JPMorgan Chase & Co.

PILLAR 3 REGULATORY CAPITAL DISCLOSURES

For the quarterly period ended December 31, 2023

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INTRODUCTION

JPMorgan Chase & Co. (“JPMorgan Chase” or the “Firm”) a financial holding company incorporated under Delaware law in 1968, is a leading financial services firm based in the United States of America (“U.S.”), with operations worldwide. JPMorgan Chase had $3.9 trillion in assets and $327.9 billion in stockholders’ equity as of December 31, 2023. 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, predominantly in the U.S., and many of the world’s most prominent corporate, institutional and government clients globally.

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 48 states and Washington, D.C JPMorgan Chase’s principal non-bank 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 subsidiaries outside the U.S. are J.P. Morgan Securities plc and J.P. Morgan SE (“JPMSE”), which are subsidiaries of JPMorgan Chase Bank, N.A. and are based in the United Kingdom (“U.K.”) and Germany, respectively.

On May 1, 2023, JPMorgan Chase acquired certain assets and assumed certain liabilities of First Republic Bank (the “First Republic acquisition”) from the Federal Deposit Insurance Corporation (“FDIC”). In connection with the First Republic acquisition, the Firm and the FDIC have entered into two shared-loss agreements with respect to certain loans and lending-related commitments.

➢ Refer to page 307 of the 2023 Form 10-K Note 34 - Business Combination for additional information on "First Republic acquisition".

➢ For additional information, refer to the Supervision and Regulation section on pages 4-8 of JPMorgan Chase's Annual Report on Form 10-K for the year ended December 31, 2023 ("2023 Form 10-K").

➢ For additional information, refer to the Recent events section on page 52 of the 2023 Form 10-K and the Introduction section on page 48 of the 2023 Form 10-K for more information on the Firm's material subsidiaries.

Basel III framework

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.

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, except where explicitly noted. This report describes the internal models used to translate risk exposures into required capital.

This report should be read in conjunction with the 2023 Form 10-K which has been filed with the U.S. Securities and Exchange Commission (“SEC”).

FIRMWIDE RISK MANAGEMENT

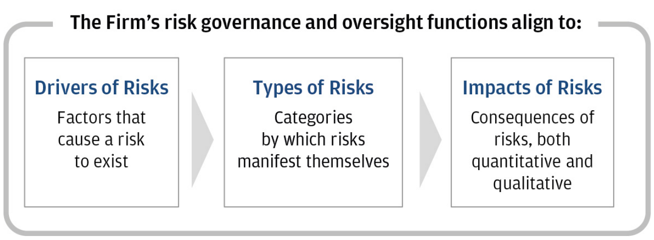
Risk is an inherent part of JPMorgan Chase's business activities. When the Firm extends a consumer or wholesale loan, advises customers and clients on their investment decisions, makes markets in securities, or offers other products or services, the Firm takes on some degree of risk. The Firm's overall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

The Firm believes that effective risk management requires, among other things:

- Acceptance of responsibility, including identification and escalation of risks by all individuals within the Firm;
- Ownership of risk identification, assessment, data and management within each of the LOBs and Corporate; and
- A Firmwide risk governance and oversight structure.

The Firm follows a disciplined and balanced compensation framework with strong internal governance and independent oversight by the Board of Directors (the "Board"). The impact of risk and control issues is carefully considered in the Firm's performance evaluation and incentive compensation processes.

Risk Governance Framework
The Firm's risk governance framework involves understanding drivers of risks, types of risks, and impacts of risks.



Drivers of risks are factors that cause a risk to exist. Drivers of risks 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.

Types of risks are categories by which risks manifest themselves. The Firm's risks are generally categorized in the following four risk types:

- Strategic risk is the risk to earnings, capital, liquidity, or reputation associated with poorly designed or failed business plans or an inadequate response to changes in the operating environment.
- 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 of an adverse outcome resulting from inadequate or failed internal processes or systems; human factors; or external events impacting the Firm's processes or systems. Operational risk includes cybersecurity, compliance, conduct, legal, and estimations and model risk.

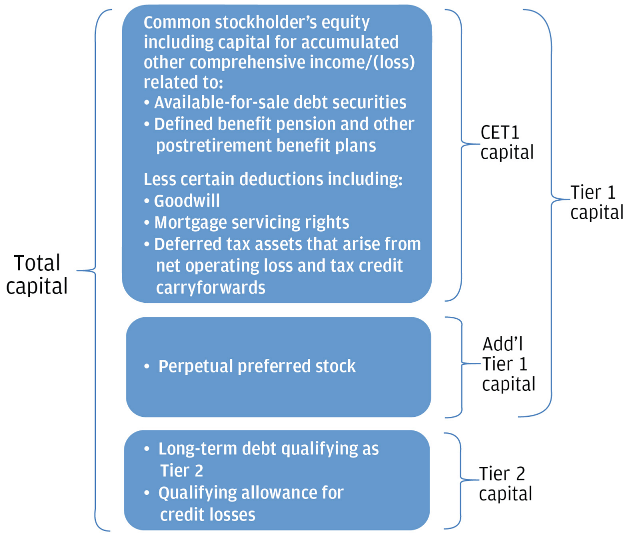
Impacts of risks are consequences of risks, both quantitative and qualitative. There may be many consequences of risks manifesting, including quantitative impacts such as a reduction in earnings and capital, liquidity outflows, and fines or penalties, or qualitative impacts such as damage to the Firm's reputation, loss of clients and customers, and regulatory and enforcement actions.

➢ Refer to pages 88-89 of the 2023 Form 10-K for additional information on Risk governance and oversight structure.

Estimations and Model Risk Management
As stated on page 2 under 'Pillar 3 report overview', internal models are used to translate risk exposures into required capital. A dedicated independent function, Model Risk Governance and Review ("MRGR"), reviews and approves new models, as well as material changes to existing models.

➢ Refer to page 154 of the 2023 Form 10-K for information on Estimations and Model Risk Management.

The three components of regulatory capital under the Basel III advanced rules are illustrated below:



Capital Management

For information on the Firm's capital management function, objectives, and governance, refer to Capital Management page 91 of the 2023 Form 10-K.

Basel III Overview

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 ("BHCs") and banks, including the Firm and JPMorgan Chase Bank, N.A. The minimum amount of regulatory capital that must be held by BHCs and banks is determined by calculating RWA, which are on-balance sheet assets and off-balance sheet exposures, weighted according to risk. Under the rules currently in effect, two comprehensive approaches are prescribed for calculating RWA: a standardized approach ("Basel III Standardized"), and an advanced approach ("Basel III Advanced").

For each of these risk-based capital ratios, the capital adequacy of the Firm is evaluated against the lower of the Standardized or Advanced approaches compared to their respective regulatory capital ratio requirements.

In July 2023, the Federal Reserve, the OCC and the FDIC released a proposal to amend the risk-based capital framework, entitled "Regulatory capital rule: Amendments applicable to large banking organizations and to banking organizations with significant trading activity," which is referred to in the 2023 Form 10-K as "U.S. Basel III proposal". Under the proposal, changes to the framework would include replacement of the Advanced approach with an expanded risk-based approach, which would not permit the use of internal models for the calculation of RWA, other than for market risk. In addition, the stress capital buffer requirement would be applicable to both the expanded risk-based approach and the Standardized approach. The proposal would significantly revise risk-based capital requirements for all banks with assets of $100 billion or more, including the Firm and other U.S. GSIBs. The proposed effective date is July 1, 2025, with a three-year transition period applicable to the expanded risk-based approach. Based on the Firm's understanding of the proposal, as applied to its Consolidated balance sheets as of June 30, 2023 (the reference date for a special data collection exercise conducted by the Federal Reserve), the estimated impact at the end of the transition period would increase RWA by approximately 30%, which would result in an approximately 25% increase to CET1 capital necessary to meet the Firm's CET1 ratio requirement, all else equal. These estimates do not reflect any actions that the Firm may take to mitigate the impact of the rule as currently proposed.

As of December 31, 2023, the Advanced Total Capital ratio became the most binding constraint for the Firm's Basel III risk-based ratios, primarily reflecting the reduction in the Stress Capital Buffer requirement. However, as of December 31, 2023, with respect to the CET1 and Tier 1 risk-based ratios, the Standardized ratios are more binding than the Advanced ratios. Under the requirements of the U.S. Basel III proposal, the new expanded risk-based approach, when fully phased-in, would be the Firm's binding constraint.

Basel III also includes a requirement for Advanced Approaches banking organizations, including the Firm, to calculate its SLR. As of the fourth quarter of 2023, the Firm's SLR became more binding than the Basel III risk-based ratios, primarily reflecting the reduction in the Stress Capital Buffer requirement.

Other Key Regulatory Developments
GSIB Surcharge

In July 2023, the Federal Reserve also released a proposal to amend the calculation of the GSIB surcharge. If adopted as proposed, these amendments would require the Firm to assess its GSIB surcharge on an annual basis, using the average of the quarterly surcharge calculations throughout the calendar year, with daily averaging required for certain measures within the surcharge calculation. Surcharge increments would be reduced from 50 bps to 10 bps and there would also be other technical amendments to the Method 2 calculation. The proposed amendments would revise risk-based capital requirements for the Firm and other U.S. GSIBs, and would become effective two calendar quarters after the adoption of the final rule.

TLAC and Eligible LTD Requirements

In August 2023, the Federal Reserve, the FDIC and the OCC released a proposal to expand the eligible long-term debt ("eligible LTD") and clean holding company requirements under the existing total loss-absorbing capacity ("TLAC") rule to apply to non-GSIB banks with $100 billion or more in total consolidated assets. While U.S. GSIBs are already subject to these requirements, the proposal would reduce the amount of LTD with remaining maturities of less than two years that count towards a U.S. GSIB's TLAC requirement. The proposal would also expand the existing capital deduction framework for LTD issued by GSIBs to include LTD issued by non-GSIB banks subject to the LTD requirements.

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 168 of the 2023 Form 10-K for the components of total stockholders' equity.

December 31, 2023 (in millions)	Basel III Advanced CECL Transitional	Basel III Advanced CECL Fully Phased-In
Total stockholders' equity	**$ 327,878**	**$ 327,878**
Less: Preferred stock	27,404	27,404
Common stockholders' equity	**300,474**	**300,474**
Less:		
Goodwill[(a)]	54,377	54,377
Other intangible assets	3,225	3,226
Add:		
Deferred tax liabilities[(b)]	2,996	2,996
Other CET1 capital adjustments[(c)(d)]	4,717	3,277
CET1 capital	**250,585**	**249,144**
Preferred stock	27,404	27,404
Other Tier 1 capital adjustments	–	–
Less: Tier 1 capital deductions	683	683
Total Tier 1 capital	**277,306**	**275,865**
Long-term debt and other instruments qualifying as Tier 2 capital	11,779	11,779
Qualifying allowance for credit losses[(e)(f)]	7,022	7,029
Other Tier 2 capital adjustments	–	–
Less:		
Tier 2 capital deductions	690	690
Total Tier 2 capital	**18,111**	**18,118**
Total capital	**$ 295,417**	**$ 293,983**

(a) Goodwill deducted from capital includes goodwill associated with equity method investments in nonconsolidated financial institutions based on regulatory requirements.
(b) Represents deferred tax liabilities related to tax-deductible goodwill and to identifiable intangibles created in nontaxable transactions, which are netted against goodwill and other intangibles when calculating CET1 capital.
(c) Includes adjustments for cash flow hedges and debit valuation adjustments ("DVA") related to structured notes recorded in accumulated other comprehensive income ("AOCI").
(d) Includes the impact of the CECL capital transition provision which was a benefit to CET1 capital of $1.4 billion.
(e) Represents qualifying eligible credit reserves that exceed expected credit losses, up to a maximum of 0.6% of credit RWA, with any excess deducted from RWA. The amount deducted from RWA as of December 31, 2023 for Basel III Advanced CECL Transitional was $1.6 billion and would have been $3.0 billion under Basel III Advanced CECL fully phased in losses.
(f) Includes incremental $655 million of allowance for credit losses on certain assets associated with First Republic to which the Standardized approach has been applied, as permitted by the transition provisions in the U.S. capital rules. In addition, $621 million of credit reserves relating to these assets was deducted from other exposures RWA.

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 278, Note 21 on page 280 and Note 22 on page 282 of the 2023 Form 10-K for additional information on subordinated debt, preferred stock and common stock.
- ➢ Refer to the Supervision and Regulation section in Part 1, Item 1 on pages 4-8 of the 2023 Form 10-K.

Restrictions on capital and transfer of funds

Regulations govern the amount of distributions the Firm and its 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 26 on page 288 of the 2023 Form 10-K for information on restrictions on cash and intercompany funds transfers.

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.

Basel III capital rules define a covered position as:

(1) A trading asset or trading liability that meets both of the following conditions:

- The position is held for the purpose of short-term resale or with the intent to benefit from actual or expected short-term price movements, or to lock in arbitrage profits or is a hedge of another covered position;
- The position is free of any restrictive covenants on its tradability or the Firm is able to hedge the material risk elements of the position in a two-way market;

(2) A foreign exchange or commodity position, regardless of whether the position is a trading position (excluding structural foreign currency positions that has received prior supervisory approval);

Covered positions exclude certain positions such as equity positions that are not publicly traded, intangible assets including any servicing assets, and liquidity facilities that provide support to asset-backed commercial paper programs. These excluded positions are referred to as non-covered throughout the report. Both covered and non-covered derivative transactions are subject to counterparty credit risk RWA.

Components of risk-weighted assets

Basel III Advanced rules classify capital requirements into three broad categories:

- Credit risk RWA covers the risk of unexpected losses due to obligor, counterparty, or issuer default, and in certain cases adverse changes in credit quality. Credit risk RWA includes retail credit risk, wholesale credit risk, counterparty credit risk, certain securitization exposures, equity investments, other assets, and the credit valuation adjustment (CVA) capital charge.
- Market risk RWA covers 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 RWA covers the risk of an adverse outcome resulting from inadequate or failed internal processes or systems; human factors; or external events impacting the Firm's processes or systems.

The following table presents the components of the Firm's total risk-weighted assets under Basel III Advanced at December 31, 2023.

December 31, 2023 (in millions)		Basel III Advanced CECL Transitional RWA
Credit risk[(a)]	$	1,155,261
Market risk		68,603
Operational risk		445,292
Total RWA	$	1,669,156

(a) Includes $52.4 billion of RWA calculated under the Standardized approach for certain assets associated with First Republic as permitted by the transition provisions in the U.S. capital rules.

RWA rollforward

The following table presents changes in the components of RWA under Basel III Advanced for the three months ended December 31, 2023. The amounts represented in the rollforward categories are an approximation, based on the predominant driver of the change.

	Basel III Advanced CECL Transitional RWA			
Three months ended December 31, 2023 (in millions)	Credit risk[(c)]	Market risk	Operational risk	Total
September 30, 2023	$1,158,510	$ 70,889	$ 442,194	$1,671,593
Model & data changes[(a)]	1,806	(97)	–	1,709
Movement in portfolio levels[(b)]	(5,055)	(2,189)	3,098	(4,146)
Changes in RWA	(3,249)	(2,286)	3,098	(2,437)
December 31, 2023	$1,155,261	$ 68,603	$ 445,292	$1,669,156

(a) Model & data changes refer to material movements in levels of RWA as a result of revised methodologies and/or treatment per regulatory guidance (exclusive of rule changes).
(b) Movement in portfolio levels (inclusive of rule changes) refers to: for Credit risk RWA, changes in book size, impacts associated with the First Republic acquisition including the benefit of the shared-loss agreements entered into with the FDIC, position rolloffs in legacy portfolios in Home Lending, changes in composition and credit quality, market movements, and deductions for excess eligible credit reserves not eligible for inclusion in Tier 2 capital; for Market risk RWA, changes in position, market movements, and for Operational risk RWA, updates to cumulative losses and macroeconomic model inputs.
(c) As of December 31, 2023, Credit risk RWA reflects approximately $52.4 billion of RWA calculated under the Standardized approach for certain assets associated with First Republic as permitted by the transition provisions in the U.S. capital rules.

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 the Firm to build and invest in market-leading businesses, including in highly stressed environments.

➢ Refer to the Capital Risk Management section on pages 91-101 of the 2023 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 for regulatory capital purposes 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, plus regulatory buffers for CET1 capital, Tier 1 capital, Total capital, Tier 1 leverage and the SLR.

The following table presents the risk-based and leverage-based regulatory capital ratio requirements and well-capitalized ratios to which the Firm and JPMorgan Chase Bank, N.A. were subject as of December 31, 2023.

	Capital ratio requirements		Well-capitalized ratios	
	BHC[(b)]	IDI[(c)]	BHC[(d)]	IDI[(e)]
Capital ratios				
CET1 capital	11.0 %	7.0 %	NA [(f)]	6.5 %
Tier 1 capital	12.5	8.5	6.0 %	8.0
Total capital	14.5	10.5	10.0	10.0
Tier 1 leverage	4.0	4.0	NA [(f)]	5.0
SLR[(a)]	5.0	6.0	NA [(f)]	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 JPMorgan Chase Bank, N.A. are subject.
(a) The SLR ratios presented under the capital ratio requirements represent minimum SLR requirement of 3.0% as well as supplementary leverage buffer requirements of 2.0% and 3.0% for BHC and JPMorgan Chase Bank, N.A., respectively.
(b) Represents the regulatory capital ratio requirements applicable to the Firm. The CET1, Tier 1 and Total capital ratio requirements each include a respective minimum requirement plus a GSIB surcharge of 4.0% as calculated under Method 2; a fixed 2.5% capital conservation buffer for Basel III Advanced ratios. The countercyclical buffer is currently set to 0% by the federal banking agencies.
(c) Represents requirements for JPMorgan Chase Bank, N.A. The CET1, Tier 1 and Total capital ratio requirements include a fixed capital conservation buffer requirement of 2.5% that is applicable to JPMorgan Chase Bank, N.A. JPMorgan Chase Bank, N.A. is not subject to the GSIB surcharge.
(d) Represents requirements for bank holding companies pursuant to regulations issued by the Federal Reserve.
(e) Represents requirements for JPMorgan Chase Bank, N.A. pursuant to regulations issued under the FDIC Improvement Act.
(f) The Federal Reserve's regulations do not establish well-capitalized thresholds for these measures for BHCs.

In addition, the Federal Reserve's Total Loss Absorbing Capacity ("TLAC") rule requires the U.S. global systemically important bank ("GSIB") top-tier holding companies, including the Firm, to maintain minimum levels of external TLAC and eligible long term debt ("eligible LTD").

➢ For additional information on TLAC and external long-term debt minimum requirements including applicable regulatory buffers, refer to the Capital Risk Management section on pages 91-101 of the 2023 Form 10-K.

Failure to meet these regulatory requirements would result in restriction on capital distributions and certain discretionary bonus payments based on a percentage of the Firm's eligible retained income. Eligible retained income ("ERI") is defined as the greater of (a) net income for the four preceding quarters, net of any distributions and associated tax effects not already reflected in net income, and (b) the average of net income over the preceding four quarters, net of any associated tax effects not already reflected in net income. The ERI in effect during the fourth quarter of 2023 for the Firm and JPMorgan Chase Bank, N.A was $32.0 billion and $16.1 billion, respectively. JPMorgan Chase Bank, N.A. is also subject to these capital requirements, with the exception of TLAC, established by its primary regulators.

Capital adequacy and Capital conservation buffer

As of December 31, 2023, JPMorgan Chase and its principal IDI subsidiary, JPMorgan Chase Bank N.A. were well-capitalized and met all capital requirements to which each was subject. In addition to its principal IDI subsidiary, JPMorgan Chase also has other regulated subsidiaries, all of which met applicable capital requirements.

As of December 31, 2023, the capital conservation buffer of the Firm under the standardized and advanced approaches was 10.5% and 9.7%, respectively, which exceeded the required standardized capital conservation buffer of 6.9% and required advanced capital conservation buffer of 6.5%. As of December 31, 2023, the capital conservation buffer of JPMorgan Chase Bank, N.A. under the standardized and advanced approaches was 9.3% and 9.6%, respectively, which exceeded the required capital conservation buffer of 2.5%.

The capital conservation buffer for the Firm and principal IDI subsidiary is calculated as the lowest of the:

(i) CET1 ratio less the CET1 minimum requirement of 4.5%,
(ii) Tier 1 ratio less the Tier1 minimum requirement of 6.0% and
(iii) Total capital ratio less the Total capital minimum requirement of 8.0%.

The capital adequacy of the Firm and JPMorgan Chase Bank N.A. 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.

Comprehensive Capital Analysis and Review (“CCAR”)

Banking supervisors require the Firm, as a large Bank Holding Company (“BHC”), to submit at least annually, a capital plan that has been reviewed and approved by the Board of Directors. The banking supervisors use the CCAR and other stress testing processes to assess whether large BHCs, such as the Firm, have sufficient capital during periods of economic and financial stress, and have robust, forward-looking capital assessment and planning processes in place that address the BHC's and principal IDI subsidiary's unique risks to enable them to absorb losses under certain stress scenarios.

Through the CCAR and other stress testing processes, the banking supervisors evaluate each BHC and principal IDI subsidiary's capital adequacy and ICAAP, as well as its plans to make capital distributions, such as dividend payments or stock repurchases.

Internal Capital Adequacy Assessment Process ("ICAAP")

Annually, the Firm prepares the ICAAP, which informs the Board of Directors of the ongoing assessment of the Firm’s processes for managing the sources and uses of capital as well as compliance with supervisory expectations for capital planning and capital adequacy. The Firm’s ICAAP integrates stress testing protocols with capital planning. The Firm’s Audit Committee is responsible for reviewing and approving the capital planning framework.

Stress testing assesses the potential impact of alternative economic and business scenarios on the Firm’s earnings and capital. Economic scenarios, and the parameters underlying those scenarios, are defined centrally and applied uniformly across the businesses. These scenarios are articulated in terms of macroeconomic factors, which are key drivers of business results; global market shocks, which generate short-term but severe trading losses; and idiosyncratic operational risk events. The scenarios are intended to capture and stress key vulnerabilities and idiosyncratic risks facing the Firm. In addition to CCAR and other periodic stress testing, management also considers tailored stress scenarios and sensitivity analyses, as necessary.

- For information on the Firm’s Internal Capital Adequacy Assessment Process (“ICAAP”) and Comprehensive Capital Analysis and Review (“CCAR”) processes, refer to pages 91-92 of the 2023 Form 10-K.

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 Advanced CECL Transitional and Fully Phased-In Approaches as of December 31, 2023.

	JPMorgan Chase & Co.	
As of December 31, 2023 (in millions, except ratios)	Basel III Advanced CECL Transitional	Basel III Advanced CECL Fully Phased-In
Risk-based capital metrics:		
CET1 capital	$ 250,585	$ 249,144
Tier 1 capital	277,306	275,865
Total capital[(a)]	295,417	293,983
Risk-weighted assets	1,669,156	1,668,841
CET1 capital ratio	15.0 %	14.9 %
Tier 1 capital ratio	16.6	16.5
Total capital ratio	17.7	17.6
Leverage-based capital metrics:		
Adjusted average assets[(b)]	$ 3,831,200	$ 3,829,760
Tier 1 leverage ratio	7.2 %	7.2 %
Total leverage exposure	$ 4,540,465	$ 4,539,024
SLR	6.1 %	6.1 %

	JPMorgan Chase Bank, N.A.	
As of December 31, 2023 (in millions, except ratios)	Basel III Advanced CECL Transitional	Basel III Advanced CECL Fully Phased-In
Risk-based capital metrics:		
CET1 capital	$ 262,030	$ 260,573
Tier 1 capital	262,032	260,575
Total capital	268,392	266,938
Risk-weighted assets	1,526,952	1,526,036
CET1 capital ratio	17.2 %	17.1 %
Tier 1 capital ratio	17.2	17.1
Total capital ratio	17.6	17.5
Leverage-based capital metrics:		
Adjusted average assets[(b)]	$ 3,337,842	$ 3,336,386
Tier 1 leverage ratio	7.9 %	7.8 %
Total leverage exposure	$ 4,038,739	$ 4,037,282
SLR	6.5 %	6.5 %

(a) Total regulatory capital for JPMorgan Chase & Co. includes $101 million of surplus regulatory capital in insurance subsidiaries.
(b) Adjusted average assets, for purposes of calculating the leverage ratios, includes quarterly average assets adjusted for on-balance sheet assets that are subject to deduction from Tier 1 capital, predominantly goodwill, inclusive of estimated equity method goodwill, and other intangible assets.

➢ For information on Basel III Standardized CECL Transitional capital metrics including Credit Risk and Market Risk RWA, refer to the Capital Risk Management section on pages 91-101 and Note 27 on pages 289-290 of the 2023 Form 10-K.

Supplementary leverage ratio (“SLR”)

The following table presents the components of the Firm’s SLR as of December 31, 2023.

December 31, 2023 (in millions, except ratios)	Basel III Advanced CECL Transitional
Basel III Advanced Tier 1 capital	**$ 277,306**
Total spot assets	**3,875,393**
Add: Adjustments for frequency of calculations[(a)]	10,239
Total average assets	**3,885,632**
Less adjustments for:	
Adjustments for deductions from tier 1 capital[(b)]	55,872
Add adjustments for:	
Adjustment for derivative transactions	262,223
Adjustment for repo-style transactions	44,649
Off-balance sheet exposures[(c)]	402,393
Other[(d)]	1,440
Total leverage exposure	**$ 4,540,465**
Basel III Advanced SLR	**6.1 %**

(a) The adjustment for frequency of calculations represents the difference between total spot assets at December 31, 2023 and total average assets for the three months ended December 31, 2023.
(b) Adjusted average assets, for purposes of calculating the leverage ratios, includes quarterly average assets adjusted for on-balance sheet assets that are subject to deduction from Tier 1 capital, predominantly goodwill, inclusive of estimated equity method goodwill, and other intangible assets.
(c) Off-balance sheet exposures are calculated as the average of the three month-end spot balances on applicable regulatory exposures during the reporting quarter.
(d) Includes adjustments for the CECL capital transition provisions.

Total Loss-Absorbing Capacity ("TLAC")

The Federal Reserve’s TLAC rule requires the U.S. GSIB top-tier holding companies, including JPMorgan Chase & Co. (the “Parent Company”), to maintain minimum levels of unsecured external long-term debt and other loss-absorbing capacity with specific terms (“eligible LTD”) for purposes of recapitalizing JPMorgan Chase’s operating subsidiaries if the Parent Company were to enter into a resolution either:

- in a bankruptcy proceeding under Chapter 11 of the U.S. Bankruptcy Code, or
- in a receivership administered by the FDIC under Title II of the Dodd-Frank Act (“Title II”).

If the Parent Company were to enter into a resolution, holders of eligible LTD and other debt and equity securities of the Parent Company will absorb the losses of the Parent Company and its subsidiaries.

The preferred “single point of entry” strategy under JPMorgan Chase’s resolution plan contemplates that only the Parent Company would enter bankruptcy proceedings. JPMorgan Chase’s subsidiaries would be recapitalized, as needed, so that they could continue normal operations or subsequently be divested or wound down in an orderly manner. As a result, the Parent

Company's losses and any losses incurred by its subsidiaries would be imposed first on holders of the Parent Company's equity securities and thereafter on its unsecured creditors, including holders of eligible LTD and other debt securities. Claims of holders of those securities would have a junior position to the claims of creditors of JPMorgan Chase's subsidiaries and to the claims of priority (as determined by statute) and secured creditors of the Parent Company.

Accordingly, in a resolution of the Parent Company in bankruptcy, holders of eligible LTD and other debt securities of the Parent Company would realize value only to the extent available to the Parent Company as a shareholder of JPMorgan Chase Bank, N.A. and its other subsidiaries, and only after any claims of priority and secured creditors of the Parent Company have been fully repaid.

The FDIC has similarly indicated that a single point of entry recapitalization model could be a desirable strategy to resolve a systemically important financial institution, such as the Parent Company, under Title II. However, the FDIC has not formally adopted a single point of entry resolution strategy.

If the Parent Company were to approach, or enter into, a resolution, none of the Parent Company, the Federal Reserve or the FDIC is obligated to follow JPMorgan Chase's preferred resolution strategy, and losses to holders of eligible LTD and other debt and equity securities of the Parent Company, under whatever strategy is ultimately followed, could be greater than they might have been under JPMorgan Chase's preferred strategy.

The following table presents the eligible external TLAC and eligible LTD amounts, as well as a representation of these amounts as a percentage of the Firm's total RWA and total leverage exposure applying the impact of the CECL capital transition provisions as of December 31, 2023.

	December 31, 2023	
(in billions, except ratio)	**External TLAC**	LTD
Total eligible amount	$ 513.8	$ 222.6
% of RWA	30.7 %	13.3 %
Regulatory requirements	23.0	10.0
Surplus/(shortfall)	$ 129.2	$ 55.4
% of total leverage exposure	11.3 %	4.9 %
Regulatory requirements	9.5	4.5
Surplus/(shortfall)	$ 82.5	$ 18.3

➢ For additional information on TLAC, refer to the Capital Risk Management section on pages 91-101 of the 2023 Form 10-K. 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 9-33 of the Firm's 2023 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 consists of scored mortgage and home equity loans held in the Consumer & Community Banking ("CCB") and Asset & Wealth Management ("AWM") business segments; scored mortgage loans held in the Corporate segment; scored credit card, auto and business banking loans, and overdrafts in CCB; and the associated lending-related commitments in each of those business segments. The wholesale credit portfolio refers primarily to exposures held by the Corporate & Investment Bank (“CIB”), Commercial Banking (“CB”), AWM and Corporate business segments, as well as risk-rated business banking and auto dealer loans held in CCB. 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.

In addition to Credit Risk Management, an independent Credit Review function is responsible for:

- Independently assessing risk grades assigned to exposures in the Firm’s wholesale credit portfolio and the timeliness of risk grade changes initiated by responsible business units; and
- Evaluating the effectiveness of the credit management processes of the LOBs and Corporate, including the adequacy of credit analyses and risk grading/loss given default (“LGD”) rationales, proper monitoring and management of credit exposures, and compliance with applicable grading policies and underwriting guidelines.

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 111-134 of the 2023 Form 10-K.

➢ Refer to the Notes to the Consolidated Financial Statements beginning on page 171 of the 2023 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 non-covered securitization and equity exposures. 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 December 31, 2023.

December 31, 2023 (in millions)		Basel III Advanced CECL Transitional RWA
Retail exposures	$	203,701
Wholesale exposures		502,026
Counterparty exposures		119,310
Securitization exposures[(a)]		60,476
Equity exposures		70,073
Other exposures[(b)(c)]		157,547
CVA		43,759
Less: Excess eligible credit reserves not included in Tier 2 capital		1,631
Total credit risk RWA	$	1,155,261

(a) Represents securitization RWA for non-covered positions only.
(b) Includes retail and wholesale exposures of $24.3 billion and $28 billion respectively calculated under the Standardized Approach for certain assets associated with the First Republic acquisition as permitted by the transition provisions under the U.S. capital rules. Also includes other assets, non-material portfolios, and unsettled transactions.
(c) Includes a deduction for $621 million of allowance for loan losses calculated under the Standardized approach for certain assets associated with the First Republic acquisition, as permitted by the transition provisions within the U.S. capital rules.

Credit risk exposures

Credit risk exposures for the three months ended December 31, 2023 are contained in the 2023 Form 10-K. Specific references to the 2023 Form 10-K are listed below.

Traditional credit products

- Refer to Credit and Investment Risk Management beginning on page 111 for credit-related information on the consumer and wholesale portfolios.
- Refer to Note 12 on pages 235-254 for the distribution of loans by geographic region and industry.
- Refer to Note 28 on pages 291-296 for the contractual amount and geographic distribution of lending-related commitments.
- Refer to Consumer Credit Portfolio and Wholesale Credit Portfolio on pages 116 and 121 for information on remaining contractual maturity breakdown for consumer and wholesale portfolios.

Counterparty credit risk

- Refer to the Consumer Credit Portfolio section on pages 114-119, and to the Wholesale Credit Portfolio section on pages 120-130 for eligible margin loans balances.
- Refer to Wholesale Credit Portfolio footnote (d) on page 121 and Country Risk on page 144.
- Refer to Note 5 on pages 203-216 for the gross positive fair value, netting benefits and net exposure of derivative receivables.
- Refer to Derivative contracts on page 128 for credit derivatives used in credit portfolio management activities.
- Refer to Credit and Investment Risk Management, Risk monitoring and management on page 112, Note 4, Credit risk concentration, on pages 201-202 of the 2023 Form 10-K, Note 5, Derivative instruments, on pages 203-216 and Note 11, Securities financing activities, on pages 232-234 of the 2023 Form 10-K for a discussion of credit limits for counterparty credit exposures, policies for securing collateral, valuing and managing collateral.
- Refer to Note 5, Derivative instruments, on pages 203-216, Note 11, Securities financing activities, on pages 232-234 and Wholesale Credit Portfolio, Receivables from customers, on page 128 of the 2023 Form 10-K for a discussion of primary types of collateral taken for counterparty credit exposures.
- Refer to Note 11 on pages 232-234 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 111-134 and Note 10 on pages 227-231 for the investment securities portfolio by issuer type.

Country risk

- Refer to page 145 the top 20 country exposures (excluding the U.S.).

Allowance for credit losses

- Refer to Allowance for Credit Losses on pages 131-133 for a summary of changes in the allowance for loan losses and allowance for lending-related commitments.
- Refer to Note 13 on pages 255-260 for the allowance for credit losses and loans and lending-related commitments by impairment methodology.
- Refer to Note 11 on pages 232-234 for the allowance for credit losses on held-to-maturity securities.

Average balances

- Refer to page 310 for the Consolidated average balance sheet.

Credit Risk Mitigation

- Refer to Credit and Investment Risk Management, Risk monitoring and management on page 112, Note 1, Basis of presentation, Offsetting assets and liabilities, on pages 171-174, Note 4, Credit risk concentrations, on page 201-202, Note 5, Derivative instruments, on pages 203-216, and Note 11, Securities financing activities on pages 232-234 of the 2023 Form 10-K for a discussion of processes for managing and recognizing credit risk mitigation and policies for on netting benefit.
- Refer to Market Risk Management, Risk monitoring and control, on page 135, Note 4, Credit risk concentrations, on page 201-202, Note 5, Derivative instruments, on pages 203-216, and Note 11, Securities financing activities, on pages 232-234 of the 2023 Form 10-K for a discussion of market and credit risk concentrations and credit derivative counterparties and their creditworthiness.

Credit risk concentrations

Concentrations of credit risk arise when a number of clients, counterparties or customers are engaged in similar business activities or activities in the same geographic region, or when they have similar economic features that would cause their ability to meet contractual obligations to be similarly affected by changes in economic conditions.

JPMorgan Chase regularly monitors various segments of its credit portfolios to assess potential credit risk concentrations and to obtain additional collateral when deemed necessary and permitted under the Firm's agreements. Senior management is significantly involved in the credit approval and review process, and risk levels are adjusted as needed to reflect the Firm's risk appetite.

In the Firm's consumer portfolio, concentrations are managed primarily by product and by U.S. geographic region, with a key focus on trends and concentrations at the portfolio level, where potential credit risk concentrations can be remedied through changes in underwriting policies and portfolio guidelines.

In the wholesale portfolio, credit risk concentrations are evaluated primarily by industry and monitored regularly on both an aggregate portfolio level and on an individual client or counterparty basis. The Firm's wholesale exposure is managed through loan syndications and participations, loan sales, securitizations, credit derivatives, master netting agreements, collateral and other risk-reduction techniques.

➢ Refer to Note 12 of 2023 Form 10-K for additional information on loans.

The Firm does not believe that its exposure to any particular loan product or industry segment results in a significant concentration of credit risk.

Terms of loan products and collateral coverage are included in the Firm's assessment when extending credit and establishing its allowance for credit losses.

➢ Refer to Note 4, Credit risk concentrations on pages 201-202 of the 2023 Form 10-K for additional information.

The retail portfolio is comprised of exposures that are scored and managed on a segment 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 parameter estimation

The internal ratings process for retail exposures covers the assignment of individual loan, line of credit or off-balance exposures into homogeneous segments defined by the predominant product and borrower risk characteristics. The criteria for grouping loans into segments was developed using a combination of empirical analysis and management judgment. Predominant risk drivers used for segmentation vary by portfolio and exposure type, but include loan characteristics such as product type, collateral type and loan-to-value, exposure size, origination channel and documentation type and borrower information such as credit score, delinquency history and line of credit utilization rate.

The retail exposures are first broken down into their retail subcategories. Residential mortgage exposures include all exposures secured by residential real estate. This includes traditional mortgages, home equity loans, home equity lines of credit and business banking exposures that are primarily secured by residential real estate. Qualifying revolving exposures ("QRE") include credit cards where the overall credit limit is less than or equal to $100,000.

Other retail includes all exposures not classified as residential mortgage or QRE. This includes personal auto finance loans, credit card accounts above $100,000, business card exposures without a personal guarantee and business banking loans that are less than $500,000 and that are scored or managed as a group of loans with homogeneous risk characteristics.

The segmentation process creates differentiated risk buckets spanning a wide spectrum of relatively-low to relatively-high expected loss rates. The assignment of exposures to segments occurs on a monthly basis for the majority of the retail portfolio, and at least quarterly for all modeled retail exposures. The overall capital requirement for a given retail subcategory fluctuates based on changes in the mix of products and key risk drivers used for segmentation, and may be impacted by any model enhancements or modifications to parameter estimates.

For each retail sub-category, a separate segmentation model exists for PD, LGD and, for exposures with available undrawn credit exposure, EAD. EAD for a given segment is defined as the Firm's carrying value for on-balance sheet exposures plus a portion of the off-balance sheet exposures based on the Firm's best estimate of net additions to the balance sheet if the exposures were to enter into default in the upcoming year, assuming an economic downturn for that period. Quantification of EAD for off-balance sheet exposures is developed through empirical analysis of historical behavior of defaulted exposures in the months leading up to a default.

The probability of default for a segment estimates the likelihood a borrower will default on the exposure over the next year, based on historical observations over an economic cycle. The PD is quantified based on empirical analysis and observed default rate performance over five or more years, including during a period of stressed economic conditions. Generally, the PD rate for a given segment equates to the simple average of observed one year default rates over the available historical reference data. However, in some instances the Firm makes adjustments to PD estimates to better reflect a full economic cycle.

LGD for a given segment is an estimate of expected loss during a period of stressed economic conditions. The LGD estimate is based on empirical analysis of post-default loss and recovery information over a historical observation period, and factors in the timing of expected cash flows, estimated recovery costs and accrued interest and fees. The Firm's final estimate is based on the higher of observed performance between the long-run reference data and the downturn-specific performance.

The risk drivers comprising the segments are evaluated on their ability to differentiate risk consistently over time. Modifications to the segments are made periodically, driven by the validation results, shifts in risk management strategies, regulatory guidance or risk modeling best practices. The risk characteristics used for segmentation are consistent with the predominant risk drivers used for other internal credit risk models used by the Firm.

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.

The following table presents the Firm's retail RWA at December 31, 2023.

December 31, 2023 (in millions)		Basel III Advanced RWA
Residential mortgages	$	35,666
Qualifying revolving		141,337
Other retail		26,698
Total retail credit RWA	$	203,701

Residential mortgage exposures

The following table includes first lien and junior lien mortgages and revolving home equity lines of credit. First lien mortgages were 93% of the exposure amount, revolving exposures were 6.9%, and the remaining exposures related to junior lien mortgages. Revolving exposures were predominantly originated prior to 2010 and drive approximately 19% of the total risk weighted assets of this portfolio, with nearly 18% of the exposures in the equal to or greater than 0.75% probability of default ("PD") ranges. Recent originations are primarily first lien mortgages and are predominantly reflected in the less than 0.75% PD ranges.

December 31, 2023
(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	$	140,729	$	17,819	$	146,975	$	6,549	0.05	29.76	4.46
0.10 to <0.20		48,553		539		48,690		5,598	0.15	33.49	11.50
0.20 to <0.75		42,469		1,937		44,202		9,931	0.33	36.99	22.46
0.75 to <5.50		10,480		6		10,383		6,577	1.77	35.59	63.34
5.50 to <10.00		907		–		892		951	6.35	26.99	106.47
10.00 to < 100		1,506		3		1,489		2,216	31.11	28.53	148.96
100 (default)		3,523		218		3,745		3,844	100.00	N/A (a)	102.63
Total	$	248,167	$	20,522	$	256,376	$	35,666	1.85%	31.50%	13.91%

(a) The Loss given default ("LGD") rate is reported as N/A 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. Any balance remaining after the charge-off is risk weighted at 100%.

Qualifying revolving exposures

The following table includes exposures to individuals that are revolving, unsecured and unconditionally cancellable 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).

December 31, 2023
(in millions, except ratios)

	Balance sheet	Off balance sheet			Exposure-weighted average		
PD range (%)	Balance sheet amount	Off balance sheet commitments	EAD	RWA	PD	LGD	Risk weight
0.00 to <0.50	$ 88,385	$ 809,520	$ 336,263	$ 18,040	0.10	91.51	5.36
0.50 to <2.00	46,721	66,592	60,439	23,627	1.06	94.02	39.09
2.00 to <3.50	20,478	12,583	22,403	17,449	2.62	94.18	77.89
3.50 to <5.00	16,667	2,826	16,913	16,844	3.72	94.15	99.59
5.00 to <8.00	10,749	2,218	10,861	16,255	6.95	94.47	149.66
8.00 to < 100	25,815	1,532	25,817	49,122	24.06	93.16	190.26
100 (default)	–	–	–	–	100.00	N/A [(a)]	–
Total	$ 208,815	$ 895,271	$ 472,696	$ 141,337	1.94%	92.21%	29.90%

(a) Defaulted exposures in the qualifying revolving portfolio are charged off prior to reaching default as defined in the Basel III capital rules. Accordingly, no defaulted exposures are reported in the 100 (default) PD range.

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 scored 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).

December 31, 2023
(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 <0.50	$ 32,731	$ 12,806	$ 37,188	$ 5,163	0.20	36.64	13.88
0.50 to <2.00	32,581	5,128	33,496	12,828	1.13	35.02	38.30
2.00 to <3.50	4,135	1,166	4,335	2,889	2.50	46.68	66.63
3.50 to <5.00	2,724	741	2,803	1,739	3.75	40.84	62.06
5.00 to <8.00	1,623	144	1,635	1,039	6.67	39.17	63.54
8.00 to < 10.00	2,622	7	2,632	2,474	24.68	45.49	94.00
100 (default)	296	151	448	566	100.00	N/A [(a)]	126.58
Total	$ 76,712	$ 20,143	$ 82,537	$ 26,698	2.27%	36.79%	32.35%

(a) The LGD rate is reported as N/A 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. Any balance remaining after the charge off is risk weighted at 100%.

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 predominantly 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 non-covered debt securities;
- 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 parameter estimation

Risk weights are determined by using internal risk weight parameters. The estimation process for these parameters begins with internal risk-ratings assigned to the obligor. Obligor ratings are used for both internal risk management and regulatory capital calculations.

For regulatory capital, probability of default is defined as the Firm's best estimate of the long-run, through-the-cycle average one-year default rate. The Firm's PD estimates used in RWA calculations are based on the internal default experience of obligors with the same rating.

LGD is defined as an estimate of losses given a default event under stressed economic conditions. The LGD estimate is based on empirical analysis of post-default loss and recovery information over the historical observation period, and factors in the timing of expected cash flows, estimated recovery costs, and accrued interest and fees. The regulatory LGD used in the RWA calculation reflects the higher of the loss experience over the entire historical observation period and the loss experience over a stress period.

EAD for a non-defaulted obligor is the estimate of total exposure upon default of the obligor. EAD is a calculation of the full amount of the Firm's exposure to on-balance sheet exposures plus a portion of the off-balance sheet exposure based on the Firm's best estimate of net additions of contingent exposure if the obligor were to enter into default in the upcoming year under stressed economic conditions. Quantification of EAD for off-balance sheet exposures is developed through empirical analysis of historical behavior of defaulted exposures in the months leading up to default.

Both the internal ratings process and the risk parameter estimation process are subject to independent review.

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.

The adjacent table presents risk-weighted assets by Basel reporting classification. The Corporate, Bank and Sovereign classifications include credit or issuer exposure to these entities. 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").

December 31, 2023 (in millions)		Basel III Advanced RWA
Corporate	$	402,354
Bank		11,463
Sovereign		28,525
Income-producing real estate		59,594
High volatility commercial real estate		90
Total wholesale credit RWA	$	502,026

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), issuer risk for debt securities, and cash placed with various central banks, predominantly Federal Reserve Banks. Total EAD is $1.9 trillion, with 80% of this exposure in the first two PD ranges, which are predominantly investment-grade. Exposures meeting the Basel definition of default represent 0.3% of total EAD. The exposure-weighted average LGD for the wholesale portfolio is 27%.

December 31, 2023 (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 <0.15	$	1,165,380	$	112,403	$	1,247,977	$	83,319	0.02	23.79	6.68
0.15 to <0.50		177,770		189,567		303,762		124,830	0.17	31.87	41.09
0.50 to <1.35		156,495		126,849		227,836		138,425	0.82	33.07	60.76
1.35 to <10.00		76,193		64,257		111,739		98,942	3.57	30.20	88.55
10.00 to <100		23,047		22,258		34,229		50,180	21.09	29.51	146.60
100 (default)		5,603		761		5,979		6,330	100.00	N/A (a)	105.88
Total	$	1,604,488	$	516,095	$	1,931,522	$	502,026	1.03%	26.74%	25.99%

(a) The LGD rate is reported as N/A for defaulted wholesale exposures because the RWA is calculated based on supervisor provided risk weights and does not depend on LGD estimates

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 December 31, 2023, $103.2 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 parameter estimation

Counterparty credit risk RWA calculations utilize the PD and LGD methodologies described in the Wholesale Credit Risk section of this report. The EAD methodologies are described below.

Over-the-counter ("OTC") derivatives

The Firm principally uses the internal model method ("IMM") under the Basel III capital rules for calculating counterparty credit risk regulatory capital for OTC derivatives.

The IMM methodology uses the Firm's internal models to calculate effective expected positive exposure ("EEPE"), which when multiplied by the regulatory-prescribed multiplier, produces the counterparty-level regulatory measure of EAD.

The Firm's IMM methodology simulates forward-looking market risk factors and uses product-specific pricing models to produce the expected exposure profile for the set of OTC derivatives under each legally enforceable master netting agreement ("netting set"). The IMM model computes two sets of expected exposure profiles and EADs: (1) unstressed expected exposure profiles and EADs using the current market data, and (2) stressed expected exposure profiles and EADs based on a historical period that includes a period of economic stress that results in wider credit default swap ("CDS") spreads. For RWA reporting purposes, the higher of the RWAs generated from these two produced profiles is used. In addition to the regulatory measure of exposure, the IMM model also produces a variety of other risk measures used for internal credit risk management and reporting.

For certain types of derivatives where the IMM model is not used, regulatory exposure is calculated using the Standardized Approach for Counterparty Credit Risk ("SA-CCR"). The SA-CCR framework calculates EAD on the basis of Replacement Cost ("RC") and Potential Future Exposure ("PFE") components, taking into account factors such as: i) trade types & trade details (such as notional and maturity); and ii) portfolio netting, collateralization and collateral held.

In addition, the SA-CCR framework incorporates the effects of collateral received or posted. The EAD is used in the regulatory capital formula to calculate counterparty-level RWA.

The IMM models are subject to periodic backtesting to demonstrate that performance continues to be acceptable. Further, the internal models are also used to project the impacts of various internal and regulatory stress events to enhance knowledge of the impact potential events would have on credit exposures and capital adequacy.

Certain OTC derivatives are considered securitization exposures and reported in the Securitization section of this report.

Repo-style transactions and eligible margin loans

Counterparty credit risk for repo style transactions and eligible margin loans stems from the inability or unwillingness of a trading counterparty to fulfill their contractual obligations to the Firm. Upon a default, the amount of the risk is the market value of the exposure to the counterparty less the market value of collateral received from the counterparty.

Counterparty credit risk RWA for both repo style transactions and eligible margin loans is calculated using the Collateral Haircut Approach. Under this method the credit risk mitigation benefits of eligible collateral is recognized in the determination of EAD after applying relevant standard supervisory market price volatility haircuts.

EAD for repo-style transactions includes certain exposures which are not reflected on the Firm's Consolidated balance sheet such as:

- Securities borrowing and lending transactions collateralized by securities, and
- Securities lending indemnification agreements

Cleared transactions

Cleared transactions include exchange-traded derivatives such as futures and options, OTC derivatives and repo-style transactions that the Firm clears through a central counterparty ("CCP") for its own account or for client accounts. A CCP is a clearing house that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer and thereby ensuring the future performance of open contracts. A CCP becomes counterparty to trades with market participants through novation, an open offer system, or another legally binding arrangement. A cleared derivative where the counterparty is a client is classified as an OTC derivative for regulatory reporting.

Basel III capital requirements for cleared transactions consists of two components of exposure used to calculate RWA: (1) trade exposure, which is the sum of the EAD (based on the same EAD calculation used for OTC derivatives or repo-style transactions) and collateral posted by the Firm that is not bankruptcy remote from the CCP, and (2) contributions to the guarantee fund maintained by a CCP as part of the member loss sharing agreement. Only cleared trades where the counterparty is a CCP are classified as cleared transactions under the Basel III capital rules.

Wrong-way risk

Wrong-way risk is the risk that exposure to a counterparty is positively correlated with the probability of default of the same counterparty, which could cause exposure to increase at the same time as the counterparty's capacity to meet its obligations is decreasing. This risk would result in greater EAD when compared with a transaction with another counterparty that does not have this risk. The Firm has policies and processes in place to actively monitor and control wrong-way risk throughout the life cycle of each transaction. Wrong-way risk is factored into the Firm's EAD and RWA calculations in line with the Basel III capital rules.

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.

December 31, 2023 (in millions)		Basel III Advanced RWA
OTC derivatives	$	48,358
Repo-style transactions		36,370
Eligible margin loans		25,411
Cleared transactions		9,171
Total counterparty credit RWA	$	119,310

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 $273 billion, with 73% 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 this portfolio is 40%. The collateral benefit is reflected primarily in the EAD.

December 31, 2023
(in millions, except ratios)

					Exposure-weighted average		
PD range (%)		EAD		RWA	PD	LGD	Risk weight
0.00 to <0.15	$	131,853	$	21,026	0.07	38.75	15.95
0.15 to <0.50		67,682		28,040	0.27	40.57	41.43
0.50 to <1.35		51,864		35,603	0.81	41.23	68.65
1.35 to <10.00		19,815		23,234	3.86	40.54	117.26
10.00 to <100		803		1,345	20.60	33.03	167.51
100 (default)		844		891	100.00	N/A [(a)]	105.62
Total	$	272,861	$	110,139	0.92%	39.80%	40.37%

(a) The LGD rate is reported as N/A for defaulted counterpart credit exposures because the RWA is calculated based on supervisor provided risk weights and does not depend on LGD estimates.

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 December 31, 2023, $7.3 billion of EAD for counterparty credit exposures are covered by eligible guarantees.

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 investors 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 executes securitizations for a variety of business purposes including as a source of liquidity and reducing credit exposures. The Firm securitizes a variety of financial assets including residential and commercial mortgages loans, commercial and industrial loans, and auto loans. The risks inherent in these assets include interest rate, credit and liquidity risk.

The Firm did not transfer any assets to re-securitization VIEs during 2023, and retained interests in any such Firm-sponsored VIEs as of December 31, 2023 were immaterial.

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 covered and non-covered securitizations with the exception of covered modeled correlation trading positions which are included in the Market Risk section.

Due diligence

For each securitization and re-securitization exposure, under the Basel III capital rules the Firm is required to perform due diligence prior to acquiring these exposures and document such due diligence within three business days. The Firm's due diligence procedures are designed to provide it with a comprehensive understanding of the features that would materially affect the performance of a securitization or re-securitization.

The Firm's due diligence procedures include analyzing and monitoring:

- The quality of the credit risk, including information regarding the performance of the underlying credit exposures and relevant market data;
- The structural and other enhancement features that may affect the credit quality of a securitization or re-securitization; and
- For re-securitization positions, information on the performance of the underlying securitization exposures.

The level of detail included in the due diligence process is commensurate with the complexity of each securitization or re-securitization exposure held. In addition to pre-trade due diligence, ongoing due diligence is also performed no less frequently than quarterly as required by the Basel III capital rules.

Risk management

The risks related to securitization and re-securitization transactions are managed in accordance with the Firm's credit risk and market risk management policies.

Credit risk mitigation

Various strategies are employed by the Firm to mitigate the risks that arise from securitization and re-securitization positions. These include credit risk mitigation at both the transaction and portfolio levels through diversification and hedging.

Market risk monitoring

Each line of business that transacts in securitizations and re-securitizations, and the Market Risk function work together to monitor the positions, position changes, and the composition of the total portfolio. This includes, but is not limited to, the review of daily positions against approved risk limits using risk measures such as market values, risk factor sensitivities and stress loss scenarios. Covered securitization and re-securitization positions are included in the Firm's Risk Management VaR and Regulatory VaR. These positions are included in the market risk and limit reports that are distributed on a daily basis to the trading desks, Risk Management and senior managers within the lines of business.

Securitization and re-securitization positions can be sensitive to interest rate levels and the overall credit environment. The Firm may hedge credit spread and interest rate risk, and non-U.S. dollar foreign exchange risk associated with non-U.S. dollar denominated assets, as needed, related to its securitization and re-securitization positions. JPMorgan Chase's policies allow various financial instruments to be employed to mitigate or hedge the risks of securitization and re-securitization positions. Examples of these instruments include U.S. Treasuries, interest rate swaps, FX forwards, and various credit derivatives.

Hierarchy of approaches

Basel III Advanced capital rules prescribe a hierarchy of approaches for calculating securitization RWA. First, any after-tax gain-on-sale resulting from a securitization is deducted from CET1 and a 1250% risk weight is applied to any credit-enhancing interest only strips ("CEIOs") that are not required to be deducted. RWA for securitization exposures that are not required to be deducted or assigned a 1250% risk weight is computed under the Supervisory Formula Approach ("SFA"), which leverages internal models to compute the input parameters that determine RWA. The Firm utilizes approved SFA models for a variety of underlying asset classes including residential and commercial mortgage loans, corporate loans, student loans and auto loans in securitization transactions. Where SFA cannot be utilized, RWA is calculated under the Simplified Supervisory Formula Approach ("SSFA"), which leverages supervisory risk weights and other inputs to determine RWA or assigned a 1250% risk weight.

- Refer to Note 1 & Note 14 on pages 171-174 and 261-268, respectively, of the 2023 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 175-196 of the 2023 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 235, Note 2, the valuation methodology table on page 177, and Note 14, Loan securitizations on page 261, of the 2023 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 28, Loan sales- and securitization-related indemnifications on pages 291-296 of the 2023 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 covered and non-covered exposures receiving securitization capital treatment (with the exception of covered modeled correlation trading positions which are included in the Market Risk section). The amounts include traditional and synthetic securitization exposures with re-securitizations shown separately based on Supervisory Formula Approach and Simplified Supervisory Formula Approach.

	Securitization							
	SFA		SSFA		1250%		Total	
December 31, 2023 (in millions)	Exposure	RWA	Exposure	RWA	Exposure	RWA	Exposure	RWA
Risk weight								
= 0% ≤ 20%	$ 109,708	$ 21,345	$ 136,345	$ 28,507	$ –	$ –	$ 246,053	$ 49,852
> 20% ≤ 50%	12,813	4,033	3,616	1,375	–	–	16,429	5,408
> 50% ≤ 100%	952	627	517	495	–	–	1,469	1,122
> 100% < 1250%	257	652	316	880	–	–	573	1,532
= 1250%	9	109	15	195	283	3,753	307	4,057
Securitization, excluding re-securitization	$ 123,739	$ 26,766	$ 140,809	$ 31,452	$ 283	$ 3,753	$ 264,831	$ 61,971

	Re-securitization							
	SFA		SSFA		1250%		Total	
December 31, 2023 (in millions)	Exposure	RWA	Exposure	RWA	Exposure	RWA	Exposure	RWA
Risk weight								
= 0% ≤ 20%	$ 59	$ 13	$ 3,227	$ 684	$ –	$ –	$ 3,286	$ 697
> 20% ≤ 50%	–	–	–	–	–	–	–	–
> 50% ≤ 100%	–	–	–	–	–	–	–	–
> 100% < 1250%	–	–	–	2	–	–	–	2
= 1250%	–	–	–	2	–	–	–	2
Re-securitization(a)	$ 59	$ 13	$ 3,227	$ 688	$ –	$ –	$ 3,286	$ 701
Total securitization (b)	$ 123,798	$ 26,779	$ 144,036	$ 32,140	$ 283	$ 3,753	$ 268,117	$ 62,672

(a) As of December 31, 2023, there were no re-securitizations to which credit risk mitigation has been applied.
(b) Total securitization RWA includes $2.2 billion of covered securitization positions reported as non-modeled specific risk 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 December 31, 2023 was immaterial.

Exposure by collateral type

The following table presents on- and off-balance sheet covered and non-covered securitization exposures (with the exception of covered modeled correlation trading positions which are included in the Market Risk section) by type of underlying collateral. These exposures arise from both traditional and synthetic securitization transactions.

December 31, 2023 (in millions)	Exposure			
	On-balance sheet	Off-balance sheet[(a)]	Total	RWA
Collateral type:				
Residential mortgages	$ 36,298	$ 1,357	$ 37,655	$ 8,478
Commercial mortgages	37,862	914	38,776	9,608
Commercial and industrial loans	110,116	22,117	132,233	28,056
Consumer auto loans	19,138	7,199	26,337	5,667
Student loans	10,753	1,199	11,952	2,568
Municipal bonds	19	4,386	4,405	1,181
Other	12,867	3,892	16,759	7,114
Total securitization exposure	$ 227,053	$ 41,064	$ 268,117	$ 62,672

(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 securitizations in which the Firm has retained exposure in either covered positions or non-covered positions. Third-party assets in deals sponsored by JPMorgan Chase are shown separately. During the three months ended December 31, 2023, losses recognized on securitized assets was zero.

December 31, 2023 (in millions)	Principal amount outstanding			
	JPMorgan Chase assets held in traditional securitizations[(a)]	Third-party assets held in traditional securitizations[(a)]	JPMorgan Chase assets in synthetic securitizations	Assets 90 days past due or on nonaccrual status
Collateral type:				
Residential mortgages	$ 46,031	$ –	$ 2,575	$ 811
Commercial mortgages	46,648	79,791	–	3,036
Commercial and industrial loans	664	–	26,644	–
Consumer auto loans	902	–	449	1
Student loans	–	–	–	1
Municipal bonds	–	–	–	–
Other	–	–	13,147	–
Total	$ 94,245	$ 79,791	$ 42,815	$ 3,849

(a) Represents assets held in nonconsolidated securitization VIEs.

Securitization activity

The following table presents assets pending securitization (i.e., assets held with the intent to securitize) at December 31, 2023, and the Firm's securitization activities for the twelve months ended December 31, 2023, related to assets either held in Firm-sponsored securitization entities that were not consolidated by the Firm or held on the Firm's consolidated balance sheet and synthetically securitized. 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 traditional securitization activities.

	Carrying value	Original principal amount		
		Traditional securitization		Synthetic securitization
	Assets pending securitization	Assets securitized with retained exposure	Assets securitized without retained exposure	Assets securitized with retained exposure
(in millions)	December 31, 2023	twelve months ended December 31, 2023		
Collateral type:				
Residential mortgages	$ 9,221	$ 6,870	$ 808	$ –
Commercial mortgages	289	1,950	1,248	–
Commercial and industrial loans	–	–	–	23,126
Consumer auto loans	7,872	703	–	–
Student loans	–	–	–	–
Municipal bonds	–	–	–	–
Other	–	–	–	12,391
Total	$ 17,382	$ 9,523	$ 2,056	$ 35,517

EQUITY RISK NOT SUBJECT TO THE MARKET RISK CAPITAL RULES

Equity investments that are not subject to the market risk capital rules (i.e. non-covered positions) 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 privately-held financial instruments representing ownership interests or other forms of junior capital. In general, principal investments include tax-oriented investments and investments made to enhance or accelerate the Firm's business strategies and exclude those that are consolidated on the Firm's balance sheets. These investments are made by dedicated investing businesses or as part of a broader business strategy. The Firm's principal investments are managed by the LOBs and Corporate and are reflected within their respective financial results. The Firm's investments will continue to evolve based on market circumstances and in line with its strategic initiatives, including the Firm's environmental and social goals.Asset classes include tax-oriented investments (e.g., alternative energy and affordable housing investments), private equity, various debt and equity instruments, real assets and investment funds (including separate accounts).

Investments in separate accounts are held in connection with corporate and bank-owned life insurance and certain asset management activities.

Non-covered investments in equity securities are accounted for using one of the following methods:

- Equity method (which requires the Firm to recognize its proportionate share of the entity's net earnings), or fair value if the fair value option was elected, for investments in which the Firm has significant influence over operating and financing decisions (but does not own a majority of the voting equity interests).
- Fair value measurement basis for the Firm's investment companies and asset management funds accounted for under investment company guidelines, irrespective of the percentage of equity ownership interests held. These include investments in both publicly-held and privately held entities, including investments in buyouts, growth equity and venture opportunities.
- Cost less impairment (if any), plus or minus observable price changes from an identical or similar investment of the same issuer (i.e., the "measurement alternative").

Accounting and valuation policies for equity investments

➢ Refer to Principal risk, on page 134 of the 2023 Form 10-K for a discussion of investment risk management related to principal investments.

➢ Refer to Note 1 on page 171 of the 2023 Form 10-K for a discussion of the accounting for investments in unconsolidated subsidiaries and other non-trading (i.e., non-covered) equity investments.

➢ Refer to Note 2 on pages 175-196 of the 2023 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

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”). Under FLTA, RWA is calculated by computing a risk-weight on each of the underlying exposures held by the fund as if they were held directly by the Firm, then multiplying that risk-weight by the Firm’s proportional ownership share of the fund. Under the SML-TA, the Firm uses a fund's prospectus to determine an appropriate risk-weight to assign to its entire exposure to the fund, which is based on the highest risk-weight that applies to any exposure the fund is permitted to hold. Under the SRWA, the Firm applies regulatory prescribed risk-weights to the adjusted carrying value of each equity exposure that is not an exposure to an investment fund.

Equity risk-weighted assets

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

December 31, 2023 (in millions) Risk-weight category		Exposure[a]			RWA
0%	$	7,225	[b]	$	–
20%		1,408			299
100%		43,534			46,145
250%		878			2,328
300%		–			–
400%		1,151			4,878
600%		6			38
Simple Modified Look-Through Approach		381			1,248
Full Look-Through Approach		24,236			15,137
Total	$	78,819		$	70,073

(a) Includes off-balance sheet unfunded commitments for equity investments of $11.6 billion.

(b) Consists of Federal Reserve Bank stock.

Carrying value and fair value

The following table presents the carrying value and fair value of non-covered equity investments.

December 31, 2023 (in millions)		Carrying value		Fair value
Publicly traded	$	24,907	$	24,922
Non-publicly traded		43,928		54,764
Total	$	68,835	$	79,686

Realized gains/(losses)

Cumulative realized gains/(losses) from sales and liquidations during the three months ended December 31, 2023 was $65 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 non-covered equity investments that are accounted for under the cost, measurement alternative and equity method were $10.9 billion as of December 31, 2023.

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 non-statistical, used to assess risk and risk monitoring and control, see Market Risk Management on pages 135-143 of the 2023 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 December 31, 2023. The components of market risk RWA are discussed in detail in the Regulatory market risk capital models section on pages 29-33 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 December 31, 2023 (in millions)	Risk-based capital	RWA
Internal models:		
Value-at-Risk based measure ("VBM")	$ 500	$ 6,256
Stressed Value-at-Risk based measure ("SVBM")	916	11,451
Incremental risk charge ("IRC")	448	5,603
Comprehensive risk measure ("CRM")	125	1,560
Total internal models	1,989	24,870
Non-modeled specific risk	3,309	41,359
Other charges	190	2,374
Total Market risk	$ 5,488	$ 68,603

Material portfolio of covered positions

The Firm's portfolio of covered positions under the Basel III capital rules arise predominantly from activities in CIB, which makes markets in products across fixed income, foreign exchange, equities, commodities and credit markets.

- Refer to pages 65-66 and 72-77 of the 2023 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. It 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 as appropriate to various groups including senior management, the Board Risk Committee and regulators.

- Refer to pages 135-143 of the 2023 Form 10-K Market Risk Management 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 nonstatistical measures such as stress testing, in addition to VaR, to capture and manage its market risk positions.

- Refer to the stress testing section on page 33 of this report for further information on stress testing.

The Firm has a single VaR framework used as a basis for calculating Risk Management VaR and Regulatory VaR.

Comparison of Risk Management VaR and Regulatory VaR

Risk Management VaR is calculated assuming a 1-day holding period and an expected tail-loss methodology which approximates a 95% confidence level. The Firm believes this provides a daily measure of risk that is closely aligned to risk management decisions made by the LOBs and Corporate and, along with other market risk measures, provides the appropriate information needed to respond to risk events. The Firm's Risk Management VaR is disclosed in its SEC filings.

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

As noted above, Regulatory VaR is applied to covered positions as defined by Basel III capital rules, which may be different than 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.

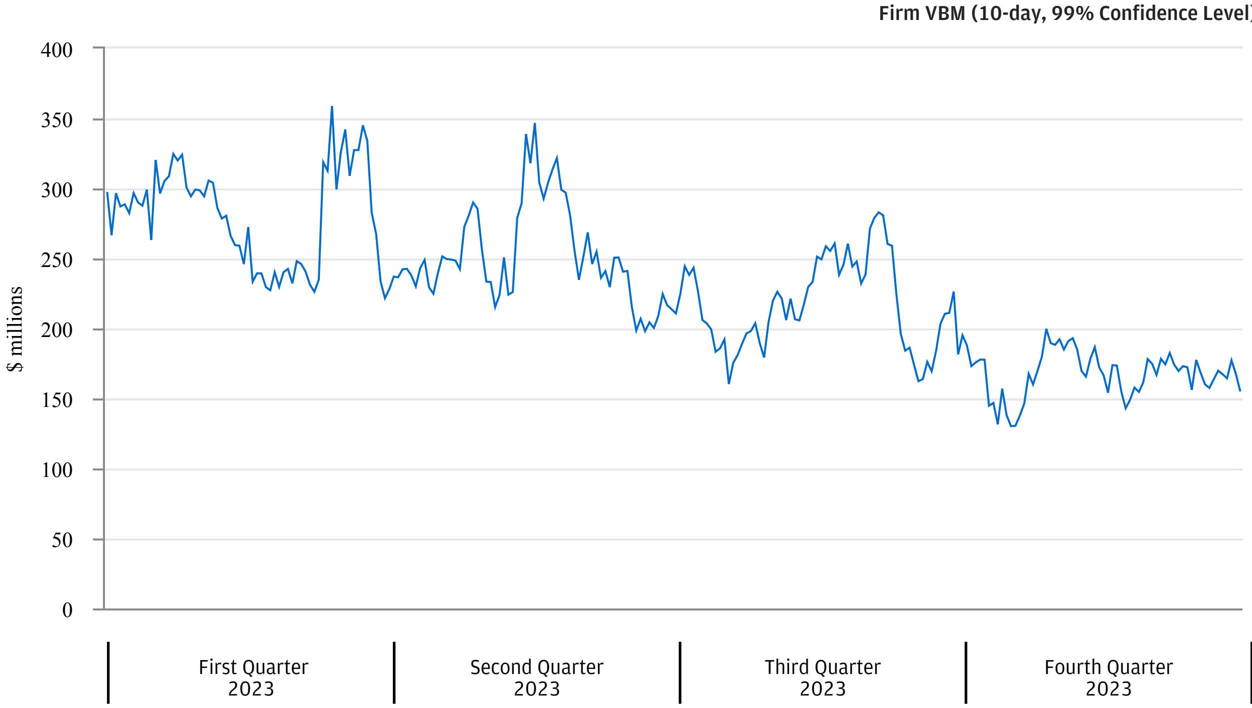
Regulatory market risk capital models

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.

The following chart presents VBM, assuming a 10-day holding period, for the 12 months ending December 31, 2023.

Daily VaR-Based Measure Results



CIB VaR-Based Measure (“VBM”)

For the three months ended December 31, 2023, average CIB VBM was $158 million.

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

	Three months ended December 31, 2023 [a]			
(in millions)	Avg	Min	Max	December 31, 2023
CIB 10-day VBM by risk type				
Interest rate	$125	$ 96	$ 147	$ 96
Credit spread	114	99	126	102
Foreign exchange	59	41	84	68
Equities	34	26	49	34
Commodities and others	40	29	60	36
Diversification benefit	(214) [b]	NM [c]	NM [c]	(189) [b]
CIB 10-day VBM	158	126	193	147
Firm 10-day VBM	$167	$130	$ 200	$ 155

(a) The average, minimum and maximum measures are based on the 60 business days ending with the quarter-end reporting date.

(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.

VBM Backtesting
As required by Basel III capital rules, the Firm compares the daily gains and losses with the daily VBM results on covered positions, which for the purpose of backtesting is computed using a 1-day holding period and a 99% confidence level.

The gains and losses differ from the Firm's reported revenue as they exclude certain components of total net revenue, such as those associated with the execution of new transactions (i.e., intraday client-driven trading and intraday risk management activities), fees, commissions, other valuation adjustments and net interest income. These excluded components of total net revenue may more than offset the backtesting gain or loss on a particular day.

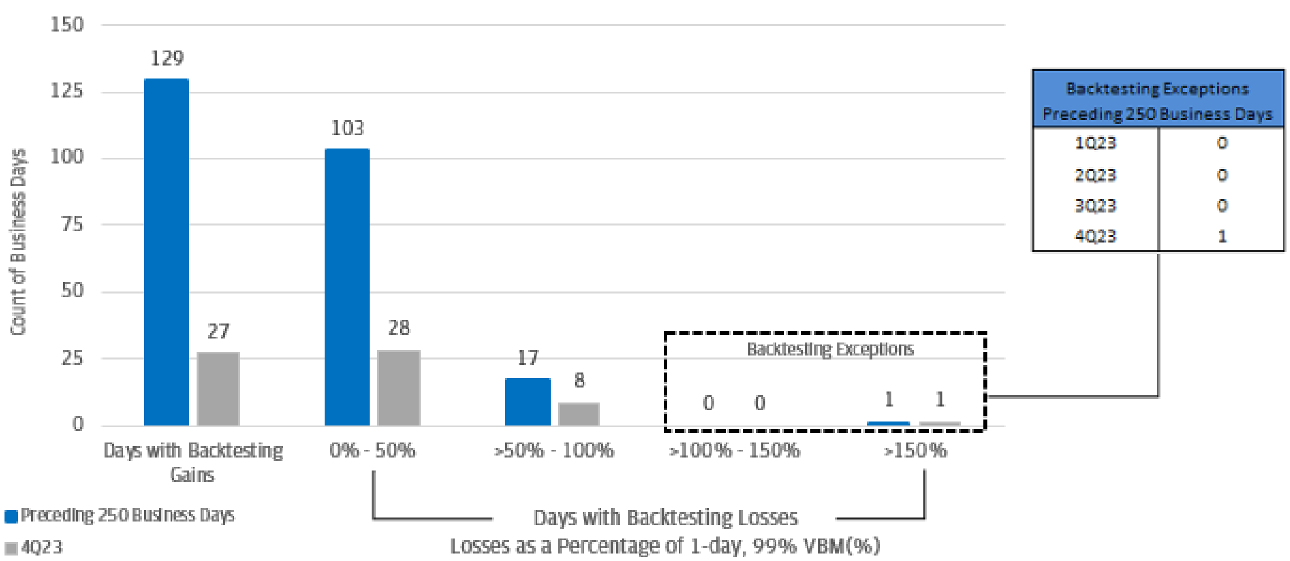
A backtesting exception occurs when the daily backtesting loss exceeds the daily VaR-based measure for the prior day.

Under the Firm's Regulatory VaR methodology, assuming current changes in market values are consistent with the historical changes used in the simulation, the Firm would expect to observe one backtesting exception every 100 business days on average.

The number of backtesting exceptions observed can differ from the statistically expected number of backtesting exceptions if the current level of market volatility is materially different from the level of market volatility during the historical period used to calibrate the VaR model.

The chart below presents the distribution of Firmwide daily backtesting gains and losses for the preceding 250 business days and three months ended December 31, 2023. The daily backtesting losses are displayed as a percentage of the corresponding daily VaR-based measure assuming a 1-day holding period. The count of days with backtesting losses are shown in aggregate, in fifty percentage point intervals. Backtesting exceptions are displayed within the intervals that are greater than one hundred percent.The backtesting results for Regulatory VaR differ from those disclosed in the Market Risk section of the Firm's Form 10-K, which are based on the Firm's Risk Management VaR, and the gains and losses corresponding to that population scope. As shown below, one backtesting exception was observed in the three months ended December 31, 2023.

Distribution of Daily Backtesting Gains and Losses



VaR-Based Measure Capital

The following table presents the Firm's VBM capital requirement, which is calculated as the higher of (1) the preceding 60 business days average measure scaled by the Firm's regulatory multiplier and (2) the quarter-end spot measure. The regulatory multiplier is prescribed by the Basel III capital rules based on the number of backtesting exceptions in the preceding 250 business days. As of December 31, 2023, the Firm's regulatory multiplier was 3.00.

Three months ended December 31, 2023 (in millions)	Risk-based capital	RWA
Firm VBM	$ 500	$ 6,256

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 assuming a 10-day holding period and a 99% confidence level. It is calculated at least weekly, with each measure no less than the corresponding VBM.

The following table presents the average, minimum, maximum and the quarter-end spot measure for 4Q23 for CIB and the Firm.

	Three months ended December 31, 2023 (a)			
(in millions)	Avg.	Min	Max	December 31, 2023
CIB 10-day SVBM	$ 303	$ 268	$ 377	$ 276
Firm 10-day SVBM	$ 305	$ 262	$ 387	$ 272

(a) The average, minimum and maximum measures are based on the 12 weeks ending with the quarter-end reporting date.

The following table presents the Firm's SVBM capital requirement, which is calculated as the higher of (1) the preceding 12-weeks average measure scaled by the Firm's regulatory multiplier and (2) the quarter-end spot measure. The regulatory multiplier is prescribed by the Basel III capital rules based on the number of backtesting exceptions in the preceding 250 business days. As of December 31, 2023, the Firm's regulatory multiplier was 3.00.

Three months ended December 31, 2023 (in millions)	Risk-based capital	RWA
Firm SVBM	916	$ 11,451

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 output of the IRC model is used directly as the capital measure and is calculated at least weekly.

The Firm has developed a Monte Carlo simulation-based model to compute the IRC measure. Modeling of default events is based on a multi-factor asset approach, which incorporates the effects of issuer, regional and industry risk concentrations. Credit migration risk is captured in the IRC model by an explicit simulation of credit spreads. The underlying simulation model is calibrated to provide joint distributions across all risk factors (e.g., default, spread, recovery, basis effects), including important cross-effects that can have a significant impact on the tail risk of the portfolio, such as the correlation between defaults and recoveries.

The IRC model assumes the trading positions remain constant in order to model profit and loss distributions over a one-year holding period. This approach assumes a one-year liquidity horizon for all positions and all risk factor shocks are applied to the portfolio instantaneously.

The IRC model uses a full revaluation approach to capture the re-pricing risk of all positions due to credit migration and default events. This approach requires full economic details on all positions for re-pricing to capture the nonlinear effects of risk factors on the value of the portfolio during large market moves.

The IRC is validated through the evaluation of modeling assumptions, sensitivity analysis, ongoing monitoring, benchmarking and outcomes analysis. In order to ensure continued applicability and relevance, the IRC model's calibration to historical market data is updated quarterly. In addition, as market conditions and portfolios change over time, ongoing testing and monitoring of the model (including sensitivity analysis, accuracy and convergence testing) is conducted to ensure the appropriateness and accuracy of model settings, parameters and outputs.

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

	Three months ended December 31, 2023 (a)			
(in millions)	Avg.	Min	Max	December 31, 2023
CIB IRC	$ 448	$ 320	$ 612	$ 359

(a) The average, minimum and maximum measures are based on the 12 weeks ending with the quarter-end reporting date.

The following table presents the reported IRC risk-based capital requirement which, under the Basel III capital rules, is calculated as the higher of (1) the quarterly average and (2) the quarter-end spot value.

Three months ended December 31, 2023 (in millions)	Risk-based capital	RWA
CIB IRC	$ 448	$ 5,603

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.

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 at least weekly.

The CRM risk-based capital requirement for each calculation date is the greater of the modeled CRM and a floor that is equal to 8% of the total specific risk add-on using the standardized approach.

The CRM model is an extension of the previously described Monte-Carlo simulation-based IRC model, and it includes additional risk factors that are relevant for index tranches, bespoke tranches, and first-to-default positions in the Firm's correlation trading portfolio. The range of risk factors simulated by the CRM model includes default events, credit spreads, recovery rates, implied correlations and inherent basis risks within these products.

The CRM model assumes the trading positions remain constant in order to model profit and loss distributions over a one-year holding period. This approach assumes a one-year liquidity horizon for all positions and all risk factor shocks are applied to the portfolio instantaneously. The CRM model uses a full revaluation approach to capture the repricing risk of all correlation trading positions, including the non-linear effects of risk factors on the value of the portfolio during large market moves.

The CRM model is validated through the evaluation of modeling assumptions, sensitivity analysis, ongoing monitoring, benchmarking and outcomes analysis. In order to ensure continued applicability and relevance, the CRM model's calibration to historical market data is updated quarterly. As an additional validation, and to comply with the requirements of the Basel III capital rules, weekly CRM stress testing is performed for all correlation trading positions. The weekly CRM stress testing leverages stress scenarios across major risk factors including default, spread, index-CDS basis spreads, and base correlation. In addition, as market conditions and portfolios change over time, ongoing testing and monitoring of the model (including sensitivity analysis, accuracy and convergence testing) is conducted to ensure the appropriateness and accuracy of model settings, parameters and outputs.

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

	Three months ended December 31, 2023 [(a)]			
(in millions)	Avg.	Min	Max	December 31, 2023
CIB CRM	$ 125	$ 100	$ 151	$ 100

(a) The average, minimum and maximum measures are based on the 12 weeks ending with the quarter-end reporting date.

The following table presents the reported CRM risk-based capital requirement which, under Basel III capital rules, is calculated as the higher of (1) the quarterly average and (2) the quarter-end spot value.

Three months ended December 31, 2023 (in millions)	Risk-based capital	RWA
CIB CRM	$ 125	$ 1,560

Aggregate securitization positions

- ➢ For information on the aggregate amount of on-balance sheet and off-balance sheet securitization positions with the exception of modelled correlation trading positions, which are included in this section by exposure type, refer to Securitization on page 24 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.

December 31, 2023 (in millions)	Notional amount[(a)]	Fair value[(b)]
Positions modeled in CRM	$ 2,397	$ (671)
Positions not modeled in CRM	(1,495)	(10)
Total correlation trading positions	$ 902	$ (681)

(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.

December 31, 2023 (in millions)	Risk-based capital	RWA
Securitization positions[(a)]	$ 176	$ 2,196
Non-securitization positions	3,133	39,163
Total Non-modeled specific risk	$ 3,309	$ 41,359

(a) Represents Securitization RWA for covered positions only.

Other charges

Other charges reflect exposures receiving alternative capital treatments.

December 31, 2023 (in millions)	Risk-based capital	RWA
Firm other charges	$ 190	$ 2,374

Independent review of market risk regulatory capital models

A dedicated independent model risk function, the Model Risk Governance and Review group, is responsible for approving new models, as well as material changes to existing models, prior to their use. Market risk regulatory capital models are in scope for this process. The critical elements of the review process are:

- An evaluation of the conceptual soundness of the model specifications such as risk factor representation of the products and the associated simulation methods;
- An analysis of model outcomes, including a comparison of the outputs with empirical experience and, where relevant, with alternative model specifications;
- An evaluation of the adequacy of model calibration procedures and model implementation testing performed by model developers.

The evaluation of the conceptual soundness of a model seeks to assess the reasonableness of model specifications, and takes into consideration the purpose of the model. This process also seeks to identify the main model assumptions, evaluate their adequacy, understand their strengths and weaknesses, and the impact that such assumptions may have on the model output.

The output of models, and the models' response to changes in inputs, are evaluated via outcomes analysis which may include: comparing model results against empirical evidence; comparing model results against the results obtained with alternative settings, or models; and assessing the reasonableness of the sensitivity of model results to changes in portfolio and market inputs.

The Model Risk function assesses the completeness and quality of the testing performed by model developers to ensure the integrity of model implementation. The Model Risk function also evaluates the approach used by model developers to assess the numerical accuracy of the results, such as the setting of the number of trials in a Monte Carlo simulation.

Additional model testing may be requested of the model development team by the Model Risk function or may be performed directly by the Model Risk function. To address the model risk issues identified during the independent model review, the Model Risk function may require a remediation plan with specific actions and timelines, as well as an evaluation of the need for compensating controls to mitigate model risk until the issues are addressed.

Once models have been approved, model users and developers are responsible for maintaining a robust operating environment, and must monitor and evaluate the performance of the models on an ongoing basis. Model users and developers may seek to enhance models in response to changes in the relevant portfolios and in product and market developments, as well as to capture improvements in available modeling techniques and systems capabilities.

➢ For additional information, refer to Estimations and Model Risk Management on page 154 of the 2023 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 140 of the 2023 Form 10-K.

OPERATIONAL RISK MANAGEMENT

Operational risk is the risk of an adverse outcome resulting from inadequate or failed internal processes or systems; human factors; or external events impacting the Firm's processes or systems. Operational Risk includes compliance, conduct, legal, and estimations and model risk. Operational risk is inherent in the Firm's activities and can manifest itself in various ways, including fraudulent acts, business disruptions (including those caused by extraordinary events beyond the Firm's control), cyber attacks, inappropriate employee behavior, failure to comply with applicable laws, rules and regulations or failure of vendors or other third party providers to perform in accordance with their agreements. Operational Risk Management attempts to manage operational risk at appropriate levels in light of the Firm's financial position, the characteristics of its businesses, and the markets and regulatory environments in which it operates.

- Refer to pages 147-154 of the 2023 Form 10-K for a discussion of Operational Risk Management and page 98 of Capital Risk Management of the 2023 Form 10-K for operational risk RWA.

Operational Risk Measurement

- Refer to Operational Risk Management on pages 147-154 of the 2023 Form 10-K for information related to operational risk measurement.

Other operational risks

- Refer to Operational Risk Management on pages 147-154 of the 2023 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 FOR TRADITIONAL BANKING ACTIVITIES

Structural interest rate risk management

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 which are included in VaR, 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 the investment securities portfolio, and associated derivative instruments.

- Refer to pages 140-142 of the 2023 Form 10-K for a detailed discussion of Earnings-at-risk.
- Refer to the table on page 136 of the 2023 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 December 31, 2023 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

December 31, 2023 (in millions, except ratios)	Basel III Advanced CECL Transitional
Basel III Advanced Tier 1 capital	**$ 277,306**
Total spot assets	3,875,393
Add: Adjustments for frequency of calculations[(a)]	10,239
Total average assets	**3,885,632**
Less adjustments for:	
Adjustments for deductions from Tier 1 capital[(b)]	55,872
Add adjustments for:	
Adjustment for derivative transactions	262,223
Adjustment for repo-style transactions	44,649
Adjustment for off-balance sheet exposures[(c)]	402,393
Other[(d)]	1,440
Total leverage exposure	**$ 4,540,465**
Basel III Advanced SLR	**6.1 %**

(a) The adjustment for frequency of calculations represents the difference between total spot assets at December 31, 2023, and average assets for the three months ended December 31, 2023.
(b) Adjusted average assets, for purposes of calculating the leverage ratios, includes quarterly average assets adjusted for on-balance sheet assets that are subject to deduction from Tier 1 capital, predominantly goodwill, inclusive of estimated equity method goodwill, and other intangible assets..
(c) Off-balance sheet exposures are calculated as the average of the three month-end spot balances on applicable regulatory exposures during the reporting quarter.
(d) Includes adjustments for the CECL capital transition provisions.

Derivative transactions

The following table presents the components of total derivative exposure.

(in millions)	December 31, 2023
Replacement cost for all derivative transactions	$ 122,710
Add-on amounts for potential future exposure ("PFE") for all derivative transactions	186,855
Gross-up for collateral posted in derivative transactions if collateral is deducted from on-balance sheet assets	123,549
Less: Deduction of receivable assets for qualifying cash variation margin posted in derivative transactions	123,549
Less: Exempted exposures to central counterparties ("CCPs") in cleared transactions	22,564
Adjusted effective notional principal amount of sold credit protection	566,412
Less: Effective notional principal amount offsets and PFE deductions for sold credit protection	505,392
Total derivative exposure[(a)]	**348,021**
Less: On-balance-sheet average derivative receivables	85,798
Adjustment for derivative transactions	**$ 262,223**

(a) 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)	December 31, 2023
Gross assets for repo-style transactions[(a)]	$ 775,191
Less: amounts netted[(b)]	256,969
Add: Counterparty credit risk for all repo-style transactions	45,392
Exposure amount for repo-style transactions where the Firm acts as an agent[(c)]	448
Total exposures for repo-style exposures	**564,062**
Less: on-balance sheet amounts	
Securities purchased under resale agreements	319,045
Securities borrowed	200,368
Adjustment for repo-style transactions	**$ 44,649**

(a) Excludes the value of securities received as collateral where the Firm as securities lender has not sold or re-hypothecated 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)	December 31, 2023
Off-balance sheet exposures - gross notional amounts	$ 1,561,084
Less: Adjustments for conversion to credit equivalent amounts	1,158,691
Adjustment for other off-balance sheet exposures	**$ 402,393**

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 on pages 175-196 in the Note 2 of the 2023 Form 10-K.

- Refer to Note 2 on page 175 of the 2023 Form 10-K, for information on credit and funding valuation adjustments.

References to JPMorgan Chase's 2023 Form 10-K

JPMorgan Chase's the 2023 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

Notes to consolidated financial statements