JPMorgan Chase & Co.

PILLAR 3 REGULATORY CAPITAL DISCLOSURES

For the quarterly period ended December 31, 2021

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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 $3.7 trillion in assets and $294.1 billion in stockholders' equity as of December 31, 2021. 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. as of December 31, 2021. 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 subsidiary outside the U.S. is J.P. Morgan Securities plc, a U.K.-based subsidiary of JPMorgan Chase Bank, N.A.

➢ 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, 2021 ("2021 Form 10-K ")

Pillar 3 report overview

This report provides information on the Firm's capital structure, capital adequacy, risk exposures, and risk-weighted assets ("RWA") under the Basel III advanced approach, 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 2021 Form 10-K which has been filed with the U.S. Securities and Exchange Commission ("SEC").

Basel III overview

The Basel framework consists of a three "Pillar" approach:

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

The capital rules under Basel III establish minimum capital ratios and overall capital adequacy standards for large and internationally active U.S. Bank Holding Companies ("BHCs") and banks, including the Firm and its insured depository institution ("IDI")subsidiaries, including JPMorgan Chase Bank, N.A. The minimum amount of regulatory capital that must be held by BHCs and banks is determined by calculating risk-weighted assets ("RWA"), which are on-balance sheet assets and off-balance sheet exposures, weighted according to risk. Two comprehensive approaches are prescribed for calculating RWA: a standardized approach ("Basel III Standardized"), and an advanced approach ("Basel III Advanced"). For each of the 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.

The Firm's Basel III Standardized-risk-based ratios are currently more binding than the Basel III Advanced-risk-based ratios.

Basel III also includes a requirement for Advanced Approaches banking organizations, including the Firm, to calculate the supplementary leverage ratio ("SLR"). The Firm's SLR is currently more binding than the Basel III Standardized-risk-based ratios.

➢ Refer to page 87 of the 2021 Form 10-K for information on Basel III Reforms.

Risk is an inherent part of JPMorgan Chase's business activities. When the Firm extends a consumer or wholesale loan, advises customers 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 businesses, and the associated risks, in a manner that balances serving the interests of its clients, customers and investors and protects the safety and soundness of the Firm.

The Firm believes that effective risk management requires, 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
- Firmwide structures for risk governance.

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 and oversight framework

The Firm's risk management governance and oversight 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 the economic environment, regulatory and government policy, competitor and market evolution, business decisions, process and judgment error, deliberate wrongdoing, dysfunctional markets, and natural disasters.

Types of Risks are categories by which risks manifest themselves. 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 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 associated with an adverse outcome resulting from inadequate or failed internal processes or systems; human factors; or external events impacting the Firm's processes or systems. It includes 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 reputation damage, loss of clients and customers, and regulatory and enforcement actions.

The Firm's risk governance and oversight framework is managed on a Firmwide basis. The Firm has an Independent Risk Management ("IRM") function, which consists of the Risk Management and Compliance organizations. The Chief Executive Officer ("CEO") appoints, subject to approval by the Risk Committee of the Board ("Board Risk Committee"), the Firm's Chief Risk Officer ("CRO") to lead the IRM organization and manage the risk governance structure of the Firm. The framework is subject to approval by the Board Risk Committee in the form of the Risk Governance and Oversight Policy. The Firm's CRO oversees and delegates authorities to LOB CROs, Firmwide Risk Executives ("FREs"), and the Firm's Chief Compliance Officer ("CCO"), who each establish Risk Management and Compliance organizations, set the Firm's risk governance policies and standards, and define and oversee the implementation of the Firm's risk governance. The LOB CROs are responsible for risks that arise in their LOBs, while FREs oversee risk areas that span across the individual LOBs, functions and regions.

Three lines of defense
The Firm relies upon each area of the Firm giving rise to risk to operate within the parameters identified by the IRM function, and within its own management-identified risk and control standards.

Each LOB and Treasury & CIO, including their aligned Operations, Technology and Control Management, are the Firm's "first line of defense" and own the identification of risks, as well as the design and execution of controls to manage those risks. The first line of defense is responsible for adherence to applicable laws, rules and regulations and for the implementation of the risk management structure (which may include policy, standards, limits, thresholds and controls) established by IRM.

The IRM function is independent of the businesses and is the Firm's "second line of defense." The IRM function independently assesses and challenges the first line of defense risk management practices. IRM is also responsible for its own adherence to applicable laws, rules and regulations and for the implementation of policies and standards established by IRM with respect to its own processes.

Internal Audit is an independent function that provides objective assessment on the adequacy and effectiveness of Firmwide processes, controls, governance and risk management as the "third line of defense." The Internal Audit Function is headed by the General Auditor, who reports to the Audit Committee and administratively to the CEO.

In addition, there are other functions that contribute to the Firmwide control environment but are not considered part of a particular line of defense, including Finance, Human Resources and Legal, and are responsible for adherence to applicable laws, rules and regulations and policies and standards established by IRM with respect to their own processes.

Risk identification and ownership
Each LOB and Corporate owns the ongoing identification of risks, as well as the design and execution of controls, including IRM-specified controls, to manage those risks. To support this activity, the Firm has a formal Risk Identification framework designed to facilitate each LOB and Corporate's responsibility to identify material risks inherent to the Firm, catalog them in a central repository and review the most material risks on a regular basis. The IRM function reviews and challenges the LOB and Corporate's identified risks, maintains the central repository and provides the consolidated Firmwide results to the Firmwide Risk Committee ("FRC") and Board Risk Committee.

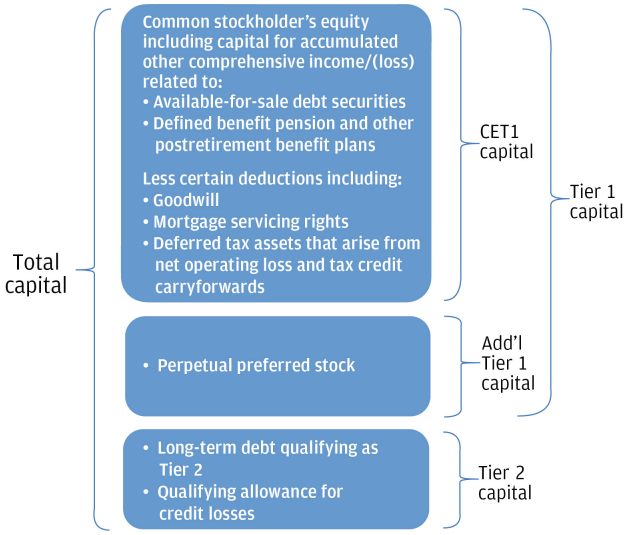
Risk appetite
The Firm's overall appetite for risk is governed by "Risk Appetite" frameworks for quantitative and qualitative risks. Periodically the Firm's risk appetite is set and approved by senior management (including the CEO and CRO) and approved by the Board Risk Committee. Quantitative and qualitative risks are assessed to monitor and measure the Firm's capacity to take risk consistent with its stated risk appetite. Risk appetite results are reported to the Board Risk Committee.

➢ Refer to pages 81-84 of the 2021 Form 10-K for additional information on Firmwide Risk Management.

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 149 of the 2021 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

- Refer to Regulatory Developments relating to the COVID-19 Pandemic on pages 87-88 and the Capital Risk Management section.
- Refer to Note 27 - Regulatory Capital on pages 281-282 of the 2021 Form 10-K for additional information on Current Expected Credit Losses ("CECL") impacting the Firm and its capital metrics.

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 162 of the 2021 Form 10-K for the components of total stockholders' equity.

December 31, 2021 (in millions)	Basel III Advanced CECL Transitional	Basel III Advanced CECL Fully Phased-In
Total stockholders' equity	**$ 294,127**	**$ 294,127**
Less: Preferred stock	34,838	34,838
Common stockholders' equity	**259,289**	**259,289**
Less:		
Goodwill	50,315	50,315
Other intangible assets	882	882
Add:		
Deferred tax liabilities[(a)]	2,499	2,499
Other CET1 capital adjustments[(b)(c)]	3,351	470
CET1 capital	**213,942**	**211,061**
Preferred stock	34,838	34,838
Other Tier 1 capital adjustments[(d)]	(1,999)	(1,999)
Less: Tier 1 capital deductions	619	619
Total Tier 1 capital	**246,162**	**243,281**
Long-term debt and other instruments qualifying as Tier 2 capital	14,106	14,106
Qualifying allowance for credit losses[(e)]	5,908	5,908
Other Tier 2 capital adjustments	68	68
Less: Tier 2 capital deductions	448	448
Total Tier 2 capital	**19,634**	**19,634**
Total capital	**$ 265,796**	**$ 262,915**

(a) Represents deferred tax liabilities related to tax-deductible goodwill and to identifiable intangibles created in nontaxable transactions, which are netted against goodwill and other intangibles when calculating CET1 capital.
(b) Includes adjustments for cash flow hedges and debit valuation adjustment ("DVA")")related to structured notes recorded in accumulated other comprehensive income ("AOCI").
(c) The impact of the CECL capital transition provision was an increase in CET1 capital of $2.9 billion.
(d) Other Tier 1 Capital adjustments included $2.0 billion of Series Z preferred stock called for redemption on December 31, 2021 and subsequently redeemed on February 1, 2022.
(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, 2021 for Basel III Advanced CECL Transitional was $0.03 billion and would have been $2.7 billion under Basel III Advanced CECL fully phased in. losses

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 269, Note 21 on page 271 and Note 22 on page 273 of the 2021 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 2021 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 280 of the 2021 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 associated with 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, 2021.

December 31, 2021 (in millions)	Basel III Advanced CECL Transitional RWA
Credit risk	$ 1,047,042
Market risk	95,506
Operational risk	405,372
Total RWA	$ 1,547,920

RWA rollforward

The following table presents changes in the components of RWA under Basel III Advanced for the three months ended December 31, 2021. 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, 2021 (in millions)	Credit risk	Market risk	Operational risk	Total
September 30, 2021	$1,037,658	$100,479	$ 406,375	$1,544,512
Model & data changes[(a)]	(7,475)	(5,442)	–	(12,917)
Portfolio runoff[(b)]	(940)	–	–	(940)
Movement in portfolio levels[(c)]	17,799	469	(1,003)	17,265
Changes in RWA	9,384	(4,973)	(1,003)	3,408
December 31, 2021	$1,047,042	$ 95,506	$ 405,372	$1,547,920

(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) Portfolio runoff for Credit risk RWA primarily reflects reduced risk from position rolloffs in legacy portfolios in Home Lending business.
(c) Movement in portfolio levels (inclusive of rule changes) refers to: for Credit risk RWA, changes in book size, 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 changes in the Firm's regulatory multiplier from Regulatory VaR backtesting exceptions; and for Operational risk RWA, updates to cumulative losses and macroeconomic model inputs.

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 86-96 of the the 2021 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 its IDI subsidiaries were subject as of December 31, 2021.

	Capital ratio requirements		Well-capitalized ratios	
	BHC[(b)]	IDI[(c)]	BHC[(d)]	IDI[(e)]
Capital ratios				
CET1 capital	10.5 %	7.0 %	NA [(f)]	6.5 %
Tier 1 capital	12.0	8.5	6.0 %	8.0
Total capital	14.0	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 its IDI subsidiaries 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 IDI subsidiaries, 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 3.5% 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's IDI subsidiaries. The CET1, Tier 1 and Total capital ratio requirements include a fixed capital conservation buffer requirement of 2.5% that is applicable to the IDI subsidiaries. The IDI subsidiaries are 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 IDI subsidiaries 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 88- 95 of the 2021 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 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. As of December 31, 2021, the eligible retained income for the Firm and JPMorgan Chase Bank, N.A was $22.0 billion and $39.2 billion, respectively. IDI subsidiaries are also subject to these capital requirements, with the exception of TLAC, established by their respective primary regulators.

Capital adequacy and Capital conservation buffer
As of December 31, 2021, JPMorgan Chase and its IDI subsidiaries were well-capitalized and met all capital requirements to which each was subject. In addition to its IDI subsidiaries, JPMorgan Chase also has other regulated subsidiaries, all of which meet applicable capital requirements.

As of December 31, 2021, the capital conservation buffer of the Firm and JPMorgan Chase Bank, N.A. was 8.6% and 9.8%, respectively, which exceeded the required capital conservation buffer of 6.0% (inclusive of the 3.5% GSIB surcharge) for the Firm and 2.5% for JPMorgan Chase Bank, N.A.

The capital conservation buffer for the Firm and IDI subsidiaries 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 large BHCs and their IDI subsidiaries, 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 ensure that large BHCs and their IDI subsidiaries 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 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 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 stress testing control 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 Regulatory Capital on pages 86-87 of the the 2021 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, 2021.

	JPMorgan Chase & Co.[c]	
As of December 31, 2021 (in millions, except ratios)	**Basel III Advanced CECL Transitional**	**Basel III Advanced CECL Fully Phased-In**
Risk-based capital metrics:		
CET1 capital	**$ 213,942**	**$ 211,061**
Tier 1 capital	**246,162**	**243,281**
Total capital[a]	**265,796**	**262,915**
Risk-weighted assets	**1,547,920**	**1,545,209**
CET1 capital ratio	**13.8 %**	**13.7 %**
Tier 1 capital ratio	**15.9**	**15.7**
Total capital ratio	**17.2**	**17.0**
Leverage-based capital metrics:		
Adjusted average assets[b]	**$ 3,782,035**	**$ 3,779,154**
Tier 1 leverage ratio	**6.5 %**	**6.4 %**
Total leverage exposure	**$ 4,571,789**	**$ 4,568,908**
SLR	**5.4 %**	**5.3 %**

	JPMorgan Chase Bank, N.A.[c]	
As of December 31, 2021 (in millions, except ratios)	Basel III Advanced CECL Transitional	Basel III Advanced CECL Fully Phased-In
Risk-based capital metrics:		
CET1 capital	$ 266,907	$ 263,994
Tier 1 capital	266,910	263,997
Total capital	272,299	269,386
Risk-weighted assets	1,392,847	1,390,126
CET1 capital ratio	19.2 %	19.0 %
Tier 1 capital ratio	19.2	19.0
Total capital ratio	19.5	19.4
Leverage-based capital metrics:		
Adjusted average assets[b]	$ 3,334,925	$ 3,332,012
Tier 1 leverage ratio	8.0 %	7.9 %
Total leverage exposure	$ 4,119,286	$ 4,116,373
SLR	6.5 %	6.4 %

(a) Total regulatory capital for JPMorgan Chase & Co. includes $302 million of surplus regulatory capital in insurance subsidiaries.

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

(c) The capital metrics reflect the CECL capital transition provisions. Additionally, loans originated under the Paycheck Protection Program ("PPP") receive a zero percent risk weight.

➢ 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 86-96 and Note 27 on pages 281-282 of the the 2021 Form 10-K.

Supplementary leverage ratio ("SLR")

The following table presents the components of the Firm's SLR as of December 31, 2021.

December 31, 2021 (in millions, except ratios)	**Basel III Advanced CECL Transitional**
Basel III Advanced Tier 1 capital	**$ 246,162**
Total spot assets	**3,743,567**
Add: Adjustments for frequency of calculations[a]	88,088
Total average assets	**3,831,655**
Less adjustments for:	
Adjustments for deductions from tier 1 capital[b]	49,998
Add adjustments for:	
Adjustment for derivative transactions	387,501
Adjustment for repo-style transactions	41,377
Off-balance sheet exposures[c]	358,373
Other[d]	2,881
Total leverage exposure	**$ 4,571,789**
Basel III Advanced SLR	**5.4 %**

(a) The adjustment for frequency of calculations represents the difference between total spot assets at December 31, 2021 and total average assets for the three months ended December 31, 2021.

(b) Adjustments for assets that are subject to deduction from Tier 1 capital are predominantly 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 the 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, 2021.

	December 31, 2021	
(in billions, except ratio)	External TLAC	LTD
Total eligible amount	$ 464.6	$ 210.4
% of RWA	28.4 %	12.8 %
Regulatory requirements	22.5	9.5
Surplus/(shortfall)	$ 95.9	$ 54.7
% of total leverage exposure	10.2 %	4.6 %
Regulatory requirements	9.5	4.5
Surplus/(shortfall)	$ 30.3	$ 4.6

For additional information on TLAC, refer to the Capital Risk Management section on pages 86-96 of the the 2021 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 2021 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 validating or changing the risk grades assigned to exposures in the Firm's wholesale credit portfolio, and assessing 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 106-132 of the 2021 Form 10-K.
- Refer to the Notes to the Consolidated Financial Statements beginning on page 165 of the 2021 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, 2021.

December 31, 2021 (in millions)	Basel III Advanced CECL Transitional RWA
Retail exposures	$ 156,902
Wholesale exposures	486,107
Counterparty exposures	144,507
Securitization exposures[(a)]	46,869
Equity exposures	66,101
Other exposures[(b)]	84,257
CVA	62,328
Less: Excess eligible credit reserves not included in Tier 2 capital	29
Total credit risk RWA	$ 1,047,042

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

Credit risk exposures

Credit risk exposures for the three months ended December 31, 2021 are contained in the the 2021 Form 10-K. Specific references to the the 2021 Form 10-K are listed below.

Traditional credit products

- Refer to Credit and Investment Risk Management beginning on page 106 for credit-related information on the consumer and wholesale portfolios.
- Refer to Note 12 on pages 229-247 for the distribution of loans by geographic region and industry.
- Refer to Note 28 on pages 283-288 for the contractual amount and geographic distribution of lending-related commitments.
- Refer to Credit Portfolio on page 109 for additional information on the various forms of assistance the Firm has granted to customers and clients impacted by the COVID-19 pandemic. Consumer and Wholesale assistance on page 112 and page 118 respectively.

Counterparty credit risk

- Refer to the Consumer Credit Portfolio section on pages 110-116, and to the Wholesale Credit Portfolio section on pages 117-128 for eligible margin loans balances.
- Refer to Wholesale Credit Portfolio footnote (e) on page 119, Country Risk on page 141.
- Refer to Note 5 on pages 196-210 for the gross positive fair value, netting benefits and net exposure of derivative receivables.
- Refer to Derivative contracts on page 126 for credit derivatives used in credit portfolio management activities.
- Refer to Credit and Investment Risk Management, Risk monitoring and management on page 107, Note 4, Credit risk concentration, on page 194-195, Note 5, Derivative instruments, on pages 196-210 and Note 11, Securities financing activities, on pages 226-228 of the 2021 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 196-210, Note 11, Securities financing activities, on pages 226-228 and Wholesale Credit Portfolio, Receivables from customers, on page 126 of the 2021 Form 10-K for a discussion of primary types of collateral taken for counterparty credit exposures.
- Refer to Note 11 on pages 227-228 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 106-132 and Note 10 on pages 220-225 for the investment securities portfolio by issuer type.

Country risk

- Refer to page 142 the top 20 country exposures (excluding the U.S.).

Allowance for credit losses

- Refer to Allowance for Credit Losses on pages 129-131 for a summary of changes in the allowance for loan losses and allowance for lending-related commitments.
- Refer to Note 13 on pages 248-252 for the allowance for credit losses and loans and lending-related commitments by impairment methodology.
- Refer to Note 10 on pages 220-225 for the allowance for credit losses on held-to-maturity securities.

Average balances

- Refer to page 296 for the Consolidated average balance sheet.

Credit Risk Mitigation

- Refer to Credit and Investment Risk Management, Risk monitoring and management on page 107, Note 1, Basis of presentation, Offsetting assets and liabilities, on pages 166-167, Note 4, Credit risk concentrations, on page 194-195, Note 5, Derivative instruments, on pages 196-210, and Note 11, Securities financing activities on pages 226-228 of the 2021 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 133, Note 4, Credit risk concentrations, on page 194-195, Note 5, Derivative instruments, on pages 196-210, and Note 11, Securities financing activities, on pages 226-228 of the 2021 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.

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.

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 loan losses.

➢ Refer to Note 4, Credit risk concentrations on page 194-195 of the 2021 Form 10-K for additional information.

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

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

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

Risk 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, 2021.

December 31, 2021 (in millions)		Basel III Advanced RWA
Residential mortgages	$	41,829
Qualifying revolving		93,930
Other retail		21,143
Total retail credit RWA	$	156,902

Residential mortgage exposures

The following table includes first lien and junior lien mortgages and revolving home equity lines of credit. First lien mortgages were 92.0% of the exposure amount, revolving exposures were 7.9%, and the remaining exposures related to junior lien mortgages. Revolving exposures were predominantly originated prior to 2010 and drive approximately 21% of the total risk weighted assets of this portfolio, with nearly 21% 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, 2021
(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	$ 140,539	$ 26,162	$ 152,304	$ 7,059	0.05	31.84	4.63
0.10 to <0.20	50,031	829	50,351	5,930	0.15	34.41	11.78
0.20 to <0.75	40,486	5,836	46,088	9,935	0.31	36.80	21.56
0.75 to <5.50	13,116	47	12,912	8,654	1.87	36.33	67.03
5.50 to <10.00	1,414	1	1,346	1,379	6.37	25.97	102.46
10.00 to < 100	2,007	1	1,928	2,813	23.98	27.78	145.91
100 (default)	6,254	12	6,197	6,059	100.00	N/A [a]	97.77 [b]
Total	$ 253,847	$ 32,888	$ 271,126	$ 41,829	2.69%	32.59%	15.43%

(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%.

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

Qualifying revolving exposures

The following table includes exposures to individuals that are revolving, unsecured and unconditionally 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, 2021
(in millions, except ratios)

PD range (%)	Balance sheet amount	Off balance sheet commitments	EAD	RWA	Exposure-weighted average		
					PD	LGD	Risk weight
0.00 to <0.50	$ 70,008	$ 651,699	$ 272,641	$ 14,384	0.09	91.49	5.28
0.50 to <2.00	35,030	49,347	45,265	17,683	1.06	93.93	39.07
2.00 to <3.50	15,282	10,210	16,831	13,072	2.62	94.05	77.67
3.50 to <5.00	13,083	2,073	13,236	13,157	3.71	94.10	99.40
5.00 to <8.00	6,482	1,616	6,550	9,747	6.90	94.39	148.80
8.00 to < 100	13,570	1,052	13,571	25,887	19.71	93.27	190.76
100 (default)	–	–	–	–	100.00	N/A	–
Total	$ 153,455	$ 715,997	$ 368,094	$ 93,930	1.30%	92.12%	25.52%

(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, 2021
(in millions, except ratios)

PD range (%)	Balance sheet amount	Off balance sheet commitments	EAD	RWA	Exposure-weighted average		
					PD	LGD	Risk weight
0.00 to <0.50	$ 46,598 [a]	$ 13,636	$ 50,516 [a]	$ 6,906 [a]	0.16	34.22	13.67
0.50 to <2.00	22,664	977	22,993	9,344	0.90	39.95	40.65
2.00 to <3.50	3,046	591	3,170	2,015	2.68	43.87	63.57
3.50 to <5.00	931	33	945	736	3.64	51.29	77.85
5.00 to <8.00	1,211	59	1,225	845	7.04	42.21	68.96
8.00 to < 10.00	1,025	5	1,032	1,071	26.44	48.92	103.74
100 (default)	149	445	593	226	100.00	N/A [b]	38.07
Total	$ 75,624	$ 15,746	$ 80,474	$ 21,143	1.69%	36.50%	26.27%

(a) As of December 31, 2021, EAD includes $5.4 billion of loans originated under the PPP, which attract a zero percent risk weight.
(b) 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, 2021 (in millions)	Basel III Advanced RWA
Corporate	$ 393,452
Bank	10,781
Sovereign	25,923
Income-producing real estate	55,824
High volatility commercial real estate	127
Total wholesale credit RWA	$ 486,107

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 $2.1 trillion, with 83% of this exposure in the first two PD ranges, which are predominantly investment-grade. Exposures meeting the Basel definition of default represent 0.1% of total EAD. The exposure-weighted average LGD for the wholesale portfolio is 26%.

December 31, 2021 (in millions, except ratios)

PD range (%)	Balance sheet amount	Off balance sheet commitments	EAD	RWA	Exposure-weighted average		
					PD	LGD	Risk weight
0.00 to <0.15	$ 1,383,784 [(a)]	$ 114,032	$ 1,468,220 [(a)]	$ 82,938 [(a)]	0.02	23.16	5.65
0.15 to <0.50	196,991	194,873	322,309	135,036	0.16	31.10	41.90
0.50 to <1.35	149,225	112,864	215,777	126,232	0.81	31.71	58.50
1.35 to <10.00	68,461	71,815	111,287	95,686	3.65	28.48	85.98
10.00 to <100	14,648	29,312	29,575	43,301	21.30	29.29	146.41
100 (default)	2,099	1,072	2,793	2,914	100.00	N/A [(b)]	104.33
Total	$ 1,815,208	$ 523,968	$ 2,149,961	$ 486,107	0.73%	25.58%	22.61%

(a) As of December 31, 2021, EAD includes $1.3 billion of loans originated under the PPP, which attract a zero percent risk weight.

(b) 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, 2021, $100.3 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 current exposure method ("CEM"). In the CEM methodology, EAD for a netting set is the sum of the mark-to-market ("MTM") value, floored at zero and an add-on amount which is based on the notional amount and a regulatory conversion factor for each derivative transaction. In the EAD calculation, exposures at the transaction level are aggregated to incorporate the effects of legally enforceable master netting agreements.

In addition, both methods incorporate 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, 2021 (in millions)		Basel III Advanced RWA
OTC derivatives	$	59,135
Repo-style transactions		46,882
Eligible margin loans		29,925
Cleared transactions		8,565
Total counterparty credit RWA	$	144,507

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 $328 billion, with 74% of this exposure in the first two PD ranges, which are predominantly investment-grade. Exposures meeting the Basel definition of default represent 0.1% of total EAD. The exposure-weighted average LGD for this portfolio is 40%. The collateral benefit is reflected primarily in the EAD.

December 31, 2021
(in millions, except ratios)

			Exposure-weighted average		
PD range (%)	EAD	RWA	PD	LGD	Risk weight
0.00 to <0.15	$ 151,699	$ 24,500	0.07	39.01	16.15
0.15 to <0.50	90,215	40,444	0.29	41.97	44.83
0.50 to <1.35	55,801	37,933	0.87	41.34	67.98
1.35 to <10.00	28,132	28,372	3.38	36.44	100.85
10.00 to <100	2,005	4,306	22.94	39.24	214.75
100 (default)	378	387	100.00	N/A [(a)]	102.35
Total	$ 328,230	$ 135,942	0.81%	39.99%	41.42%

(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, 2021, $4.7 billion of EAD for OTC derivatives is covered by eligible guarantees.

SECURITIZATION

Securitizations are transactions in which:

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

Securitizations are classified as either traditional or synthetic. In a traditional securitization, the originator establishes a special purpose entity ("SPE") and sells assets (either originated or purchased) off its balance sheet into the SPE, which issues securities to investors. In a synthetic securitization, credit risk is transferred to 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 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. 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 15 on pages 165-168 and 261-264, respectively, of the 2021 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 169-189 of the 2021 Form 10-K for a discussion on the valuation of retained or purchased securitization interests.
- Refer to Note 13, Loans held-for-sale, on page 250, Note 2, the valuation methodology table on page 171, and Note 15, Loan securitizations on page 161, of the 2021 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 283-288 of the 2021 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 that are presented in the Market Risk section). The amounts include traditional and synthetic securitization exposures with re-securitizations shown separately based on SFA and SSFA.

	Securitization							
	SFA		SSFA		1250%		Total	
December 31, 2021 (in millions)	Exposure	RWA	Exposure	RWA	Exposure	RWA	Exposure	RWA
Risk weight								
= 0% ≤ 20%	$ 88,110	$ 18,125	$ 113,430	$ 23,954	$ –	$ –	$ 201,540	$ 42,079
> 20% ≤ 50%	3,198	891	7,825	2,223	–	–	11,023	3,114
> 50% ≤ 100%	313	209	1,277	852	–	–	1,590	1,061
> 100% < 1250%	60	361	844	2,581	–	–	904	2,942
= 1250%	2	23	18	233	68	898	88	1,154
Securitization, excluding re-securitization	$ 91,683	$ 19,609	$ 123,394	$ 29,843	$ 68	$ 898	$ 215,145	$ 50,350

	Re-securitization							
	SFA		SSFA		1250%		Total	
December 31, 2021 (in millions)	Exposure	RWA	Exposure	RWA	Exposure	RWA	Exposure	RWA
Risk weight								
= 0% ≤ 20%	$ 49	$ 11	$ 655	$ 139	$ –	$ –	$ 704	$ 150
> 20% ≤ 50%	1	–	–	–	–	–	1	–
> 50% ≤ 100%	–	–	–	–	–	–	–	–
> 100% < 1250%	–	–	12	75	–	–	12	75
= 1250%	–	–	2	33	–	–	2	33
Re-securitization[(a)]	$ 50	$ 11	$ 669	$ 247	$ –	$ –	$ 719	$ 258
Total securitization[(b)]	$ 91,733	$ 19,620	$ 124,063	$ 30,090	$ 68	$ 898	$ 215,864	$ 50,608

(a) As of December 31, 2021, there were no re-securitizations to which credit risk mitigation has been applied.

(b) Total securitization RWA includes $3.7 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, 2021 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 that are presented in the Market Risk section) by type of underlying collateral. These exposures arise from both traditional and synthetic securitization transactions.

December 31, 2021 (in millions)	Exposure			RWA
	On-balance sheet	Off-balance sheet[a]	Total	
Collateral type:				
Residential mortgages	$ 43,259	$ 605	$ 43,864	$ 10,832
Commercial mortgages	30,001	460	30,461	7,487
Commercial and industrial loans	78,723	3,330	82,053	18,009
Consumer auto loans	17,376	7,900	25,276	5,729
Student loans	6,997	1,376	8,373	1,968
Municipal bonds	30	6,194	6,224	1,485
Other	15,787	3,826	19,613	5,098
Total securitization exposure	$ 192,173	$ 23,691	$ 215,864	$ 50,608

(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, 2021, losses recognized on securitized assets was zero.

December 31, 2021 (in millions)	Principal amount outstanding			Assets 90 days past due or on nonaccrual status
	JPMorgan Chase assets held in traditional securitizations[a]	Third-party assets held in traditional securitizations[a]	JPMorgan Chase assets in synthetic securitizations	
Collateral type:				
Residential mortgages	$ 61,553	$ 5	$ 3,334	$ 4,556
Commercial mortgages	42,855	60,873	–	1,723
Commercial and industrial loans	–	–	3,536	–
Consumer auto loans	–	–	2,019	1
Student loans	–	–	–	–
Municipal bonds	–	–	–	–
Other	–	52	668	–
Total	$ 104,408	$ 60,930	$ 9,557	$ 6,280

(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, 2021, and the Firm's securitization activities for the twelve months ended December 31, 2021, 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, 2021	twelve months ended December 31, 2021		
Collateral type:				
Residential mortgages	$ 41,991	$ 23,384	$ 492	$ 2,364
Commercial mortgages	2,433	12,076	2,841	–
Commercial and industrial loans	2,000	–	–	–
Consumer auto loans	18,300	–	–	–
Student loans	–	–	–	–
Municipal bonds	–	–	–	–
Other	–	–	–	74
Total	$ 64,724	$ 35,460	$ 3,333	$ 2,438

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 investments will continue to evolve in line with its strategies, including the Firm's commitment to support underserved communities and minority-owned businesses. 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 ("COLI"/"BOLI") and certain asset management activities.

- Refer to Note 8 on pages 218-219 of the 2021 Form 10-K for a discussion of COLI and the related investment strategy and asset allocation.

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 132 of the 2021 Form 10-K for a discussion of investment risk management related to principal investments.
- Refer to Note 1 on pages 165-168 of the 2021 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 169-189 of the 2021 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, 2021 (in millions)				
Risk-weight category	Exposure[a]		RWA	
0%	$ 5,294	[b]	$ –	
20%	307		65	
100%	34,379		36,442	
250%	2,050		5,431	
300%	4		13	
400%	1,729		7,330	
600%	59		374	
Simple Modified Look-Through Approach	125		81	
Full Look-Through Approach	24,913		16,365	
Total	$ 68,860		$ 66,101	

(a) Includes off-balance sheet unfunded commitments for equity investments of $6.7 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, 2021 (in millions)	Carrying value	Fair value
Publicly traded	$ 27,381	$ 27,397
Non-publicly traded	34,600	46,063
Total	$ 61,981	$ 73,460

Realized gains/(losses)

Cumulative realized gains/(losses) from sales and liquidations during the three months ended December 31, 2021 were $237 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 $11.5 billion as of December 31, 2021.

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 133-140 of the 2021 Form 10-K .
- Refer to page 133 of the 2021 Form 10-K for a discussion of Managing Market Risks in response to the COVID-19 pandemic.

Measures included in market risk RWA
The following table presents the Firm's market risk-based capital and risk-weighted assets at December 31, 2021. The components of market risk RWA are discussed in detail in the Regulatory market risk capital models section on pages 29-32 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, 2021 (in millions)	Risk-based capital	RWA
Internal models:		
Value-at-Risk based measure ("VBM")	$ 647	$ 8,090
Stressed Value-at-Risk based measure ("SVBM")	2,021	25,267
Incremental risk charge ("IRC")	1,412	17,646
Comprehensive risk measure ("CRM")	144	1,797
Total internal models	4,224	52,800
Non-modeled specific risk	3,234	40,424
Other charges	183	2,282
Total Market risk	$ 7,641	$ 95,506

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 61-62 and 67-72 of the 2021 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 to senior management, the Board of Directors and regulators.

- Refer to pages 133-140 of the 2021 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 pages 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.

As required by the Basel III capital rules, the Firm calculates Regulatory VaR assuming a 10-day holding period and an expected tail loss methodology, which approximates a 99% confidence level.

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.

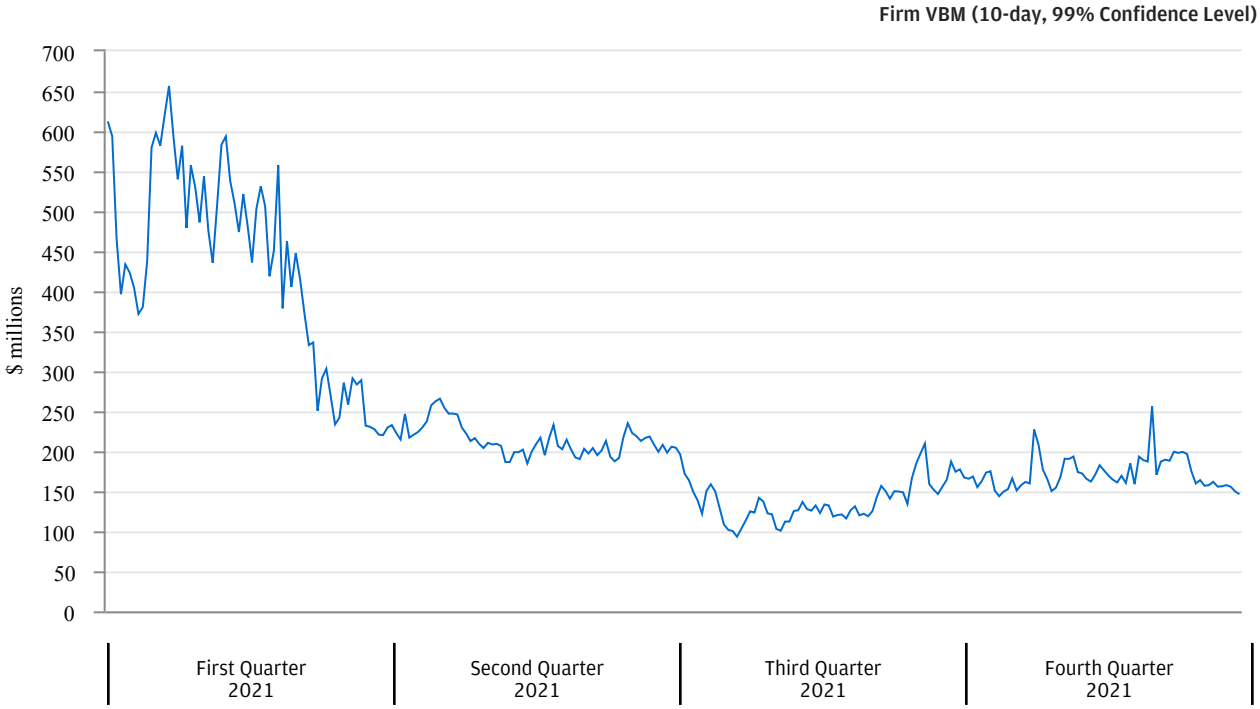
Regulatory market risk capital models

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 VaR-based measure, assuming a 10-day holding period, for the 12 months ending December 31, 2021.

Daily VaR-Based Measure Results



CIB VaR-Based Measure ("VBM")

For the three months ended December 31, 2021, average CIB VBM was $174 million.

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

	Three months ended December 31, 2021 [a]			
(in millions)	Avg	Min	Max	December 31, 2021
CIB 10-day VBM by risk type				
Interest rate	$158	$116	$ 261	$ 155
Credit spread	89	78	112	85
Foreign exchange	21	12	45	14
Equities	60	49	104	60
Commodities and other	60	41	73	47
Diversification benefit	(214) [b]	NM [c]	NM [b]	(209) [a]
Total CIB 10-day VBM	174	145	252	152
Total Firm 10-day VBM	$173	$144	$ 256	$ 146

(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.

These gains and losses differ from the Firm's reported revenue as they exclude select 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, certain 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.

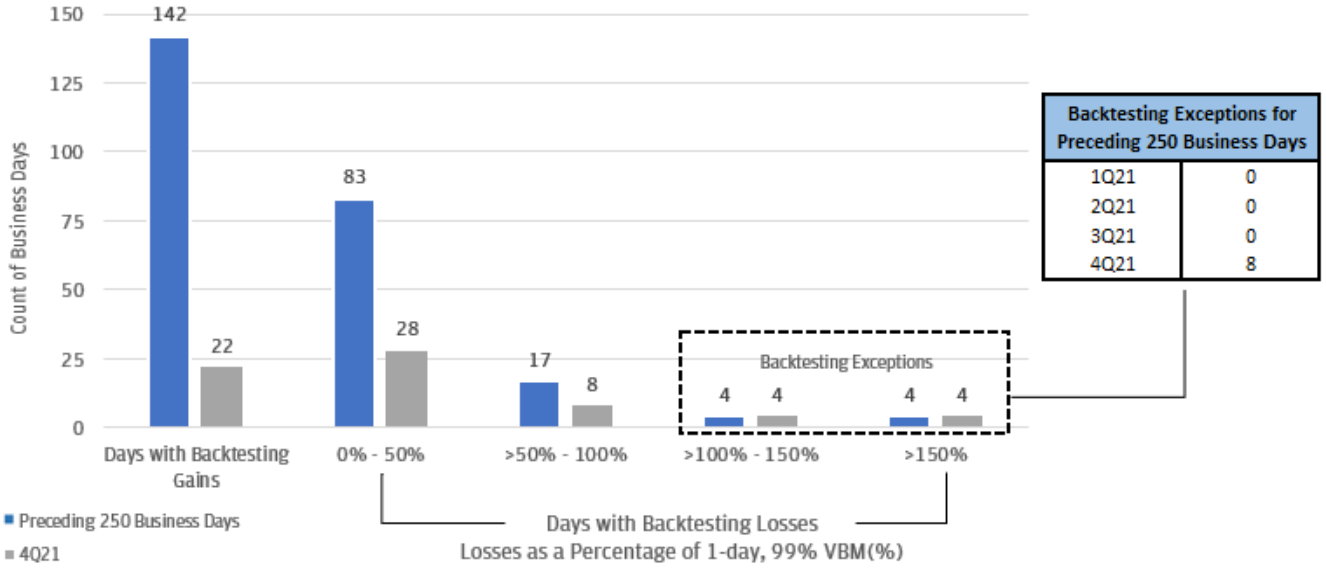
A backtesting exception occurs when the daily backtesting loss exceeds the daily VaR-based measure for the prior day.

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 on average one backtesting exception every 100 trading days.

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, 2021. 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, eight backtesting exceptions were observed in the three months ended December 31, 2021 as market volatility, particularly related to interest rates, was materially higher than the market volatility during the historical period used to calibrate the VaR Model.

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, 2021, the Firm's regulatory multiplier was 3.75.

Three months ended December 31, 2021 (in millions)	Risk-based capital	RWA
Firm modeled VBM	$ 647	$ 8,090

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 at least weekly assuming a 10-day holding period and a 99% confidence level.

The following table presents the average, minimum, maximum and the quarter-end spot measure for 4Q21 for CIB and the Firm.

	Three months ended December 31, 2021 [a]			
(in millions)	Avg.	Min	Max	December 31, 2021
Total CIB 10-day SVBM	$ 545	$ 415	$ 705	$ 415
Total Firm 10-day SVBM	$ 539	$ 374	$ 713	$ 374

(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, 2021, the Firm's regulatory multiplier was 3.75.

Three months ended December 31, 2021 (in millions)	Risk-based capital	RWA
Firm modeled SVBM	2,021	$ 25,267

Incremental Risk Charge ("IRC")

The IRC measure captures the risks of issuer default and credit migration that are incremental to the risks already captured in the VBM. The model is intended to measure the potential loss over a one-year holding period at a 99.9% confidence level and is applicable to debt positions that are not correlation trading or securitization positions. The IRC is calculated 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 non-linear 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, 2021 [a]			
(in millions)	Avg.	Min	Max	December 31, 2021
CIB IRC on trading positions	$ 924	$ 485	$ 1,653	$ 1,412

(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 IRC risk-based capital requirement for the CIB, which is the same as the risk measure itself. IRC reflects the higher of the quarterly average and period-end spot measure under the Basel III capital rules.

Three months ended December 31, 2021 (in millions)	Risk-based capital	RWA
Total CIB IRC	$ 1,412	$ 17,646

Comprehensive Risk Measure ("CRM")

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

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

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, 2021 [(a)]			
(in millions)	Avg.	Min	Max	December 31, 2021
CIB CRM	$ 118	$ 94	$ 159	$ 144

(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 CRM risk-based capital requirement for the CIB, which is the same as the risk measure itself. CRM reflects the higher of the quarterly average and period-end spot measure under the Basel III capital rules.

Three months ended December 31, 2021 (in millions)	Risk-based capital	RWA
Total CIB CRM	$ 144	$ 1,797

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, 2021 (in millions)	Notional amount[(a)]	Fair value[(b)]
Positions modeled in CRM	$ (541)	$ (96)
Positions not modeled in CRM	–	(7)
Total correlation trading positions	$ (541)	$ (103)

(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, 2021 (in millions)	Risk-based capital	RWA
Securitization positions[(a)]	$ 299	$ 3,739
Non-securitization positions	2,935	36,685
Total Non-modeled specific risk	$ 3,234	$ 40,424

(a) Represents Securitization RWA for covered positions only.

Other charges

Other charges reflect exposures receiving alternative capital treatments.

December 31, 2021 (in millions)	Risk-based capital	RWA
Total Firm other charges	$ 183	$ 2,282

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 model output.

The output of models, and the models' response to changes in inputs, are evaluated via outcomes analysis which includes: 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 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 149 of the 2021 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 86-87 of the 2021 Form 10-K.

➢ Refer to page 133 of the 2021 Form 10-K for a discussion of Managing Market Risks in response to the COVID-19 pandemic.

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 143-149 of the 2021 Form 10-K for a discussion of Operational Risk Management and page 93 of Capital Risk Management for operational risk RWA.

Operational Risk Measurement

- Refer to Operational Risk Management on page 143 of the 2021 Form 10-K for information related to operational risk measurement.

Other operational risks

- Refer to Operational Risk Management on pages 144-145 of the 2021 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

Earnings-at-risk

The effect of interest rate exposure on the Firm's reported net income is important as interest rate risk represents one of the Firm's significant market risks. Interest rate risk arises not only from trading activities but also from the Firm's traditional banking activities, which include extension of loans and credit facilities, taking deposits, issuing debt and the investment securities portfolio.

- Refer to pages 138-139 of the 2021 Form 10-K for a detailed discussion of Earnings-at-risk.
- Refer to the table on page 140 of the 2021 Form 10-K for a summary of positions included in earnings-at-risk.

SUPPLEMENTARY LEVERAGE RATIO

The SLR is defined as Tier 1 capital under the Basel III capital rules divided by the Firm's total leverage exposure. The tables below present the components of the Firm's SLR as of December 31, 2021 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, 2021 (in millions, except ratios)	Basel III Advanced CECL Transitional
Basel III Advanced Tier 1 capital	**$ 246,162**
Total spot assets	3,743,567
Add: Adjustments for frequency of calculations[(a)]	88,088
Total average assets	**3,831,655**
Less adjustments for:	
Adjustments for deductions from Tier 1 capital[(b)]	49,998
Add adjustments for:	
Adjustment for derivative transactions	387,501
Adjustment for repo-style transactions	41,377
Adjustment for off-balance sheet exposures[(c)]	358,373
Other[(d)]	2,881
Total leverage exposure	**$ 4,571,789**
Basel III Advanced SLR	**5.4 %**

(a) The adjustment for frequency of calculations represents the difference between total spot assets at December 31, 2021, and average assets for the three months ended December 31, 2021.
(b) Adjustments for assets that are subject to deduction from Tier 1 capital are predominantly 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, 2021
Replacement cost for all derivative transactions[(a)]	$ 65,934
Add-on amounts for potential future exposure ("PFE") for all derivative transactions	365,687
Gross-up for collateral posted in derivative transactions if collateral is deducted from on-balance sheet assets	1,389
Less: Exempted exposures to central counterparties ("CCPs") in cleared transactions	18,125
Adjusted effective notional principal amount of sold credit protection	561,687
Less: Effective notional principal amount offsets and PFE deductions for sold credit protection	523,519
Total derivative exposure[(b)]	**453,053**
Less: On-balance-sheet average derivative receivables	65,552
Adjustment for derivative transactions	**$ 387,501**

(a) Includes cash collateral received of $2.9 billion.
(b) Receivables for cash variation margin that are posted under a qualifying derivative contract where the Firm has obtained an appropriate legal opinion with respect to master netting agreements with the same counterparty, and where other relevant criteria under U.S. GAAP are met, are netted against derivative liabilities and are not included in on-balance sheet assets.

Repo-style transactions

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

(in millions)	December 31, 2021
Gross assets for repo-style transactions[(a)]	$ 820,109
Less: amounts netted[(b)]	345,420
Add: Counterparty credit risk for all repo-style transactions	42,494
Exposure amount for repo-style transactions where the Firm acts as an agent[(c)]	200
Total exposures for repo-style exposures	**517,383**
Less: on-balance sheet amounts	
Securities purchased under resale agreements	268,947
Securities borrowed	207,059
Adjustment for repo-style transactions	**$ 41,377**

(a) Excludes the value of securities received as collateral where the Firm as securities lender has not sold or rehypothecated the collateral securities received.
(b) Reflects netting of transactions where the Firm has obtained an appropriate legal opinion with respect to master netting agreements with the same counterparty, and where other relevant criteria under U.S. GAAP are met.
(c) Includes exposures where the Firm's guarantee is greater than the difference between the fair value of the security or cash the Firm's customer has lent and the value of the collateral provided.

Other off-balance sheet exposures

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

(in millions)	December 31, 2021
Off-balance sheet exposures - gross notional amounts	$ 1,334,171
Less: Adjustments for conversion to credit equivalent amounts	975,798
Adjustment for other off-balance sheet exposures	**$ 358,373**

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 169-189 in the Note 2 of the 2021 Form 10-K.

- Refer to Note 2 on page 212 of the the 2021 Form 10-K, for information on credit and funding valuation adjustments.

References to JPMorgan Chase's 2021 Form 10-K

JPMorgan Chase's the 2021 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

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