loans	Other ^(d)		Beneficial interests in VIE assets ^(f)	Other ^(g)	
VIE program type ^(a)							
Firm-sponsored credit card trusts	\$—	\$45,919	\$ 790	\$46,709	\$31,181	\$ 18	\$ 31,199
Firm-administered multi-seller conduits	—	23,760	43	23,803	2,719	33	2,752
Municipal bond vehicles	2,897	—	8	2,905	2,969	2	2,971
Mortgage securitization entities ^(b)	143	4,246	103	4,492	468	313	781
Student loan securitization entities ^(c)	—	1,689	59	1,748	1,527	4	1,531
Other	145	—	2,318	2,463	183	120	303
Total	\$3,185	\$75,614	\$ 3,321	\$82,120	\$39,047	\$ 490	\$ 39,537

(a) Excludes intercompany transactions which are eliminated in consolidation.

(b) Includes residential and commercial mortgage securitizations as well as re-securitizations.

The Firm deconsolidated the student loan securitization entities in the second quarter of 2017 as it no longer had a controlling financial interest in these entities as a result of the sale of the student loan portfolio. For additional information see Note 23.

(c) Includes assets classified as cash and other assets on the Consolidated balance sheets.

The assets of the consolidated VIEs included in the program types above are used to settle the liabilities of those entities. The difference between total assets and total liabilities recognized for consolidated VIEs represents the Firm's interest in the consolidated VIEs for each program type.

The interest-bearing beneficial interest liabilities issued by consolidated VIEs are classified in the line item on the Consolidated balance sheets titled, "Beneficial interests issued by consolidated VIEs." The holders of these beneficial interests do not have recourse to the general credit of JPMorgan Chase. Included in beneficial interests in VIE assets are long-term beneficial interests of \$26.3 billion and \$33.4 billion at June 30, 2017, and December 31, 2016, respectively. The maturities of the long-term beneficial interests as of June 30, 2017, were as follows: \$10.6 billion under one year, \$14.5 billion between one and five years, and \$1.2 billion over five years.

(g) Includes liabilities classified as accounts payable and other liabilities on the Consolidated balance sheets.

Loan securitizations

The Firm has securitized and sold a variety of loans, including residential mortgage, credit card, student and commercial (primarily related to real estate) loans. For a further description of the Firm's accounting policies regarding securitizations, see Note 16 of JPMorgan Chase's 2016 Annual Report.

Securitization activity

The following table provides information related to the Firm's securitization activities for the three and six months ended June 30, 2017 and 2016, related to assets held in Firm-sponsored securitization entities that were not consolidated by the Firm, and where sale accounting was achieved based on the accounting rules in effect at the time of the securitization.

(in millions)	Three months ended June 30,				Six months ended June 30,			
	2017		2016		2017		2016	
	Residential mortgage ^(c)	Commercial and other ^(d)	Residential mortgage ^(c)	Commercial and other ^(d)	Residential mortgage ^(c)	Commercial and other ^(d)	Residential mortgage ^(c)	Commercial and other ^(d)
Principal securitized	\$1,020	\$1,997	\$413	\$1,034	\$2,049	\$3,312	\$413	\$2,358
All cash flows during the period ^(a) :								
Proceeds from loan sales as securities								
Level 2	\$1,048	\$2,029	\$413	\$1,062	\$2,083	\$3,377	\$413	\$2,373
Level 3	\$—	\$—	\$—	\$2	\$—	\$—	\$—	\$2
Total proceeds received from loan sales	\$1,048	\$2,029	\$413	\$1,064	\$2,083	\$3,377	\$413	\$2,375
Servicing fees collected	134	1	111	1	267	2	223	1
Purchases of previously transferred financial assets (or the underlying collateral) ^(b)	1	—	—	—	1	—	37	—
Cash flows received on interests	128	206	111	307	259	541	205	580

(a) Excludes re-securitization transactions.

(b) Includes cash paid by the Firm to reacquire assets from off-balance sheet, nonconsolidated entities – for example, loan repurchases due to representation and warranties and servicer clean-up calls.

(c) Includes prime, Alt-A, subprime, and option ARMs. Excludes certain loan securitization transactions entered into with Ginnie Mae, Fannie Mae and Freddie Mac.

(d) Includes commercial mortgage and student loan securitizations.

Loans and excess MSR sold to U.S. government-sponsored enterprises, loans in securitization transactions pursuant to Ginnie Mae guidelines, and other third-party-sponsored securitization entities

In addition to the amounts reported in the securitization activity tables above, the Firm, in the normal course of business, sells originated and purchased mortgage loans and certain originated excess MSR on a nonrecourse basis, predominantly to U.S. government-sponsored enterprises (“U.S. GSEs”). These loans and excess MSR are sold primarily for the purpose of securitization by the U.S. GSEs, who provide certain guarantee provisions (e.g., credit enhancement of the loans). The Firm also sells loans into securitization transactions pursuant to Ginnie Mae guidelines; these loans are typically insured or guaranteed by another U.S. government agency. The Firm does not consolidate the securitization vehicles underlying these transactions as it is not the primary beneficiary. For a limited number of loan sales, the Firm is obligated to share a portion of the credit risk associated with the sold loans with the purchaser. See Note 19 of this Form 10-Q, and Note 29 of JPMorgan Chase's 2016 Annual Report for additional information about the Firm's loan sales- and securitization-related indemnifications. See Note 14 for additional information about the impact of the Firm's sale of certain excess MSR. The following table summarizes the activities related to loans sold to the U.S. GSEs, loans in securitization transactions pursuant to Ginnie Mae guidelines, and other third-party-sponsored securitization entities.

(in millions)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Carrying value of loans sold	\$11,711	\$8,824	\$28,880	\$17,836
Proceeds received from loan sales as cash	4	234	13	238
Proceeds received from loan sales as securities ^(a)	11,602	8,548	28,589	17,503
Total proceeds received from loan sales ^(b)	\$11,606	\$8,782	\$28,602	\$17,741

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Gains on loan sales^{(c)(d)} \$42 \$64 \$73 \$114

(a) Predominantly includes securities from U.S. GSEs and Ginnie Mae that are generally sold shortly after receipt.

(b) Excludes the value of MSRs retained upon the sale of loans.

(c) Gains on loan sales include the value of MSRs.

(d) The carrying value of the loans accounted for at fair value approximated the proceeds received upon loan sale.

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Options to repurchase delinquent loans

In addition to the Firm's obligation to repurchase certain loans due to material breaches of representations and warranties as discussed in Note 20, the Firm also has the option to repurchase delinquent loans that it services for Ginnie Mae loan pools, as well as for other U.S. government agencies under certain arrangements. The Firm typically elects to repurchase delinquent loans from Ginnie Mae loan pools as it continues to service them and/or manage the foreclosure process in accordance with the applicable requirements, and such loans continue to be insured or guaranteed. When the Firm's repurchase option becomes exercisable, such loans must be reported on the Consolidated balance sheets as a loan with a corresponding liability. For additional information, refer to Note 11 of this Form 10-Q and Note 14 of JPMorgan Chase's 2016 Annual Report.

The following table presents loans the Firm repurchased or had an option to repurchase, real estate owned, and foreclosed government-guaranteed residential mortgage loans recognized on the Firm's Consolidated balance sheets as of June 30, 2017 and December 31, 2016. Substantially all of these loans and real estate are insured or guaranteed by U.S. government agencies.

(in millions)	June 30, 2017	Dec 31, 2016
Loans repurchased or option to repurchase ^(a)	\$8,744	\$9,556
Real estate owned	105	142
Foreclosed government-guaranteed residential mortgage loans ^(b)	762	1,007

(a) Predominantly all of these amounts relate to loans that have been repurchased from Ginnie Mae loan pools.

(b) Relates to voluntary repurchases of loans, which are included in accrued interest and accounts receivable.

Loan delinquencies and liquidation losses

The table below includes information about components of nonconsolidated securitized financial assets held in Firm-sponsored private-label securitization entities, in which the Firm has continuing involvement, and delinquencies as of June 30, 2017, and December 31, 2016.

(in millions)	Securitized assets		90 days past due		Liquidation losses			
					Three months ended June 30,		Six months ended June 30,	
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016	2017	2016	2017	2016
Securitized loans								
Residential mortgage:								
Prime / Alt-A & option ARMs	\$54,473	\$57,543	\$5,385	\$6,169	\$226	\$318	\$438	\$658
Subprime	18,758	19,903	3,662	4,186	201	296	376	618
Commercial and other	65,915	71,464	1,632	1,755	5	93	57	486
Total loans securitized	\$139,146	\$148,910	\$10,679	\$12,110	\$432	\$707	\$871	\$1,762

Note 14 – Goodwill and Mortgage servicing rights

For a discussion of the accounting policies related to goodwill and mortgage servicing rights, see Note 17 of JPMorgan Chase's 2016 Annual Report.

Goodwill

The following table presents goodwill attributed to the business segments.

(in millions)	June 30, December 31,	
	2017	2016
Consumer & Community Banking	\$30,806	\$ 30,797
Corporate & Investment Bank	6,775	6,772
Commercial Banking	2,861	2,861
Asset & Wealth Management	6,858	6,858
Total goodwill	\$47,300	\$ 47,288

The following table presents changes in the carrying amount of goodwill.

(in millions)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Balance at beginning of period	\$47,292	\$47,310	\$47,288	\$47,325
Changes during the period from:				
Dispositions ^(a)	—	—	—	(71)
Other ^(b)	8	(7)	12	49
Balance at June 30,	\$47,300	\$47,303	\$47,300	\$47,303

(a) During the six months ended June 30, 2016, represents AWM goodwill, which was disposed of as part of AWM sales completed in March 2016.

(b) Includes foreign currency translation adjustments and other tax-related adjustments.

Goodwill Impairment testing

For further description of the Firm's goodwill impairment testing, including the primary method used to estimate the fair value of the reporting units, and the assumptions used in the goodwill impairment test, see Impairment testing on pages 240–241 of JPMorgan Chase's 2016 Annual Report.

Goodwill was not impaired at June 30, 2017, or December 31, 2016, nor was goodwill written off due to impairment during the six months ended June 30, 2017 or 2016.

Declines in business performance, increases in credit losses, increases in equity capital requirements, as well as deterioration in economic or market conditions, estimates of adverse regulatory or legislative changes or increases in the estimated market cost of equity, could cause the estimated fair values of the Firm's reporting units or their associated goodwill to decline in the future, which could result in a material impairment charge to earnings in a future period related to some portion of the associated goodwill.

Mortgage servicing rights

MSRs represent the fair value of expected future cash flows for performing servicing activities for others. The fair value considers estimated future servicing fees and ancillary revenue, offset by estimated costs to service the loans, and generally declines over time as net servicing cash flows are received, effectively amortizing the MSR asset against contractual servicing and ancillary fee income. MSRs are either purchased from third parties or recognized upon sale or securitization of mortgage loans if servicing is retained. For a further description of the MSR asset, interest rate risk management, and the valuation of MSRs, see Note 17 of JPMorgan Chase's 2016 Annual Report and Note 2 of this Form 10-Q.

The following table summarizes MSR activity for the three and six months ended June 30, 2017 and 2016.

(in millions, except where otherwise noted)	As of or for the three months ended June 30,		As of or for the six months ended June 30,	
	2017	2016	2017	2016
Fair value at beginning of period	\$6,079	\$5,658	\$6,096	\$6,608
MSR activity:				
Originations of MSRs	154	113	371	220
Purchase of MSRs	—	—	—	—
Disposition of MSRs ^(a)	(67)	(3)	(138)	(67)
Net additions	87	110	233	153
Changes due to collection/realization of expected cash flows	(213)	(239)	(419)	(480)
Changes in valuation due to inputs and assumptions:				
Changes due to market interest rates and other ^(b)	(178)	(433)	(121)	(1,195)
Changes in valuation due to other inputs and assumptions:				
Projected cash flows (e.g., cost to service)	2	(14)	14	(7)
Discount rates	(7)	—	(19)	7
Prepayment model changes and other ^(c)	(17)	(10)	(31)	(14)
Total changes in valuation due to other inputs and assumptions	(22)	(24)	(36)	(14)
Total changes in valuation due to inputs and assumptions	(200)	(457)	(157)	(1,209)
Fair value at June 30,	\$5,753	\$5,072	\$5,753	\$5,072
Change in unrealized gains/(losses) included in income related to MSRs held at June 30,	\$(200)	\$(457)	\$(157)	\$(1,209)
Contractual service fees, late fees and other ancillary fees included in income	477	545	964	1,106
Third-party mortgage loans serviced at June 30, (in billions)	569	632	569	632
Net servicer advances at June 30, (in billions) ^(d)	4.1	5.6	4.1	5.6

Includes excess MSRs transferred to agency-sponsored trusts in exchange for stripped mortgage backed securities

(a) ("SMBS"). In each transaction, a portion of the SMBS was acquired by third parties at the transaction date; the Firm acquired the remaining balance of those SMBS as trading securities.

(b) Represents both the impact of changes in estimated future prepayments due to changes in market interest rates, and the difference between actual and expected prepayments.

(c) Represents changes in prepayments other than those attributable to changes in market interest rates.

Represents amounts the Firm pays as the servicer (e.g., scheduled principal and interest, taxes and insurance), which will generally be reimbursed within a short period of time after the advance from future cash flows from the trust or the underlying loans. The Firm's credit risk associated with these servicer advances is minimal because

(d) reimbursement of the advances is typically senior to all cash payments to investors. In addition, the Firm maintains the right to stop payment to investors if the collateral is insufficient to cover the advance. However, certain of these servicer advances may not be recoverable if they were not made in accordance with applicable rules and agreements.

The following table presents the components of mortgage fees and related income (including the impact of MSR risk management activities) for the three and six months ended June 30, 2017 and 2016.

(in millions)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
CCB mortgage fees and related income				
Net production revenue	\$ 152	\$ 261	\$ 293	\$ 423
Net mortgage servicing revenue:				
Operating revenue:				
Loan servicing revenue	518	593	1,040	1,209
Changes in MSR asset fair value due to collection/realization of expected cash flows	(212)	(238)	(417)	(478)
Total operating revenue	306	355	623	731
Risk management:				
Changes in MSR asset fair value due to market interest rates and other ^(a)	(178)	(433)	(121)	(1,195)
Other changes in MSR asset fair value due to other inputs and assumptions in model ^(b)	(22)	(24)	(36)	(14)
Change in derivative fair value and other	143	530	48	1,411
Total risk management	(57)	73	(109)	202
Total net mortgage servicing revenue	249	428	514	933
Total CCB mortgage fees and related income	401	689	807	1,356
All other	3	—	3	—
Mortgage fees and related income	\$404	\$689	\$810	\$1,356

(a) Represents both the impact of changes in estimated future prepayments due to changes in market interest rates, and the difference between actual and expected prepayments.

(b) Represents the aggregate impact of changes in model inputs and assumptions such as projected cash flows (e.g., cost to service), discount rates and changes in prepayments other than those attributable to changes in market interest rates (e.g., changes in prepayments due to changes in home prices).

The table below outlines the key economic assumptions used to determine the fair value of the Firm's MSRs at June 30, 2017, and December 31, 2016, and outlines the sensitivities of those fair values to immediate adverse changes in those assumptions, as defined below.

(in millions)

	June 30, 2017	Dec 31, 2016
Weighted-average prepayment rate	9.62 %	9.41 %
assumption ("CPR")		
Impact on fair value of 10% adverse	\$ (21)	\$ (231)

change
 Impact
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 CPR: Constant prepayment rate.

The sensitivity analysis in the preceding table is hypothetical and should be used with caution. Changes in fair value based on variation in assumptions generally cannot be easily extrapolated, because the relationship of the change in the assumptions to the change in fair value are often highly interrelated and may not be linear. In this table, the effect that a change in a particular assumption may have on the fair value is calculated without changing any other assumption. In reality, changes in one factor may result in changes in another, which could either magnify or counteract the impact of the initial change.

Note 15 – Deposits

For further discussion on deposits, see Note 19 of JPMorgan Chase’s 2016 Annual Report.

At June 30, 2017, and December 31, 2016, noninterest-bearing and interest-bearing deposits were as follows.

(in millions)	June 30, 2017	December 31, 2016
U.S. offices		
Noninterest-bearing	\$ 394,921	\$ 400,831
Interest-bearing (included \$14,285 and \$12,245 at fair value) ^(a)	781,709	737,949
Total deposits in U.S. offices	1,176,630	1,138,780
Non-U.S. offices		
Noninterest-bearing	17,152	14,764
Interest-bearing (included \$3,469 and \$1,667 at fair value) ^(a)	245,691	221,635
Total deposits in non-U.S. offices	262,843	236,399
Total deposits	\$ 1,439,473	\$ 1,375,179

(a) Includes structured notes classified as deposits for which the fair value option has been elected. For further discussion, see Note 3 of JPMorgan Chase’s 2016 Annual Report.

Note 16 – Earnings per share

For a discussion of the computation of basic and diluted earnings per share (“EPS”), see Note 24 of JPMorgan Chase’s 2016 Annual Report. The following table presents the calculation of basic and diluted EPS for the three and six months ended June 30, 2017 and 2016.

(in millions, except per share amounts)	Three months ended June 30,		Six months ended June 30,	
	2017	2016	2017	2016
Basic earnings per share				
Net income	\$ 7,029	\$ 6,200	\$ 13,477	\$ 11,720
Less: Preferred stock dividends	411	411	823	823
Net income applicable to common equity	6,618	5,789	12,654	10,897
Less: Dividends and undistributed earnings allocated to participating securities ^(a)	63	61	123	124
Net income applicable to common stockholders ^(a)	\$ 6,555	\$ 5,728	\$ 12,531	\$ 10,773
Total weighted-average basic shares outstanding ^(a)	3,574.13	3,675.5	3,587.9	3,693.0
Net income per share	\$ 1.83	\$ 1.56	\$ 3.49	\$ 2.92
Diluted earnings per share				
Net income applicable to common stockholders ^(a)	\$ 6,555	\$ 5,728	\$ 12,531	\$ 10,773
Total weighted-average basic shares outstanding ^(a)	3,574.13	3,675.5	3,587.9	3,693.0
Add: Employee stock options, SARs, warrants and unvested PSUs	24.9	30.7	26.8	28.9
Total weighted-average diluted shares outstanding ^(a)	3,599.03	3,706.2	3,614.7	3,721.9
Net income per share	\$ 1.82	\$ 1.55	\$ 3.47	\$ 2.89

(a) The prior period amounts have been revised to conform with the current period presentation. The revision had no impact on the Firm’s reported earnings per share.

Note 17 – Accumulated other comprehensive income/(loss)

AOCI includes the after-tax change in unrealized gains and losses on investment securities, foreign currency translation adjustments (including the impact of related derivatives), cash flow hedging activities, net loss and prior service costs/(credit) related to the Firm's defined benefit pension and OPEB plans.

As of or for the three months ended June 30, 2017 (in millions)	Unrealized gains on investment securities ^(b)	Translation adjustments, net of hedges	Cash flow hedges	Defined benefit pension and OPEB plans	DVA on fair value option elected liabilities	Accumulated other comprehensive income/(loss)
Balance at April 1, 2017	\$ 1,762	\$ (157)	\$ (9)	\$(2,274)	\$(245)	\$(923)
Net change	457	—	53	19	2	531
Balance at June 30, 2017	\$ 2,219	\$ (157)	\$ 44	\$(2,255)	\$(243)	\$(392)
As of or for the three months ended June 30, 2016 (in millions)	Unrealized gains on investment securities ^(b)	Translation adjustments, net of hedges	Cash flow hedges	Defined benefit pension and OPEB plans	DVA on fair value option elected liabilities	Accumulated other comprehensive income/(loss)
Balance at April 1, 2016	\$ 3,054	\$ (164)	\$(114)	\$(2,206)	\$ 212	\$ 782
Net change	867	3	(87)	56	(3)	836
Balance at June 30, 2016	\$ 3,921	\$ (161)	\$(201)	\$(2,150)	\$ 209	\$ 1,618
As of or for the six months ended June 30, 2017 (in millions)	Unrealized gains/(losses) on investment securities ^(b)	Translation adjustments, net of hedges	Cash flow hedges	Defined benefit pension and OPEB plans	DVA on fair value option elected liabilities	Accumulated other comprehensive income/(loss)
Balance at January 1, 2017	\$ 1,524	\$ (164)	\$(100)	\$(2,259)	\$(176)	\$(1,175)
Net change	695	7	144	4	(67)	783
Balance at June 30, 2017	\$ 2,219	\$ (157)	\$ 44	\$(2,255)	\$(243)	\$(392)
As of or for the six months ended June 30, 2016 (in millions)	Unrealized gains/(losses) on investment securities ^(b)	Translation adjustments, net of hedges	Cash flow hedges	Defined benefit pension and OPEB plans	DVA on fair value option elected liabilities	Accumulated other comprehensive income/(loss)
Balance at January 1, 2016	\$ 2,629	\$ (162)	\$(44)	\$(2,231)	NA	\$ 192
Cumulative effect of change in accounting principle ^(a)	—	—	—	—	\$ 154	154
Net change	1,292	1	(157)	81	\$ 55	1,272
Balance at June 30, 2016	\$ 3,921	\$ (161)	\$(201)	\$(2,150)	\$ 209	\$ 1,618

Effective January 1, 2016, the Firm adopted new accounting guidance related to the recognition and measurement of financial liabilities where the fair value option has been elected. This guidance requires the portion of the total change in fair value caused by changes in the Firm's own credit risk (DVA) to be presented separately in OCI; previously these amounts were recognized in net income.

(a)

(b)

Represents the after-tax difference between the fair value and amortized cost of securities accounted for as AFS, including net unamortized unrealized gains and losses related to AFS securities transferred to HTM.

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The following table presents the pre-tax and after-tax changes in the components of OCI.

Three months ended June 30, (in millions)	2017			2016		
	Pre-tax	Tax effect	After-tax	Pre-tax	Tax effect	After-tax
Unrealized gains/(losses) on investment securities:						
Net unrealized gains/(losses) arising during the period	\$ 695	\$(259)	\$ 436	\$ 1,408	\$(528)	\$ 880
Reclassification adjustment for realized (gains)/losses included in net income ^(a)	34	(13)	21	(21)	8	(13)
Net change	729	(272)	457	1,387	(520)	867
Translation adjustments ^(b) :						
Translation	317	(117)	200	(10)	4	(6)
Hedges	(319)	119	(200)	17	(8)	9
Net change	(2)	2	—	7	(4)	3
Cash flow hedges:						
Net unrealized gains/(losses) arising during the period	23	(10)	13	(187)	70	(117)
Reclassification adjustment for realized (gains)/losses included in net income ^(c)	65	(25)	40	48	(18)	30
Net change	88	(35)	53	(139)	52	(87)
Defined benefit pension and OPEB plans:						
Net gains/(losses) arising during the period	6	(2)	4	8	(3)	5
Reclassification adjustments included in net income ^(d) :						
Amortization of net loss	62	(23)	39	64	(25)	39
Prior service costs/(credits)	(9)	4	(5)	(9)	3	(6)
Foreign exchange and other	(25)	6	(19)	28	(10)	18
Net change	34	(15)	19	91	(35)	56
DVA on fair value option elected liabilities, net change:	\$ 2	\$—	\$ 2	\$(4)	\$ 1	\$(3)
Total other comprehensive income/(loss)	\$ 851	\$(320)	\$ 531	\$ 1,342	\$(506)	\$ 836

Six months ended June 30, (in millions)	2017			2016		
	Pre-tax	Tax effect	After-tax	Pre-tax	Tax effect	After-tax
Unrealized gains/(losses) on investment securities:						
Net unrealized gains/(losses) arising during the period	\$ 1,062	\$(390)	\$ 672	\$ 2,140	\$(803)	\$ 1,337
Reclassification adjustment for realized (gains)/losses included in net income ^(a)	37	(14)	23	(72)	27	(45)
Net change	1,099	(404)	695	2,068	(776)	1,292
Translation adjustments ^(b) :						
Translation	899	(342)	557	579	(216)	363
Hedges	(875)	325	(550)	(573)	211	(362)
Net change	24	(17)	7	6	(5)	1
Cash flow hedges:						
Net unrealized gains/(losses) arising during the period	82	(31)	51	(354)	133	(221)
Reclassification adjustment for realized (gains)/losses included in net income ^(c)	150	(57)	93	103	(39)	64
Net change	232	(88)	144	(251)	94	(157)
Defined benefit pension and OPEB plans:						

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Net gains/(losses) arising during the period	(52)	19	(33)	(15)	6	(9)
Reclassification adjustments included in net income ^(d) :						
Amortization of net loss	124	(46)	78	128	(49)	79
Prior service costs/(credits)	(18)	7	(11)	(18)	7	(11)
Settlement (gain)/loss	(3)	1	(2)	—	—	—
Foreign exchange and other	(32)	4	(28)	34	(12)	22
Net change	19	(15)	4	129	(48)	81
DVA on fair value option elected liabilities, net change:	\$(105)	\$38	\$(67)	\$88	\$(33)	\$55
Total other comprehensive income/(loss)	\$1,269	\$(486)	\$783	\$2,040	\$(768)	\$1,272

(a) The pre-tax amount is reported in securities gains/(losses) in the Consolidated statements of income.

Reclassifications of pre-tax realized gains/(losses) on translation adjustments and related hedges are reported in (b) other income/expense in the Consolidated statements of income. The amounts were not material for the periods presented.

(c) The pre-tax amounts are predominantly recorded in net interest income in the Consolidated statements of income.

(d) The pre-tax amount is reported in compensation expense in the Consolidated statements of income.

Note 18 – Regulatory capital

The Federal Reserve establishes capital requirements, including well-capitalized standards, for the consolidated financial holding company. The Office of the Comptroller of the Currency (“OCC”) establishes similar minimum capital requirements and standards for the Firm’s national banks, including JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A.

Capital rules under Basel III establish minimum capital ratios and overall capital adequacy standards for large and internationally active U.S. bank holding companies and banks, including the Firm and its IDI subsidiaries. Basel III sets forth two comprehensive approaches for calculating RWA: a standardized approach (“Basel III Standardized”), and an advanced approach (“Basel III Advanced”). Certain of the requirements of Basel III are subject to phase-in periods that began on January 1, 2014 and continue through the end of 2018 (“transitional period”).

There are three categories of risk-based capital under the Basel III Transitional rules: CET1 capital, Tier 1 capital and Tier 2 capital. CET1 capital predominantly includes common stockholders’ equity (including capital for AOCI related to debt and equity securities classified as AFS as well as for defined benefit pension and OPEB plans), less certain deductions for goodwill, MSRs and deferred tax assets that arise from NOL and tax credit carryforwards. Tier 1 capital predominantly consists of CET1 capital as well as perpetual preferred stock. Tier 2 capital includes long-term debt qualifying as Tier 2 and qualifying allowance for credit losses. Total capital is Tier 1 capital plus Tier 2 capital.

The following tables present the risk-based and leverage-based capital metrics for JPMorgan Chase and its significant national bank subsidiaries under both the Basel III Standardized Transitional and Basel III Advanced Transitional approaches at June 30, 2017, and December 31, 2016.

(in millions, except ratios)	JPMorgan Chase & Co.			
	Basel III Standardized Transitional		Basel III Advanced Transitional	
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016
Regulatory capital				
CET1 capital	\$186,942	\$182,967	\$186,942	\$182,967
Tier 1 capital ^(a)	212,353	208,112	212,353	208,112
Total capital	243,061	239,553	233,345	228,592
Assets				
Risk-weighted	1,478,816	1,464,981	1,459,196	1,476,915
Adjusted average ^(b)	2,512,120	2,484,631	2,512,120	2,484,631
Capital ratios ^(c)				
CET1	12.6	% 12.5	% 12.8	% 12.4
Tier 1 ^(a)	14.4	14.2	14.6	14.1
Total	16.4	16.4	16.0	15.5
Tier 1 leverage ^(d)	8.5	8.4	8.5	8.4

(in millions, except ratios)	JPMorgan Chase Bank, N.A.			
	Basel III Standardized Transitional		Basel III Advanced Transitional	
	Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016
Regulatory capital				
CET1 capital	\$184,141	\$179,319	\$184,141	\$179,319
Tier 1 capital ^(a)	184,141	179,341	184,141	179,341
Total capital	195,851	191,662	189,381	184,637

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Assets				
Risk-weighted	1,304,939	1,293,203	1,245,670	1,262,613
Adjusted average ^(b)	2,107,302	2,088,851	2,107,302	2,088,851

Capital ratios ^(c)								
CET1	14.1	%	13.9	%	14.8	%	14.2	%
Tier 1 ^(a)	14.1		13.9		14.8		14.2	
Total	15.0		14.8		15.2		14.6	
Tier 1 leverage ^(d)	8.7		8.6		8.7		8.6	

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		Chase Bank USA, N.A.			
		Basel III Standardized		Basel III Advanced	
		Transitional		Transitional	
(in millions, except ratios)		Jun 30, 2017	Dec 31, 2016	Jun 30, 2017	Dec 31, 2016
Regulatory capital					
CET1 capital		\$19,647	\$16,784	\$19,647	\$16,784
Tier 1 capital ^(a)		19,647	16,784	19,647	16,784
Total capital		25,684	22,862	24,297	21,434
Assets					
Risk-weighted		109,002	112,297	194,110	186,378
Adjusted average ^(b)		122,880	120,304	122,880	120,304
Capital ratios^(c)					
CET1		18.0	% 14.9	% 10.1	% 9.0
Tier 1 ^(a)		18.0	14.9	10.1	9.0
Total		23.6	20.4	12.5	11.5
Tier 1 leverage ^(d)		16.0	14.0	16.0	14.0

(a) Includes the deduction associated with the permissible holdings of covered funds (as defined by the Volcker Rule) acquired after December 31, 2013. The deduction was not material as of June 30, 2017 and December 31, 2016.

Adjusted average assets, for purposes of calculating the Tier 1 leverage ratio, includes total quarterly average assets (b) adjusted for unrealized gains/(losses) on AFS securities, less deductions for goodwill and other intangible assets, defined benefit pension plan assets, and deferred tax assets related to NOL and tax credit carryforwards.

For each of the risk-based capital ratios, the capital adequacy of the Firm and its national bank subsidiaries is (c) evaluated against the lower of the two ratios as calculated under Basel III approaches (Standardized or Advanced) as required by the Collins Amendment of the Dodd-Frank Act (the "Collins Floor").

(d) The Tier 1 leverage ratio is not a risk-based measure of capital. This ratio is calculated by dividing Tier 1 capital by adjusted average assets.

Under the risk-based capital guidelines of the Federal Reserve, JPMorgan Chase is required to maintain minimum ratios of CET1, Tier 1 and Total capital to RWA, as well as a minimum leverage ratio (which is defined as Tier 1 capital divided by adjusted quarterly average assets). Failure to meet these minimum requirements could cause the Federal Reserve to take action. National bank subsidiaries also are subject to these capital requirements by their respective primary regulators. The following table presents the minimum ratios to which the Firm and its national bank subsidiaries are subject as of June 30, 2017.

Capital ratios	Minimum capital ratios		Well-capitalized ratios	
	BHC ^{(a)(e)}	IDI ^{(b)(e)}	BHC ^(c)	IDI ^(d)
CET1	7.50	% 5.75	% —	% 6.5
Tier 1	9.00	7.25	6.0	8.0
Total	11.00	9.25	10.0	10.0
Tier 1 leverage	4.0	4.0	—	5.0

Note: The table above is as defined by the regulations issued by the Federal Reserve, OCC and FDIC and to which the Firm and its national bank subsidiaries are subject.

(a) Represents the Transitional minimum capital ratios applicable to the Firm under Basel III at June 30, 2017. At June 30, 2017, the CET1 minimum capital ratio includes 1.25% resulting from the phase in of the Firm's 2.5% capital

conservation buffer and 1.75%, resulting from the phase in of the Firm's 3.5% GSIB surcharge.

Represents requirements for JPMorgan Chase's banking subsidiaries. The CET1 minimum capital ratio includes

- (b) 1.25% resulting from the phase in of the 2.5% capital conservation buffer that is applicable to the banking subsidiaries. The banking subsidiaries are not subject to the GSIB surcharge.
- (c) Represents requirements for bank holding companies pursuant to regulations issued by the Federal Reserve.
- (d) Represents requirements for bank subsidiaries pursuant to regulations issued under the FDIC Improvement Act.
- (e) For the period ended December 31, 2016 the CET1, Tier 1, Total and Tier 1 leverage minimum capital ratios applicable to the Firm were 6.25%, 7.75%, 9.75% and 4.0% and the CET1, Tier 1, Total and Tier 1 leverage minimum capital ratios applicable to the Firm's banking subsidiaries were 5.125%, 6.625%, 8.625% and 4.0% respectively. As of June 30, 2017, and December 31, 2016, JPMorgan Chase and all of its banking subsidiaries were well-capitalized and met all capital requirements to which each was subject.

Note 19 – Off-balance sheet lending-related financial instruments, guarantees, and other commitments

JPMorgan Chase provides lending-related financial instruments (e.g., commitments and guarantees) to meet the financing needs of its customers. The contractual amount of these financial instruments represents the maximum possible credit risk to the Firm should the counterparty draw upon the commitment or the Firm be required to fulfill its obligation under the guarantee, and should the counterparty subsequently fail to perform according to the terms of the contract. Most of these commitments and guarantees are refinanced, extended, cancelled, or expire without being drawn upon or a default occurring. As a result, the total contractual amount of these instruments is not, in the Firm's view, representative of its expected future credit exposure or funding requirements. For further discussion of lending-related commitments and guarantees, and the Firm's related accounting policies, see Note 29 of JPMorgan Chase's 2016 Annual Report.

To provide for probable credit losses inherent in wholesale and certain consumer lending-related commitments, an allowance for credit losses on lending-related commitments is maintained. See Note 12 for further information regarding the allowance for credit losses on lending-related commitments.

The following table summarizes the contractual amounts and carrying values of off-balance sheet lending-related financial instruments, guarantees and other commitments at June 30, 2017, and December 31, 2016. The amounts in the table below for credit card and home equity lending-related commitments represent the total available credit for these products. The Firm has not experienced, and does not anticipate, that all available lines of credit for these products will be utilized at the same time. The Firm can reduce or cancel credit card lines of credit by providing the borrower notice or, in some cases as permitted by law, without notice. In addition, the Firm typically closes credit card lines when the borrower is 60 days or more past due. The Firm may reduce or close HELOCs when there has been a demonstrable decline in the creditworthiness of the borrower.

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Off-balance sheet lending-related financial instruments, guarantees and other commitments

By remaining maturity (in millions)	Contractual amount					Carrying value ^(h)		
	June 30, 2017					Dec 31, 2016	Jun 30, 2017	Dec 31, 2016
	Expires in 1 year or less	Expires after 1 year through 3 years	Expires after 3 years through 5 years	Expires after 5 years	Total	Total		
Lending-related								
Consumer, excluding credit card:								
Home equity	\$3,927	\$1,929	\$1,287	\$14,169	\$21,312	\$21,714	\$11	\$12
Residential mortgage ^{(a)(b)}	14,828	—	—	11	14,839	11,882	—	—
Auto	7,174	996	173	78	8,421	8,468	2	2
Consumer & Business Banking ^(b)	12,023	938	111	518	13,590	12,733	19	12
Total consumer, excluding credit card	\$37,952	\$3,863	\$1,571	\$14,776	\$58,162	\$54,797	\$32	\$26
Credit card	\$576,264	\$—	\$—	\$—	\$576,264	\$553,891	\$—	\$—
Total consumer ^(c)	\$614,216	\$3,863	\$1,571	\$14,776	\$634,426	\$608,688	\$32	\$26
Wholesale:								
Other unfunded commitments to extend credit ^(d)	\$70,287	\$112,057	\$137,158	\$10,585	\$330,087	\$328,497	\$904	\$905
Standby letters of credit and other financial guarantees ^(d)	15,264	9,930	6,988	1,140	33,322	35,947	621	586
Other letters of credit ^(d)	2,754	233	101	1	3,089	3,570	4	2
Total wholesale ^(e)	\$88,305	\$122,220	\$144,247	\$11,726	\$366,498	\$368,014	\$1,529	\$1,493
Total lending-related	\$702,521	\$126,083	\$145,818	\$26,502	\$1,000,924	\$976,702	\$1,561	\$1,519
Other guarantees and commitments								
Securities lending indemnification agreements and guarantees ^(f)	\$161,004	\$—	\$—	\$—	\$161,004	\$137,209	\$—	\$—
Derivatives qualifying as guarantees	3,569	208	10,606	39,779	54,162	51,966	378	80
Unsettled reverse repurchase and securities borrowing agreements	98,140	—	—	—	98,140	50,722	—	—
Unsettled repurchase and securities lending agreements	80,583	—	—	—	80,583	26,948	—	—
Loan sale and securitization-related indemnifications:								
Mortgage repurchase liability	NA	NA	NA	NA	NA	NA	129	133
Loans sold with recourse	NA	NA	NA	NA	1,814	2,730	49	64
Other guarantees and commitments ^(g)	459	2,484	1,012	1,570	5,525	5,715	(100)	(118)

(a) Includes certain commitments to purchase loans from correspondents.

(b) Certain loan portfolios have been reclassified. The prior period amounts have been revised to conform with the current period presentation.

(c) Predominantly all consumer lending-related commitments are in the U.S.

At June 30, 2017, and December 31, 2016, reflected the contractual amount net of risk participations totaling \$361 million and \$328 million, respectively, for other unfunded commitments to extend credit; \$10.7 billion and \$11.1

(d) billion, respectively, for standby letters of credit and other financial guarantees; and \$334 million and \$265 million, respectively, for other letters of credit. In regulatory filings with the Federal Reserve these commitments are shown gross of risk participations.

(e)

At June 30, 2017, and December 31, 2016, the U.S. portion of the contractual amount of total wholesale lending-related commitments was 77% and 79%, respectively.

(f) At June 30, 2017, and December 31, 2016, collateral held by the Firm in support of securities lending indemnification agreements was \$169.2 billion and \$143.2 billion, respectively. Securities lending collateral primarily consists of cash and securities issued by governments that are members of the Organisation for Economic Co-operation and Development and U.S. government agencies.

(g) Included unfunded commitments of \$41 million and \$48 million at June 30, 2017, and December 31, 2016, respectively to third-party private equity funds; and \$918 million and \$1.0 billion, at June 30, 2017, and December 31, 2016, respectively, to other equity investments. These commitments included \$30 million and \$34 million, respectively, related to investments that are generally fair valued at net asset value as discussed in Note 2. In addition, included letters of credit hedged by derivative transactions and managed on a market risk basis of \$4.5 billion and \$4.6 billion at June 30, 2017, and December 31, 2016, respectively.

(h) For lending-related products, the carrying value represents the allowance for lending-related commitments and the guarantee liability; for derivative-related products, the carrying value represents the fair value.

Other unfunded commitments to extend credit

Other unfunded commitments to extend credit generally consist of commitments for working capital and general corporate purposes, extensions of credit to support commercial paper facilities and bond financings in the event that those obligations cannot be remarketed to new investors, as well as committed liquidity facilities to clearing organizations. The Firm also issues commitments under multipurpose facilities which could be drawn upon in several forms, including the issuance of a standby letter of credit.

The Firm acts as a settlement and custody bank in the U.S. tri-party repurchase transaction market. In its role as settlement and custody bank, the Firm is exposed to the intra-day credit risk of its cash borrower clients, usually broker-dealers. This exposure arises under secured

clearance advance facilities that the Firm extends to its clients (i.e., cash borrowers); these facilities contractually limit the Firm's intra-day credit risk to the facility amount

and must be repaid by the end of the day. As of June 30, 2017, and December 31, 2016, the maximum outstanding commitment under the secured clearance advance facility was \$1.6 billion and \$2.4 billion, respectively.

Standby letters of credit and other financial guarantees

Standby letters of credit and other financial guarantees are conditional lending commitments issued by the Firm to guarantee the performance of a customer to a third party under certain arrangements, such as commercial paper facilities, bond financings, acquisition financings, trade and similar transactions.

The following table summarizes the standby letters of credit and other letters of credit arrangements as of June 30, 2017, and December 31, 2016.

Standby letters of credit, other financial guarantees and other letters of credit

	June 30, 2017		December 31, 2016	
	Standby letters of credit and other financial guarantees	Other letters of credit	Standby letters of credit and other financial guarantees	Other letters of credit
(in millions)				
Investment-grade ^(a)	\$26,592	\$2,245	\$28,245	\$2,781
Noninvestment-grade ^(a)	6,730	844	7,702	789
Total contractual amount	\$33,322	\$3,089	\$35,947	\$3,570
Allowance for lending-related commitments	\$177	\$4	\$145	\$2
Guarantee liability	444	—	441	—
Total carrying value	\$621	\$4	\$586	\$2
Commitments with collateral	\$17,878	\$894	\$19,346	\$940

^(a) The ratings scale is based on the Firm's internal ratings which generally correspond to ratings as defined by S&P and Moody's.

Derivatives qualifying as guarantees

The Firm transacts certain derivative contracts that have the characteristics of a guarantee under U.S. GAAP. For further information on these derivatives, see Note 29 of JPMorgan Chase's 2016 Annual Report.

The following table summarizes the derivatives qualifying as guarantees as of June 30, 2017, and December 31, 2016.

	June 30, 2017	December 31, 2016
(in millions)		
Total notional value of derivatives ^(a)	54,162	51,966
Notional amount of stable value contracts ^(b)	28,892	28,665

Maximum exposure to loss on stable value contracts	3,031	3,012
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Fair value^(c)

Derivative payables	393	96
Derivative receivables	15	16

(a) The notional amount generally represents the Firm's maximum exposure to derivatives qualifying as guarantees.

(b) Exposure to certain stable value contracts is contractually limited to a substantially lower percentage of the notional amount.

(c) The fair value of the contracts reflect the probability, in the Firm's view, of whether the Firm will be required to perform under the contract.

The Firm reduces exposures to these contracts by entering into offsetting transactions, or by entering into contracts that hedge the market risk related to the derivative guarantees.

In addition to derivative contracts that meet the characteristics of a guarantee, the Firm is both a purchaser and seller of credit protection in the credit derivatives market. For a further discussion of credit derivatives, see Note 4.

Loan sales- and securitization-related indemnifications

In connection with the Firm's mortgage loan sale and securitization activities with GSEs and in certain private label transactions, the Firm has made representations and warranties that the loans sold meet certain requirements, and that may require the Firm to repurchase the mortgage loans and/or indemnify the loan purchaser if such representations and warranties are breached by the Firm. In addition, although the Firm's securitizations are predominantly nonrecourse, the Firm does provide recourse servicing in certain limited cases where it agrees to share credit risk with the owner of the mortgage loans. For additional information, see Note 29 of JPMorgan Chase's 2016 Annual Report. The liability related to repurchase demands associated with private label securitizations is separately evaluated by the Firm in establishing its litigation reserves. For additional information regarding litigation, see Note 21 of this Form 10-Q and Note 31 of JPMorgan Chase's 2016 Annual Report.

Guarantees of subsidiary

The Parent Company has guaranteed certain long-term debt and structured notes of its subsidiaries, including JPMorgan

Chase Financial Company LLC ("JPMFC"), a 100%-owned finance subsidiary. All securities issued by JPMFC are fully and unconditionally guaranteed by the Parent Company, and these guarantees rank on a parity with the Firm's unsecured and unsubordinated indebtedness.

Note 20 – Pledged assets and collateral

For a discussion of the Firm's pledged assets and collateral, see Note 30 of JPMorgan Chase's 2016 Annual Report.

Pledged assets

The Firm may pledge financial assets that it owns to maintain potential borrowing capacity with central banks and for other purposes, including to secure borrowings and public deposits, collateralize repurchase and other securities financing agreements, and cover customer short sales. Certain of these pledged assets may be sold or repledged or otherwise used by the secured parties and are identified as financial instruments owned (pledged to various parties) on the Consolidated balance sheets.

The following table presents the Firm's pledged assets.

	June	December
(in billions)	30,	31,
	2017	2016
Assets that may be sold or repledged or otherwise used by secured parties	\$154.3	\$ 133.6
Assets that may not be sold or repledged or otherwise used by secured parties	60.4	53.5
Assets pledged at Federal Reserve banks and FHLBs	478.2	441.9
Total assets pledged	\$692.9	\$ 629.0

Total assets pledged do not include assets of consolidated VIEs; these assets are used to settle the liabilities of those entities. See Note 13 for additional information on assets and liabilities of consolidated VIEs. For additional information on the Firm's securities financing activities, see Note 10. For additional information on the Firm's long-term debt, see Note 21 of JPMorgan Chase's 2016 Annual Report.

Collateral

The Firm had accepted financial assets as collateral that it could sell or repledge, deliver or otherwise use. This collateral was generally obtained under resale agreements, securities borrowing agreements, customer margin loans and derivative agreements. Collateral was generally used under repurchase agreements, securities lending agreements or to cover customer short sales and to collateralize deposits and derivative agreements.

The following table presents the fair value of collateral accepted.

	June	December
(in billions)	30,	31,
	2017	2016
Collateral that could be sold or repledged, delivered, or otherwise used	\$972.2	\$ 914.1
Collateral sold, repledged, delivered or otherwise used	779.8	746.6

Note 21 – Litigation
Contingencies

As of June 30, 2017, the Firm and its subsidiaries and affiliates are defendants or putative defendants in numerous legal proceedings, including private, civil litigations and regulatory/government investigations. The litigations range from individual actions involving a single plaintiff to class action lawsuits with potentially millions of class members. Investigations involve both formal and informal proceedings, by both governmental agencies and self-regulatory organizations. These legal proceedings are at varying stages of adjudication, arbitration or investigation, and involve each of the Firm's lines of business and geographies and a wide variety of claims (including common law tort and contract claims and statutory antitrust, securities and consumer protection claims), some of which present novel legal theories.

The Firm believes the estimate of the aggregate range of reasonably possible losses, in excess of reserves established, for its legal proceedings is from \$0 to approximately \$1.9 billion at June 30, 2017. This estimated aggregate range of reasonably possible losses was based upon currently available information for those proceedings in which the Firm believes that an estimate of reasonably possible loss can be made. For certain matters, the Firm does not believe that such an estimate can be made, as of that date. The Firm's estimate of the aggregate range of reasonably possible losses involves significant judgment, given the number, variety and varying stages of the proceedings (including the fact that many are in preliminary stages), the existence in many such proceedings of multiple defendants (including the Firm) whose share of liability has yet to be determined, the numerous yet-unresolved issues in many of the proceedings (including issues regarding class certification and the scope of many of the claims) and the attendant uncertainty of the various potential outcomes of such proceedings, including where the Firm has made assumptions concerning future rulings by the court or other adjudicator, or about the behavior or incentives of adverse parties or regulatory authorities, and those assumptions prove to be incorrect. In addition, the outcome of a particular proceeding may be a result which the Firm did not take into account in its estimate because the Firm had deemed the likelihood of that outcome to be remote. Accordingly, the Firm's estimate of the aggregate range of reasonably possible losses will change from time to time, and actual losses may vary significantly.

Set forth below are descriptions of the Firm's material legal proceedings.

Foreign Exchange Investigations and Litigation. The Firm previously reported settlements with certain government authorities relating to its foreign exchange ("FX") sales and trading activities and controls related to those activities. FX-related investigations and inquiries by government authorities, including competition authorities, are ongoing, and the Firm is cooperating with those matters. In May 2015, the Firm pleaded guilty to a single violation of federal antitrust law. In January 2017, the Firm was sentenced, with judgment entered thereafter. The Department of Labor granted the Firm a temporary one-

year waiver of disqualification, effective upon entry of judgment, that allows the Firm and its affiliates to continue to rely on the Qualified Professional Asset Manager exemption under the Employee Retirement Income Security Act ("ERISA"). The Firm's application for a lengthier exemption is pending. Separately, in February 2017 the South Africa Competition Commission referred its FX investigation of the Firm and other banks to the South Africa Competition Tribunal, which has initiated civil proceedings.

The Firm is also one of a number of foreign exchange dealers defending a class action filed in the United States District Court for the Southern District of New York by U.S.-based plaintiffs, principally alleging violations of federal antitrust laws based on an alleged conspiracy to manipulate foreign exchange rates (the "U.S. class action"). In January 2015, the Firm entered into a settlement agreement in the U.S. class action. Following this settlement, a number of additional putative class actions were filed seeking damages for persons who transacted FX futures and options on futures (the "exchanged-based actions"), consumers who purchased foreign currencies at allegedly inflated rates (the "consumer action"), participants or beneficiaries of qualified ERISA plans (the "ERISA actions"), and purported indirect purchasers of FX instruments (the "indirect purchaser action"). Since then, the Firm has entered into a revised settlement agreement to resolve the consolidated U.S. class action, including the exchange-based actions, and that agreement has been preliminarily approved by the Court. The District Court has dismissed one of the ERISA actions, and the plaintiffs have filed an appeal. The consumer action, a second ERISA action and the indirect purchaser action remain pending in the District Court.

In September 2015, two class actions were filed in Canada against the Firm as well as a number of other FX dealers, principally for alleged violations of the Canadian Competition Act based on an alleged conspiracy to fix the prices of currency purchased in the FX market. The first action was filed in the province of Ontario, and sought to represent all persons in Canada who transacted any FX instrument. The second action was filed in the province of Quebec, and sought authorization to represent only those persons in Quebec who engaged in FX transactions. In late 2016, the Firm settled the Canadian class actions, and both settlements have received judicial approval.

General Motors Litigation. JPMorgan Chase Bank, N.A. participated in, and was the Administrative Agent on behalf of a syndicate of lenders on, a \$1.5 billion syndicated Term Loan facility (“Term Loan”) for General Motors Corporation (“GM”). In July 2009, in connection with the GM bankruptcy proceedings, the Official Committee of Unsecured Creditors of Motors Liquidation Company (“Creditors Committee”) filed a lawsuit against JPMorgan Chase Bank, N.A., in its individual capacity and as Administrative Agent for other lenders on the Term Loan, seeking to hold the underlying lien invalid based on the filing of a UCC-3 termination statement relating to the Term Loan. In January 2015, following several court proceedings, the United States Court

of Appeals for the Second Circuit reversed the Bankruptcy Court's dismissal of the Creditors Committee's claim and remanded the case to the Bankruptcy Court with instructions to enter partial summary judgment for the Creditors Committee as to the termination statement. The proceedings in the Bankruptcy Court continue with respect to, among other things, additional defenses asserted by JPMorgan Chase Bank, N.A. and the value of additional collateral on the Term Loan that was unaffected by the filing of the termination statement at issue. In connection with that additional collateral, a trial in the Bankruptcy Court regarding the value of certain representative assets concluded in May 2017, and a ruling is pending. In addition, certain Term Loan lenders filed cross-claims against JPMorgan Chase Bank, N.A. in the Bankruptcy Court seeking indemnification and asserting various claims.

Interchange Litigation. A group of merchants and retail associations filed a series of class action complaints alleging that Visa and MasterCard, as well as certain banks, conspired to set the price of credit and debit card interchange fees, enacted respective rules in violation of antitrust laws, and engaged in tying/bundling and exclusive dealing. The parties entered into an agreement to settle the cases for a cash payment of \$6.1 billion to the class plaintiffs (of which the Firm's share is approximately 20%) and an amount equal to ten basis points of credit card interchange for a period of eight months to be measured from a date within 60 days of the end of the opt-out period. The agreement also provided for modifications to each credit card network's rules, including those that prohibit surcharging credit card transactions. In December 2013, the District Court granted final approval of the settlement.

A number of merchants appealed to the United States Court of Appeals for the Second Circuit, which, in June 2016, vacated the District Court's certification of the class action and reversed the approval of the class settlement. Both the plaintiffs and the defendants filed petitions seeking review by the U.S. Supreme Court of the Second Circuit's decision, and those petitions were denied in March 2017. The case has been remanded to the District Court for further proceedings consistent with the appellate decision.

In addition, certain merchants have filed individual actions raising similar allegations against Visa and MasterCard, as well as against the Firm and other banks, and those actions are proceeding.

LIBOR and Other Benchmark Rate Investigations and Litigation. JPMorgan Chase has received subpoenas and requests for documents and, in some cases, interviews, from federal and state agencies and entities, including the U.S. Department of Justice ("DOJ"), the U.S. Commodity Futures Trading Commission ("CFTC"), the U.S. Securities and Exchange Commission ("SEC") and various state attorneys general, as well as the European Commission ("EC"), the U.K. Financial Conduct Authority ("FCA"), the Canadian Competition Bureau, the Swiss Competition Commission ("ComCo") and other regulatory authorities and banking associations around the world relating primarily to the process by which interest rates were submitted to the British Bankers Association ("BBA") in connection with the setting of the BBA's London Interbank Offered Rate

("LIBOR") for various currencies, principally in 2007 and 2008. Some of the inquiries also relate to similar processes by which information on rates is submitted to the European Banking Federation ("EBF") in connection with the setting of the EBF's Euro Interbank Offered Rates ("EURIBOR") and to the Japanese Bankers' Association for the setting of Tokyo Interbank Offered Rates ("TIBOR"), as well as processes for the setting of U.S. dollar ISDAFIX rates and other reference rates in various parts of the world during similar time periods. The Firm is responding to and continuing to cooperate with these inquiries. As previously reported, the Firm has resolved EC inquiries relating to Yen LIBOR and Swiss Franc LIBOR. In December 2016, the Firm resolved ComCo inquiries relating to these same rates. ComCo's investigation relating to EURIBOR, to which the Firm and other banks are subject, continues. In December 2016, the EC issued a decision against the Firm and other banks finding an infringement of European antitrust rules relating to EURIBOR. The Firm has filed an appeal with the European General Court. In June 2016, the DOJ informed the Firm that the DOJ had closed its inquiry into LIBOR and other benchmark rates with respect to the Firm without taking action. Other inquiries have been discontinued without any action against JPMorgan Chase, including by the SEC, FCA and the Canadian Competition Bureau.

In addition, the Firm has been named as a defendant along with other banks in a series of individual and putative class actions filed in various United States District Courts. These actions have been filed, or consolidated for pre-trial purposes, in the United States District Court for the Southern District of New York. In these actions, plaintiffs make varying allegations that in various periods, starting in 2000 or later, defendants either individually or collectively manipulated the U.S. dollar LIBOR, Yen LIBOR, Swiss franc LIBOR, Euroyen TIBOR, EURIBOR, Singapore

Interbank Offered Rate (“SIBOR”), Singapore Swap Offer Rate (“SOR”) and/or the Bank Bill Swap Reference Rate (“BBSW”) by submitting rates that were artificially low or high. Plaintiffs allege that they transacted in loans, derivatives or other financial instruments whose values are affected by changes in U.S. dollar LIBOR, Yen LIBOR, Swiss franc LIBOR, Euroyen TIBOR, EURIBOR, SIBOR, SOR or BBSW and assert a variety of claims including antitrust claims seeking treble damages. These matters are in various stages of litigation.

The Firm has agreed to settle the putative class actions related to Yen LIBOR, Euroyen TIBOR and Swiss franc LIBOR. Those settlements are subject to further documentation and approval by the Court.

In the EURIBOR action, the District Court dismissed all claims except a single antitrust claim and two common law claims, and dismissed all defendants except the Firm and Citibank.

In the U.S. dollar LIBOR-related actions, the District Court dismissed certain claims, including the antitrust claims, and permitted other claims under the Commodity Exchange Act and common law to proceed. In May 2016, the United States Court of Appeals for the Second Circuit vacated the dismissal of the antitrust claims and remanded the case to the District Court to consider, among other things, whether the plaintiffs have standing to assert antitrust claims. In July

2016, JPMorgan Chase and other defendants again moved in the District Court to dismiss the antitrust claims, and in December 2016, the District Court granted in part and denied in part defendants' motion, finding that certain plaintiffs lacked standing to assert antitrust claims. Those plaintiffs have filed an appeal. In May 2017, plaintiffs in three putative class actions moved in the District Court for class certification, and the Firm and other defendants have opposed that motion.

The Firm is one of the defendants in a number of putative class actions alleging that defendant banks and ICAP conspired to manipulate the U.S. dollar ISDAFIX rates. Plaintiffs primarily assert claims under the federal antitrust laws and Commodity Exchange Act. In April 2016, the Firm settled the ISDAFIX litigation, along with certain other banks. Those settlements have been preliminarily approved by the Court.

Madoff Litigation. A putative class action was filed in the United States District Court for the District of New Jersey by investors who were net winners (i.e., Madoff customers who had taken more money out of their accounts than had been invested) in Madoff's Ponzi scheme and were not included in a prior class action settlement. These plaintiffs alleged violations of the federal securities law, as well as other state and federal claims. The New Jersey court granted a transfer motion to the United States District Court for the Southern District of New York. The New York court granted the Firm's motion to dismiss, and the United States Court of Appeals for the Second Circuit has affirmed that dismissal. Plaintiffs have until September 2017 to file a petition for writ of certiorari with the United States Supreme Court. A similar action was filed in the United States District Court for the Middle District of Florida, although it was not styled as a class action, and included claims pursuant to Florida statutes. The Florida court granted the Firm's motion to dismiss the case, the United States Court of Appeals for the Eleventh Circuit affirmed the dismissal, and the United States Supreme Court denied plaintiffs' petition for writ of certiorari. In addition, the same plaintiffs have re-filed their dismissed state claims in Florida state court, where the action is stayed pending resolution of the federal court matters.

Mortgage-Backed Securities and Repurchase Litigation and Related Regulatory Investigations. The Firm and affiliates (together, "JPMC"), Bear Stearns and affiliates (together, "Bear Stearns") and certain Washington Mutual affiliates (together, "Washington Mutual") have been named as defendants in a number of cases in their various roles in offerings of MBS. The remaining civil cases include one investor action and actions for repurchase of mortgage loans. The Firm and certain of its current and former officers and Board members have also been sued in a shareholder derivative action relating to the Firm's MBS activities, which remains pending.

Issuer Litigation – Individual Purchaser Actions. With the exception of one remaining action, the Firm has resolved all of the individual actions brought against JPMC, Bear Stearns and Washington Mutual as MBS issuers (and, in some cases, also as underwriters of their own MBS offerings).

Repurchase Litigation. The Firm is defending a number of actions brought by trustees, securities administrators and/or master servicers of various MBS trusts on behalf of purchasers of securities issued by those trusts. These cases generally allege breaches of various representations and warranties regarding securitized loans and seek repurchase of those loans or equivalent monetary relief, as well as indemnification of attorneys' fees and costs and other remedies. The Firm has reached a settlement with Deutsche Bank National Trust Company, acting as trustee for various MBS trusts, and the Federal Deposit Insurance Corporation (the "FDIC") in connection with the litigation related to a significant number of MBS issued by Washington Mutual; that case is described in the Washington Mutual Litigations section below. Other repurchase actions, each specific to one or more MBS transactions issued by JPMC, are in various stages of litigation.

In addition, the Firm and a group of 21 institutional MBS investors made a binding offer to the trustees of MBS issued by JPMC and Bear Stearns providing for the payment of \$4.5 billion and the implementation of certain servicing changes by JPMC, to resolve all repurchase and servicing claims that have been asserted or could have been asserted with respect to 330 MBS trusts created between 2005 and 2008. The offer does not resolve claims relating to Washington Mutual MBS. The trustees (or separate and successor trustees) for this group of 330 trusts have accepted the settlement for 319 trusts in whole or in part and excluded from the settlement 16 trusts in whole or in part. The trustees' acceptance has received final approval from the court.

Additional actions have been filed against third-party trustees that relate to loan repurchase and servicing claims involving trusts sponsored by JPMC, Bear Stearns and Washington Mutual.

In actions against the Firm involving offerings of MBS issued by the Firm, the Firm has contractual rights to indemnification from sellers of mortgage loans that were securitized in such offerings. However, certain of those indemnity rights may prove effectively unenforceable in various situations, such as where the loan sellers are now defunct.

The Firm has entered into agreements with a number of MBS trustees or entities that purchased MBS that toll applicable statute of limitations periods with respect to their claims, and has settled, and in the future may settle, tolled claims. There is no assurance that the Firm will not be named as a defendant in additional MBS-related litigation. Derivative Action. A shareholder derivative action against the Firm, as nominal defendant, and certain of its current and former officers and members of its Board of Directors relating to the Firm's MBS activities is pending in California federal court. In June 2017, the court granted defendants' motion to dismiss the cause of action that alleged material misrepresentations and omissions in the Firm's proxy statement, found that the court did not have personal jurisdiction over the individual defendants with respect to the remaining causes of action, and transferred that remaining portion of the case to the United States District

Court for the Southern District of New York without ruling on the merits.

Government Enforcement Investigations and Litigation. The Firm is responding to an ongoing investigation being conducted by the DOJ's Criminal Division and two United States Attorney's Offices relating to MBS offerings securitized and sold by the Firm and its subsidiaries.

Mortgage-Related Investigations and Litigation. In January 2017, a Consent Order was entered by the United States District Court for the Southern District of New York resolving allegations by the Civil Division of the United States Attorney's Office for the Southern District of New York that the Firm violated the Fair Housing Act and Equal Credit Opportunity Act by giving pricing discretion to independent mortgage brokers in its wholesale lending origination channel which, according to the government's model, may have charged higher fees and interest rates to African-American and Hispanic borrowers than non-Hispanic White borrowers during the period between 2006 and 2009. The Firm denied liability, but agreed to pay a total of approximately \$55 million to resolve this matter. In addition, three municipalities have commenced litigation against the Firm alleging violations of an unfair competition law or the Fair Housing Act. The municipalities seek, among other things, civil penalties for the unfair competition claim, and, for the Fair Housing Act claims, damages resulting from lost tax revenue and increased municipal costs associated with foreclosed properties. Two of the municipal actions were stayed pending an appeal to the United States Supreme Court. In May 2017, the Supreme Court held that the City of Miami has standing to bring claims under the Fair Housing Act, and remanded the case to the lower court to determine whether the City sufficiently alleged that the defendant's conduct proximately caused the alleged damages. In the two stayed municipal actions against the Firm, one remains stayed pending the resolution of the City of Miami case on remand, and in the other, the municipality has moved to reopen the case, which the Firm has opposed. The third municipal action against the Firm was stayed pending an appeal by the City of Los Angeles to the United States Court of Appeals for the Ninth Circuit in a related action. In May 2017, the Court of Appeals affirmed judgments against the City of Los Angeles and in favor of the defendants, and following that decision, the court has not yet lifted the stay in the action against the Firm. Municipal Derivatives Litigation. Several civil actions were commenced in New York and Alabama courts against the Firm relating to certain Jefferson County, Alabama (the "County") warrant underwritings and swap transactions. The claims in the civil actions generally alleged that the Firm made payments to certain third parties in exchange for being chosen to underwrite more than \$3 billion in warrants issued by the County and to act as the counterparty for certain swaps executed by the County. The County filed for bankruptcy in November 2011. In June 2013, the County filed a Chapter 9 Plan of Adjustment, as amended (the "Plan of Adjustment"), which provided that all the above-described actions against the Firm would be released and dismissed with prejudice. In November 2013, the Bankruptcy Court confirmed the Plan of Adjustment,

and in December 2013, certain sewer rate payers filed an appeal challenging the confirmation of the Plan of Adjustment. All conditions to the Plan of Adjustment's effectiveness, including the dismissal of the actions against the Firm, were satisfied or waived and the transactions contemplated by the Plan of Adjustment occurred in December 2013. Accordingly, all the above-described actions against the Firm have been dismissed pursuant to the terms of the Plan of Adjustment. The appeal of the Bankruptcy Court's order confirming the Plan of Adjustment remains pending. Petters Bankruptcy and Related Matters. JPMorgan Chase and certain of its affiliates, including One Equity Partners ("OEP"), have been named as defendants in several actions filed in connection with the receivership and bankruptcy proceedings pertaining to Thomas J. Petters and certain affiliated entities (collectively, "Petters") and the Polaroid Corporation. The principal actions against JPMorgan Chase and its affiliates have been brought by a court-appointed receiver for Petters and the trustees in bankruptcy proceedings for three Petters entities. These actions generally seek to avoid certain putative transfers in connection with (i) the 2005 acquisition by Petters of Polaroid, which at the time was majority-owned by OEP; (ii) two credit facilities that JPMorgan Chase and other financial institutions entered into with Polaroid; and (iii) a credit line and investment accounts held by Petters. In January 2017, the Court substantially denied the defendants' motion to dismiss an amended complaint filed by the plaintiffs, and defendants' motion for leave to appeal that decision is pending.

Proprietary Products Investigations and Litigation. In December 2015, JPMorgan Chase Bank, N.A. and J.P. Morgan Securities LLC agreed to a settlement with the SEC, and JPMorgan Chase Bank, N.A. agreed to a settlement with the CFTC, regarding disclosures to clients concerning conflicts associated with the Firm's sale and use of proprietary

products, such as J.P. Morgan mutual funds, in the Firm's CCB and AWM wealth management businesses, and the U.S. Private Bank's disclosures concerning the use of hedge funds that pay placement agent fees to JPMorgan Chase broker-dealer affiliates. The Firm settled with an additional government authority in July 2016, and continues to cooperate with inquiries from other government authorities concerning disclosure of conflicts associated with the Firm's sale and use of proprietary products. A putative class action, which was filed in the United States District Court for the Northern District of Illinois on behalf of financial advisory clients from 2007 to the present whose funds were invested in proprietary funds and who were charged investment management fees, was dismissed by the Court. The dismissal was affirmed on appeal. Plaintiffs have filed a petition for writ of certiorari with the United States Supreme Court, to which the Firm will respond.

Referral Hiring Practices Investigations. In November 2016, the Firm entered into settlements with DOJ, the SEC and the Board of Governors of the Federal Reserve System (the "Federal Reserve") to resolve those agencies' respective investigations relating to a former hiring program for

candidates referred by clients, potential clients and government officials in the Asia Pacific region. Other related investigations are ongoing, and the Firm continues to cooperate with these investigations.

Washington Mutual Litigations. Proceedings related to Washington Mutual's failure are pending before the United States District Court for the District of Columbia and include a lawsuit brought by Deutsche Bank National Trust Company, initially against the FDIC and amended to include JPMorgan Chase Bank, N.A. as a defendant, asserting an estimated \$6 billion to \$10 billion in damages based upon alleged breaches of certain representations and warranties given by certain Washington Mutual affiliates in connection with mortgage securitization agreements. The case includes assertions that JPMorgan Chase Bank, N.A. may have assumed liabilities for the alleged breaches of representations and warranties in the mortgage securitization agreements. In June 2015, the court ruled in favor of JPMorgan Chase Bank, N.A. on the question of whether the Firm or the FDIC bears responsibility for Washington Mutual Bank's repurchase obligations, holding that JPMorgan Chase Bank, N.A. assumed only those liabilities that were reflected on Washington Mutual Bank's financial accounting records as of September 25, 2008, and only up to the amount of the book value reflected therein.

JPMorgan Chase also filed complaints in the United States District Court for the District of Columbia against the FDIC, in its corporate capacity as well as in its capacity as receiver for Washington Mutual Bank, asserting multiple claims for indemnification under the terms of the Purchase & Assumption Agreement between JPMorgan Chase Bank, N.A. and the FDIC relating to JPMorgan Chase Bank, N.A.'s purchase of substantially all of the assets and certain liabilities of Washington Mutual Bank (the "Purchase & Assumption Agreement").

The Firm, Deutsche Bank National Trust Company and the FDIC signed a settlement agreement to resolve (i) pending litigation brought by Deutsche Bank National Trust Company against the FDIC and JPMorgan Chase Bank, N.A., as defendants, relating to alleged breaches of certain representations and warranties given by certain Washington Mutual affiliates in connection with mortgage securitization agreements and (ii) JPMorgan Chase Bank, N.A.'s outstanding indemnification claims pursuant to the terms of the Purchase & Assumption Agreement. Deutsche Bank National Trust Company filed a judicial approval proceeding, and the court has approved the settlement.

Wendel. Since 2012, the French criminal authorities have been investigating a series of transactions entered into by senior managers of Wendel Investissement ("Wendel") during the period from 2004 through 2007 to restructure their shareholdings in Wendel. JPMorgan Chase Bank, N.A., Paris branch provided financing for the transactions to a number of managers of Wendel in 2007. JPMorgan Chase has cooperated with the investigation. The investigating judges issued an *ordonnance de renvoi* in November 2016, referring JPMorgan Chase Bank, N.A. to the French tribunal correctionnel for alleged complicity in tax fraud. No date for trial has been set by the court. The Firm has been successful in legal challenges made to the Court of

Cassation, France's highest court, which have been referred back to and remain pending before the Paris Court of Appeal. In addition, civil proceedings have been commenced against JPMorgan Chase Bank, N.A. by a number of the managers. The claims are separate, involve different allegations and are at various stages of proceedings.

* * *

In addition to the various legal proceedings discussed above, JPMorgan Chase and its subsidiaries are named as defendants or are otherwise involved in a substantial number of other legal proceedings. The Firm believes it has meritorious defenses to the claims asserted against it in its currently outstanding legal proceedings and it intends to defend itself vigorously. Additional legal proceedings may be initiated from time to time in the future.

The Firm has established reserves for several hundred of its currently outstanding legal proceedings. In accordance with the provisions of U.S. GAAP for contingencies, the Firm accrues for a litigation-related liability when it is probable that such a liability has been incurred and the amount of the loss can be reasonably estimated. The Firm evaluates its outstanding legal proceedings each quarter to assess its litigation reserves, and makes adjustments in such reserves, upwards or downward, as appropriate, based on management's best judgment after consultation with counsel. The Firm's legal expense was \$61 million and a benefit of \$(430) million for the three months ended June 30, 2017 and 2016, respectively, and an expense of \$279 million and a benefit of \$(476) million for the six months ended June 30, 2017 and 2016, respectively. There is no assurance that the Firm's litigation reserves will not need to be adjusted in the future.

In view of the inherent difficulty of predicting the outcome of legal proceedings, particularly where the claimants seek very large or indeterminate damages, or where the matters present novel legal theories, involve a large number of parties or are in early stages of discovery, the Firm cannot state with confidence what will be the eventual outcomes of the currently pending matters, the timing of their ultimate resolution or the eventual losses, fines, penalties or consequences related to those matters. JPMorgan Chase believes, based upon its current knowledge, after consultation with counsel and after taking into account its current litigation reserves, that the legal proceedings currently pending against it should not have a material adverse effect on the Firm's consolidated financial condition. The Firm notes, however, that in light of the uncertainties involved in such proceedings, there is no assurance that the ultimate resolution of these matters will not significantly exceed the reserves it has currently accrued or that a matter will not have material reputational consequences. As a result, the outcome of a particular matter may be material to JPMorgan Chase's operating results for a particular period, depending on, among other factors, the size of the loss or liability imposed and the level of JPMorgan Chase's income for that period.

Note 22 – Business segments

The Firm is managed on a line of business basis. There are four major reportable business segments - Consumer & Community Banking, Corporate & Investment Bank, Commercial Banking and Asset & Wealth Management. In addition, there is a Corporate segment.

The business segments are determined based on the products and services provided, or the type of customer served, and they reflect the manner in which financial information is currently evaluated by management. Results of these lines of business are presented on a managed basis. For a further discussion concerning JPMorgan Chase's business segments, see Segment results below, and Note 33 of JPMorgan Chase's 2016 Annual Report.

Segment results

The following table provides a summary of the Firm's segment results as of or for the three and six months ended June 30, 2017 and 2016, on a managed basis. The Firm's definition of managed basis starts with the reported U.S. GAAP results and includes certain reclassifications to present total net revenue for the Firm (and each of the reportable business segments) on a FTE basis. Accordingly, revenue from investments that receive tax credits and tax-exempt securities is presented in the managed results on a basis comparable to taxable investments and securities. This allows management to assess the comparability of revenue from year-to-year arising from both taxable and

tax-exempt sources. The corresponding income tax impact related to tax-exempt items is recorded within income tax expense. These adjustments have no impact on net income as reported by the Firm as a whole or by the lines of business.

The amount of capital assigned to each business is referred to as equity. On at least an annual basis, the Firm assesses the level of capital required for each line of business as well as the assumptions and methodologies used to allocate capital. Through the end of 2016, capital was allocated to the lines of business based on a single measure, Basel III Advanced Fully Phased-In RWA. Effective January 1, 2017, the Firm's methodology used to allocate capital to the business segments was updated. Under the new methodology, capital is no longer allocated to each line of business for goodwill and other intangibles associated with acquisitions effected by the line of business. In addition, the new methodology incorporates Basel III Standardized Fully Phased-In RWA (as well as Basel III Advanced Fully Phased-In RWA), leverage, the global systemically important banks ("GSIB") surcharge, and a simulation of capital in a severe stress environment. The methodology will continue to be weighted towards Basel III Advanced Fully Phased-In RWA because the Firm believes it to be the best proxy for economic risk.

Segment results and reconciliation^(a)

As of or for the three months ended June 30, (in millions, except ratios)	Consumer & Community Banking		Corporate & Investment Bank		Commercial Banking		Asset & Wealth Management	
	2017	2016	2017	2016	2017	2016	2017	2016
Noninterest revenue	\$3,684	\$4,138	\$6,444	\$6,475	\$583	\$586	\$2,366	\$2,192
Net interest income	7,728	7,313	2,445	2,690	1,505	1,231	846	747
Total net revenue	11,412	11,451	8,889	9,165	2,088	1,817	3,212	2,939
Provision for credit losses	1,394	1,201	(53)	(235)	(130)	(25)	4	(8)
Noninterest expense	6,500	6,004	4,841	5,078	790	731	2,192	2,098
Income before income tax expense	3,518	4,246	4,101	3,852	1,428	1,111	1,016	849
Income tax expense	1,295	1,590	1,391	1,359	526	415	392	328
Net income	\$2,223	\$2,656	\$2,710	\$2,493	\$902	\$696	\$624	\$521
Average equity	\$51,000	\$51,000	\$70,000	\$64,000	\$20,000	\$16,000	\$9,000	\$9,000
Total assets	529,859	519,187	847,377	826,019	220,676	208,151	147,508	134,380
Return on equity	17%	20%	15%	15%	17%	16%	27%	22%
Overhead ratio	57	52	54	55	38	40	68	71
As of or for the three months ended June 30, (in millions, except ratios)	Corporate		Reconciling Items ^(a)		Total			
	2017	2016	2017	2016	2017	2016		
Noninterest revenue	\$781	\$171	\$(596)	\$(529)	\$13,262	\$13,033		

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Net interest income	23	(329)	(339)	\$(305)	12,208	11,347
Total net revenue	804	(158)	(935)	\$(834)	25,470	24,380
Provision for credit losses	—	(1	)	—	—	1,215	1,402	
Noninterest expense	183	(273	)	—	—	14,506	13,638	
Income/(loss) before income tax expense/(benefit)	621	116		(935	)	(834	)	9,749
Income tax expense/(benefit)	51	282		(935	)	(834	)	2,720
Net income/(loss)	\$570	\$(166	)	\$—	\$—	\$7,029	\$6,200	
Average equity	\$80,200	\$84,429		\$—	\$—	\$230,200	\$224,429	
Total assets	817,754	778,359		NA	NA	2,563,174	2,466,096	
Return on equity	NM	NM		NM	NM	12	% 10	%
Overhead ratio	NM	NM		NM	NM	57	56	

Segment managed results reflect revenue on a FTE basis with the corresponding income tax impact recorded within (a) income tax expense/(benefit). These adjustments are eliminated in reconciling items to arrive at the Firm's reported U.S. GAAP results.

Segment results and reconciliation^(a)

As of or for the six months ended June 30, (in millions, except ratios)	Consumer & Community Banking		Corporate & Investment Bank		Commercial Banking		Asset & Wealth Management		
	2017	2016	2017	2016	2017	2016	2017	2016	
	Noninterest revenue	\$7,001	\$7,944	\$13,380	\$12,009	\$1,182	\$1,142	\$4,634	\$4,437
Net interest income	15,381	14,624	5,045	5,291	2,924	2,478	1,665	1,474	
Total net revenue	22,382	22,568	18,425	17,300	4,106	3,620	6,299	5,911	
Provision for credit losses	2,824	2,251	(149)	)694	(167)	)279	22	5	
Noninterest expense	12,895	12,092	9,962	9,886	1,615	1,444	4,772	4,173	
Income before income tax expense	6,663	8,225	8,612	6,720	2,658	1,897	1,505	1,733	
Income tax expense	2,452	3,079	2,661	2,248	957	705	496	625	
Net income	\$4,211	\$5,146	\$5,951	\$4,472	\$1,701	\$1,192	\$1,009	\$1,108	
Average common equity	\$51,000	\$51,000	\$70,000	\$64,000	\$20,000	\$16,000	\$9,000	\$9,000	
Total assets	529,859	519,187	847,377	826,019	220,676	208,151	147,508	134,380	
Return on common equity	16%	19	% 16%	13	% 16%	14	% 22%	24	%
Overhead ratio	58	54	54	57	39	40	76	71	
As of or for the six months ended June 30, (in millions, except ratios)	Corporate		Reconciling Items ^(a)		Total				
	2017	2016	2017	2016	2017	2016			
	Noninterest revenue	\$854	\$440	\$(1,178)	\$(1,080)	\$25,873	\$24,892		
Net interest income	(75)	)(542)	)(668)	)(598)	)24,272	22,727			
Total net revenue	779	(102)	)(1,846)	)(1,678)	)50,145	47,619			
Provision for credit losses	—	(3)	)—	—	2,530	3,226			
Noninterest expense	281	(120)	)—	—	29,525	27,475			
Income/(loss) before income tax expense/(benefit)	498	21	(1,846)	)(1,678)	18,090	16,918			
Income tax expense/(benefit)	(107)	)219	(1,846)	)(1,678)	4,613	5,198			
Net income/(loss)	\$605	\$(198)	)\$—	\$—	\$13,477	\$11,720			
Average common equity	\$78,959	\$82,995	\$—	\$—	\$228,959	\$222,995			
Total assets	817,754	778,359	NA	NA	2,563,174	2,466,096			
Return on common equity	NM	NM	NM	NM	11%	10	%		
Overhead ratio	NM	NM	NM	NM	59	58			

Segment managed results reflect revenue on a FTE basis with the corresponding income tax impact recorded within (a) income tax expense/(benefit). These FTE adjustments are eliminated in reconciling items to arrive at the Firm's reported U.S. GAAP results.

Note 23 – Business changes and developments

Student loan portfolio transfer and sale

The Firm transferred the student loan portfolio to held-for-sale in the first quarter of 2017. The transfer resulted in a write-down of the portfolio to the estimated fair value at the time of the transfer. This write-down was recognized predominantly as a \$467 million charge-off, resulting in a \$218 million increase in the provision for credit losses after utilization of the allowance for loan losses of \$249 million in the first quarter of 2017. The Firm sold substantially all of the portfolio in the second quarter of 2017, and such sale did not have a material impact on the Firm's Consolidated Financial Statements.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of JPMorgan Chase & Co.:

We have reviewed the accompanying consolidated balance sheet of JPMorgan Chase & Co. and its subsidiaries (the “Firm”) as of June 30, 2017, and the related consolidated statements of income and comprehensive income for the three-month and six-month periods ended June 30, 2017 and 2016 and changes in stockholders’ equity, and cash flows for the six-month periods ended June 30, 2017 and 2016. These interim financial statements are the responsibility of the Firm’s management.

We conducted our review in accordance with the standards of the Public Company Accounting Oversight Board (United States). A review of interim financial information consists principally of applying analytical procedures and making inquiries of persons responsible for financial and accounting matters. It is substantially less in scope than an audit conducted in accordance with the standards of the Public Company Accounting Oversight Board (United States), the objective of which is the expression of an opinion regarding the financial statements taken as a whole.

Accordingly, we do not express such an opinion.

Based on our review, we are not aware of any material modifications that should be made to the accompanying consolidated interim financial statements for them to be in conformity with accounting principles generally accepted in the United States of America.

We previously audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet as of December 31, 2016, and the related consolidated statements of income, comprehensive income, changes in stockholders’ equity, and cash flows for the year then ended (not presented herein), and in our report dated February 28, 2017, we expressed an unqualified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying consolidated balance sheet information as of December 31, 2016, is fairly stated in all material respects in relation to the consolidated balance sheet from which it has been derived.

August 2, 2017

PricewaterhouseCoopers LLP, 300 Madison Avenue, New York, NY 10017

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JPMorgan Chase & Co.

Consolidated average balance sheets, interest and rates

(Taxable-equivalent interest and rates; in millions, except rates)

	Three months ended June 30, 2017			Three months ended June 30, 2016		
	Average balance	Interest ^(e)	Rate (annualized)	Average balance	Interest ^(e)	Rate (annualized)
Assets						
Deposits with banks	\$437,637	\$1,008	0.92 %	\$379,001	\$466	0.49%
Federal funds sold and securities purchased under resale agreements	193,302	528	1.10	201,871	576	1.15
Securities borrowed	90,151	(21) ^(f)	(0.09)	101,669	(96) ^(f)	(0.38)
Trading assets – debt instruments	234,809	1,834	3.13	215,780	1,878	3.50
Taxable securities	229,196	1,410	2.47	235,641	1,380	2.36
Nontaxable securities ^(a)	45,499	720	6.35	44,400	671	6.08
Total securities	274,695	2,130	3.11 ^(g)	280,041	2,051	2.95 ^(g)
Loans	904,969	10,066	4.46	859,727	9,032	4.22
Other assets ^(b)	41,546	444	4.28	41,436	211	2.06
Total interest-earning assets	2,177,109	15,989	2.95	2,079,525	14,118	2.73
Allowance for loan losses	(13,350)			(13,983)		
Cash and due from banks	19,742			18,956		
Trading assets – equity instruments	126,127			99,626		
Trading assets – derivative receivables	58,250			69,823		
Goodwill	47,290			47,309		
Mortgage servicing rights	5,774			5,512		
Other intangible assets	838			928		
Other assets	137,456			133,493		
Total assets	\$2,559,236			\$2,441,189		
Liabilities						
Interest-bearing deposits	\$1,006,008	\$629	0.25 %	\$919,759	\$321	0.14%
Federal funds purchased and securities loaned or sold under repurchase agreements	196,331	387	0.79	176,855	282	0.64
Commercial paper	19,466	63	1.29	17,462	38	0.88
Trading liabilities – debt, short-term and other liabilities ^{(c)(d)}	197,066	548	1.12	200,141	314	0.63
Beneficial interests issued by consolidated VIEs	34,083	128	1.51	38,411	118	1.24
Long-term debt	295,868	1,687	2.29	291,726	1,393	1.92
Total interest-bearing liabilities	1,748,822	3,442	0.79	1,644,354	2,466	0.60
Noninterest-bearing deposits	404,121			396,207		
Trading liabilities – equity instruments ^(d)	19,346			20,747		
Trading liabilities – derivative payables	44,740			54,048		
All other liabilities, including the allowance for lending-related commitments	85,939			75,336		
Total liabilities	2,302,968			2,190,692		
Stockholders' equity						
Preferred stock	26,068			26,068		
Common stockholders' equity	230,200			224,429		

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Total stockholders' equity	256,268		250,497	
Total liabilities and stockholders' equity	\$2,559,236		\$2,441,189	
Interest rate spread		2.16 %		2.13%
Net interest income and net yield on interest-earning assets	\$12,547	2.31	\$11,652	2.25

(a) Represents securities which are tax exempt for U.S. federal income tax purposes.

(b) Includes margin loans.

(c) Includes brokerage customer payables.

(d) Included trading liabilities – debt and equity instruments of \$90,499 million and \$95,151 million for the three months ended June 30, 2017 and 2016, respectively.

(e) Interest includes the effect of certain related hedging derivatives. Taxable-equivalent amounts are used where applicable.

(f) Negative interest income and yield is related to client-driven demand for certain securities combined with the impact of low interest rates; this is matched book activity and the negative interest expense on the corresponding securities loaned is recognized in interest expense and reported within trading liabilities – debt, short-term and other liabilities.

(g) For the three months ended June 30, 2017 and 2016, the annualized rates for securities, based on amortized cost, were 3.15% and 3.00%, respectively; this does not give effect to changes in fair value that are reflected in accumulated other comprehensive income/(loss).

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JPMorgan Chase & Co.

Consolidated average balance sheets, interest and rates

(Taxable-equivalent interest and rates; in millions, except rates)

	Six months ended June 30, 2017			Six months ended June 30, 2016		
	Average balance	Interest ^(e)	Rate (annualized)	Average balance	Interest ^(e)	Rate (annualized)
Assets						
Deposits with banks	\$429,946	\$1,730	0.81 %	\$371,600	\$926	0.50 %
Federal funds sold and securities purchased under resale agreements	195,122	1,054	1.09	203,433	1,130	1.12
Securities borrowed	92,747	(65)	^(f) (0.14)	102,565	(188)	^(f) (0.37)
Trading assets – debt instruments	230,330	3,717	3.25	212,047	3,594	3.41
Taxable securities	234,967	2,840	2.44	238,008	2,822	2.38
Nontaxable securities ^(a)	45,133	1,410	6.30	44,257	1,336	6.07
Total securities	280,100	4,250	3.06 ^(g)	282,265	4,158	2.96 ^(g)
Loans	898,473	19,888	4.46	850,126	17,939	4.24
Other assets ^(b)	42,337	786	3.74	39,718	404	2.05
Total interest-earning assets	2,169,055	31,360	2.92	2,061,754	27,963	2.73
Allowance for loan losses	(13,536)			(13,810)		
Cash and due from banks	19,800			18,450		
Trading assets – equity instruments	120,735			92,453		
Trading assets – derivative receivables	59,816			70,237		
Goodwill	47,292			47,320		
Mortgage servicing rights	5,938			5,715		
Other intangible assets	845			957		
Other assets	136,326			134,979		
Total assets	\$2,546,271			\$2,418,055		
Liabilities						
Interest-bearing deposits	\$996,067	\$1,112	0.23 %	\$904,050	\$641	0.14 %
Federal funds purchased and securities loaned or sold under repurchase agreements	192,990	680	0.71	174,050	542	0.63
Commercial paper	16,432	103	1.26	17,499	71	0.82
Trading liabilities – debt, short-term and other liabilities ^{(c)(d)}	198,515	986	1.00	198,187	541	0.55
Beneficial interests issued by consolidated VIEs	36,416	263	1.46	39,125	231	1.19
Long-term debt	294,056	3,276	2.25	289,943	2,612	1.81
Total interest-bearing liabilities	1,734,476	6,420	0.75	1,622,854	4,638	0.57
Noninterest-bearing deposits	404,831			395,568		
Trading liabilities – equity instrument ^(d)	20,204			19,625		
Trading liabilities – derivative payables	46,547			57,319		
All other liabilities, including the allowance for lending-related commitments	85,186			73,626		
Total liabilities	2,291,244			2,168,992		
Stockholders' equity						
Preferred stock	26,068			26,068		
Common stockholders' equity	228,959			222,995		

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Total stockholders' equity	255,027		249,063	
Total liabilities and stockholders' equity	\$2,546,271		\$2,418,055	
Interest rate spread		2.17 %		2.16 %
Net interest income and net yield on interest-earning assets	\$24,940	2.32	\$23,325	2.28

(a) Represents securities which are tax exempt for U.S. federal income tax purposes.

(b) Includes margin loans.

(c) Includes brokerage customer payables.

(d) Included trading liabilities - debt and equity instruments of \$92,283 million and \$91,434 million for the six months ended June 30, 2017 and 2016, respectively.

(e) Interest includes the effect of certain related hedging derivatives. Taxable-equivalent amounts are used where applicable.

(f) Negative interest income and yield is related to client-driven demand for certain securities combined with the impact of low interest rates; this is matched book activity and the negative interest expense on the corresponding securities loaned is recognized in interest expense and reported within trading liabilities - debt, short-term and other liabilities.

(g) For the six months ended June 30, 2017 and 2016, the annualized rates for securities, based on amortized cost, were 3.09% and 3.01% respectively; this does not give effect to changes in fair value that are reflected in accumulated other comprehensive income/(loss).

GLOSSARY
OF TERMS

AND

ACRONYMS

2016 Annual Report or 2016 Form 10-K: Annual report on Form 10-K for year ended December 31, 2016, filed with the U.S. Securities and Exchange Commission.

ABS: Asset-backed securities

Active foreclosures: Loans referred to foreclosure where formal foreclosure proceedings are ongoing. Includes both judicial and non-judicial states.

AFS: Available-for-sale

Allowance for loan losses to total loans: represents period-end allowance for loan losses divided by retained loans.

AOCI: Accumulated other comprehensive income/(loss)

ARM(s): Adjustable rate mortgage(s)

AWM: Asset & Wealth Management

Beneficial interests issued by consolidated VIEs: represents the interest of third-party holders of debt, equity securities, or other obligations, issued by VIEs that JPMorgan Chase consolidates.

Benefit obligation: refers to the projected benefit obligation for pension plans and the accumulated postretirement benefit obligation for OPEB plans.

BHC: Bank holding company

CB: Commercial Banking

CBB: Consumer & Business Banking

CCAR: Comprehensive Capital Analysis and Review

CCB: Consumer & Community Banking

CCP: "Central counterparty" is a clearing house that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer and thereby ensuring the future performance of open contracts. A CCP becomes counterparty to trades with market participants through novation, an open offer system, or another legally binding arrangement.

CDS: Credit default swaps

CEO: Chief Executive Officer

CET1 Capital: Common Equity Tier 1 Capital

CFTC: Commodity Futures Trading Commission

CFO: Chief Financial Officer

Chase Bank USA, N.A.: Chase Bank USA, National Association

CIB: Corporate & Investment Bank

CIO: Chief Investment Office

Client deposits and other third party liabilities: Deposits, as well as deposits that are swept to on-balance sheet liabilities (e.g., commercial paper, federal funds purchased and securities loaned or sold under repurchase agreements) as part of client cash management programs.

CLO: Collateralized loan obligations

CLTV: Combined loan-to-value

Collateral-dependent: A loan is considered to be collateral-dependent when repayment of the loan is expected to be provided solely by the underlying collateral, rather than by cash flows from the borrower's operations, income or other resources.

Commercial Card: provides a wide range of payment services to corporate and public sector clients worldwide through the commercial card products. Services include procurement, corporate travel and entertainment, expense management services, and business-to-business payment solutions.

Core loans: represents loans considered central to the Firm's ongoing businesses; core loans exclude loans classified as trading assets, runoff portfolios, discontinued portfolios and portfolios the Firm has an intent to exit.

Credit derivatives: Financial instruments whose value is derived from the credit risk associated with the debt of a third party issuer (the reference entity) which allow one party (the protection purchaser) to transfer that risk to another party (the protection seller). Upon the occurrence of a credit event by the reference entity, which may include, among other events, the bankruptcy or failure to pay its obligations, or certain restructurings of the debt of the reference entity, neither party has recourse to the reference entity. The protection purchaser has recourse to the protection seller for the difference between the face value of the CDS contract and the fair value at the time of settling the credit derivative contract. The determination as to whether a credit event has occurred is generally made by the relevant International Swaps and Derivatives Association (“ISDA”) Determinations Committee.

Criticized: Criticized loans, lending-related commitments and derivative receivables that are classified as special mention, substandard and doubtful categories for regulatory purposes and are generally consistent with a rating of CCC+/Caa1 and below, as defined by S&P and Moody’s.

CRO: Chief Risk Officer

CVA: Credit valuation adjustments

DFAST: Dodd-Frank Act Stress Test

Dodd-Frank Act: Wall Street Reform and Consumer Protection Act

DOJ: U.S. Department of Justice

DOL: U.S. Department of Labor

DVA: Debit valuation adjustment

E&P: Exploration & Production

EC: European Commission

Eligible LTD: Long-term debt satisfying certain eligibility criteria

Embedded derivatives: are implicit or explicit terms or features of a financial instrument that affect some or all of

the cash flows or the value of the instrument in a manner similar to a derivative. An instrument containing such terms or features is referred to as a “hybrid.” The component of the hybrid that is the non-derivative instrument is referred to as the “host.” For example, callable debt is a hybrid instrument that contains a plain vanilla debt instrument (i.e., the host) and an embedded option that allows the issuer to redeem the debt issue at a specified date for a specified amount (i.e., the embedded derivative). However, a floating rate instrument is not a hybrid composed of a fixed-rate instrument and an interest rate swap.

ERISA: Employee Retirement Income Security Act of 1974

EPS: Earnings per share

Exchange-traded derivatives: Derivative contracts that are executed on an exchange and settled via a central clearing house.

Fannie Mae: Federal National Mortgage Association

FASB: Financial Accounting Standards Board

FCA: Financial Conduct Authority

FCC: Firmwide Control Committee

FDIA: Federal Depository Insurance Act

FDIC: Federal Deposit Insurance Corporation

Federal Reserve: The Board of the Governors of the Federal Reserve System

Fee share: Proportion of fee revenue based on estimates of investment banking fees generated across the industry from investment banking transactions in M&A, equity and debt underwriting, and loan syndications. Source: Dealogic, a third party provider of investment banking fee competitive analysis and volume-based league tables for the above noted industry products.

FFELP: Federal Family Education Loan Program

FFIEC: Federal Financial Institutions Examination Council

FHA: Federal Housing Administration

FHLB: Federal Home Loan Bank

FICO score: A measure of consumer credit risk provided by credit bureaus, typically produced from statistical models by Fair Isaac Corporation utilizing data collected by the credit bureaus.

Firm: JPMorgan Chase & Co.

Forward points: represents the interest rate differential between two currencies, which is either added to or subtracted from the current exchange rate (i.e., “spot rate”) to determine the forward exchange rate.

Free-standing derivatives: is a derivative contract entered into either separate and apart from any of the Firms other financial instruments or equity transactions. Or, in conjunction with some other transaction and is legally detachable and separately exercisable.

FSB: Financial Stability Board

FTE: Fully taxable-equivalent

FVA: Funding valuation adjustment

FX: Foreign exchange

G7: “Group of Seven nations”: Countries in the G7 are Canada, France, Germany, Italy, Japan, the U.K. and the U.S.

G7 government bonds: Bonds issued by the government of one of the G7 nations.

Ginnie Mae: Government National Mortgage Association

GSE: Fannie Mae and Freddie Mac

GSIB: Globally systemically important banks

HAMP: Home affordable modification program

Headcount-related expense: Includes salary and benefits (excluding performance-based incentives), and other noncompensation costs related to employees.

HELOAN: Home equity loan

HELOC: Home equity line of credit

Home equity – senior lien: represents loans and commitments where JPMorgan Chase holds the first security interest on the property.

Home equity – junior lien: represents loans and commitments where JPMorgan Chase holds a security interest that is subordinate in rank to other liens.

HQLA: High quality liquid assets

HTM: Held-to-maturity

IDI: Insured depository institutions

IHC: JPMorgan Chase Holdings LLC, an intermediate holding company

Impaired loan: Impaired loans are loans measured at amortized cost, for which it is probable that the Firm will be unable to collect all amounts due, including principal and interest, according to the contractual terms of the agreement.

Impaired loans include the following:

▲ All wholesale nonaccrual loans

▲ All TDRs (both wholesale and consumer), including ones that have returned to accrual status

Interchange income: A fee paid to a credit card issuer in the clearing and settlement of a sales or cash advance transaction.

Investment-grade: An indication of credit quality based on JPMorgan Chase's internal risk assessment system.

"Investment grade" generally represents a risk profile similar to a rating of a "BBB-"/"Baa3" or better, as defined by independent rating agencies.

IR: Interest rate

ISDA: International Swaps and Derivatives Association

JPMorgan Chase: JPMorgan Chase & Co.

JPMorgan Chase Bank, N.A.: JPMorgan Chase Bank, National Association

JPMorgan Securities: J.P. Morgan Securities LLC

LCR: Liquidity coverage ratio

LGD: Loss given default

LIBOR: London Interbank Offered Rate

LLC: Limited Liability Company

LOB: Line of business

Loss emergence period: represents the time period between the date at which the loss is estimated to have been incurred and the realization of that loss.

LTIP: Long-term incentive plan

LTV: "Loan-to-value ratio": For residential real estate loans, the relationship, expressed as a percentage, between the principal amount of a loan and the appraised value of the collateral (i.e., residential real estate) securing the loan.

Origination date LTV ratio

The LTV ratio at the origination date of the loan. Origination date LTV ratios are calculated based on the actual appraised values of collateral (i.e., loan-level data) at the origination date.

Current estimated LTV ratio

An estimate of the LTV as of a certain date. The current estimated LTV ratios are calculated using estimated collateral values derived from a nationally recognized home price index measured at the metropolitan statistical area ("MSA") level. These MSA-level home price indices consist of actual data to the extent available and forecasted data where actual data is not available. As a result, the estimated collateral values used to calculate these ratios do not represent actual appraised loan-level collateral values; as such, the resulting LTV ratios are necessarily imprecise and should therefore be viewed as estimates.

Combined LTV ratio

The LTV ratio considering all available lien positions, as well as unused lines, related to the property. Combined LTV ratios are used for junior lien home equity products.

Master netting agreement: An agreement between two counterparties who have multiple contracts with each other that provides for the net settlement of all contracts, as well as cash collateral, through a single payment, in a single currency, in the event of default on or termination of any one contract.

MBS: Mortgage-backed securities

MD&A: Management's discussion and analysis

MMDA: Money Market Deposit Accounts

Moody's: Moody's Investor Services

Mortgage product types:

Alt-A

Alt-A loans are generally higher in credit quality than subprime loans but have characteristics that would disqualify the borrower from a traditional prime loan. Alt-A lending characteristics may include one or more of the following: (i) limited documentation; (ii) a high CLTV ratio; (iii) loans secured by non-owner occupied properties; or (iv) a debt-to-income ratio above normal limits. A substantial

proportion of the Firm's Alt-A loans are those where a borrower does not provide complete documentation of his or her assets or the amount or source of his or her income.

Option ARMs

The option ARM real estate loan product is an adjustable-rate mortgage loan that provides the borrower with the option each month to make a fully amortizing, interest-only or minimum payment. The minimum payment on an option ARM loan is based on the interest rate charged during the introductory period. This introductory rate is usually significantly below the fully indexed rate. The fully indexed rate is calculated using an index rate plus a margin. Once the introductory period ends, the contractual interest rate charged on the loan increases to the fully indexed rate and adjusts monthly to reflect movements in the index. The minimum payment is typically insufficient to cover interest accrued in the prior month, and any unpaid interest is deferred and added to the principal balance of the loan. Option ARM loans are subject to payment recast, which converts the loan to a variable-rate fully amortizing loan upon meeting specified loan balance and anniversary date triggers.

Prime

Prime mortgage loans are made to borrowers with good credit records who meet specific underwriting requirements, including prescriptive requirements related to income and overall debt levels. New prime mortgage borrowers provide full documentation and generally have reliable payment histories.

Subprime

Subprime loans are loans that, prior to mid-2008, were offered to certain customers with one or more high risk characteristics, including but not limited to: (i) unreliable or poor payment histories; (ii) a high LTV ratio of greater than 80% (without borrower-paid mortgage insurance); (iii) a high debt-to-income ratio; (iv) an occupancy type for the loan is other than the borrower's primary residence; or (v) a history of delinquencies or late payments on the loan.

MSA: Metropolitan statistical areas

MSR: Mortgage servicing rights

NA: Data is not applicable or available for the period presented.

Net Capital Rule: Rule 15c3-1 under the Securities Exchange Act of 1934.

Net charge-off/(recovery) rate: represents net charge-offs/(recoveries) (annualized) divided by average retained loans for the reporting period.

Net yield on interest-earning assets: The average rate for interest-earning assets less the average rate paid for all sources of funds.

NM: Not meaningful

NOL: Net operating loss

Nonaccrual loans: Loans for which interest income is not recognized on an accrual basis. Loans (other than credit

card loans and certain consumer loans insured by U.S. government agencies) are placed on nonaccrual status when full payment of principal and interest is not expected, regardless of delinquency status, or when principal and interest has been in default for a period of 90 days or more unless the loan is both well-secured and in the process of collection. Collateral-dependent loans are typically maintained on nonaccrual status.

Nonperforming assets: Nonperforming assets include nonaccrual loans, nonperforming derivatives and certain assets acquired in loan satisfactions, predominantly real estate owned and other commercial and personal property.

NOW: Negotiable Order of Withdrawal

NSFR: Net stable funding ratio

OAS: Option-adjusted spread

OCC: Office of the Comptroller of the Currency

OCI: Other comprehensive income/(loss)

OEP: One Equity Partners

OIS: Overnight index swap

OPEB: Other postretirement employee benefit

OTC: "Over-the-counter derivatives": Derivative contracts that are negotiated, executed and settled bilaterally between two derivative counterparties, where one or both counterparties is a derivatives dealer.

OTC cleared: "Over-the-counter cleared derivatives": Derivative contracts that are negotiated and executed bilaterally, but subsequently settled via a central clearing house, such that each derivative counterparty is only exposed to the default of that clearing house.

OTTI: Other-than-temporary impairment

Overhead ratio: Noninterest expense as a percentage of total net revenue.

Parent Company: JPMorgan Chase & Co.

Participating securities: represents unvested stock-based compensation awards containing nonforfeitable rights to dividends or dividend equivalents (collectively, "dividends"), which are included in the earnings per share calculation using the two-class method. JPMorgan Chase grants restricted stock and RSUs to certain employees under its stock-based compensation programs, which entitle the recipients to receive nonforfeitable dividends during the vesting period on a basis equivalent to the dividends paid to holders of common stock. These unvested awards meet the definition of participating securities. Under the two-class method, all earnings (distributed and undistributed) are allocated to each class of common stock and participating securities, based on their respective rights to receive dividends.

PCA: Prompt corrective action

PCI: "Purchased credit-impaired" loans represents loans that were acquired in the Washington Mutual transaction and deemed to be credit-impaired on the acquisition date in accordance with the guidance of the FASB. The guidance

allows purchasers to aggregate credit-impaired loans acquired in the same fiscal quarter into one or more pools, provided that the loans have common risk characteristics (e.g., product type, LTV ratios, FICO scores, past due status, geographic location). A pool is then accounted for as a single asset with a single composite interest rate and an aggregate expectation of cash flows.

PD: Probability of default

PRA: Prudential Regulatory Authority

Pre-provision profit/(loss): represents total net revenue less noninterest expense. The Firm believes that this financial measure is useful in assessing the ability of a lending institution to generate income in excess of its provision for credit losses.

Principal transactions revenue: Principal transactions revenue is driven by many factors, including the bid-offer spread, which is the difference between the price at which the Firm is willing to buy a financial or other instrument and the price at which the Firm is willing to sell that instrument. It also consists of realized (as a result of closing out or termination of transactions, or interim cash payments) and unrealized (as a result of changes in valuation) gains and losses on financial and other instruments (including those accounted for under the fair value option) primarily used in client-driven market-making activities and on private equity investments. In connection with its client-driven market-making activities, the Firm transacts in debt and equity instruments, derivatives and commodities (including

physical commodities inventories and financial instruments that reference commodities). Principal transactions revenue also includes certain realized and unrealized gains and losses related to hedge accounting and specified risk-management activities, including: (a) certain derivatives designated in qualifying hedge accounting relationships (primarily fair value hedges of commodity and foreign exchange risk), (b) certain derivatives used for specific risk management purposes, primarily to mitigate credit risk, foreign exchange risk and commodity risk, and (c) other derivatives.

PSU(s): Performance share units

Receivables from customers: primarily represents margin loans to brokerage customers that are collateralized through assets maintained in the clients' brokerage accounts, as such no allowance is held against these receivables. These receivables are reported within accrued interest and accounts receivable on the Firm's Consolidated balance sheets.

Regulatory VaR: Daily aggregated VaR calculated in accordance with regulatory rules.

REO: Real estate owned

Reported basis: Financial statements prepared under U.S. GAAP, which excludes the impact of taxable-equivalent adjustments.

Retained loans: Loans that are held-for-investment (i.e. excludes loans held-for-sale and loans at fair value).

Revenue wallet: Total fee revenue based on estimates of investment banking fees generated across the industry (i.e., the revenue wallet) from investment banking transactions in M&A, equity and debt underwriting, and loan syndications. Source: Dealogic, a third-party provider of investment banking competitive analysis and volume based league tables for the above noted industry products.

RHS: Rural Housing Service of the U.S. Department of Agriculture

ROE: Return on equity

ROTCE: Return on tangible common equity

RSU(s): Restricted stock units

RWA: "Risk-weighted assets": Basel III establishes two comprehensive methodologies for calculating RWA (a Standardized approach and an Advanced approach) which include capital requirements for credit risk, market risk, and in the case of Basel III Advanced, also operational risk. Key differences in the calculation of credit risk RWA between the Standardized and Advanced approaches are that for Basel III Advanced, credit risk RWA is based on risk-sensitive approaches which largely rely on the use of internal credit models and parameters, whereas for Basel III Standardized, credit risk RWA is generally based on supervisory risk-weightings which vary primarily by counterparty type and asset class. Market risk RWA is calculated on a generally consistent basis between Basel III Standardized and Basel III Advanced.

S&P: Standard and Poor's 500 Index

SAR(s): Stock appreciation rights

SCCL: Single-counterparty credit limits

SEC: Securities and Exchange Commission

Seed capital: Initial JPMorgan capital invested in products, such as mutual funds, with the intention of ensuring the fund is of sufficient size to represent a viable offering to clients, enabling pricing of its shares, and allowing the manager to develop a track record. After these goals are achieved, the intent is to remove the Firm's capital from the investment.

Short sale: is a sale of real estate in which proceeds from selling the underlying property are less than the amount owed the Firm under the terms of the related mortgage and the related lien is released upon receipt of such proceeds.

Single-name: Single reference-entities

SLR: Supplementary leverage ratio

SMBS: Stripped mortgage-backed securities

SOA: Society of Actuaries

SPEs: Special purpose entities

Structural interest rate risk: represents interest rate risk of the non-trading assets and liabilities of the Firm.

Structured notes: Structured notes are predominantly financial instruments containing embedded derivatives. Where present, the embedded derivative is the primary driver of risk.

Suspended foreclosures: Loans referred to foreclosure where formal foreclosure proceedings have started but are currently on hold, which could be due to bankruptcy or loss mitigation. Includes both judicial and non-judicial states.

Taxable-equivalent basis: In presenting managed results, the total net revenue for each of the business segments and the Firm is presented on a tax-equivalent basis. Accordingly, revenue from investments that receive tax credits and tax-exempt securities is presented in the managed results on a basis comparable to taxable investments and securities; the corresponding income tax impact related to tax-exempt items is recorded within income tax expense.

TBVPS: Tangible book value per share

TCE: Tangible common equity

TDR: "Troubled debt restructuring" is deemed to occur when the Firm modifies the original terms of a loan agreement by granting a concession to a borrower that is experiencing financial difficulty.

TLAC: Total Loss Absorbing Capacity

U.K.: United Kingdom

Unaudited: Financial statements and information that have not been subjected to auditing procedures sufficient to permit an independent certified public accountant to express an opinion.

U.S.: United States of America

U.S. GAAP: Accounting principles generally accepted in the United States of America.

U.S. GSE(s): “U.S. government-sponsored enterprises”: In the U.S., GSEs are quasi-governmental, privately-held entities established by Congress to improve the flow of credit to specific sectors of the economy and provide certain essential services to the public. U.S. GSEs include Fannie Mae and Freddie Mac, but do not include Ginnie Mae, which is directly owned by the U.S. Department of Housing and Urban Development. U.S. GSE obligations are not explicitly guaranteed as to the timely payment of principal and interest by the full faith and credit of the U.S. government.

U.S. Treasury: U.S. Department of the Treasury

VA: U.S. Department of Veterans Affairs

VaR: “Value-at-risk” is a measure of the dollar amount of potential loss from adverse market moves in an ordinary market environment.

VIEs: Variable interest entities

Warehouse loans: consist of prime mortgages originated with the intent to sell that are accounted for at fair value and classified as trading assets.

Washington Mutual transaction: On September 25, 2008, JPMorgan Chase acquired certain of the assets of the banking operations of Washington Mutual Bank (“Washington Mutual”) from the FDIC.

LINE OF
BUSINESS
METRICS

CONSUMER & COMMUNITY BANKING (“CCB”)

Households: A household is a collection of individuals or entities aggregated together by name, address, tax identifier and phone. Reported on a one-month lag.

Debit and credit card sales volume: Dollar amount of cardmember purchases, net of returns.

Deposit margin/deposit spread: represents net interest income expressed as a percentage of average deposits.

Mortgage Production and Mortgage Servicing revenue comprises the following:

Net production revenue: includes net gains or losses on originations and sales of mortgage loans, other production-related fees and losses related to the repurchase of previously-sold loans.

Net mortgage servicing revenue: includes the following components:

a) Operating revenue predominantly represents the return on Mortgage Servicing’s MSR asset and includes:

• Actual gross income earned from servicing third-party mortgage loans, such as contractually specified servicing fees and ancillary income; and

• The change in the fair value of the MSR asset due to the collection or realization of expected cash flows.

b) Risk management represents the components of Mortgage Servicing’s MSR asset that are subject to ongoing risk management activities, together with derivatives and other instruments used in those risk management activities.

Mortgage origination channels comprise the following:

Retail: Borrowers who buy or refinance a home through direct contact with a mortgage banker employed by the Firm using a branch office, the Internet or by phone. Borrowers are frequently referred to a mortgage banker by a banker in a Chase branch, real estate brokers, home builders or other third parties.

Correspondent: Banks, thrifts, other mortgage banks and other financial institutions that sell closed loans to the Firm.

Card Services: includes the Card and Commerce Solutions businesses.

Card: is a business that primarily issues credit cards to consumers and small businesses.

Commerce Solutions: is a business that primarily processes transactions for merchants.

Net revenue rate: represents Card Services net revenue (annualized) expressed as a percentage of average loans for the period.

Auto loan and lease origination volume: Dollar amount of auto loans and leases originated.

CORPORATE & INVESTMENT BANK (“CIB”)

Definition of selected CIB revenue:

Investment Banking: incorporates all revenue associated with investment banking activities, and is reported net of investment banking revenue shared with other lines of business.

Treasury Services: offers a broad range of products and services that enable clients to manage payments and receipts, as well as invest and manage funds. Products include U.S. dollar and multi-currency clearing, ACH, lockbox, disbursement and reconciliation services, check deposits, and currency-related services.

Lending: includes net interest income, fees, gains or losses on loan sale activity, gains or losses on securities received as part of a loan restructuring, and the risk management results related to the credit portfolio. Lending also includes Trade Finance, which includes loans tied directly to goods crossing borders, export/import loans, commercial letters of credit, standby letters of credit, and supply chain finance.

Fixed Income Markets: primarily includes revenue related to market-making across global fixed income markets, including foreign exchange, interest rate, credit and commodities markets.

Equity Markets: primarily includes revenue related to market-making across global equity products, including cash instruments, derivatives, convertibles and Prime Services.

Securities Services: primarily includes custody, fund accounting and administration, and securities lending products sold principally to asset managers, insurance companies and public and private investment funds. Also includes clearance, collateral management and depositary receipts business which provides broker-dealer clearing and custody services, including tri-party repo transactions, collateral management products, and depositary bank services for American and global depositary receipt programs.

Description of certain business metrics:

Assets under custody (“AUC”): represents activities associated with the safekeeping and servicing of assets on which Securities Services earns fees.

Investment banking fees: represents advisory, equity underwriting, bond underwriting and loan syndication fees.

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COMMERCIAL BANKING (“CB”)

CB is divided into four primary client segments: Middle Market Banking, Corporate Client Banking, Commercial Term Lending, and Real Estate Banking.

Middle Market Banking: covers corporate, municipal and nonprofit clients, with annual revenue generally ranging between \$20 million and \$500 million.

Corporate Client Banking: covers clients with annual revenue generally ranging between \$500 million and \$2 billion and focuses on clients that have broader investment banking needs.

Commercial Term Lending: primarily provides term financing to real estate investors/owners for multifamily properties as well as office, retail and industrial properties.

Real Estate Banking: provides full-service banking to investors and developers of institutional-grade real estate investment properties.

Other: primarily includes lending and investment-related activities within the Community Development Banking business.

CB product revenue comprises the following:

Lending: includes a variety of financing alternatives, which are primarily provided on a secured basis; collateral includes receivables, inventory, equipment, real estate or other assets. Products include term loans, revolving lines of credit, bridge financing, asset-based structures, leases, and standby letters of credit.

Treasury services: includes revenue from a broad range of products and services that enable CB clients to manage payments and receipts, as well as invest and manage funds.

Investment banking: includes revenue from a range of products providing CB clients with sophisticated capital-raising alternatives, as well as balance sheet and risk management tools through advisory, equity underwriting, and loan syndications. Revenue from fixed income and equity market products used by CB clients is also included.

Other: product revenue primarily includes tax-equivalent adjustments generated from Community Development Banking activity and certain income derived from principal transactions.

ASSET & WEALTH MANAGEMENT (“AWM”)

Assets under management (“AUM”): represent assets managed by AWM on behalf of its Private Banking, Institutional and Retail clients. Includes “Committed capital not Called.”

Client assets: represent assets under management, as well as custody, brokerage, administration and deposit accounts.

Multi-asset: Any fund or account that allocates assets under management to more than one asset class.

Alternative assets: The following types of assets constitute alternative investments – hedge funds, currency, real estate, private equity and other investment funds designed to focus on nontraditional strategies.

AWM’s lines of business consist of the following:

Asset Management: provides comprehensive global investment services - including asset management, pension analytics, asset-liability management and active risk-budgeting strategies.

Wealth Management: offers investment advice and wealth management, including investment management, capital markets and risk management, tax and estate planning, banking, lending and specialty-wealth advisory services.

AWM’s client segments consist of the following:

Private Banking: clients include high- and ultra-high-net-worth individuals, families, money managers, business owners and small corporations worldwide.

Institutional: clients include both corporate and public institutions, endowments, foundations, nonprofit organizations and governments worldwide.

Retail: clients include financial intermediaries and individual investors.

Asset Management has two high-level measures of its overall fund performance:

Percentage of mutual fund assets under management in funds rated 4- or 5-star: Mutual fund rating services rank funds based on their risk-adjusted performance over various periods. A 5-star rating is the best rating and represents the top 10% of industry-wide ranked funds.

A 4-star rating represents the next 22.5% of industry-wide ranked funds. A 3-star rating represents the next 35% of industry-wide ranked funds. A 2-star rating represents the next 22.5% of industry-wide ranked funds. A 1-star rating is the worst rating and represents the bottom 10% of industry-wide ranked funds. The “overall Morningstar rating” is derived from a weighted average of the performance associated with a fund’s three-, five- and ten-year (if applicable) Morningstar Rating metrics. For U.S. domiciled funds, separate star ratings are given at the individual share class level. The Nomura “star rating” is based on three-year risk-adjusted performance only. Funds with fewer than three years of history are not rated and hence excluded from this analysis. All ratings, the assigned peer categories and the asset values used to derive this analysis are sourced from these fund rating providers. The data providers re-denominate the asset values into U.S. dollars. This % of AUM is based on star ratings at the share class level for U.S. domiciled funds, and at a “primary share class” level to represent the star rating of all other funds except for Japan where Nomura provides ratings at the fund level. The “primary share class”, as defined by Morningstar, denotes the share class recommended as being the best proxy for the portfolio and in most cases will be the most retail version (based upon annual management charge, minimum investment, currency and other factors). The performance data could have been different if all funds/accounts would have been included. Past performance is not indicative of future results.

Percentage of mutual fund assets under management in funds ranked in the 1st or 2nd quartile (one, three, and five years): All quartile rankings, the assigned peer categories and the asset values used to derive this analysis are sourced from the fund ranking providers. Quartile rankings are done on the net-of-fee absolute return of each fund. The data providers re-denominate the asset values into U.S. dollars. This % of AUM is based on fund performance and associated peer rankings at the share class level for U.S. domiciled funds, at a “primary share class” level to represent the quartile ranking of the U.K., Luxembourg and Hong Kong funds and at the fund level for all other funds. The “primary share class”, as defined by Morningstar, denotes the share class recommended as being the best proxy for the portfolio and in most cases will be the most retail version (based upon annual management charge, minimum investment, currency and other factors). Where peer group rankings given for a fund are in more than one “primary share class” territory both rankings are included to reflect local market competitiveness (applies to “Offshore Territories” and “HK SFC Authorized” funds only). The performance data could have been different if all funds/accounts would have been included. Past performance is not indicative of future results.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

For a discussion of the quantitative and qualitative disclosures about market risk, see the Market Risk Management section of Management’s discussion and analysis on pages 72–76 of this Form 10-Q and pages 116–123 of JPMorgan Chase’s 2016 Annual Report.

Item 4. Controls and Procedures.

As of the end of the period covered by this report, an evaluation was carried out under the supervision and with the participation of the Firm’s management, including its Chairman and Chief Executive Officer and its Chief Financial Officer, of the effectiveness of its disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934). Based on that evaluation, the Chairman and Chief Executive Officer and the Chief Financial Officer concluded that these disclosure controls and procedures were effective. See Exhibits 31.1 and 31.2 for the Certification statements issued by the Chairman and Chief Executive Officer and Chief Financial Officer. The Firm is committed to maintaining high standards of internal control over financial reporting. Nevertheless, because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. In addition, in a firm as large and complex as JPMorgan Chase, lapses or deficiencies in internal controls do occur from time to time, and there can be no assurance that any such deficiencies will not result in significant deficiencies or material weaknesses in internal controls in the future. For further information, see “Management’s report on internal control over financial reporting” on page 139 of JPMorgan Chase’s 2016 Annual Report. There was no change in the Firm’s internal control over financial reporting (as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934) that occurred during the three months ended June 30, 2017, that has materially affected, or is reasonably likely to materially affect, the Firm’s internal control over financial reporting.

Part II – Other Information

Item 1. Legal Proceedings.

For information that updates the disclosures set forth under Part I, Item 3: Legal Proceedings, in JPMorgan Chase’s 2016 Annual Report on Form 10-K, see the discussion of the Firm’s material legal proceedings in Note 21 of this Form 10-Q.

Item 1A. Risk Factors.

For a discussion of certain risk factors affecting the Firm, see Part I, Item 1A: Risk Factors on pages 8–21 of JPMorgan Chase’s 2016 Annual Report on Form 10-K and Forward-Looking Statements on page 82 of this Form 10-Q.

Supervision and regulation

For information on Supervision and Regulation, see the Supervision and regulation section on pages 1–8 of JPMorgan Chase’s 2016 Form 10-K.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

During the three months ended June 30, 2017, no shares of common stock of JPMorgan Chase & Co. were issued in transactions exempt from registration under the Securities Act of 1933, pursuant to Section 4(2) thereof.

Repurchases under the common equity repurchase program

Following receipt in June 2017 of the Federal Reserve’s non-objection to the Firm’s 2017 capital plan, the Firm’s Board of Directors authorized the repurchase of up to \$19.4 billion of common equity (common stock and warrants) between July 1, 2017 and June 30, 2018. This authorization includes shares repurchased to offset issuances under the Firm’s equity-based compensation plans.

The following table sets forth the Firm’s repurchases of common equity for the three and six months ended June 30, 2017 and 2016. There were no warrants repurchased during the six months ended June 30, 2017 and 2016.

	Three months ended June 30,		Six months ended June 30,	
(in millions)	2017	2016	2017	2016
Total shares of common stock repurchased	35.0	45.8	67.1	75.0
Aggregate common stock repurchases	\$3,007	\$2,840	\$5,839	\$4,536

The Firm may, from time to time, enter into written trading plans under Rule 10b5-1 of the Securities Exchange Act of 1934 to facilitate repurchases in accordance with the common equity repurchase program. A Rule 10b5-1

repurchase plan allows the Firm to repurchase its equity during periods when it would not otherwise be repurchasing common equity — for example, during internal trading blackout periods. All purchases under a Rule 10b5-1 plan must be made according to a predefined plan established when the Firm is not aware of material nonpublic information.

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The authorization to repurchase common equity will be utilized at management's discretion, and the timing of purchases and the exact amount of common equity that may be repurchased is subject to various factors, including market conditions; legal and regulatory considerations affecting the amount and timing of repurchase activity; the Firm's capital position (taking into account goodwill and

intangibles); internal capital generation; and alternative investment opportunities. The repurchase program does not include specific price targets or timetables; may be executed through open market purchases or privately negotiated transactions, or utilizing Rule 10b5-1 programs; and may be suspended at any time.

Shares repurchased pursuant to the common equity repurchase program during the six months ended June 30, 2017, were as follows.

Six months ended June 30, 2017	Total shares of common stock repurchased	Average price paid per share of common stock ^(a)	Aggregate repurchases of common equity (in millions) ^(a)	Dollar value of remaining authorized repurchase (in millions) ^(a)	
First quarter	32,132,964	\$ 88.14	\$ 2,832	\$ 3,221	^(b)
April	12,141,723	86.43	1,049	2,172	
May	12,032,546	86.38	1,040	1,132	
June	10,765,858	85.26	918	214	
Second quarter	34,940,127	86.05	3,007	214	
Year-to-date	67,073,091	\$ 87.05	\$ 5,839	\$ 214	^(c)

(a) Excludes commissions cost.

^(b) Represents the amount remaining under the \$10.6 billion repurchase program that was authorized by the Board of Directors on June 29, 2016.

^(c) The \$214 million unused portion under the prior Board authorization was canceled when the \$19.4 billion program was authorized.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

Exhibit No. Description of Exhibit

15	Letter re: Unaudited Interim Financial Information. ^(a)
31.1	Certification. ^(a)
31.2	Certification. ^(a)
32	Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. ^(b)
101.INS	XBRL Instance Document. ^{(a)(c)}
101.SCH	XBRL Taxonomy Extension Schema Document. ^(a)
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document. ^(a)
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document. ^(a)
101.LAB	XBRL Taxonomy Extension Label Linkbase Document. ^(a)
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document. ^(a)

(a) Filed herewith.

Furnished herewith. This exhibit shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that Section. Such exhibit shall not be deemed incorporated into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.

Pursuant to Rule 405 of Regulation S-T, includes the following financial information included in the Firm’s Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2017, formatted in XBRL (eXtensible Business Reporting Language) interactive data files: (i) the Consolidated statements of income (unaudited) for the three and six months ended June 30, 2017 and 2016, (ii) the Consolidated statements of comprehensive income (unaudited) for the three and six months ended June 30, 2017 and 2016, (iii) the Consolidated balance sheets (unaudited) as of June 30, 2017, and December 31, 2016, (iv) the Consolidated statements of changes in stockholders’ equity (unaudited) for the six months ended June 30, 2017 and 2016, (v) the Consolidated statements of cash flows (unaudited) for the six months ended June 30, 2017 and 2016, and (vi) the Notes to Consolidated Financial Statements (unaudited).

SIGNATURE

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

JPMorgan Chase & Co.

(Registrant)

By: /s/ Nicole Giles

Nicole Giles

Managing Director and Corporate Controller

(Principal Accounting Officer)

Date: August 2, 2017

INDEX TO EXHIBITS

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† This exhibit shall not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that Section. Such exhibit shall not be deemed incorporated into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.