

JPMORGAN CHASE & CO.
PILLAR 3 REGULATORY CAPITAL DISCLOSURES

For the quarterly period ended September 30, 2018

Table of Contents

Disclosure map	<u>1</u>
Introduction	<u>2</u>
Report overview	<u>2</u>
Basel III overview	<u>2</u>
Enterprise-wide risk management	<u>3</u>
Governance and oversight	<u>3</u>
Regulatory capital	<u>4</u>
Components of capital	<u>4</u>
Risk-weighted assets	<u>5</u>
Capital adequacy	<u>6</u>
Supplementary leverage ratio	<u>8</u>
Credit risk	<u>9</u>
Retail credit risk	<u>11</u>
Wholesale credit risk	<u>13</u>
Counterparty credit risk	<u>14</u>
Securitization	<u>15</u>
Equity risk in the banking book	<u>18</u>
Market risk	<u>19</u>
Material portfolio of covered positions	<u>19</u>
Value-at-risk	<u>19</u>
Regulatory market risk capital models	<u>20</u>
Independent review	<u>23</u>
Economic-value stress testing	<u>24</u>
Operational risk	<u>25</u>
Capital measurement	<u>25</u>
Interest rate risk in the banking book	<u>26</u>
Supplementary leverage ratio	<u>27</u>
Appendix	<u>28</u>
Valuation process	<u>28</u>
Estimations and model risk management	<u>28</u>
References	<u>28</u>

DISCLOSURE MAP

Pillar 3 Requirement	Description	Pillar 3 Report page reference	3Q18 Form 10-Q page reference	2017 Form 10-K page reference
Capital structure	Terms and conditions of capital instruments	4		1, 249, 251
	Capital components	4	88	150, 251, 252
Capital adequacy	Capital adequacy assessment process	6	44	82, 89
	Risk-weighted assets by risk stripe	5		
	Regulatory capital metrics	7	160	259
Credit risk: general disclosures	Policies and practices	9	55	99, 177, 203, 211, 231, 261
	Credit risk exposures	10	55, 78	99, 130
	Retail			
	Distribution of exposure	10	57, 134, 143, 163	102, 216, 226, 262
	Impaired loans and ALLL	10	135, 147	217, 234
	Wholesale			
	Distribution of exposure	10	62, 127, 145, 163	108, 203, 228, 262
	Impaired loans and ALLL	10	146, 147	230, 234
Credit risk: IRB	Parameter estimation methods	11, 13		
	RWA	9, 11, 13, 14		
Counterparty credit	Parameter estimation methods	14		
	Policies and practices	9		179, 208, 267
	Counterparty credit risk exposure	14	57, 62, 111, 131	102, 108, 179, 208
	Credit derivatives purchased and sold	10	68, 122	115, 189
Credit risk mitigation	Policies and practices	9		179, 211, 267
	Exposure covered by guarantees and CDS	13, 14		
Securitization	Objectives, vehicles, accounting policies	15	15, 148	48, 56, 155, 179, 236
	Securitization RWA	16		
	Securitization exposure	17		
	Assets securitized	17		
	Current year securitization activity	17		
Market risk	Material portfolio of covered positions	19		
	Value-at-risk	19	73	121, 123
	Regulatory market risk capital models	20		
	Stress testing	24		124, 125
Operational risk	Operational risk management policies	25		131
	Description of AMA	25		131
Equity investments in the banking book	Policies and practices	18		120, 153, 155, 160, 195, 203
	Carrying value and fair value	18	94, 127	
	Realized and unrealized gains/(losses)	18		
	Equity investments by risk weight	18		
Interest rate risk in the banking book	Nature, assumptions, frequency of measurement	26	76	126
	Earnings sensitivity to rate shocks	26	76	126
Supplementary leverage ratio (SLR)	Overview of SLR	8	44, 47	88
	Components of SLR	27		

INTRODUCTION

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 United States of America (“U.S.”), with operations worldwide; the Firm had \$2.6 trillion in assets and \$259.0 billion in stockholders’ equity as of September 30, 2018. 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 as of September 30, 2018, and Chase Bank USA, National Association (“Chase Bank USA, N.A.”), a national banking association that is the Firm’s principal credit card-issuing bank. JPMorgan Chase’s principal nonbank subsidiary is J.P. Morgan Securities LLC (“J.P. Morgan Securities”), a U.S. broker-dealer. The bank and non-bank subsidiaries of JPMorgan Chase operate nationally as well as through overseas branches and subsidiaries, and representative offices. The Firm’s principal operating subsidiary in the U.K is J.P. Morgan Securities plc, a subsidiary of JPMorgan Chase Bank, N.A.

Pillar 3 report overview

This report provides information on the Firm’s capital structure, capital adequacy, risk exposures, and risk-weighted assets (“RWA”). This report describes the internal models used to translate risk exposures into required capital.

This report should be read in conjunction with JPMorgan Chase’s Pillar 3 Regulatory Capital Disclosures Report for the quarterly period ended December 31, 2017 (“4Q17 Pillar 3 Report”), as well as the Annual Report on Form 10-K for the year ended December 31, 2017 (“2017 Form 10-K”) and the Quarterly Report on Form 10-Q for the period ended September 30, 2018 (“3Q18 Form 10-Q”) which has been filed with the U.S. Securities and Exchange Commission (“SEC”).

Basel III overview

The Basel framework consists of a three “Pillar” approach:

- Pillar 1 establishes minimum capital requirements, defines eligible capital instruments, and prescribes rules for calculating RWA.
- Pillar 2 requires banks to have an internal capital adequacy assessment process and requires that banking supervisors evaluate each bank’s overall risk profile as well as its risk management and internal control processes.
- Pillar 3 encourages market discipline through disclosure requirements which allow market participants to assess the risk and capital profiles of banks.

Capital rules under Basel III establish minimum capital ratios and overall capital adequacy standards for large and internationally active U.S. bank holding companies (“BHC”) 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”). While the required capital remains subject to the transitional rules during 2018, the Firm’s capital ratios as of September 30, 2018 were equivalent whether calculated on a transitional basis or on a fully phased-in basis.

Basel III also includes a requirement for Advanced Approach banking organizations, including the Firm, to calculate the supplementary leverage ratio (“SLR”) which also became fully phased-in as of January 1, 2018.

- Refer to pages 1-8 of the 2017 Form 10-K for information on Basel III Reforms.

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.

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 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.

Firmwide Risk Management is overseen and managed on an enterprise-wide basis. The Firm's approach to risk management involves understanding drivers of risks, risk types, and impacts of risks.

Drivers of risk include, but are not limited to, the economic environment, regulatory or government policy, competitor or market evolution, business decisions, process or judgment error, deliberate wrongdoing, dysfunctional markets, and natural disasters.

The Firm's risks are generally categorized in the following four risk types:

- Strategic risk is the risk associated with the Firm's current and future business plans and objectives, including capital risk, liquidity risk, and the impact to the Firm's reputation.
- Credit and investment risk is the risk associated with the default or change in credit profile of a client, counterparty or customer; or loss of principal or a reduction in expected returns on investments, including consumer credit risk, wholesale credit risk, and investment portfolio risk.
- Market risk is the risk associated with the effect of changes in market factors, such as interest and foreign exchange rates, equity and commodity prices, credit spreads or implied volatilities, on the value of assets and liabilities held for both the short and long term.
- Operational risk is the risk associated with inadequate or failed internal processes, people and systems, or from external events and includes compliance risk, conduct risk, legal risk, and estimations and model risk.

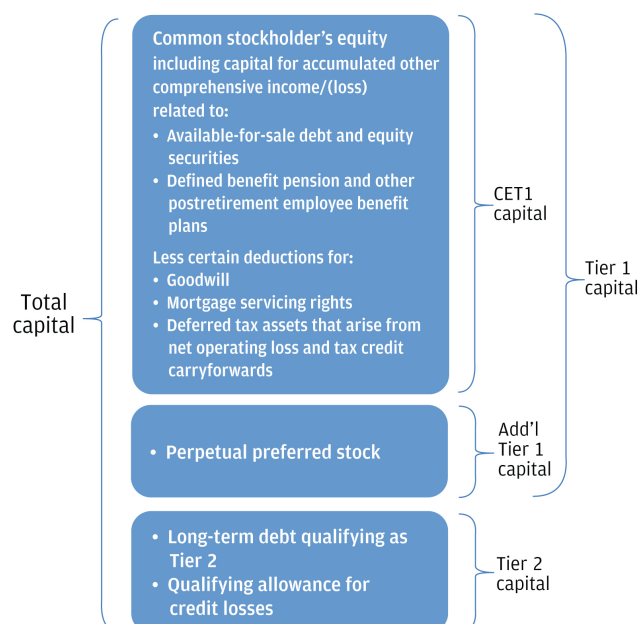
There may be many consequences of risks manifesting, including quantitative impacts such as reduction in earnings and capital, liquidity outflows, and fines or penalties, or qualitative impacts, such as reputation damage, loss of clients, and regulatory and enforcement actions.

Governance and oversight

- Refer to pages 77-80 of the 2017 Form 10-K for information on Risk Governance and oversight.

REGULATORY CAPITAL

The three categories of risk-based capital and their predominant components under the Basel III Transitional rules are illustrated below:



Terms of capital instruments

The terms and conditions of the Firm's capital instruments are described in the Firm's SEC filings.

- Refer to Note 20 on page 251 and Note 21 on pages 252 respectively of the 2017 Form 10-K for additional information on preferred stock and common stock.
- Refer to Note 19 on pages 249-250 of the 2017 Form 10-K for information on trust preferred securities.
- Refer to the Supervision and Regulation section in Part 1, Item 1 on pages 1-2 of the 2017 Form 10-K.

Components of capital

A reconciliation of total stockholders' equity to Basel III Advanced Transitional CET1 capital, Tier 1 capital, Tier 2 capital and Total capital is presented in the table below.

- Refer to the Consolidated balance sheets on page 88 of the 3Q18 Form 10-Q for the components of total stockholders' equity.

September 30, 2018 (in millions)	Basel III Advanced Transitional
Total stockholders' equity	\$ 258,956
Less: Preferred stock	27,764
Common stockholders' equity	231,192
Less:	
Goodwill	47,483
Other intangible assets	781
Other CET1 capital adjustments ^(b)	195
Add:	
Deferred tax liabilities ^(c)	2,239
CET1 capital	184,972
Preferred stock ^(a)	27,764
Other Tier 1 capital adjustments ^(a)	(1,691)
Less: Tier 1 capital deductions	456
Total Tier 1 capital	210,589
Long-term debt and other instruments qualifying as Tier 2 capital	13,342
Qualifying allowance for credit losses	4,496
Other Tier 2 capital adjustments	212
Less: Tier 2 capital deductions	65
Total Tier 2 capital	17,985
Total capital	\$ 228,574

(a) As of September 30, 2018, Preferred stock includes the issuance of \$1.7 billion of Series DD preferred stock, and other Tier 1 adjustments includes \$1.7 billion of Series I preferred stock called for redemption and subsequently redeemed on October 30, 2018. Tier 1 capital as of September 30, 2018 reflects both the issuance and the redemption.

(b) Includes debit valuation adjustments ("DVA") related to structured notes recorded in accumulated other comprehensive income ("AOCI").

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

Restrictions on capital and transfer of funds

Regulations govern the amount of dividends the Firm's banking subsidiaries could pay without the prior approval of their relevant banking regulators.

- Refer to Note 18 on page 160 of the 3Q18 Form 10-Q and Note 25 on page 258 of the 2017 Form 10-K for information on restrictions on cash and intercompany funds transfers.

Capital management

For additional information on regulatory capital, capital actions and the regulatory capital outlook, refer to the Capital Risk Management section on pages 44-48 of the 3Q18 Form 10-Q and Note 26 on pages 259-260 of the 2017 Form 10-K. The Capital Risk Management section of the Form 10-K reflects regulatory capital, RWA and capital ratios calculated under both the Basel III Advanced and Standardized Fully Phased-In and Transitional rules, whereas the related capital metrics presented in this report are calculated under Basel III Advanced Transitional rules, except where explicitly noted.

Risk-weighted assets

Basel III establishes two comprehensive approaches 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.

Covered position definition

The covered position definition determines which positions are subject to market risk RWA treatment and, consequently, which positions are subject to credit risk RWA treatment.

- For information on the definition of a covered position, refer to Regulatory Capital on page 6 of the 4Q17 Pillar 3 Report.

Throughout this report, covered positions are also referred to as "trading book" positions. Similarly, non-covered positions are referred to as "banking book" positions. Both covered and non-covered derivative transactions are subject to counterparty credit risk RWA.

Components of risk-weighted assets

The following table presents the components of the Firm's total risk-weighted assets under Basel III Advanced Fully Phased-In at September 30, 2018.

September 30, 2018 (in millions)	Basel III Advanced Fully Phased-In RWA
Credit risk	\$ 927,901
Market risk	119,227
Operational risk	391,401
Total RWA	\$ 1,438,529

- For information on the components of risk-weighted assets, refer to Regulatory Capital on page 7 of the 4Q17 Pillar 3 Report.

RWA rollforward

The following table presents changes in the components of RWA under Basel III Advanced Fully Phased-In for the three months ended September 30, 2018. The amounts represented in the rollforward categories are an approximation, based on the predominant driver of the change.

Three months ended September 30, 2018 (in millions)	Basel III Advanced Fully Phased-In RWA			
	Credit risk	Market risk	Operational risk	Total
June 30, 2018	\$ 932,629	\$ 118,618	\$ 387,500	\$ 1,438,747
Model & data changes ^(a)	2,965	(2,450)	—	515
Portfolio runoff ^(b)	(2,500)	—	—	(2,500)
Movement in portfolio levels ^(c)	(5,193)	3,059	3,901	1,767
Changes in RWA	(4,728)	609	3,901	(218)
September 30, 2018	\$ 927,901	\$ 119,227	\$ 391,401	\$ 1,438,529

- (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 reduced risk from position rollofs in legacy portfolios in the Home Lending business.
- (c) Movement in portfolio levels (inclusive of rule changes) refers to: changes in book size, composition, credit quality, and market movements for credit risk RWA; changes in position and market movements for market risk RWA; and updates to cumulative losses for operational risk RWA

Capital requirements

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 fortress 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.

- Refer to the Capital Risk Management section on pages 44-48 of the 3Q18 Form 10-Q and pages 82-91 of the 2017 Form 10-K for information on the Firm's strategy and governance.

The Basel III framework applies to the consolidated results of JPMorgan Chase & Co. The basis of consolidation used for regulatory reporting is the same as that used under U.S. GAAP. There are no material entities within JPMorgan Chase that are deconsolidated and whose capital is deducted.

Under the risk-based capital ("RBC") guidelines of the Federal Reserve, JPMorgan Chase is required to maintain minimum ratios for CET1, Tier 1, Total, Tier 1 leverage and the SLR. Failure to meet these minimum requirements could cause the Federal Reserve to take action. IDI subsidiaries are also subject to these capital requirements by their respective primary regulators.

The following table represents the minimum and well-capitalized ratios to which the Firm and its IDI subsidiaries were subject as of September 30, 2018.

	Minimum capital ratios		Well-capitalized ratios	
	BHC ^{(a)(e)}	IDI ^{(b)(e)}	BHC ^(c)	IDI ^(d)
Capital ratios				
CET1	9.0%	6.375%	—%	6.5%
Tier 1	10.5	7.875	6.0	8.0
Total	12.5	9.875	10.0	10.0
Tier 1 leverage	4.0	4.000	5.0	5.0
SLR	5.0	6.000	—	6.0

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 IDI subsidiaries are subject.

- (a) Represents the Transitional minimum capital ratios applicable to the Firm under Basel III at September 30, 2018. At September 30, 2018, the CET1 minimum capital ratio includes 1.875% resulting from the phase in of the Firm's 2.5% capital conservation buffer, and 2.625% resulting from the phase in of the Firm's 3.5% global systemically important banks ("GSIB") surcharge.
- (b) Represents requirements for JPMorgan Chase's IDI subsidiaries. The CET1 minimum capital ratio includes 1.875% resulting from the phase in of the 2.5% capital conservation buffer that is applicable to the IDI subsidiaries. The IDI 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 IDI subsidiaries pursuant to regulations issued under the FDIC Improvement Act.
- (e) Represents minimum SLR requirement of 3.0%, as well as, supplementary leverage ratio buffers of 2.0% and 3.0% for BHC and IDI, respectively.

Capital adequacy

As of September 30, 2018, JPMorgan Chase and all of its IDI subsidiaries were well-capitalized and met all capital requirements to which each was subject. Capital ratios for the Firm's significant IDI subsidiaries are presented on the following page.

In addition to its IDI subsidiaries, JPMorgan Chase also has other regulated subsidiaries, all of which meet applicable capital requirements.

The capital adequacy of the Firm and its IDI 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).

- For information on the Firm's Internal Capital Adequacy Assessment Process ("ICAAP") and Comprehensive Capital Analysis and Review ("CCAR") processes, refer to Regulatory Capital on page 8 of the 4Q17 Pillar 3 Report and page 47 of the 3Q18 Form 10-Q.

Regulatory capital metrics for JPMorgan Chase and its significant IDI subsidiaries

The following tables present the risk-based and leverage-based capital metrics for JPMorgan Chase and its significant IDI subsidiaries under both the Basel III Standardized Transitional and Basel III Advanced Transitional Approaches at September 30, 2018.

JPMorgan Chase & Co.		
September 30, 2018 (in millions, except ratios)	Basel III Standardized Transitional	Basel III Advanced Transitional
Regulatory capital		
CET1 capital	\$ 184,972	\$ 184,972
Tier 1 capital	210,589	210,589
Total capital ^(a)	238,303	228,574
Assets		
Risk-weighted	\$ 1,545,326	1,438,529
Adjusted average ^(b)	2,552,612	2,552,612
Capital ratios^(c)		
CET1 ^(d)	12.0%	12.9%
Tier 1	13.6	14.6
Total	15.4	15.9
Tier 1 leverage ^(e)	8.2	8.2

JPMorgan Chase Bank, N.A.		
September 30, 2018 (in millions, except ratios)	Basel III Standardized Transitional	Basel III Advanced Transitional
Regulatory capital		
CET1 capital	\$ 188,608	\$ 188,608
Tier 1 capital	188,608	188,608
Total capital	199,634	193,613
Assets		
Risk-weighted	\$ 1,362,039	\$ 1,211,473
Adjusted average ^(b)	2,141,332	2,141,332
Capital ratios^(c)		
CET1 ^(d)	13.8%	15.6%
Tier 1	13.8	15.6
Total	14.7	16.0
Tier 1 leverage ^(e)	8.8	8.8

	Chase Bank USA, N.A.			
September 30, 2018 (in millions, except ratios)	Basel III Standardized Transitional		Basel III Advanced Transitional	
Regulatory capital				
CET1 capital	\$	23,136	\$	23,136
Tier 1 capital		23,136		23,136
Total capital		28,026		26,636
Assets				
Risk-weighted	\$	109,138	\$	182,177
Adjusted average ^(b)		116,411		116,411
Capital ratios^(c)				
CET1 ^(d)		21.2%		12.7%
Tier 1		21.2		12.7
Total		25.7		14.6
Tier 1 leverage ^(e)		19.9		19.9

- (a) Total capital for JPMorgan Chase & Co. includes \$531 million of surplus regulatory capital in insurance subsidiaries.
- (b) Adjusted average assets, for purposes of calculating the Tier 1 leverage ratio, includes total quarterly average assets adjusted for on-balance sheet assets that are subject to deduction from Tier 1 capital, predominantly goodwill and other intangible assets.
- (c) For each of the risk-based capital ratios, the capital adequacy of the Firm and its IDI subsidiaries is evaluated against the lower of the two ratios as calculated under Basel III approaches (Standardized or Advanced).
- (d) At September 30, 2018, the Firm and its U.S. subsidiary banks are required to maintain a capital conservation buffer in addition to the 4.5% minimum CET1 requirement or be subject to limitations on the amount of capital that may be distributed, including dividends and common equity repurchases. The capital conservation buffer is calculated as the lowest of the: (i) CET1 ratio less the CET1 minimum requirement, (ii) Tier 1 ratio less the Tier1 minimum requirement and (iii) Total capital ratio less the Total capital minimum requirement. At September 30, 2018, the calculated capital conservation buffer of the Firm, JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A. was 7.4%, 6.7% and 6.6%, respectively. This was in excess of the estimated required capital conservation buffer of 4.5% (inclusive of the GSIB surcharge) for the Firm and 1.875% for JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A. at that date. In addition, the buffer for retained earnings for the Firm, JPMorgan Chase Bank, N.A. and Chase Bank USA, N.A. was \$1.8 billion, \$3.0 billion and \$0.3 billion respectively.
- (e) The Tier 1 leverage ratio is not a risk-based measure of capital.

Supplementary leverage ratio (“SLR”)

The following table presents the components of the Firm’s Advanced Fully Phased-In SLR as of September 30, 2018.

(in millions, except ratio)		September 30, 2018
Basel III Advanced Fully Phased-In Tier 1 capital	\$	210,589
Total spot assets		2,615,183
Add: Adjustments for frequency of calculations ^(a)		(15,562)
Total average assets		2,599,621
Less: Adjustments for deductions from tier 1 capital		47,009
Total adjusted average assets^(b)		2,552,612
Off-balance sheet exposures ^(c)		682,906
Total leverage exposure	\$	3,235,518
Basel III Advanced Fully Phased-In SLR		6.5%

- (a) The adjustment for frequency of calculations represents the difference between total spot assets at September 30, 2018 and total average assets for the three months ended September 30, 2018.
- (b) Adjusted average assets, for purposes of calculating the SLR, includes total quarterly average assets adjusted for on-balance sheet assets that are subject to deduction from Tier 1 capital, predominantly goodwill and other intangible assets.
- (c) Off-balance sheet exposures are calculated as the average of the three month-end spot balances during the quarter.

Additional information on the components of the leverage exposure is provided in the SLR section of this report.

CREDIT RISK

Credit risk is the risk associated with the default or change in credit profile of a client, counterparty or customer. The Firm provides credit to a variety of customers, ranging from large corporate and institutional clients to individual consumers and small businesses. The consumer credit portfolio refers to exposures held by the Consumer & Community Banking (“CCB”) business segment as well as prime mortgage and home equity loans held in the Asset & Wealth Management (“AWM”) business segment and prime mortgage loans held in the Corporate segment. The consumer portfolio consists primarily of residential real estate loans, credit card loans, auto loans, and business banking loans, as well as associated lending-related commitments. The wholesale credit portfolio refers primarily to exposures held by the Corporate & Investment Bank (“CIB”), Commercial Banking (“CB”), AWM and Corporate segment. In addition to providing credit to clients, the Firm engages in client-related activities that give rise to counterparty credit risk such as securities financing, margin lending and market-making activities in derivatives. Finally, credit risk is also inherent in the Firm’s investment securities portfolio held by Treasury and Chief Investment Office (“CIO”) in connection with its asset-liability management objectives. Investment securities, as well as deposits with banks and cash due from banks, are classified as wholesale exposures for RWA reporting.

Basel III includes capital charges for counterparty default risk and credit valuation adjustments (“CVA”). CVA is a fair value adjustment to reflect counterparty credit risk in the valuation of over-the-counter (“OTC”) derivatives. The Firm calculates CVA RWA using the Simple CVA approach, which uses internal ratings based probability of default (“PD”) and a combination of the current exposure method (“CEM”) and the internal model method (“IMM”) exposure at default (“EAD”) for each netting set.

- For information on IMM and CEM EAD methodologies, refer to Credit Risk on page 17 of the 4Q17 Pillar 3 Report.

For information on risk management policies and practices, governance and oversight and accounting policies related to these exposures:

- Refer to Credit and Investment Risk Management on pages 99-120 of the 2017 Form 10-K and page 55 of the 3Q18 Form 10-Q
- Refer to the Notes to the Consolidated Financial Statements beginning on page 153 of the 2017 Form 10-K. Specific page references are contained in the Appendix of this report.

Summary of credit risk RWA

Credit risk RWA includes retail, wholesale and counterparty credit exposures described in this section as well as securitization and equity exposures in the banking book. Other exposures such as non-material portfolios, unsettled transactions and other assets that are not classified elsewhere are also included. The following table presents the Firm’s total credit risk RWA at September 30, 2018.

September 30, 2018 (in millions)	Basel III Advanced Fully Phased-In RWA
Retail exposures	\$ 210,284
Wholesale exposures	421,205
Counterparty exposures	111,732
Securitization exposures ^(a)	25,245
Equity exposures	39,055
Other exposures ^(b)	74,690
CVA	45,690
Total credit risk RWA	\$ 927,901

(a) Represents banking book securitization RWA only.

(b) Includes other assets, non-material portfolios, and unsettled transactions.

Credit risk exposures

Credit risk exposures as reported under U.S. GAAP as of and for the three months ended September 30, 2018 are contained in the 3Q18 Form 10-Q. Specific references to the 3Q18 Form 10-Q are listed below.

Traditional credit products

- Refer to Credit Risk Management beginning on page 55 for credit-related information on the consumer and wholesale portfolios.
- Refer to Note 11 on pages 133-146 for the distribution of loans by geographic region and industry.
- Refer to Note 20 on pages 162-165 for the contractual amount and geographic distribution of lending-related commitments.

Counterparty credit risk

- Refer to the Consumer Credit Portfolio section on pages 57-61, and to the Wholesale Credit Portfolio section on pages 62-68 for eligible margin loans balances.
- Refer to Wholesale Credit Portfolio footnote (d) on page 63, Country Risk on page 78.
- Refer to Note 4 on pages 111-122 for the gross positive fair value, netting benefits, and net exposure of derivative receivables.
- Refer to Derivative contracts on pages 67-68 for credit derivatives used in credit portfolio management activities.
- Refer to Note 10 on pages 131-132 for information on gross and net securities purchased under resale agreements and securities borrowed transactions, and for information regarding the credit risk inherent in the securities financing portfolio.

Investment securities

- Refer to Credit and Investment Risk Management on pages 55-72 and Note 9 on pages 127-130 for the investment securities portfolio by issuer type.

Country risk

- Refer to page 78 for the top 20 country exposures (excluding the U.S.).

Allowance for credit losses

- Refer to Allowance for Credit Losses on pages 69-71 for a summary of changes in the allowance for loan losses and allowance for lending-related commitments.
- Refer to Note 12 on page 147 for the allowance for credit losses and loans and lending-related commitments by impairment methodology.

Average balances

- Refer to page 173-174 for the Consolidated average balance sheet.

Credit risk concentrations

- For further information on credit risk concentrations, refer to Credit risk monitoring on page 11 in the 4Q17 Pillar 3 Report.

RETAIL CREDIT RISK

The retail portfolio is comprised of exposures that are scored and managed on a pool basis rather than on an individual-exposure basis. For the retail portfolio, credit loss estimates are based on statistical analysis of credit losses over discrete periods of time. The statistical analysis uses portfolio modeling, credit scoring, and decision-support tools, which consider loan-level factors such as delinquency status, credit scores, collateral values, and other risk factors.

The population of exposures subject to retail capital treatment for regulatory reporting substantially overlaps with the consumer credit portfolio reflected in the Firm's SEC disclosures. The retail population consists of all scored exposures (mainly in CCB business segment), certain residential mortgages booked as trading assets (that do not meet the definition of a covered position) and certain wholesale loans under \$1 million as required by the Basel III capital rules.

The retail capital population excludes certain risk-rated business banking and auto dealer loans that are included in the consumer portfolio in the Firm's SEC disclosures; these are subject to wholesale capital treatment as required by the Basel III capital rules.

Risk-weighted assets

To calculate retail credit RWA, the Firm inputs its risk parameter estimates (PD, LGD and EAD) into the Internal Ratings Based (IRB) risk weight formula, as specified by the Basel III capital rules. The IRB risk weight formula generates an estimate of unexpected losses at a 99.9% confidence level. Unexpected losses are converted to a RWA measure by an application of a 12.5 supervisory multiplier.

- For information on risk parameter estimation methods for the retail credit portfolio, refer to Retail Credit Risk on page 12-13 of the 4Q17 Pillar 3 Report.

September 30, 2018 (in millions)	Basel III Advanced Fully Phased-In RWA
Residential mortgages	\$ 81,148
Qualifying revolving	106,202
Other retail	22,934
Total retail credit RWA	\$ 210,284

Residential mortgage exposures

The following table includes first lien and junior lien mortgages and revolving home equity lines of credit. First lien mortgages were 86.6% of the exposure amount, revolving exposures were 12.9%, and the remaining exposures related to junior lien mortgages. Most revolving exposures were originated prior to 2010 and drive approximately 35.1% of the total risk weighted assets of this portfolio, with nearly 28.7% of the exposures in the equal to or greater than 0.75% PD ranges. Recent originations are primarily first lien mortgages and are predominantly reflected in the less than 0.75% PD ranges.

September 30, 2018
(in millions, except ratios)

PD range (%)	Balance sheet amount	Off balance sheet commitments	EAD	RWA	Exposure-weighted average		
					PD	LGD	Risk weight
0.00 to < 0.10	\$ 136,116	\$ 20,347	\$ 144,396	\$ 7,715	0.05%	34.56%	5.34%
0.10 to < 0.20	71,944	2,456	73,932	9,394	0.16	36.05	12.71
0.20 to < 0.75	58,446	1,414	59,532	17,169	0.35	44.93	28.84
0.75 to < 5.50	23,322	2,115	23,849	24,038	1.92	52.65	100.79
5.50 to < 10.00	2,244	551	2,350	5,102	6.91	53.22	217.10
10.00 to < 100	2,891	19	2,896	6,978	28.91	46.04	240.95
100 (default)	11,750	164	11,917	10,754	100.00	— ^(a)	90.24 ^(b)
Total	\$ 306,713	\$ 27,066	\$ 318,872	\$ 81,148	4.32%	37.51%	25.45%

(a) The LGD rate is reported as zero for residential mortgage exposures in default because by the time they reach the Basel III capital rules definition of default they have been charged off to the fair value of any underlying collateral less cost to sell.

(b) The exposure-weighted average risk weight for defaulted loans is less than 100% due to certain loans being insured and/or guaranteed by U.S. government agencies which attract lower than 100% risk weight.

Qualifying revolving exposures

The following table includes exposures to individuals that are revolving, unsecured and unconditionally cancelable by JPMorgan Chase; and they have a maximum exposure amount of up to \$100,000 (i.e. credit card and overdraft lines on individual checking accounts).

September 30, 2018
(in millions, except ratios)

PD range (%)		Balance sheet amount	Off balance sheet commitments	EAD	RWA	Exposure-weighted average		
						PD	LGD	Risk weight
0.00 to < 0.50	\$	53,148	\$ 524,062	\$ 213,255	\$ 11,356	0.10%	93.27%	5.33%
0.50 to < 2.00		35,553	49,394	44,700	17,785	1.09	93.33	39.79
2.00 to < 3.50		17,031	9,929	18,283	14,075	2.61	93.47	76.98
3.50 to < 5.00		14,854	2,462	15,020	14,903	3.75	93.05	99.22
5.00 to < 8.00		7,477	1,881	7,543	11,001	6.74	93.71	145.84
8.00 to < 100		19,231	1,336	19,235	37,082	20.16	93.24	192.78
100 (default)		—	—	—	—	—	— ^(a)	—
Total	\$	147,294	\$ 589,064	\$ 318,036	\$ 106,202	1.92%	93.29%	33.39%

(a) The LGD rate is reported as zero for qualifying revolving exposures in default as these unsecured credit cards are charged off prior to reaching the Basel III capital rules definition of default.

Other retail exposures

The following table includes other retail exposures to individuals that are not classified as residential mortgage or qualifying revolving exposures (e.g. includes auto loans, credit card accounts above \$100,000, business card exposures without a personal guarantee, scored business banking loans and certain wholesale loans under \$1 million).

September 30, 2018
(in millions, except ratios)

PD range (%)		Balance sheet amount	Off balance sheet commitments	EAD	RWA	Exposure-weighted average		
						PD	LGD	Risk weight
0.00 to < 0.50	\$	34,056	\$ 10,321	\$ 37,492	\$ 6,964	0.19%	44.06%	18.58%
0.50 to < 2.00		21,563	1,012	21,950	9,934	0.93	44.04	45.25
2.00 to < 3.50		3,026	472	3,132	2,250	2.93	49.03	71.85
3.50 to < 5.00		545	38	569	682	3.83	78.70	119.79
5.00 to < 8.00		1,228	70	1,243	894	6.75	44.38	71.89
8.00 to < 100		1,599	6	1,609	1,753	24.25	51.56	108.96
100 (default)		416	15	431	457	100.00	— ^(a)	106.00
Total	\$	62,433	\$ 11,934	\$ 66,426	\$ 22,934	1.95%	44.49%	34.52%

(a) The LGD rate is reported as zero for retail exposures in default because by the time they reach the Basel III capital rules definition of default they have been charged off to the fair value of any underlying collateral less cost to sell.

WHOLESALE CREDIT RISK

The wholesale portfolio is a risk-rated portfolio. Risk-rated portfolios are generally held in CIB, CB and AWM business segments and in Corporate but also include certain business banking and auto dealer loans held in the CCB business segment that are risk-rated because they have characteristics similar to commercial loans. For the risk-rated portfolio, credit loss estimates are based on estimates of the probability of default and loss severity given a default. The estimation process begins when risk-ratings are assigned to each obligor and credit facility to differentiate risk within the portfolio. These risk ratings are reviewed regularly by Credit Risk management and revised as needed to reflect the borrower's current financial position, risk profile and related collateral.

The population of risk-rated loans and lending-related commitments receiving wholesale treatment for regulatory capital purposes largely overlaps with the wholesale credit portfolio reflected in the Firm's SEC disclosures. In accordance with the Basel III capital rules, the wholesale population for regulatory capital consists of:

- All risk-rated loans and commitments (excluding certain wholesale loans under \$1 million which receive retail regulatory capital treatment);
- Deposits with banks, and cash and due from banks;
- Exposures to issuer risk for debt securities in the banking book;
- Certain exposures recorded as trading assets that do not meet the definition of a covered position;

Certain off-balance sheet items, such as standby letters of credit and letters of credit, are reported net of risk participations for U.S. GAAP reporting, but are included gross of risk participations for regulatory reporting.

Risk-weighted assets

To calculate wholesale credit RWA, the Firm inputs its risk parameter estimates (PD, LGD and EAD) into the IRB risk weight formula as specified by the U.S. banking supervisors. The IRB risk weight formula generates an estimate of unexpected losses at a 99.9% confidence level. Unexpected losses are converted to a RWA measure by an application of a 12.5 supervisory multiplier.

- For information on risk parameter estimation methods for the wholesale credit portfolio, refer to Wholesale Credit Risk on page 15 of the 4Q17 Pillar 3 Report.

The below table presents risk-weighted assets by Basel reporting classification. The Corporate classification includes both credit and issuer exposure to corporate entities. Similarly, the Bank and Sovereign classifications include both credit and issuer exposure to banks and sovereign entities respectively. High volatility commercial real estate ("HVCRE") refers to acquisition, development and construction lending. HVCRE is a separate Basel classification because these loans represent higher risk than loans financing income-producing real estate ("IPRE").

September 30, 2018 (in millions)	Basel III Advanced Fully Phased-In RWA
Corporate	\$ 349,249
Bank	13,413
Sovereign	12,766
Income-producing real estate	44,929
High volatility commercial real estate	848
Total wholesale credit RWA	\$ 421,205

Wholesale exposures

The following table presents exposures to wholesale clients and issuers by PD range. Exposures are comprised primarily of traditional credit products (i.e. loans and lending-related commitments), debt securities, and cash placed with various central banks, predominantly Federal Reserve Banks. Total EAD is \$1.4 trillion, with 76% of this exposure in the first two PD ranges, which are predominantly investment-grade. Exposures meeting the Basel definition of default represent 0.1% of total EAD. The exposure-weighted average LGD for the wholesale portfolio is 30%.

September 30, 2018 (in millions, except ratios)

PD range (%)	Balance sheet amount	Off balance sheet commitments	EAD	RWA	Exposure-weighted average		
					PD	LGD	Risk weight
0.00 to < 0.15	\$ 702,742	\$ 167,123	\$ 827,401	\$ 105,462	0.05%	28.10%	12.75%
0.15 to < 0.50	134,657	140,326	220,267	100,447	0.26	36.29	45.60
0.50 to < 1.35	173,051	87,084	222,159	112,523	0.75	27.58	50.65
1.35 to < 10.00	61,232	60,144	94,579	89,958	3.85	32.43	95.11
10.00 to < 100	4,408	4,607	6,597	10,680	22.78	32.78	161.88
100 (default)	1,714	637	2,014	2,135	100.00	38.33	106.00
Total	\$ 1,077,804	\$ 459,921	\$ 1,373,017	\$ 421,205	0.71%	29.67%	30.68%

Credit risk mitigation

The risk mitigating benefit of eligible guarantees and credit derivative hedges are reflected in the RWA calculation as permitted by the Basel III capital rules. At September 30, 2018, \$85.1 billion of EAD for wholesale exposures is covered by eligible guarantees or credit derivatives.

COUNTERPARTY CREDIT RISK

Counterparty credit risk exposures arise from OTC derivatives, repo-style transactions, eligible margin loans and cleared transactions.

Risk-weighted assets

To calculate counterparty credit risk RWA, the Firm inputs its risk parameter estimates (PD, LGD and EAD) into the same IRB risk weight formula as wholesale exposures. The IRB risk weight formula generates an estimate of unexpected losses at a 99.9% confidence level. Unexpected losses are converted to an RWA measure by an application of a 12.5 supervisory multiplier.

RWA for exposures where the counterparty is a CCP depends on whether the CCP meets the criteria for classification as a qualifying CCP. The appropriate risk weights are applied to the trade exposure and contributions to the CCP's guarantee fund.

The following table presents risk-weighted assets by transaction type.

- Except as outlined below with regards to eligible margin loans, for information on risk parameter estimation methods and wrong-way risk for the counterparty credit risk, refer to Counterparty Credit Risk on page 17-18 of the 4Q17 Pillar 3 Report.

Effective as of the second quarter of 2018, in accordance with Basel III capital rules, the credit risk mitigation benefits of collateral that can be netted for eligible margin loans are recognized in the determination of EAD using the supervisory haircut approach.

September 30, 2018 (in millions)	Basel III Advanced Fully Phased-In RWA
OTC derivatives	\$ 55,567
Repo-style transactions	34,270
Eligible margin loans	12,730
Cleared transactions	9,165
Total counterparty credit RWA	\$ 111,732

Counterparty credit exposures

The following table presents counterparty credit risk exposures for OTC derivatives, repo-style transactions and eligible margin loans by PD range. The table does not include cleared transactions. Total EAD is \$253.6 billion, with 79% of this exposure in the first two PD ranges, which are predominantly investment-grade. Exposures meeting the Basel definition of default represent 0.1% of total EAD. The exposure-weighted average LGD for this portfolio is 42%. The collateral benefit is reflected primarily in the EAD.

September 30, 2018
(in millions, except ratios)

PD range (%)	EAD	RWA	Exposure-weighted average		
			PD	LGD	Risk weight
0.00 to < 0.15	\$ 153,171	\$ 33,815	0.09%	41.76%	22.08%
0.15 to < 0.50	46,854	23,173	0.27	44.47	49.46
0.50 to < 1.35	37,095	25,260	0.75	41.14	68.09
1.35 to < 10.00	15,076	17,270	3.63	39.57	114.55
10.00 to < 100	1,198	2,872	22.70	42.56	239.69
100 (default)	166	177	100.00	34.49	106.64
Total	\$ 253,560	\$ 102,567	0.60%	42.04%	40.45%

Credit risk mitigation

The risk mitigating benefit of eligible guarantees and credit derivative hedges are reflected in the RWA calculation as permitted by the Basel III capital rules. At September 30, 2018, \$3.7 billion of EAD for OTC derivatives is covered by eligible guarantees.

SECURITIZATION

Securitizations are transactions in which:

- The credit risk of the underlying exposure is transferred to third parties and has been separated into two or more tranches;
- The performance of the securitization depends upon the performance of the underlying exposures or reference assets; and
- All or substantially all of the underlying exposures or reference assets are financial exposures.

Securitizations are classified as either traditional or synthetic. In a traditional securitization, the originator establishes a special purpose entity (“SPE”) and sells assets (either originated or purchased) off its balance sheet into the SPE, which issues securities to investors. In a synthetic securitization, credit risk is transferred to an investor through the use of credit derivatives or guarantees. In a synthetic securitization, there is no change in accounting treatment for the assets securitized.

Securitizations include on- or off-balance sheet exposures (including credit enhancements) that arise from a securitization or re-securitization transaction; or an exposure that directly or indirectly references a securitization (e.g. credit derivative). A re-securitization is a securitization transaction in which one or more of the underlying exposures that have been securitized is itself a securitization.

On-balance sheet exposures include securities, loans, as well as servicing advances related to private-label mortgage backed securitizations for which the Firm acts as servicer. Off-balance sheet exposures include liquidity commitments, certain recourse obligations, and derivatives for which the counterparty risk or the reference obligation is a securitization exposure.

The Firm plays a variety of roles in asset securitizations such as investor or originator in traditional and synthetic securitization transactions and servicer/collateral manager of assets transferred into traditional securitizations. The Firm also provides liquidity facilities to securitization transactions.

This section includes both banking book and trading book securitizations with the exception of modeled correlation trading positions which are included in the Market Risk section.

- For information on risk management and due diligence for securitization exposures, refer to Securitization on page 19 of the 4Q17 Pillar 3 Report.

Hierarchy of approaches

- For information on Hierarchy of approaches for securitization exposures, refer to Securitization on page 20 of the 4Q17 Pillar 3 Report.

Risk-weighted assets

The following table presents banking book and trading book exposures receiving securitization capital treatment (with the exception of modeled correlation trading positions which are presented in the Market Risk section). The amounts include traditional and synthetic securitization exposures with re-securitizations shown separately.

September 30, 2018 (in millions)	Securitization							
	SFA		SSFA		1250%		Total	
	Exposure	RWA	Exposure	RWA	Exposure	RWA	Exposure	RWA
Risk weight								
= 0% ≤ 20%	\$ 47,851	\$ 10,142	\$ 63,889	\$ 13,478	\$ —	\$ —	\$ 111,741	\$ 23,621
> 20% ≤ 50%	2,079	546	2,193	689	—	—	4,272	1,235
> 50% ≤ 100%	47	32	479	389	—	—	525	420
> 100% < 1250%	41	201	524	1,218	—	—	565	1,419
= 1250%	19	233	16	201	73	967	108	1,402
Securitization, excluding re-securitization	\$ 50,037	\$ 11,154	\$ 67,101	\$ 15,975	\$ 73	\$ 967	\$ 117,211	\$ 28,097

September 30, 2018 (in millions)	Re-securitization							
	SFA		SSFA		1250%		Total	
	Exposure	RWA	Exposure	RWA	Exposure	RWA	Exposure	RWA
Risk weight								
= 0% ≤ 20%	\$ 349	\$ 74	\$ 17	\$ 4	\$ —	\$ —	\$ 368	\$ 78
> 20% ≤ 50%	—	—	1	—	—	—	1	—
> 50% ≤ 100%	—	—	—	—	—	—	—	—
> 100% < 1250%	2	12	37	102	—	—	38	115
= 1250%	—	—	1	8	1	7	1	15
Re-securitization^(a)	\$ 351	\$ 86	\$ 56	\$ 114	\$ 1	\$ 7	\$ 408	\$ 208
Total securitization^(b)	\$ 50,388	\$ 11,241	\$ 67,156	\$ 16,090	\$ 74	\$ 975	\$ 117,618	\$ 28,305

(a) As of September 30, 2018, there were no re-securitizations to which credit risk mitigation has been applied.

(b) Total securitization RWA includes \$3.1 billion of RWA on trading book exposure of \$5.4 billion. The trading book RWA represents non-modeled securitization charges in the Market Risk section of this report.

Any gain-on-sale in connection with a securitization exposure must be deducted from CET1 capital. The amount deducted as of September 30, 2018 was immaterial.

Exposure by collateral type

The following table presents banking book and trading book exposures receiving securitization capital treatment (with the exception of modeled correlation trading positions which are presented in the Market Risk section). The amounts below include traditional and synthetic securitization exposures

September 30, 2018 (in millions)	Exposure				RWA
	On-balance sheet	Off-balance sheet ^(a)	Total		
Collateral type:					
Residential mortgages	\$ 18,241	\$ 693	\$ 18,935	\$	4,831
Commercial mortgages	14,007	207	14,213		3,883
Commercial and industrial loans	31,274	2,418	33,692		7,916
Consumer auto loans	16,621	5,350	21,972		4,675
Student loans	9,289	560	9,849		2,524
Municipal bonds	8	5,041	5,050		1,127
Other	10,595	3,313	13,908		3,349
Total securitization exposure	\$ 100,035	\$ 17,583	\$ 117,618	\$	28,305

(a) Includes the counterparty credit risk EAD associated with derivative transactions for which the counterparty credit risk is a securitization exposure.

Assets securitized

The following table presents the total outstanding principal balance of JPMorgan Chase-sponsored securitization trusts in which the Firm has retained exposure in either the banking book or the trading book. Third-party assets in deals sponsored by JPMorgan Chase are shown separately.

September 30, 2018 (in millions)	Principal amount outstanding				Assets impaired or past due ^(b)
	JPMorgan Chase assets held in traditional securitizations ^(a)	Third-party assets held in traditional securitizations ^(a)	JPMorgan Chase assets held in synthetic securitizations		
Collateral type:					
Residential mortgages	\$ 73,751	\$ 10	\$ —	\$	7,138
Commercial mortgages	43,400	40,866	—		503
Commercial and industrial loans	—	—	—		—
Consumer auto loans	—	—	—		—
Student loans	263	—	—		14
Municipal bonds	—	—	—		—
Other	—	—	—		—
Total	\$ 117,414	\$ 40,876	\$ —	\$	7,655

(a) Represents assets held in nonconsolidated securitization VIEs.

(b) Represents assets 90 days or more past due or on nonaccrual status.

Securitization activity

The following table presents assets pending securitization (i.e., assets held with the intent to securitize) at September 30, 2018, and the Firm's securitization activities for nine months ended September 30, 2018, 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. All instruments transferred into securitization trusts during the nine months ended September 30, 2018 were classified as trading assets under U.S. GAAP. As such, changes in fair value were recorded in principal transactions revenue and there were no significant gains or losses associated with the securitization activity.

September 30, 2018 (in millions)	Carrying value	Original principal amount	
	Assets pending securitization	Assets securitized with retained exposure	Assets securitized without retained exposure
Collateral type:			
Residential mortgages	\$ 11,676	\$ 5,972	\$ —
Commercial mortgages	2,081	6,899	1,806
Commercial and industrial loans	—	—	—
Consumer auto loans	—	—	—
Student loans	—	—	—
Municipal bonds	—	—	—
Other	—	—	—
Total	\$ 13,757	\$ 12,871	\$ 1,806

EQUITY RISK IN THE BANKING BOOK

Equity investments in the banking book include principal investments, investments in unconsolidated subsidiaries, other equity investments classified within other assets and certain equity investments classified within trading assets that do not meet the definition of a covered position.

Principal investments are typically private non-traded financial instruments representing ownership or other forms of junior capital. Principal investments cover multiple asset classes and are made either in stand-alone investing businesses or as part of a broader business platform. Asset classes include tax-oriented investments (e.g., affordable housing and alternative energy investments), private equity, various debt and equity instruments, real assets and investment funds (including separate accounts).

Equity Investments in the banking book are held primarily for reasons other than capital gains including client relationships and employee benefits.

Investments in separate accounts are held in connection with corporate- and bank-owned life insurance ("COLI/BOLI") and certain asset management activities.

- Refer to Note 8 on pages 195-200 of the 2017 Form 10-K for a discussion of COLI and the related investment strategy and asset allocation.
- For information on investments in marketable equity, refer to Equity risk in the banking book on page 22 of the 4Q17 Pillar 3 Report.

Accounting and valuation policies for equity investments

- Refer to Principal risk, on page 120 of the 2017 Form 10-K for a discussion of investment risk management related to principal investments.
- Refer to Note 1 on pages 91-92 of 3Q18 Form 10-Q and pages 153-155 of the 2017 Form 10-K for a discussion of the accounting for investments in unconsolidated subsidiaries.
- Refer to Note 2 on pages 155-173 of the 2017 Form 10-K for more information on the Firm's methodologies regarding the valuation of private equity direct investments and fund investments (i.e., mutual/collective investment funds, private equity funds, hedge funds and real estate funds).

Risk-weight approaches

For equity exposures to investment funds, the Firm uses either the Full Look-Through Approach ("FLTA") or the Simple Modified Look-Through Approach ("SML-TA") to calculate RWA. For all other equity exposures, the Firm uses the Simple Risk-Weight Approach ("SRWA").

- For information on Risk-weight approaches, refer to Equity risk in the banking book on page 22 of the 4Q17 Pillar 3 Report.

Equity risk-weighted assets

The table below presents the exposure and RWA by risk weight.

September 30, 2018 (in millions)		
Risk-weight category	Exposure ^(a)	RWA
0%	\$ 6,369 ^(b)	\$ —
20%	1,825	387
100%	20,488	21,717
250%	773	2,049
600%	164	1,043
Look-through	22,207	13,859
Total	\$ 51,826	\$ 39,055

(a) Includes off-balance sheet unfunded commitments for equity investments of \$943 million.

(b) Consists of Federal Reserve Bank stock.

Carrying value and fair value

The following table presents the carrying value and fair value of equity investments in the banking book.

September 30, 2018 (in millions)		
	Carrying value	Fair value
Publicly traded	\$ 25,288	\$ 25,302
Non-publicly traded	24,575	32,299
Total	\$ 49,863	\$ 57,601

Realized gains/(losses)

Cumulative realized gains/(losses) from sales and liquidations during the three months ended September 30, 2018 were \$67 million. This includes previously recognized unrealized gains/(losses) that have been reversed and booked as realized gains/(losses).

Unrealized gains/(losses)

Total net unrealized and unrecognized gains on non-trading equity investments in the banking book that are accounted for under the cost, measurement alternative and equity method were \$7.7 billion as of September 30, 2018.

MARKET RISK

Market risk is the risk associated with the effect of changes in market factors such as interest and foreign exchange rates, equity and commodity prices, credit spreads or implied volatilities, on the value of assets and liabilities held for both the short and long term.

- For a discussion of the Firm's Market Risk Management organization, tools used to measure risk and risk monitoring and control, see Market Risk Management on pages 121-128 of the 2017 Form 10-K

Measures included in market risk RWA

The following table presents the Firm's market risk-based capital and risk-weighted assets at September 30, 2018. The components of market risk RWA are discussed in detail in the Regulatory market risk capital models section on pages 20-23 of this report. RWA is calculated as RBC times a multiplier of 12.5; any calculation differences are due to rounding.

Three months ended September 30, 2018 (in millions)	Risk-based capital	RWA
Internal models:		
Value-at-Risk based measure ("VBM")	\$ 597	\$ 7,466
Stressed Value-at-Risk based measure ("SVBM")	2,515	31,441
Incremental risk charge ("IRC")	266	3,330
Comprehensive risk measure ("CRM")	147	1,838
Total internal models	3,526	44,075
Non-modeled specific risk ^(a)	4,828	60,345
Other charges	1,185	14,807
Total Market risk	\$ 9,538	\$ 119,227

(a) Non-modeled specific risk includes trading book securitization RWA of \$3.1 billion.

Material portfolio of covered positions

The Firm's market risks arise predominantly from activities in the CIB business. CIB makes markets in products across fixed income, foreign exchange, equities, commodities and credit markets; hence the Firm's portfolio of covered positions under the Basel III capital rules is predominantly comprised of positions held by the CIB. Other lines of business have covered positions; these positions are not material.

- Refer to pages 55-56 and to pages 62-66 of the 2017 Form 10-K for a discussion of CIB's Business Segment Results.

Value-at-Risk ("VaR")

VaR is a statistical risk measure used, 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.

- Refer to Market Risk Management on pages 121-128 of the 2017 Form 10-K for information on the Firm's VaR framework.

Since VaR is based on historical data, it is an imperfect measure of market risk exposure and potential future losses. 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.

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.

- Refer to the Economic-value stress testing section on page 24 of this report for further information on stress testing.

Risk management VaR comparison to Regulatory VaR

Risk Management VaR is calculated assuming a one-day holding period and an expected tail-loss methodology which approximates a 95% confidence level. VaR provides a consistent framework to measure risk profiles and levels of diversification across product types and is used for aggregating risks and monitoring limits across businesses. VaR results are reported to senior management, the Board of Directors and regulators.

Under the Firm's Risk Management VaR methodology, assuming current changes in market values are consistent with the historical changes used in the simulation, the Firm would expect to incur VaR "back-testing exceptions," defined as losses greater than that predicted by VaR estimates, an average of five times every 100 trading days. For risk management purposes, the Firm believes the use of a 95% confidence level with a one-day holding period 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 appropriate information to respond to risk events on a daily basis. The Firm's Risk Management VaR is disclosed in its SEC filings.

As required by the Basel III capital rules, the Firm calculates Regulatory VaR assuming a 10-day holding period and an expected tail loss methodology, which approximates a 99% confidence level. Under this methodology, the Firm would expect to incur Regulatory VaR “back-testing exceptions”, defined as losses greater than that predicted by Regulatory VaR estimates, on average once every 100 trading days. However, the Firm expects that, under normal market conditions, it may experience fewer “back-testing exceptions” because the Firm’s Regulatory VaR models are calibrated to exclude certain diversification benefits, which generally results in higher VaR measures. The Firm’s Risk Management VaR as reported in the Firm’s Form 10-Qs and Form 10-K does not exclude these diversification benefits.

As noted above, Regulatory VaR is applied to “covered positions” as defined by the Basel III capital rules, which may be different from the positions included in the Firm’s Risk Management VaR. For example, credit derivative hedges of accrual loans are included in the Firm’s Risk Management VaR, while Regulatory VaR excludes these credit derivative hedges.

- Refer to Value-at-risk on pages 123-125 of the 2017 Form 10-K and pages 73-75 of the 3Q18 Form 10-Q for additional information on Risk Management VaR.

Regulatory market risk capital models

VaR-Based Measure (“VBM”)

The VBM is an aggregate loss measure that combines Regulatory VaR and modeled specific risk (“SR”) factors over a 10-day holding period and a 99% confidence level. While Regulatory VaR measures the risk of loss due to market price or rate movements, the modeled SR portion of the VBM measures the risk of loss from factors other than broad market movements. Modeled SR factors include event risk and idiosyncratic risk for a subset of covered positions for which the model is approved by the Firm’s banking supervisors.

CIB VaR-Based Measure (“VBM”)

For the three months ended September 30, 2018, average CIB VBM was \$200 million, compared with CIB average Risk Management VaR of \$33 million. The CIB VBM was higher due to the longer holding period (10 days), the higher confidence level (99%), differences in population, and the exclusion of the diversification benefit for certain VaR models.

The following table presents the average, minimum, maximum and period-end VBM by risk type for the CIB and total VBM for the Firm. In addition, the table presents the reduction of total risk resulting from the diversification of the portfolio, which is the sum of the CIB VBMs for each risk type less the total CIB VBM.

	Three months ended September 30, 2018			
(in millions)	Avg	Min	Max	September 30, 2018
CIB VBM by risk type				
Interest rate ^(a)	\$ 115	\$ 91	\$ 138	\$ 108
Credit spread ^(a)	108	97	129	107
Foreign exchange	26	15	51	29
Equities	65	56	81	73
Commodities and other	55	46	70	67
Diversification benefit	(169) ^(b)	NM ^(c)	NM ^(c)	(198) ^(b)
Total CIB VBM	200	171	242	186
Total Firm VBM	\$ 199	\$ 170	\$ 238	\$ 186

- (a) For certain products and portfolios, a full revaluation model is used to calculate VBM, which considers both interest rate and credit spread risks together. As such, the Firm allocates the results of the full revaluation model between interest rate and credit spread risk based on the predominant characteristics of the product or portfolio.
- (b) Average portfolio VBM and period-end portfolio VBM were less than the sum of the components described above due to portfolio diversification.
- (c) Designated as not meaningful (“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.

The following table presents the results of the Firm’s VBM converted to risk-based capital based on the application of a regulatory multiplier of 3, and the risk-weighted assets which are calculated by multiplying the risk-based capital measure by 12.5 as prescribed by the Basel III capital rules.

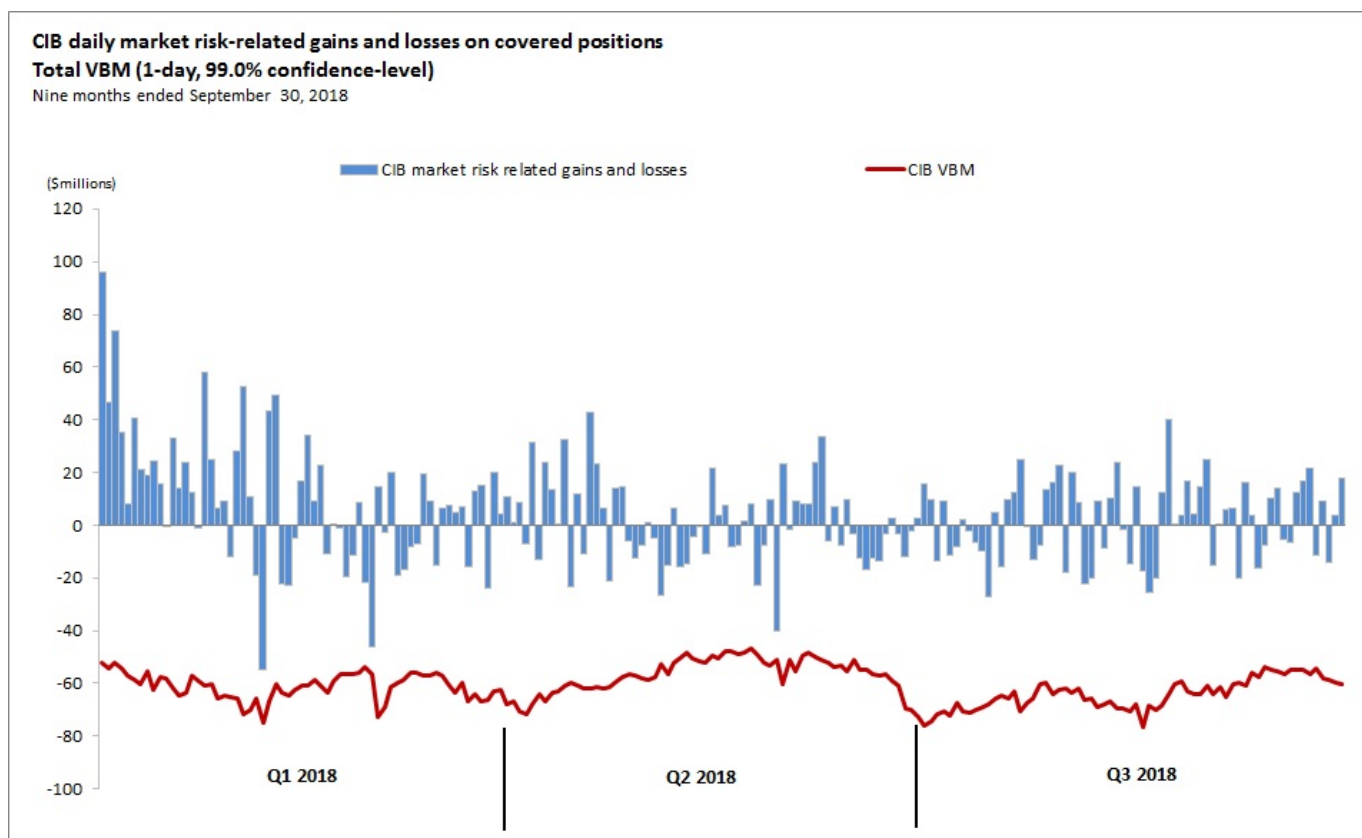
Three months ended September 30, 2018 (in millions)	Average VBM	Risk-based capital	RWA
Firm modeled VBM	\$ 199	\$ 597	\$ 7,466

- Refer to pages 123-125 of the 2017 Form 10-K for additional information on Value-at-risk and Risk Management VaR in the Market Risk Management section.

VBM back-testing

The Firm evaluates the effectiveness of its VBM methodology by back-testing, which compares daily market risk-related gains and losses with daily VBM results for a one-day holding period and a 99% confidence level as prescribed by the Basel III capital rules. Market risk-related gains and losses are defined as profits and losses on covered positions, excluding fees, commissions, valuation adjustments such as liquidity and DVA, net interest income, and gains and losses arising from intraday trading. VBM “back-testing exceptions” occur when market risk-related losses are greater than the estimate predicted by the VBM for the corresponding day.

The following chart presents the VBM back-testing results for CIB’s covered positions. The VBM presented in the chart excludes the diversification benefit for certain VaR models. The chart shows that for the nine months ended September 30, 2018, the CIB observed no back-testing exceptions and posted market risk related gains on 111 of the 194 trading days. The results in the chart below are different from the results of VaR back-testing disclosed in the Firm’s SEC filings due to the differences between the Risk Management VaR and Regulatory VaR as described on page 19-20 of this report.



Stressed VaR-Based Measure (“SVBM”)

The SVBM uses the same Regulatory VaR and SR models as are used to calculate the VBM, but the models are calibrated to reflect historical data from a continuous 12-month period that reflects significant financial stress appropriate to the Firm’s current portfolio. SVBM is calculated weekly over a 10-day holding period and a 99% confidence level. The Firm’s selection of the one-year period of significant financial stress is evaluated on an ongoing basis.

The following table presents the average, minimum, maximum and final week of the quarter SVBM for the CIB and the Firm.

(in millions)	Three months ended September 30, 2018			September 30, 2018
	Avg.	Min	Max	
Total CIB SVBM	\$ 838	\$ 762	\$ 930	\$ 826
Total Firm SVBM	\$ 838	\$ 762	\$ 932	\$ 829

(a) Represents the SVBM for the final week of the quarter, in line with Basel III rules. The measurement date need not coincide with the quarter-end date.

The following table presents the results of the Firm’s SVBM converted to risk-based capital based on the application of a regulatory multiplier of 3, and the risk-weighted assets which are calculated by multiplying the risk-based capital measure by 12.5 as prescribed by the Basel III capital rules.

Three months ended September 30, 2018 (in millions)	Average SVBM	Risk-based capital	RWA
Firm modeled SVBM	\$ 838	2,515	\$ 31,441

Incremental Risk Charge (“IRC”)

The IRC measure captures the risks of issuer default and credit migration that are incremental to the risks already captured in the VBM. The model is intended to measure the potential loss over a one-year holding period at a 99.9% confidence level and is applicable to debt positions that are not correlation trading or securitization positions. The IRC is calculated on a weekly basis.

- For information on the Firm’s IRC model, refer to Market risk on page 27 of the 4Q17 Pillar 3 Report.

The following table presents the average, minimum, maximum and period-end IRC for the CIB.

(in millions)	Three months ended September 30, 2018			September 30, 2018
	Avg.	Min	Max	
CIB IRC on trading positions	\$ 257	\$ 191	\$ 298	\$ 266

The following table presents the IRC risk-based capital requirement for the CIB, which is the same as the risk measure itself, and the risk-weighted assets which are calculated by multiplying the risk measure by 12.5 as prescribed by the Basel III capital rules.

Three months ended September 30, 2018 (in millions)	IRC ^(a)	RWA
Total CIB IRC	\$ 266	\$ 3,330

(a) IRC reflects the higher of the quarterly average and period-end spot measure under the Basel III capital rules.

Comprehensive Risk Measure (“CRM”)

The CRM captures the material price risks of portfolios of correlation trading positions. Correlation trading positions refer to client-driven, market-making activities in credit index and bespoke tranche swaps that are delta hedged with single-name and index credit default swap positions. The CRM risk-based capital requirement is the greater of modeled CRM and a floor, which is equal to 8% of the total specific risk add-on for such positions using a non-modeled approach.

Similar to the IRC, the CRM model measures potential losses over a one-year holding period at a 99.9% confidence level. The CRM is calculated on a weekly basis.

- For information on the Firm’s CRM model, refer to Market risk on page 27-28 of the 4Q17 Pillar 3 Report.

The following table presents the average, minimum, maximum and period-end CRM for the CIB.

(in millions)	Three months ended September 30, 2018			September 30, 2018
	Avg.	Min	Max	
CIB CRM Capital	\$ 147	\$ 139	\$ 153	\$ 139

The following table presents the CRM risk-based capital requirement for the CIB, which is the same as the risk measure itself, and the risk-weighted assets which are calculated by multiplying the risk-based capital measure by 12.5 as prescribed by the Basel III capital rules.

Three months ended September 30, 2018 (in millions)	CRM ^(a)	RWA
Total CIB CRM Capital	\$ 147	\$ 1,838

(a) CRM reflects the higher of the quarterly average and period-end spot measure under the Basel III capital rules.

Aggregate securitization positions

- For information on the aggregate amount of on-balance sheet and off-balance sheet securitization positions by exposure type, refer to Securitization on page 17 of this Pillar 3 Report.

Aggregate correlation trading positions

The following table presents the net notional amount and fair value of the Firm's aggregate correlation trading positions and the associated credit hedges. Credit hedges of the correlation trading positions are included as they are considered to be part of the aggregate correlation trading positions. The presentation distinguishes between positions that are modeled in CRM and those that are not modeled in CRM (included in non-modeled specific risk).

September 30, 2018 (in millions)	Notional amount ^(a)	Fair value ^(b)
Positions modeled in CRM	\$ (1,011)	\$ 82
Positions not modeled in CRM	176	—
Total correlation trading positions	\$ (835)	\$ 82

(a) Reflects the net of the notional amount of the correlation trading portfolio, including credit hedges. Negative balances, if any, reflect aggregate net short correlation trading positions.

(b) Reflects the fair value of securities and derivatives, including credit hedges.

Non-modeled specific risk

Non-modeled specific risk is calculated using supervisory-prescribed risk weights and methodologies for covered debt, equity and securitization positions that are not included in modeled SR. The market risk-based capital and risk-weighted assets (which are calculated by multiplying the capital requirement by 12.5 as prescribed by the Basel III capital rules) for non-modeled specific risk are shown in the table below.

September 30, 2018 (in millions)	Risk-based capital	RWA
Securitization positions	\$ 245	\$ 3,060
Nonsecuritization positions	4,583	57,285
Total Non-modeled specific risk	\$ 4,828	\$ 60,345

Other charges

Other charges reflect exposures receiving alternative capital treatments. The capital requirement is translated to risk-weighted assets by multiplying by 12.5 as prescribed by the Basel III capital rules.

September 30, 2018 (in millions)	Risk-based capital	RWA
Total Firm other charges	\$ 1,185	\$ 14,807

Independent review of market risk regulatory capital models

- For information on the independent review of the market risk regulatory capital models, refer to Market risk on page 29 of the 4Q17 Pillar 3 Report and to Estimations and Model Risk Management on page 137 of the 2017 Form 10-K.

Economic-value stress testing

Along with VaR, stress testing is an important tool in measuring and controlling risk. While VaR reflects the risk of loss due to adverse changes in markets using recent historical market behavior as an indicator of losses, stress testing is intended to capture the Firm's exposure to unlikely but plausible events in abnormal markets. The Firm runs weekly stress tests on market-related risks across the lines of business using multiple scenarios that assume significant changes in risk factors such as credit spreads, equity prices, interest rates, currency rates and commodity prices.

The Firm uses a number of standard scenarios that capture different risk factors across asset classes including geographical factors, specific idiosyncratic factors and extreme tail events. The stress framework calculates multiple magnitudes of potential stress for both market rallies and market sell-offs for each risk factor and combines them in multiple ways to capture different market scenarios. For example, certain scenarios assess the potential loss arising from current exposures held by the Firm due to a broad sell-off in bond markets or an extreme widening in corporate credit spreads. The flexibility of the stress testing framework allows risk managers to construct new, specific scenarios that can be used to form decisions about future possible stress events.

Stress testing complements VaR by allowing risk managers to shock current market prices to more extreme levels relative to those historically realized, and to stress test the relationships between market prices under extreme scenarios.

Stress scenarios are defined and reviewed by Market Risk Management, and significant changes are reviewed by the relevant LOB Risk Committees and may be redefined on a periodic basis to reflect current market conditions.

Stress-test results, trends and qualitative explanations based on current market risk positions are reported to the respective LOBs and the Firm's senior management to allow them to better understand the sensitivity of positions to certain defined events and to enable them to manage their risks with more transparency. Results are also reported to the Board of Directors.

The Firm's stress testing framework is utilized in calculating results for the Firm's CCAR and ICAAP processes. In addition, the results are incorporated into the quarterly assessment of the Firm's Risk Appetite Framework and are also presented to the DRPC.

OPERATIONAL RISK MANAGEMENT

Operational risk is the risk associated with inadequate or failed internal processes, people and systems, or from external events.

- Refer to Operational Risk on page 31 in 4Q17 Pillar 3 Report and pages 131-137 of the 2017 Form 10-K for a discussion of Operational Risk Management.

Measurement

- Refer to Operational Risk Management on page 131-132 of the 2017 Form 10-K for information related to operational risk measurement.
- Refer to Capital Risk Management on page 82-91 of the 2017 Form 10-K and page 47 of the 3Q18 Form 10-Q for operational risk RWA.

Other operational risks

- Refer to Other Operational Risk Management on pages 131-133 of the 2017 Form 10-K for information related to other operational risks that can lead to losses which are captured through the Firm's operational risk measurement processes.

INTEREST RATE RISK IN THE BANKING BOOK

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.

- Refer to the table on page 122 of the 2017 Form 10-K for a summary of positions included in Earnings-at-risk.

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). This simulation primarily includes retained loans, deposits, deposits with banks, investment securities, long term debt and any related interest rate hedges, and excludes other positions in risk management VaR and other sensitivity-based measures.

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 assumed 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.

- Refer to page 126 of the 2017 Form 10-K for a detailed discussion of Earnings-at-risk.
- Refer to page 76 of the 3Q18 Form 10-Q for further discussion of Earnings-at-risk.

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	Instantaneous change in rates			
(in billions)	+200 bps	+100 bps	-100 bps	-200 bps
September 30, 2018	\$ 1.7	\$ 0.8	(1.9)	NA ^(a)

(a) Given the current market interest rate environment, these downward parallel earnings-at-risk scenarios are not considered to be reasonably possible in the near term.

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

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 September 30, 2018. The non-U.S. dollar sensitivities for an instantaneous decrease in rates by 200 and 100 basis points are not material to the Firm's earnings-at-risk at September 30, 2018.

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 \$500 million at September 30, 2018. 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 results of the comparable non-U.S. dollar scenarios are not material to the Firm at September 30, 2018.

SUPPLEMENTARY LEVERAGE RATIO

The SLR is defined as Tier 1 capital under the Basel III capital rules divided by the Firm's total leverage exposure. The tables below present the components of the Firm's SLR as of September 30, 2018 with on-balance sheet amounts calculated as the quarterly average and off-balance sheet amounts calculated as the average of each of the three month's period-end balances.

Summary comparison of accounting assets and total leverage exposure

(in millions, except ratio)	September 30, 2018
Basel III Advanced Fully Phased-In Tier 1 capital	\$ 210,589
Total spot assets	2,615,183
Add: Adjustments for frequency of calculations ^(a)	(15,562)
Total average assets	2,599,621
Less: Adjustments for deductions from Tier 1 capital	47,009
Total adjusted average assets	2,552,612
Adjustment for derivative transactions	349,146
Adjustment for repo-style transactions	25,809
Adjustment for off-balance sheet exposures	307,951
Total leverage exposure	\$ 3,235,518
Basel III Advanced Fully Phased-In SLR	6.5%

(a) The adjustment for frequency of calculations represents the difference between total spot assets at September 30, 2018, and average assets for the three months ended September 30, 2018.

Derivative transactions

The following table presents the components of total derivative exposure.

(in millions)	September 30, 2018
Replacement cost for all derivative transactions ^(a)	\$ 63,353
Add-on amounts for potential future exposure ("PFE") for all derivative transactions	407,685
Gross-up for collateral posted in derivative transactions if collateral is deducted from on-balance sheet assets	1,142
Less: Exempted exposures to central counterparties ("CCPs") in cleared transactions	82,071
Adjusted effective notional principal amount of sold credit protection	777,821
Less: Effective notional principal amount offsets and PFE deductions for sold credit protection	756,995
Total derivative exposure^(b)	410,935
Less: On-balance-sheet average derivative receivables	61,789
Adjustment for derivative transactions	\$ 349,146

(a) Includes cash collateral received of \$1.6 billion.

(b) Receivables for cash variation margin that are posted under a qualifying derivative contract where the Firm has obtained an appropriate legal opinion with respect to master netting agreements with the same counterparty, and where other relevant criteria under U.S. GAAP are met, are netted against derivative liabilities and are not included in on-balance sheet assets.

Repo-style transactions

The following table presents the components of total exposures for repo-style transactions.

(in millions)	September 30, 2018
Gross assets for repo-style transactions ^(a)	\$ 628,258
Less: amounts netted ^(b)	304,188
Counterparty credit risk for all repo-style transactions	27,179
Exposure amount for repo-style transactions where the Firm acts as an agent ^(c)	15
Total exposures for repo-style exposures	351,264
Less: on-balance sheet amounts	
Securities purchased under resale agreements	208,397
Securities borrowed	117,057
Adjustment for repo-style transactions	\$ 25,809

(a) Includes adjustments for securities received where the securities lender has not sold or rehypothecated securities received.

(b) Reflects netting of transactions where the Firm has obtained an appropriate legal opinion with respect to master netting agreements with the same counterparty, and where other relevant criteria under U.S. GAAP are met.

(c) Includes exposures where the Firm's guarantee is greater than the difference between the fair value of the security or cash the Firm's customer has lent and the value of the collateral provided.

Other off-balance sheet exposures

The following table presents wholesale and retail commitments after applying the relevant credit conversion factors.

(in millions)	September 30, 2018
Off-balance sheet exposures - gross notional amounts	\$ 1,105,995
Less: Adjustments for conversion to credit equivalent amounts	798,044
Adjustment for other off-balance sheet exposures	\$ 307,951

APPENDIX

Valuation process

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, refer to Valuation Process in the 4Q17 Pillar 3 Report and to Note 2 of the 2017 Form 10-K.

- Refer to Note 2 on page 93-107 of the 3Q18 Form 10-Q, for information on credit and funding valuation adjustments.

Estimations and Model Risk Management

Model risk is the potential for adverse consequences from decisions based on incorrect or misused model outputs.

- For a discussion of the Firm's Model Risk Management, model risk review and governance, refer to Model risk management on page 35 of the 4Q17 Pillar 3 Report and Model Risk Management on page 137 of the 2017 Form 10-K for additional information.

References to JPMorgan Chase's 2017 Form 10-K and 3Q18 Form 10-Q

JPMorgan Chase's 2017 Form 10-K contains important information on the Firm's risk management policies and practices, capital management processes, and accounting policies relevant to this report. Specific references are listed below.

Management's discussion and analysis

Section	Form 10-K Page reference	Form 10-Q Page reference
Enterprise-wide risk management	75-80	42-43
Strategic risk management	81-98	
Capital risk management	82-91	44-48
Liquidity risk management	92-97	49-54
Credit and investment risk management	99-120	55
Credit portfolio	101	56
Consumer credit portfolio	102-107	57-61
Wholesale credit portfolio	108-116	62-68
Allowances for credit losses	117-119	69-71
Market risk management	121-128	73-77
Operational risk management	131-133	
Country risk management	129-130	78
Reputation risk management	98	

Notes to consolidated financial statements

Section	Form 10-K Page reference	Form 10-Q Page reference
Note 1 Basis of presentation	153-155	91-92
Note 2 Fair value measurement	155-173	93-107
Note 3 Fair value option	174	108-110
Note 4 Credit risk concentrations	177-178	
Note 5 Derivative instruments (Note 4 in 10-Q)	179	111-122
Note 8 Pension and other postretirement employee benefit plans (Note 7 in 10-Q)	195-200	125
Note 10 Securities (Note 9 in 10-Q for Investment Securities)	203-208	127-130
Note 11 Securities financing activities (Note 10 in 10-Q)	208-210	131-132
Note 12 Loans (Note 11 in 10-Q)	211-230	133-146
Note 13 Allowance for credit losses (Note 12 in 10-Q)	231-235	147
Note 14 Variable interest entities (Note 13 in 10-Q)	236-243	148-153
Note 15 Goodwill and other intangible assets (Note 14 in 10-Q)	244-247	154-156
Note 19 Long-term debt	249-250	
Note 20 Preferred stock	251	
Note 21 Common stock	252	
Note 23 Accumulated other comprehensive income/(loss) (Note 17 in 10-Q)	254	158-159
Note 25 Restrictions on cash and intercompany funds transfers (Note 18 in the 10-Q)	258	160
Note 26 Regulatory capital (Note 19 in 10-Q)	259-260	160-161
Note 27 Off-balance sheet lending-related financial instruments, guarantees and other commitments (Note 20 in 10-Q)	261-266	162-165
Note 28 Commitments, pledged assets and collateral (Note 21 in 10-Q for Pledged assets and collateral)	267	165