JPMorgan Chase & Co.

PILLAR 3 REGULATORY CAPITAL DISCLOSURES

For the quarterly period ended September 30, 2019

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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; JPMorgan Chase had $2.8 trillion in assets and $264.3 billion in stockholders’ equity as of September 30, 2019. 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 subsidiary is JPMorgan Chase Bank, National Association (“JPMorgan Chase Bank, N.A.”), a national banking association with U.S. branches in 32 states and Washington, D.C. as of September 30, 2019. 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, representative offices and subsidiary foreign banks. The Firm’s principal operating subsidiary in the United Kingdom ("U.K") is J.P. Morgan Securities plc, a subsidiary of JPMorgan Chase Bank, N.A.

➢ For additional information, refer to the Supervision and Regulation section on pages 1-3 of the JPMorgan Chase's Annual Report on Form 10-K for the year ended December 31, 2018 ("2018 Form 10-K ")

Pillar 3 report overview

This report provides information on the Firm’s capital structure, capital adequacy, risk exposures, and risk-weighted assets (“RWA”) under the Basel III advanced approach. 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, 2018 (“4Q18 Pillar 3 Report”), as well as Annual Report on Form 10-K for the year ended December 31, 2018 (“2018 Form 10-K”) and the Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2019 (“3Q19 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.

The 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, including JPMorgan Chase Bank, N.A. Two comprehensive approaches are prescribed for calculating RWA: a standardized approach (“Basel III Standardized”), and an advanced approach (“Basel III Advanced”). Effective January 1, 2019, the capital adequacy of the Firm is evaluated against the fully phased-in measures under Basel III and represents the lower of the Standardized or Advanced approaches.

Basel III also includes a requirement for Advanced Approach banking organizations, including the Firm, to calculate the supplementary leverage ratio ("SLR").

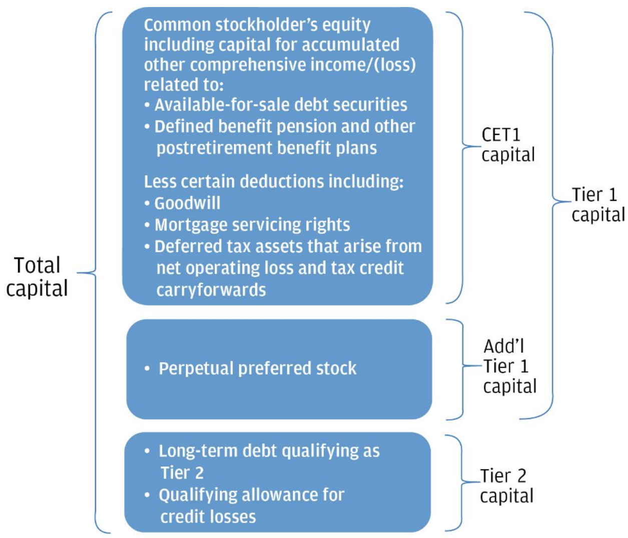
➢ Refer to page 45 of the 3Q19 Form 10-Q and pages 1–6 of the 2018 Form 10-K for information on Basel III Reforms.

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.

Risk governance and oversight

- Effective July 2019, the Board of Directors' Risk Policy Committee ("DRPC") was renamed the Risk Committee. The committee's responsibilities were not changed. For a further discussion of the committee, refer to page 81 of JPMorgan Chase's 2018 Form 10-K.
- For further discussion of Enterprise-wide risk management governance and oversight, refer to pages 79-83 of the 2018 Form 10-K , page 44 of the 3Q19 Form 10-Q and page 3 of the 4Q18 Pillar 3 Report.

The three components of regulatory capital under the Basel III 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 259 and Note 21 on page 260 of the 2018 Form 10-K for additional information on preferred stock and common stock.
- ➢ Refer to Note 19 on pages 257-258 of the 2018 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 2018 Form 10-K.

Components of capital

A reconciliation of total stockholders' equity to Basel III Advanced 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 83 of the 3Q19 Form 10-Q for the components of total stockholders' equity.

September 30, 2019 (in millions)		Basel III Advanced
Total stockholders' equity	**$**	**264,348**
Less: Preferred stock[(a)]		28,363
Common stockholders' equity		**235,985**
Less:		
Goodwill		47,818
Other intangible assets		841
Other CET1 capital adjustments[(b)]		1,546
Add:		
Deferred tax liabilities[(c)]		2,371
CET1 capital		**188,151**
Preferred stock[(a)]		28,363
Other Tier 1 capital adjustments[(a)]		(1,364)
Less: Tier 1 capital deductions		319
Total Tier 1 capital		**214,831**
Long-term debt and other instruments qualifying as Tier 2 capital		14,145
Qualifying allowance for credit losses		4,103
Other Tier 2 capital adjustments		213
Less: Tier 2 capital deductions		89
Total Tier 2 capital		**18,372**
Total capital	**$**	**233,203**

(a) As of September 30, 2019, preferred stock reflects the issuance of $2.25 billion of Series FF preferred stock and redemption of $880 million of Series W preferred stock. Other Tier 1 adjustments includes $1.37 billion of Series I preferred stock called for partial redemption on September 26, 2019 and subsequently redeemed on October 30, 2019. Tier 1 capital as of September 30, 2019 reflects the issuance and redemptions.

(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. Certain of the Firm's cash and other assets are restricted as to withdrawal or usage. These restrictions are imposed by various regulatory authorities based on the particular activities of the Firm's subsidiaries.

- Refer to Note 20 on page 154 of the 3Q19 Form 10-Q Note 25 on page 268 of the 2018 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 45-49 of the 3Q19 Form 10-Q and Note 26 on pages 269–270 of the 2018 Form 10-K.

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 4Q18 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 at September 30, 2019.

September 30, 2019 (in millions)	Basel III Advanced RWA
Credit risk	$ 962,213
Market risk	87,764
Operational risk	385,716
Total RWA	$ 1,435,693

- For information on the components of risk-weighted assets, refer to Regulatory Capital on page 7 of the 4Q18 Pillar 3 Report.

RWA rollforward

The following table presents changes in the components of RWA under Basel III Advanced for the three months ended September 30, 2019. The amounts represented in the rollforward categories are an approximation, based on the predominant driver of the change.

	Basel III Advanced RWA			
Three months ended September 30, 2019 (in millions)	Credit risk	Market risk	Operational risk	Total
June 30, 2019	$964,362	$ 100,027	$ 384,822	$ 1,449,211
Model & data changes[(a)]	(9,400)	(8,135)	–	(17,535)
Portfolio runoff[(b)]	(1,300)	–	–	(1,300)
Movement in portfolio levels[(c)]	8,551	(4,128)	894	5,317
Changes in RWA	(2,149)	(12,263)	894	(13,518)
September 30, 2019	$962,213	$ 87,764	$ 385,716	$ 1,435,693

(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 rolloffs 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 45-49 of the 3Q19 Form 10-Q and pages 85-94 of the 2018 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 and leverage-based 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, 2019.

	Minimum capital ratios		Well-capitalized ratios	
	BHC[(a)(e)]	IDI[(b)(e)]	BHC[(c)]	IDI[(d)]
Capital ratios				
CET1	10.5%	7.0%	N/A	6.5%
Tier 1	12.0	8.5	6.0	8.0
Total	14.0	10.5	10.0	10.0
Tier 1 leverage	4.0	4.0	N/A	5.0
SLR	5.0	6.0	N/A	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 minimum capital ratios applicable to the Firm under Basel III. The CET1 minimum capital ratio includes a capital conservation buffer of 2.5% and global systematically important banks ("GSIB") surcharge of 3.5%. as calculated under Method 2.

(b) Represents requirements for JPMorgan Chase's IDI subsidiaries. The CET1 minimum capital ratio includes a capital conservation buffer of 2.5% 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 buffers of 2.0% and 3.0% for BHC and IDI, respectively.

Capital adequacy

As of September 30, 2019, JPMorgan Chase and its IDI subsidiaries were well-capitalized and met all capital requirements to which each was subject. Capital ratios for the Firm's significant IDI subsidiary, JPMorgan Chase Bank, N.A., 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 are evaluated against the Basel III approaches (Standardized or Advanced) which, for each quarter, results in the lower ratio as well as the supplementary leverage ratio. The Firm's Basel III Standardized risk-based ratios are currently more binding than the Basel III Advanced risk-based ratios, and the Firm expects that this will remain the case for the foreseeable future.

- 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 4Q18 Pillar 3 Report and page 47 of the 3Q19 Form 10-Q .

Regulatory capital metrics for JPMorgan Chase and JPMorgan Chase Bank, N.A.

The following tables present the risk-based and leverage-based capital metrics for JPMorgan Chase and JPMorgan Chase Bank, N.A. under both the Basel III Standardized and Basel III Advanced Approaches at September 30, 2019.

	JPMorgan Chase & Co.	
September 30, 2019 (in millions, except ratios)	**Basel III Standardized**	**Basel III Advanced**
Regulatory capital		
CET1 capital	**$ 188,151**	**$ 188,151**
Tier 1 capital	**214,831**	**214,831**
Total capital[(a)]	**243,500**	**233,203**
Assets		
Risk-weighted	**1,527,762**	**1,435,693**
Adjusted average[(b)]	**2,717,852**	**2,717,852**
Capital ratios[(c)]		
CET1[(d)]	**12.3%**	**13.1%**
Tier 1	**14.1**	**15.0**
Total	**15.9**	**16.2**
Tier 1 leverage[(e)]	**7.9**	**7.9**

	JPMorgan Chase Bank, N.A.	
September 30, 2019 (in millions, except ratios)	**Basel III Standardized**	**Basel III Advanced**
Regulatory capital		
CET1 capital	**$ 205,347**	**$ 205,347**
Tier 1 capital	**205,347**	**205,347**
Total capital	**223,038**	**212,919**
Assets		
Risk-weighted	**1,445,648**	**1,302,749**
Adjusted average[(b)]	**2,339,858**	**2,339,858**
Capital ratios[(c)]		
CET1[(d)]	**14.2%**	**15.8%**
Tier 1	**14.2**	**15.8**
Total	**15.4**	**16.3**
Tier 1 leverage[(e)]	**8.8**	**8.8**

(a) Total regulatory capital for JPMorgan Chase & Co. includes $548 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 JPMorgan Chase Bank, N.A. is evaluated against the lower of the two ratios as calculated under Basel III approaches (Standardized or Advanced).
(d) At September 30, 2019, the Firm and its U.S bank subsidiaries 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, 2019, the calculated capital conservation buffer of the Firm and JPMorgan Chase Bank, N.A. was 7.8% and 7.4%, respectively. This was in excess of the estimated required capital conservation buffer of 6.0% (inclusive of the GSIB surcharge) for the Firm and 2.5% for JPMorgan Chase Bank, N.A. at that date. In addition, the eligible retained income for the Firm and JPMorgan Chase Bank, N.A was $1.4 billion and $2.4 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 SLR as of September 30, 2019.

(in millions, except ratio)		September 30, 2019
Basel III Advanced Tier 1 capital	**$**	**214,831**
Total spot assets		**2,764,661**
Add: Adjustments for frequency of calculations[(a)]		391
Total average assets		**2,765,052**
Less: Adjustments for deductions from tier 1 capital		47,200
Total adjusted average assets[(b)]		**2,717,852**
Off-balance sheet exposures[(c)]		686,683
Total leverage exposure	**$**	**3,404,535**
Basel III Advanced SLR		**6.3%**

(a) The adjustment for frequency of calculations represents the difference between total spot assets at September 30, 2019 and total average assets for the three months ended September 30, 2019.

(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.

Total Loss-Absorbing Capacity ("TLAC")

The Federal Reserve's TLAC rule requires the top-tier U.S. GSIB holding companies, including the Firm, to maintain minimum levels of external TLAC and eligible LTD effective January 1, 2019.

➢ For additional information on TLAC, refer to the Capital Risk Management section on page 48 of the 3Q19 Form 10-Q . For information on the financial consequences to holders of the Firm's debt and equity securities in a resolution scenario, refer to Part I, Item 1A: Risk Factors on pages 7-28 of the Firm's 2018 Form 10-K.

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 scored prime mortgage and scored 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.

- For information on counterparty default risk and credit valuation adjustments ("CVA"), refer page 11 of the 4Q18 Pillar 3 report.
- For information on IMM and CEM EAD Methodologies, refer to the Counterparty Credit Risk section on pages 18-19 of the 4Q18 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 102–123 of the 2018 Form 10-K and pages 55-69 of the 3Q19 Form 10-Q .
- Refer to the Notes to the Consolidated Financial Statements beginning on page 155 of the 2018 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 including a 1.06 scaling factor excluding CVA at September 30, 2019.

September 30, 2019 (in millions)		Basel III Advanced RWA
Retail exposures	$	202,451
Wholesale exposures		443,209
Counterparty exposures		116,690
Securitization exposures[a]		28,482
Equity exposures		41,604
Other exposures[b]		82,417
CVA		47,360
Total credit risk RWA	$	962,213

(a) Represents banking book securitization RWA only.
(b) Includes other assets, non-material portfolios, and unsettled transactions.

Credit risk exposures

Credit risk exposures for the three months ended September 30, 2019 are contained in the 3Q19 Form 10-Q . Specific references to the 3Q19 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 124-137 for the distribution of loans by geographic region and industry.
- Refer to Note 22 on pages 156-159 for the contractual amount and geographic distribution of lending-related commitments.

Counterparty credit risk

- Refer to the Consumer Credit Portfolio section on pages 56-59, and to the Wholesale Credit Portfolio section on pages 60-66 for eligible margin loans balances.
- Refer to Wholesale Credit Portfolio footnote (d) on page 61, Country Risk on page 75.
- Refer to Note 4 on pages 103-113 for the gross positive fair value, netting benefits, and net exposure of derivative receivables.
- Refer to Derivative contracts on page 55 for credit derivatives used in credit portfolio management activities.
- Refer to Note 10 on pages 122-123 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 55-69 and Note 9 on pages 118-121 for the investment securities portfolio by issuer type.

Country risk

- Refer to page 75 for the top 20 country exposures (excluding the U.S.).

Allowance for credit losses

- Refer to Allowance for Credit Losses on pages 67-68 for a summary of changes in the allowance for loan losses and allowance for lending-related commitments.
- Refer to Note 12 on page 138 for the allowance for credit losses and loans and lending-related commitments by impairment methodology.

Average balances

- Refer to page 165 for the Consolidated average balance sheet.

Credit risk concentrations

- Refer to page 12 in the 4Q18 Pillar 3 Report for additional information on credit risk concentrations.

The retail portfolio is comprised of exposures that are scored and managed on a pool basis rather than on an individual-exposure basis.

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

The following table presents the Firm's retail RWA at September 30, 2019.

September 30, 2019 (in millions)		Basel III Advanced RWA
Residential mortgages	$	64,358
Qualifying revolving		115,541
Other retail		22,552
Total retail credit RWA	$	202,451

➢ For information on risk-weighted assets and risk parameter estimation methods for the retail credit portfolio, refer to Retail Credit Risk on page 13–14 of the 4Q18 Pillar 3 Report.

Residential mortgage exposures

The following table includes first lien and junior lien mortgages and revolving home equity lines of credit. First lien mortgages were 87.0% of the exposure amount, revolving exposures were 12.0%, and the remaining exposures related to junior lien mortgages. Revolving exposures were largely originated prior to 2010 and drive approximately 33.0% of the total risk weighted assets of this portfolio, with nearly 27.0% 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, 2019
(in millions, except ratios)

								Exposure-weighted average		
PD range (%)		Balance sheet amount		Off balance sheet commitments		EAD		RWA	PD	LGD	Risk weight
0.00 to < 0.10	$	121,164	$	26,077	$	133,227	$	7,158	0.05%	37.31%	5.37%
0.10 to < 0.20		66,950		4,813		71,067		9,487	0.16	38.26	13.35
0.20 to < 0.75		50,547		924		51,386		13,607	0.35	41.41	26.48
0.75 to < 5.50		17,600		168		17,712		14,818	1.92	44.07	83.66
5.50 to < 10.00		1,855		1		1,855		3,681	6.93	48.50	198.46
10.00 to < 100		2,349		1		2,350		4,951	31.33	40.65	210.69
100 (default)		11,333		31		11,364		10,656	100.00	– (a)	93.77 (b)
Total	$	271,798	$	32,015	$	288,961	$	64,358	4.47%	37.31%	22.27%

(a) The LGD rate is reported as zero for residential mortgage exposures in default because at the point they are classified as defaulted per the Basel III capital rules definition 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, 2019
(in millions, except ratios)

PD range (%)	Balance sheet amount	Off balance sheet commitments	EAD	RWA	Exposure-weighted average PD	Exposure-weighted average LGD	Exposure-weighted average Risk weight
0.00 to < 0.50	$ 57,713	$ 562,277	$ 229,254	$ 12,387	0.10%	91.44%	5.40%
0.50 to < 2.00	38,126	54,021	48,518	19,118	1.07	93.95	39.40
2.00 to < 3.50	18,015	10,423	19,480	15,095	2.61	94.17	77.49
3.50 to < 5.00	15,453	2,721	15,662	15,616	3.73	93.96	99.71
5.00 to < 8.00	8,683	2,072	8,789	13,120	6.93	94.41	149.27
8.00 to < 100	20,982	1,411	20,984	40,205	20.72	93.14	191.60
Total	$ 158,972	$ 632,925	$ 342,687	$ 115,541	1.98%	92.25%	33.72%

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, 2019
(in millions, except ratios)

PD range (%)	Balance sheet amount	Off balance sheet commitments	EAD	RWA	Exposure-weighted average PD	Exposure-weighted average LGD	Exposure-weighted average Risk weight
0.00 to < 0.50	$ 33,182	$ 10,721	$ 36,653	$ 6,814	0.19%	44.86%	18.59%
0.50 to < 2.00	21,169	928	21,525	9,830	0.95	44.32	45.67
2.00 to < 3.50	2,963	497	3,067	2,219	2.93	49.35	72.34
3.50 to < 5.00	523	41	545	651	3.84	78.34	119.42
5.00 to < 8.00	1,335	93	1,357	984	6.73	44.83	72.49
8.00 to < 100	1,498	7	1,510	1,662	25.07	52.04	110.07
100 (default)	354	123	477	392	100.00	– (a)	82.22
Total	$ 61,024	$ 12,410	$ 65,134	$ 22,552	2.04%	45.01%	34.62%

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

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.

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

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, 2019 (in millions)		Basel III Advanced RWA
Corporate	$	366,753
Bank		12,414
Sovereign		14,037
Income-producing real estate		49,366
High volatility commercial real estate		639
Total wholesale credit RWA	$	443,209

➢ For information on risk parameter estimation methods for the wholesale credit portfolio, refer to Wholesale Credit Risk on page 16 of the 4Q18 Pillar 3 Report.

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 75% of this exposure in the first two PD ranges, which are predominantly investment-grade. Exposures meeting the Basel definition of default represent 0.3% of total EAD. The exposure-weighted average LGD for the wholesale portfolio is 29%.

September 30, 2019 (in millions, except ratios)

PD range (%)	Balance sheet amount	Off balance sheet commitments	EAD	RWA	Exposure-weighted average PD	Exposure-weighted average LGD	Exposure-weighted average Risk weight
0.00 to < 0.15	$ 697,068	$ 152,264	$ 810,972	$ 106,924	0.05%	27.63%	13.18%
0.15 to < 0.50	138,606	142,417	223,857	105,053	0.26	35.65	46.93
0.50 to < 1.35	181,278	88,799	231,984	119,468	0.75	28.13	51.50
1.35 to < 10.00	63,857	63,250	98,716	95,624	3.71	32.63	96.87
10.00 to < 100	5,054	5,421	7,982	12,303	22.88	31.72	154.14
100 (default)	2,710	1,697	3,622	3,837	100.00	37.11	105.94
Total	$ 1,088,573	$ 453,848	$ 1,377,133	$ 443,209	0.86%	29.42%	32.18%

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, 2019, $78.3 billion of EAD for wholesale exposures is covered by eligible guarantees or credit derivatives.

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

Risk-weighted assets

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

September 30, 2019 (in millions)		Basel III Advanced RWA
OTC derivatives	$	57,859
Repo-style transactions		38,389
Eligible margin loans		11,227
Cleared transactions		9,215
Total counterparty credit RWA	$	116,690

➢ For information on risk-weighted assets, risk parameter estimation methods and wrong-way risk for the counterparty credit risk, refer to Counterparty Credit Risk on page 18–19 of the 4Q18 Pillar 3 Report.

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 $265.8 billion, with 80% 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 41%. The collateral benefit is reflected primarily in the EAD.

September 30, 2019
(in millions, except ratios)

					Exposure-weighted average		
PD range (%)		EAD		RWA	PD	LGD	Risk weight
0.00 to < 0.15	$	162,683	$	36,635	0.09%	42.73%	22.52%
0.15 to < 0.50		48,946		25,825	0.26	40.48	52.76
0.50 to < 1.35		39,100		26,488	0.74	39.57	67.75
1.35 to < 10.00		14,246		16,859	3.64	32.96	118.34
10.00 to < 100		533		1,313	22.70	42.03	246.41
100 (default)		336		355	100.00	57.69	105.68
Total	$	265,844	$	107,475	0.58%	41.34%	40.43%

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, 2019, $3.6 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.

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.

- ➢ Refer to pages 20-21 of the 4Q18 Pillar 3 Report for additional information on securitization exposures, due diligence, risk management and hierarchy of approaches.
- ➢ Refer to Note 1 & Note 14 on pages 155-158 and 244-251, respectively, of the 2018 Form 10-K for a discussion of the accounting policies related to securitization activities and affiliated entities (i.e., voting interest entities and variable interest entities (including SPEs)).
- ➢ Refer to Note 2 on pages 159-161 of the 2018 Form 10-K for a discussion on the valuation of retained or purchased securitization interests.
- ➢ Refer to Note 12, Loans held-for-sale, on page 220, Note 1, the valuation methodology table on page 160, and Note 14, Loan securitizations on page 249, of the 2018 Form 10-K for a discussion of the valuation of loans that are intended to be securitized and accounted for as securitization exposures.
- ➢ Refer to Note 27, Loan sales- and securitization-related indemnifications on pages 274-275 of the 2018 Form 10-K for a discussion of the accounting policies for recognizing a liability associated with loan sales-and securitization-related indemnifications.

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 based on Supervisory Formula Approach ("SFA") and Simplified Supervisory Formula Approach ("SSFA").

	Securitization							
	SFA		SSFA		1250%		Total	
September 30, 2019 (in millions)	Exposure	RWA	Exposure	RWA	Exposure	RWA	Exposure	RWA
Risk weight								
= 0% ≤ 20%	$ 55,138	$ 11,686	$ 68,344	$ 14,407	$ –	$ –	$ 123,481	$ 26,093
> 20% ≤ 50%	2,007	551	2,396	902	–	–	4,403	1,453
> 50% ≤ 100%	197	196	691	563	–	–	889	759
> 100% < 1250%	180	492	900	1,925	–	–	1,080	2,417
= 1250%	–	–	40	495	71	933	110	1,428
Securitization, excluding re-securitization	$ 57,522	$ 12,925	$ 72,371	$ 18,292	$ 71	$ 933	$ 129,963	$ 32,150

	Re-securitization							
	SFA		SSFA		1250%		Total	
September 30, 2019 (in millions)	Exposure	RWA	Exposure	RWA	Exposure	RWA	Exposure	RWA
Risk weight								
= 0% ≤ 20%	$ 293	$ 62	$ 1,008	$ 214	$ –	$ –	$ 1,302	$ 276
> 20% ≤ 50%	–	–	–	–	–	–	–	–
> 50% ≤ 100%	–	–	27	18	–	–	27	18
> 100% < 1250%	–	–	1	1	–	–	1	1
= 1250%	–	–	1	10	–	–	1	10
Re-securitization[(a)]	$ 293	$ 62	$ 1,037	$ 243	$ –	$ –	$ 1,331	$ 305
Total securitization [(b)]	$ 57,815	$ 12,987	$ 73,408	$ 18,535	$ 71	$ 933	$ 131,294	$ 32,455

(a) As of September 30, 2019, there were no re-securitizations to which credit risk mitigation has been applied.
(b) Total securitization RWA includes $4.0 billion of RWA on trading book exposure of $7.4 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, 2019 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, 2019 (in millions)	Exposure: On-balance sheet	Exposure: Off-balance sheet[(a)]	Exposure: Total	RWA
Collateral type:				
Residential mortgages	$ 25,360	$ 445	$ 25,805	$ 7,356
Commercial mortgages	15,680	450	16,130	4,812
Commercial and industrial loans	39,412	4,221	43,633	9,494
Consumer auto loans	16,485	5,076	21,561	4,905
Student loans	7,767	514	8,281	2,122
Municipal bonds	6	4,778	4,784	1,054
Other	8,788	2,312	11,100	2,712
Total securitization exposure	$ 113,498	$ 17,796	$ 131,294	$ 32,455

(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. During the three months ended September 30, 2019, other-than-temporary impairment losses recognized on investment securities and charge-offs against the allowance for loan losses on retained securitization exposures was immaterial.

September 30, 2019 (in millions)	Principal amount outstanding: JPMorgan Chase assets held in traditional securitizations[(a)]	Principal amount outstanding: Third-party assets held in traditional securitizations[(a)]	Principal amount outstanding: JPMorgan Chase assets held in synthetic securitizations	Assets impaired or past due[(b)]
Collateral type:				
Residential mortgages	$ 70,491	$ 7	$ –	$ 5,328
Commercial mortgages	45,897	44,401	–	149
Commercial and industrial loans	–	–	–	–
Consumer auto loans	–	–	–	–
Student loans	290	–	–	13
Municipal bonds		–	–	–
Other	–	–	–	–
Total	$ 116,678	$ 44,408	$ –	$ 5,490

(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, 2019, and the Firm's securitization activities for the nine months ended September 30, 2019, 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. The carrying value of the loans accounted for at fair value under U.S. GAAP approximated the proceeds upon loan sale as changes in fair value were recorded in noninterest revenue. Accordingly, there were no significant gains or losses associated with the securitization activities.

	Carrying value	Original principal amount	
	Assets pending securitization	Assets securitized with retained exposure	Assets securitized without retained exposure
(in millions)	September 30, 2019	Nine months ended September 30, 2019	
Collateral type:			
Residential mortgages	$ 14,774	$ 7,132	$ –
Commercial mortgages	3,783	3,565	650
Commercial and industrial loans	4,720	–	–
Consumer auto loans		–	–
Student loans		–	–
Municipal bonds		–	–
Other		–	–
Total	$ 23,277	$ 10,697	$ 650

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. These investments are held primarily for reasons other than capital gains, including client relationships, strategic initiatives and employee benefits.

Principal investments are typically private non-traded financial instruments representing ownership or other forms of junior capital. Principal investments span 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, and real assets and investment funds (including separate accounts).

In general, new principal investments include tax-oriented investments, as well as investments made to enhance or accelerate LOB and Corporate strategic business initiatives.

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 202–208 of the 2018 Form 10-K for a discussion of COLI and the related investment strategy and asset allocation.
- For information on risk-weight approaches, refer to Equity risk in the banking book on page 24 of the 4Q18 Pillar 3 Report.

Accounting and valuation policies for equity investments

- Refer to Principal risk, on page 123 of the 2018 Form 10-K for a discussion of investment risk management related to principal investments.
- Refer to page 23 of the 4Q18 Pillar 3 Report for a discussion of the accounting for non-trading (i.e., banking book) equity investments.
- Refer to Note 2 on pages 159–178 of the 2018 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-weighted assets

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

September 30, 2019 (in millions) Risk-weight category	Exposure[a]	RWA
0%	$ 6,242 [b]	$ –
20%	1,599	339
100%	24,478	25,947
250%	697	1,847
300%	30	95
600%	126	801
Look-through	21,485	12,575
Total	54,657	41,604

(a) Includes off-balance sheet unfunded commitments for equity investments of $1.2 billion.
(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, 2019 (in millions)	Carrying value	Fair value
Publicly traded	$ 23,905	$ 23,920
Non-publicly traded	27,825	35,444
Total	$ 51,730	$ 59,364

Realized gains/(losses)

Cumulative realized gains/(losses) from sales and liquidations during the three months ended September 30, 2019 were $125 million. This includes previously recognized unrealized gains/(losses) that have been reversed and booked as realized gains/(losses).

Unrealized gains/(losses)

Total net gains that have not been recognized on the Consolidated balance sheet or through earnings on equity investments in the banking book that are accounted for under the cost, measurement alternative and equity method were $7.6 billion as of September 30, 2019.

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, various metrics, both statistical and nonstatistical, used to assess risk and risk monitoring and control, see Market Risk Management on pages 124–125 of the 2018 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, 2019. 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 risk-based capital ("RBC") multiplied by 12.5; any calculation differences are due to rounding.

Three months ended September 30, 2019 (in millions)	Risk-based capital	RWA
Internal models:		
Value-at-Risk based measure ("VBM")	$ 473	$ 5,916
Stressed Value-at-Risk based measure ("SVBM")	1,503	18,788
Incremental risk charge ("IRC")	258	3,229
Comprehensive risk measure ("CRM")	65	807
Total internal models	2,299	28,740
Non-modeled specific risk	4,588	57,353
Other charges	134	1,671
Total Market risk	$ 7,021	$ 87,764

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.

➢ Refer to pages 60-61 and to pages 66–70 of the 2018 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 the current market environment. The Firm has a single VaR framework used as a basis for calculating Risk Management VaR and Regulatory VaR.

➢ Refer to pages 126–128 of the 2018 Form 10-K Market Risk Management for information on the Firm's VaR framework.

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. The Firm calculates Regulatory VaR assuming a 10-day holding period and an expected tail loss methodology, which approximates a 99% confidence level.

➢ Refer to pages 25–26 of the 4Q18 Pillar 3 Report for additional information on Risk Management VaR comparison to Regulatory VaR.

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.

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") assuming a 10-day holding period and a 99% confidence level. While Regulatory VaR measures the risk of loss from broad market movements, modeled SR captures risk factors such as event risk, idiosyncratic risk and default 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, 2019, average CIB VBM was $158 million, compared with CIB average Risk Management VaR of $38 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 adjacent 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, 2019			
(in millions)	Avg	Min	Max	September 30, 2019
CIB VBM by risk type				
Interest rate[a]	$109	$ 72	$155	$ 145
Credit spread[a]	121	84	160	160
Foreign exchange	30	20	41	28
Equities	65	49	88	63
Commodities and other	35	27	42	32
Diversification benefit	(202) [b]	NM [c]	NM [c]	(234) [b]
Total CIB VBM	158	112	200	194
Total Firm VBM	$158	$116	$201	$ 191

(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 which converts to risk-based capital based on the application of the Firm's regulatory multiplier of 3.

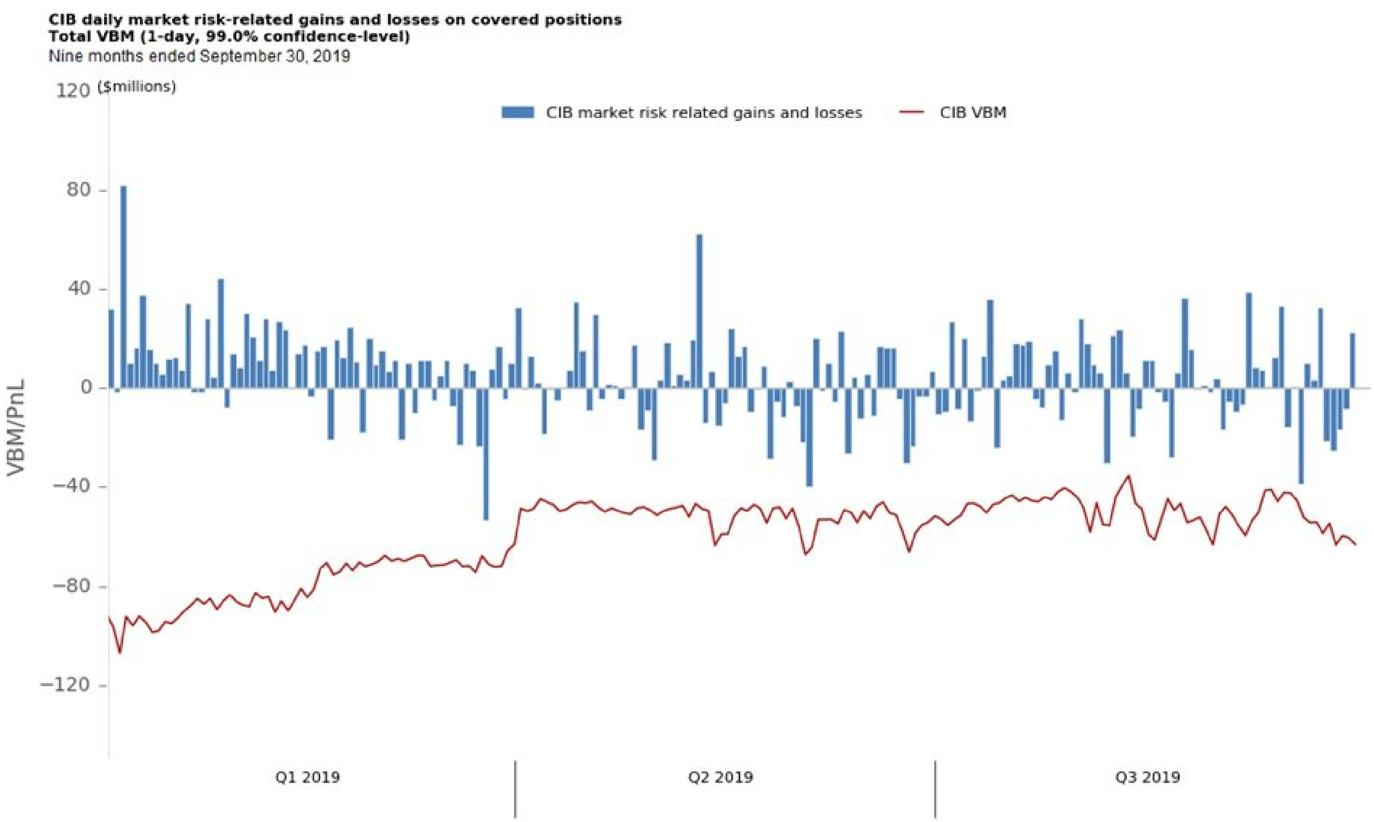
Three months ended September 30, 2019 (in millions)	Average VBM	Risk-based capital	RWA
Firm modeled VBM	$ 158	$ 473	$ 5,916

➢ Refer to pages 126–128 of the 2018 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: gains and losses on covered positions, excluding fees, commissions, certain valuation adjustments, 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 for the nine months ended September 30, 2019, the CIB observed no back-testing exceptions and posted market risk-related gains on 120 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 pages 25–26 of the 4Q18 Pillar 3 Report.



Stressed VaR-Based Measure ("SVBM")

The SVBM is an aggregate loss measure based on Regulatory VaR and SR models whose inputs are calibrated using historical data from a continuous 12-month period that reflects a period of significant financial stress relevant to the Firm's current portfolio. SVBM is calculated weekly assuming 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.

	Three months ended September 30, 2019			
(in millions)	Avg.	Min	Max	September 30, 2019[(a)]
Total CIB SVBM	$ 501	$ 416	$ 574	$ 574
Total Firm SVBM	$ 501	$ 418	$ 573	$ 573

(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 which converts to risk-based capital based on the application of the Firm's regulatory multiplier of 3.

Three months ended September 30, 2019 (in millions)	Average SVBM	Risk-based capital	RWA
Firm modeled SVBM	$ 501	1,503	$ 18,788

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 28 of the 4Q18 Pillar 3 Report.

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

	Three months ended September 30, 2019			
(in millions)	Avg.	Min	Max	September 30, 2019
CIB IRC on trading positions	$ 220	$ 198	$ 258	$ 258

The following table presents the IRC risk-based capital requirement for the CIB, which is the same as the risk measure itself.

Three months ended September 30, 2019 (in millions)	Risk-based capital	RWA
Total CIB IRC[(a)]	$ 258	$ 3,229

(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 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 28–29 of the 4Q18 Pillar 3 Report.

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

	Three months ended September 30, 2019			
(in millions)	Avg.	Min	Max	September 30, 2019
CIB CRM	$ 58	$ 53	$ 65	$ 65

The following table presents the CRM risk-based capital requirement for the CIB, which is the same as the risk measure itself.

Three months ended September 30, 2019 (in millions)	Risk-based capital	RWA
Total CIB CRM [(a)]	$ 65	$ 807

(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 15 of this 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.

September 30, 2019 (in millions)	Notional amount[(a)]	Fair value[(b)]
Positions modeled in CRM	$ 164	$ 92
Positions not modeled in CRM	329	–
Total correlation trading positions	$ 493	$ 92

(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 for non-modeled specific risk are shown in the table below.

September 30, 2019 (in millions)	Risk-based capital	RWA
Securitization positions[(a)]	$ 318	$ 3,973
Non-securitization positions	4,270	53,380
Total Non-modeled specific risk	$ 4,588	$ 57,353

(a) Represents trading book securitization RWA only.

Other charges

Other charges reflect exposures receiving alternative capital treatments.

September 30, 2019 (in millions)	Risk-based capital	RWA
Total Firm other charges	$ 134	$ 1,671

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 30 of the 4Q18 Pillar 3 Report and to Estimations and Model Risk Management on page 140 of the 2018 Form 10-K.

Stress testing

Along with VaR, stress testing is an important tool used to assess risk. While VaR reflects the risk of loss due to adverse changes in markets using recent historical market behavior, stress testing reflects the risk of loss from hypothetical changes in the value of market risk sensitive positions applied simultaneously. Stress testing measures the Firm's vulnerability to losses under a range of stressed but possible economic and market scenarios. The results are used to understand the exposures responsible for those potential losses and are measured against limits.

➢ For information on the stress testing scenarios and framework, refer to Stress Testing on page 31 of the 4Q18 Pillar 3 Report.

OPERATIONAL RISK MANAGEMENT

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.

- Refer to Operational Risk on page 32 in 4Q18 Pillar 3 Report and pages 134–136 of the 2018 Form 10-K for a discussion of Operational Risk Management.

Operational Risk Measurement

- Refer to Operational Risk Management on page 134–136 of the 2018 Form 10-K for information related to operational risk measurement.
- Refer to Capital Risk Management on page 85–94 of the 2018 Form 10-K and page 47 of the 3Q19 Form 10-Q for operational risk RWA.

Other operational risks

- Refer to Operational Risk Management on page 134–136 of the 2018 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.

Earnings-at-risk

The effect of interest rate exposure on the Firm's reported net income is 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 as well as from the investment securities portfolio.

- Refer to page 129-130 of the 2018 Form 10-K and page 73 of the 3Q19 Form 10-Q for a detailed discussion of Earnings-at-risk.
- Refer to the table on page 125 of the 2018 Form 10-K for a summary of positions included in earnings-at-risk.

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, 2019 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, 2019
Basel III Advanced Tier 1 capital	**$ 214,831**
Total spot assets	**2,764,661**
Add: Adjustments for frequency of calculations[a]	391
Total average assets	**2,765,052**
Less: Adjustments for deductions from Tier 1 capital	47,200
Total adjusted average assets	**2,717,852**
Adjustment for derivative transactions	336,856
Adjustment for repo-style transactions	36,855
Adjustment for off-balance sheet exposures	312,972
Total leverage exposure	**$ 3,404,535**
Basel III Advanced SLR	**6.3%**

(a) The adjustment for frequency of calculations represents the difference between total spot assets at September 30, 2019, and average assets for the three months ended September 30, 2019.

Derivative transactions

The following table presents the components of total derivative exposure.

(in millions)	September 30, 2019
Replacement cost for all derivative transactions[a]	$ 58,341
Add-on amounts for potential future exposure ("PFE") for all derivative transactions	377,537
Gross-up for collateral posted in derivative transactions if collateral is deducted from on-balance sheet assets	709
Less: Exempted exposures to central counterparties ("CCPs") in cleared transactions	75,635
Adjusted effective notional principal amount of sold credit protection	662,989
Less: Effective notional principal amount offsets and PFE deductions for sold credit protection	630,297
Total derivative exposure[b]	**393,644**
Less: On-balance-sheet average derivative receivables	56,788
Adjustment for derivative transactions	**$ 336,856**

(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, 2019
Gross assets for repo-style transactions[a]	$ 826,734
Less: amounts netted[b]	410,865
Counterparty credit risk for all repo-style transactions	37,619
Exposure amount for repo-style transactions where the Firm acts as an agent[c]	8
Total exposures for repo-style exposures	**453,496**
Less: on-balance sheet amounts	
Securities purchased under resale agreements	276,702
Securities borrowed	139,939
Adjustment for repo-style transactions	**$ 36,855**

(a) Excludes the value of securities received as collateral where the Firm as securities lender has not sold or rehypothecated the collateral 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, 2019
Off-balance sheet exposures - gross notional amounts	$ 1,154,794
Less: Adjustments for conversion to credit equivalent amounts	841,822
Adjustment for other off-balance sheet exposures	**$ 312,972**

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 4Q18 Pillar 3 Report and to Note 2 of the 2018 Form 10-K.

- Refer to Note 2 on page 85-99 of the 3Q19 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 36 of the 4Q18 Pillar 3 Report and Model Risk Management on page 140 of the 2018 Form 10-K for additional information.

References to JPMorgan Chase's 2018 Form 10-K and 3Q19 Form 10-Q

JPMorgan Chase's 3Q19 Form 10-Q 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

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Notes to consolidated financial statements

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