

Management's report on internal control over financial reporting

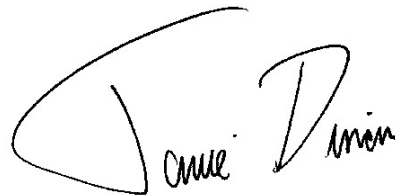
Management of JPMorgan Chase & Co. ("JPMorganChase" or the "Firm") is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed by, or under the supervision of, the Firm's principal executive and principal financial officers, or persons performing similar functions, and effected by JPMorganChase's Board of Directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP").

JPMorganChase's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records, that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the Firm's assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. GAAP, and that receipts and expenditures of the Firm are being made only in accordance with authorizations of JPMorganChase's management and directors; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Firm's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. Management has completed an assessment of the effectiveness of the Firm's internal control over financial reporting as of December 31, 2024. In making the assessment, management used the "Internal Control — Integrated Framework" ("COSO 2013") promulgated by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO").

Based upon the assessment performed, management concluded that as of December 31, 2024, JPMorganChase's internal control over financial reporting was effective based upon the COSO 2013 framework. Additionally, based upon management's assessment, the Firm determined that there were no material weaknesses in its internal control over financial reporting as of December 31, 2024.

The effectiveness of the Firm's internal control over financial reporting as of December 31, 2024, has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears herein.



James Dimon
Chairman and Chief Executive Officer



Jeremy Barnum
Executive Vice President and Chief Financial Officer

February 14, 2025

Report of Independent Registered Public Accounting Firm



To the Board of Directors and Shareholders of JPMorgan Chase & Co.:

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of JPMorgan Chase & Co. and its subsidiaries (the "Firm") as of December 31, 2024 and 2023, and the related consolidated statements of income, comprehensive income, changes in stockholders' equity and cash flows for each of the three years in the period ended December 31, 2024, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Firm's internal control over financial reporting as of December 31, 2024, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Firm as of December 31, 2024 and 2023, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2024 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Firm maintained, in all material respects, effective internal control over financial reporting as of December 31, 2024, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Firm's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's report on internal control over financial reporting. Our responsibility is to express opinions on the Firm's consolidated financial statements and on the Firm's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Firm in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial

statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Report of Independent Registered Public Accounting Firm

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Allowance for Loan Losses – Portfolio-based component of Wholesale Loan and Credit Card Loan Portfolios

As described in Note 13 to the consolidated financial statements, the allowance for loan losses for the portfolio-based component of the wholesale and credit card loan portfolios was \$22.0 billion on total portfolio-based retained loans of \$919.3 billion at December 31, 2024. The Firm's allowance for loan losses represents management's estimate of expected credit losses over the remaining expected life of the Firm's loan portfolios and considers expected future changes in macroeconomic conditions. The portfolio-based component of the Firm's allowance for loan losses for the wholesale and credit card retained loan portfolios begins with a quantitative calculation of expected credit losses over the expected life of the loan by applying credit loss factors to the estimated exposure at default. The credit loss factors applied are determined based on the weighted average of five internally developed macroeconomic scenarios that take into consideration the Firm's economic outlook as derived through forecast macroeconomic variables, the most significant of which are U.S. unemployment and U.S. real gross domestic product. This quantitative calculation is further adjusted to take into consideration model imprecision, emerging risk assessments, trends and other subjective factors that are not yet otherwise reflected in the credit loss estimate.

The principal considerations for our determination that performing procedures relating to the allowance for loan losses for the portfolio-based component of the wholesale and credit card loan portfolios is a critical audit matter are (i) the significant judgment and estimation by management in the forecast of macroeconomic variables, specifically U.S. unemployment and U.S. real gross domestic product, as the Firm's forecasts of economic conditions significantly affect its estimate of expected credit losses at the balance sheet date, (ii) the significant

judgment and estimation by management in determining the quantitative calculation utilized in their credit loss estimates and the adjustments to take into consideration model imprecision, emerging risk assessments, trends and other subjective factors that are not yet otherwise reflected in the credit loss estimate, which in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and in evaluating audit evidence obtained relating to the credit loss estimates and the appropriateness of the adjustments to the credit loss estimates, and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the Firm's allowance for loan losses, including controls over model validation and generation of macroeconomic scenarios. These procedures also included, among others, testing management's process for estimating the allowance for loan losses, which involved (i) evaluating the appropriateness of the models and methodologies used in quantitative calculations; (ii) evaluating the reasonableness of forecasts of U.S. unemployment and U.S. real gross domestic product; (iii) testing the completeness and accuracy of data used in the estimate; and (iv) evaluating the reasonableness of management's adjustments to the quantitative output for the impacts of model imprecision, emerging risk assessments, trends and other subjective factors that are not yet otherwise reflected in the credit loss estimate. These procedures also included the use of professionals with specialized skill and knowledge to assist in evaluating the appropriateness of certain models, methodologies and macroeconomic variables.

Fair Value of Certain Level 3 Financial Instruments

As described in Notes 2 and 3 to the consolidated financial statements, the Firm carries \$1.5 trillion of its assets and \$586.2 billion of its liabilities at fair value on a recurring basis. Included in these balances are \$10.9 billion of trading assets and \$51.8 billion of liabilities measured at fair value on a recurring basis, collectively financial instruments, which are classified as level 3 as they contain one or more inputs to valuation which are unobservable and significant to their fair value measurement. The Firm utilized internally developed valuation models and unobservable inputs to estimate fair value of the level 3 financial instruments. The unobservable inputs used by management to estimate the fair value of certain of these financial instruments include interest rate volatility, equity volatility, Bermudan switch value and correlation relating to interest rates, interest rate-to-foreign exchange,

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equity prices, equity-to-foreign exchange and equity-to-interest rate.

The principal considerations for our determination that performing procedures relating to the fair value of certain level 3 financial instruments is a critical audit matter are (i) the significant judgment and estimation by management in determining the inputs to estimate fair value, which in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and in evaluating audit evidence obtained related to the fair value of these financial instruments, and (ii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the Firm's determination of the fair value, including controls over models, inputs, and data. These procedures also included, among others, the involvement of professionals with specialized skill and knowledge to assist in developing an independent estimate of fair value for a sample of these financial instruments and comparing management's estimate to the independently developed estimate of fair value. Developing the independent estimate involved testing the completeness and accuracy of data provided by management, developing independent inputs and, as appropriate, evaluating and utilizing management's aforementioned unobservable inputs.

A handwritten signature in black ink that reads "PricewaterhouseCoopers LLP". The signature is written in a cursive, flowing style.

New York, New York
February 14, 2025

We have served as the Firm's auditor since 1965.

JPMorgan Chase & Co.
Consolidated statements of income

Year ended December 31, (in millions, except per share data)	2024	2023	2022
Revenue			
Investment banking fees	\$ 8,910	\$ 6,519	\$ 6,686
Principal transactions	24,787	24,460	19,912
Lending- and deposit-related fees	7,606	7,413	7,098
Asset management fees	17,801	15,220	14,096
Commissions and other fees	7,530	6,836	6,581
Investment securities losses	(1,021)	(3,180)	(2,380)
Mortgage fees and related income	1,401	1,176	1,250
Card income	5,497	4,784	4,420
Other income	12,462	5,609	4,322
Noninterest revenue	84,973	68,837	61,985
Interest income	193,933	170,588	92,807
Interest expense	101,350	81,321	26,097
Net interest income	92,583	89,267	66,710
Total net revenue	177,556	158,104	128,695
Provision for credit losses	10,678	9,320	6,389
Noninterest expense			
Compensation expense	51,357	46,465	41,636
Occupancy expense	5,026	4,590	4,696
Technology, communications and equipment expense	9,831	9,246	9,358
Professional and outside services	11,057	10,235	10,174
Marketing	4,974	4,591	3,911
Other expense	9,552	12,045	6,365
Total noninterest expense	91,797	87,172	76,140
Income before income tax expense	75,081	61,612	46,166
Income tax expense	16,610	12,060	8,490
Net income	\$ 58,471	\$ 49,552	\$ 37,676
Net income applicable to common stockholders	\$ 56,868	\$ 47,760	\$ 35,892
Net income per common share data			
Basic earnings per share	\$ 19.79	\$ 16.25	\$ 12.10
Diluted earnings per share	19.75	16.23	12.09
Weighted-average basic shares	2,873.9	2,938.6	2,965.8
Weighted-average diluted shares	2,879.0	2,943.1	2,970.0

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

JPMorgan Chase & Co.
Consolidated statements of comprehensive income

Year ended December 31, (in millions)	2024		2023		2022	
Net income	\$	58,471	\$	49,552	\$	37,676
Other comprehensive income/(loss), after-tax						
Unrealized gains/(losses) on investment securities		(87)		5,381		(11,764)
Translation adjustments, net of hedges		(858)		329		(611)
Fair value hedges		(87)		(101)		98
Cash flow hedges		(882)		1,724		(5,360)
Defined benefit pension and OPEB plans		(63)		373		(1,241)
DVA on fair value option elected liabilities		(36)		(808)		1,621
Total other comprehensive income/(loss), after-tax		(2,013)		6,898		(17,257)
Comprehensive income	\$	56,458	\$	56,450	\$	20,419

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

JPMorgan Chase & Co.
Consolidated balance sheets

December 31, (in millions, except share data)	2024	2023
Assets		
Cash and due from banks	\$ 23,372	\$ 29,066
Deposits with banks	445,945	595,085
Federal funds sold and securities purchased under resale agreements (included \$286,771 and \$259,813 at fair value)	295,001	276,152
Securities borrowed (included \$83,962 and \$70,086 at fair value)	219,546	200,436
Trading assets (included assets pledged of \$136,070 and \$128,994)	637,784	540,607
Available-for-sale securities (amortized cost of \$411,045 and \$205,456; included assets pledged of \$10,162 and \$9,219)	406,852	201,704
Held-to-maturity securities	274,468	369,848
Investment securities, net of allowance for credit losses	681,320	571,552
Loans (included \$41,350 and \$38,851 at fair value)	1,347,988	1,323,706
Allowance for loan losses	(24,345)	(22,420)
Loans, net of allowance for loan losses	1,323,643	1,301,286
Accrued interest and accounts receivable	101,223	107,363
Premises and equipment	32,223	30,157
Goodwill, MSRs and other intangible assets	64,560	64,381
Other assets (included \$15,122 and \$12,306 at fair value and assets pledged of \$6,288 and \$6,764)	178,197	159,308
Total assets^(a)	\$ 4,002,814	\$ 3,875,393
Liabilities		
Deposits (included \$33,768 and \$78,384 at fair value)	\$ 2,406,032	\$ 2,400,688
Federal funds purchased and securities loaned or sold under repurchase agreements (included \$226,329 and \$169,003 at fair value)	296,835	216,535
Short-term borrowings (included \$26,521 and \$20,042 at fair value)	52,893	44,712
Trading liabilities	192,883	180,428
Accounts payable and other liabilities (included \$5,893 and \$5,637 at fair value)	280,672	290,307
Beneficial interests issued by consolidated VIEs (included \$1 and \$1 at fair value)	27,323	23,020
Long-term debt (included \$100,780 and \$87,924 at fair value)	401,418	391,825
Total liabilities^(a)	3,658,056	3,547,515
Commitments and contingencies (refer to Notes 28, 29 and 30)		
Stockholders' equity		
Preferred stock (\$1 par value; authorized 200,000,000 shares; issued 2,005,375 and 2,740,375 shares)	20,050	27,404
Common stock (\$1 par value; authorized 9,000,000,000 shares; issued 4,104,933,895 shares)	4,105	4,105
Additional paid-in capital	90,911	90,128
Retained earnings	376,166	332,901
Accumulated other comprehensive losses	(12,456)	(10,443)
Treasury stock, at cost (1,307,313,494 and 1,228,275,301 shares)	(134,018)	(116,217)
Total stockholders' equity	344,758	327,878
Total liabilities and stockholders' equity	\$ 4,002,814	\$ 3,875,393

(a) The following table presents information on assets and liabilities related to VIEs that are consolidated by the Firm at December 31, 2024 and 2023. The assets of the consolidated VIEs are used to settle the liabilities of those entities. The holders of the beneficial interests do not have recourse to the general credit of JPMorganChase. The assets and liabilities in the table below include third-party assets and liabilities of consolidated VIEs and exclude intercompany balances that eliminate in consolidation. Refer to Note 14 for a further discussion.

December 31, (in millions)	2024	2023
Assets		
Trading assets	\$ 3,885	\$ 2,170
Loans	36,510	37,611
All other assets	681	591
Total assets	\$ 41,076	\$ 40,372
Liabilities		
Beneficial interests issued by consolidated VIEs	\$ 27,323	\$ 23,020
All other liabilities	454	263
Total liabilities	\$ 27,777	\$ 23,283

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

JPMorgan Chase & Co.

Consolidated statements of changes in stockholders' equity

Year ended December 31, (in millions, except per share data)	2024	2023	2022
Preferred stock			
Balance at January 1	\$ 27,404	\$ 27,404	\$ 34,838
Issuance	2,496	—	—
Redemption	(9,850)	—	(7,434)
Balance at December 31	20,050	27,404	27,404
Common stock			
Balance at January 1 and December 31	4,105	4,105	4,105
Additional paid-in capital			
Balance at January 1	90,128	89,044	88,415
Shares issued and commitments to issue common stock for employee share-based compensation awards, and related tax effects	768	1,084	629
Other	15	—	—
Balance at December 31	90,911	90,128	89,044
Retained earnings			
Balance at January 1	332,901	296,456	272,268
Cumulative effect of change in accounting principles	(161)	449	—
Net income	58,471	49,552	37,676
Preferred stock dividends	(1,259)	(1,501)	(1,595)
Common stock dividends (\$4.80, \$4.10 and \$4.00 per share for 2024, 2023 and 2022, respectively)	(13,786)	(12,055)	(11,893)
Balance at December 31	376,166	332,901	296,456
Accumulated other comprehensive income/(loss)			
Balance at January 1	(10,443)	(17,341)	(84)
Other comprehensive income/(loss), after-tax	(2,013)	6,898	(17,257)
Balance at December 31	(12,456)	(10,443)	(17,341)
Treasury stock, at cost			
Balance at January 1	(116,217)	(107,336)	(105,415)
Repurchase	(19,007)	(9,980)	(3,122)
Reissuance	1,206	1,099	1,201
Balance at December 31	(134,018)	(116,217)	(107,336)
Total stockholders' equity	\$ 344,758	\$ 327,878	\$ 292,332

Effective January 1, 2024, the Firm adopted the Equity Method and Joint Ventures: Accounting for Investments in Tax Credit Structures Using the Proportional Amortization Method accounting guidance. Effective January 1, 2023, the Firm adopted the Financial Instruments – Credit Losses: Troubled Debt Restructurings, and Derivatives and Hedging: Fair Value Hedging – Portfolio Layer Method accounting guidance. Refer to Note 1 for further information.

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

JPMorgan Chase & Co.

Consolidated statements of cash flows

Year ended December 31, (in millions)	2024	2023	2022
Operating activities			
Net income	\$ 58,471	\$ 49,552	\$ 37,676
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for credit losses	10,678	9,320	6,389
Depreciation and amortization	7,938	7,512	7,051
Deferred tax (benefit)/expense	2,004	(4,534)	(2,738)
Estimated bargain purchase gain associated with the First Republic acquisition	(103)	(2,775)	—
Initial gain on the Visa share exchange	(7,990)	—	—
Other	1,985	4,301	5,174
Originations and purchases of loans held-for-sale	(212,238)	(115,245)	(149,167)
Proceeds from sales, securitizations and paydowns of loans held-for-sale	205,303	116,430	167,709
Net change in:			
Trading assets	(95,729)	(74,091)	(31,449)
Securities borrowed	(18,762)	(14,902)	20,203
Accrued interest and accounts receivable	5,735	19,928	(22,970)
Other assets	(7,650)	32,970	(2,882)
Trading liabilities	2,276	5,315	11,170
Accounts payable and other liabilities	(90)	(25,388)	58,614
Other operating adjustments	6,160	4,581	2,339
Net cash (used in)/provided by operating activities	(42,012)	12,974	107,119
Investing activities			
Net change in:			
Federal funds sold and securities purchased under resale agreements	(18,706)	39,740	(54,278)
Held-to-maturity securities:			
Proceeds from paydowns and maturities	99,363	53,056	48,626
Purchases	(4,709)	(4,141)	(33,676)
Available-for-sale securities:			
Proceeds from paydowns and maturities	38,499	53,744	39,159
Proceeds from sales	104,625	108,434	84,616
Purchases	(352,712)	(115,499)	(126,258)
Proceeds from sales and securitizations of loans held-for-investment	57,921	47,312	44,892
Other changes in loans, net	(83,176)	(88,343)	(128,968)
Net cash used in First Republic Acquisition	(2,362)	(9,920)	—
All other investing activities, net	(2,146)	(16,740)	(11,932)
Net cash (used in)/provided by investing activities	(163,403)	67,643	(137,819)
Financing activities			
Net change in:			
Deposits	3,299	(32,196)	(136,895)
Federal funds purchased and securities loaned or sold under repurchase agreements	80,288	13,801	8,455
Short-term borrowings	7,439	(1,934)	(8,984)
Beneficial interests issued by consolidated VIEs	1,543	9,029	2,205
Proceeds from long-term borrowings	109,915	75,417	78,442
Payments of long-term borrowings	(96,605)	(64,880)	(45,556)
Proceeds from issuance of preferred stock	2,500	—	—
Redemption of preferred stock	(9,850)	—	(7,434)
Treasury stock repurchased	(18,830)	(9,824)	(3,162)
Dividends paid	(14,783)	(13,463)	(13,562)
All other financing activities, net	(1,469)	(1,521)	234
Net cash provided by/(used in) financing activities	63,447	(25,571)	(126,257)
Effect of exchange rate changes on cash and due from banks and deposits with banks	(12,866)	1,871	(16,643)
Net increase/(decrease) in cash and due from banks and deposits with banks	(154,834)	56,917	(173,600)
Cash and due from banks and deposits with banks at the beginning of the period	624,151	567,234	740,834
Cash and due from banks and deposits with banks at the end of the period	\$ 469,317	\$ 624,151	\$ 567,234
Cash interest paid	\$ 99,642	\$ 77,114	\$ 23,143
Cash income taxes paid, net	11,715	9,908	4,355

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

Note 1 – Basis of presentation

JPMorgan Chase & Co. (“JPMorganChase” or the “Firm”), a financial holding company incorporated under Delaware law in 1968, is a leading financial services firm based in the U.S., with operations worldwide. The Firm is a leader in investment banking, financial services for consumers and small businesses, commercial banking, financial transaction processing and asset management. Refer to Note 32 for further discussion of the Firm’s reportable business segments.

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

Consolidation

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

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

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

Voting interest entities

Voting interest entities are entities that have sufficient equity and provide the equity investors voting rights that enable them to make significant decisions relating to the entity’s operations. For these types of entities, the Firm’s determination of whether it has a controlling interest is primarily based on the amount of voting equity interests held. Entities in which the Firm has a controlling financial interest, through ownership of the majority of the entities’ voting equity interests, or through other contractual rights that give the Firm control, are consolidated by the Firm.

Investments in companies in which the Firm has significant influence over operating and financing decisions (but does not own a majority of the voting equity interests) are accounted for (i) in accordance with the equity method of accounting, or (ii) at fair value if the fair value option was elected. These investments are generally included in other assets, with income or loss included in noninterest revenue.

Certain Firm-sponsored asset management funds are structured as limited partnerships or limited liability companies. For many of these entities, the Firm is the

general partner or managing member, but the non-affiliated partners or members have the ability to remove the Firm as the general partner or managing member without cause (i.e., kick-out rights), based on a simple majority vote, or the non-affiliated partners or members have rights to participate in important decisions. Accordingly, the Firm does not consolidate these voting interest entities. However, in the limited cases where the non-managing partners or members do not have substantive kick-out or participating rights, the Firm evaluates the funds as VIEs and consolidates the funds if the Firm is the general partner or managing member and has both power and a potentially significant interest.

The Firm’s investment companies and asset management funds have investments in both publicly-held and privately-held entities, including investments in buyouts, growth equity and venture opportunities. These investments are accounted for under investment company guidelines and, accordingly, irrespective of the percentage of equity ownership interests held, are carried on the Consolidated balance sheets at fair value, and are recorded in other assets, with income or loss included in noninterest revenue. If consolidated, the Firm retains the accounting under such specialized investment company guidelines.

Variable interest entities

VIEs are entities that, by design, either (1) lack sufficient equity to permit the entity to finance its activities without additional subordinated financial support from other parties, or (2) have equity investors that do not have the ability to make significant decisions relating to the entity’s operations through voting rights, or do not have the obligation to absorb the expected losses, or do not have the right to receive the residual returns of the entity.

The most common type of VIE is an SPE. SPEs are commonly used in securitization transactions in order to isolate certain assets and distribute the cash flows from those assets to investors. The basic SPE structure involves a company selling assets to the SPE; the SPE funds the purchase of those assets by issuing securities to investors. The legal documents that govern the transaction specify how the cash earned on the assets must be allocated to the SPE’s investors and other parties that have rights to those cash flows. SPEs are generally structured to insulate investors from claims on the SPE’s assets by creditors of other entities, including the creditors of the seller of the assets.

The primary beneficiary of a VIE (i.e., the party that has a controlling financial interest) is required to consolidate the assets and liabilities of the VIE. The

Notes to consolidated financial statements

primary beneficiary is the party that has both (1) the power to direct the activities of the VIE that most significantly impact the VIE's economic performance; and (2) through its interests in the VIE, the obligation to absorb losses or the right to receive benefits from the VIE that could potentially be significant to the VIE.

To assess whether the Firm has the power to direct the activities of a VIE that most significantly impact the VIE's economic performance, the Firm considers all the facts and circumstances, including its role in establishing the VIE and its ongoing rights and responsibilities. This assessment includes, first, identifying the activities that most significantly impact the VIE's economic performance; and second, identifying which party, if any, has power over those activities. In general, the parties that make the most significant decisions affecting the VIE (such as asset managers, collateral managers, servicers, or owners of call options or liquidation rights over the VIE's assets) or have the right to unilaterally remove those decision-makers are deemed to have the power to direct the activities of a VIE.

To assess whether the Firm has the obligation to absorb losses of the VIE or the right to receive benefits from the VIE that could potentially be significant to the VIE, the Firm considers all of its economic interests, including debt and equity investments, servicing fees, and derivatives or other arrangements deemed to be variable interests in the VIE. This assessment requires that the Firm apply judgment in determining whether these interests, in the aggregate, are considered potentially significant to the VIE. Factors considered in assessing significance include: the design of the VIE, including its capitalization structure; subordination of interests; payment priority; relative share of interests held across various classes within the VIE's capital structure; and the reasons why the interests are held by the Firm.

The Firm performs on-going reassessments of: (1) whether entities previously evaluated under the majority voting-interest framework have become VIEs, based on certain events, and are therefore subject to the VIE consolidation framework; and (2) whether changes in the facts and circumstances regarding the Firm's involvement with a VIE cause the Firm's consolidation conclusion to change.

Refer to Note 14 for further discussion of Firm-sponsored VIEs.

Revenue recognition

Interest income

The Firm recognizes interest income on loans, debt securities, and other debt instruments, generally on a level-yield basis, based on the underlying contractual rate. Refer to Note 7 for further information.

Revenue from contracts with customers

JPMorganChase recognizes noninterest revenue from certain contracts with customers, in investment banking fees, deposit-related fees, asset management fees, commissions and other fees, and components of card income, when the Firm's related performance obligations are satisfied. Refer to Note 6 for further discussion of the Firm's revenue from contracts with customers.

Principal transactions revenue

JPMorganChase carries a portion of its assets and liabilities at fair value. Changes in fair value are reported primarily in principal transactions revenue. Refer to Notes 2 and 3 for further discussion of fair value measurement. Refer to Note 6 for further discussion of principal transactions revenue.

Use of estimates in the preparation of consolidated financial statements

The preparation of the Consolidated Financial Statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, revenue and expense, and disclosures of contingent assets and liabilities. Actual results could be different from these estimates.

Foreign currency translation

JPMorganChase revalues assets, liabilities, revenue and expense denominated in non-U.S. currencies into U.S. dollars using applicable exchange rates.

Gains and losses relating to translating functional currency financial statements for U.S. reporting are included in the Consolidated statements of comprehensive income. Gains and losses relating to nonfunctional currency transactions, including non-U.S. operations where the functional currency is the U.S. dollar, are reported in the Consolidated statements of income.

Offsetting assets and liabilities

U.S. GAAP permits entities to present derivative receivables and derivative payables with the same counterparty and the related cash collateral receivables and payables on a net basis on the Consolidated balance sheets when a legally enforceable master netting agreement exists. U.S. GAAP also permits securities sold and purchased under repurchase agreements and securities borrowed or loaned under securities loan agreements to be presented net when specified conditions are met, including the existence of a legally enforceable master netting agreement. The Firm has elected to net such balances where it has determined that the specified conditions are met.

The Firm uses master netting agreements to mitigate counterparty credit risk in certain transactions, including derivative contracts, resale, repurchase, securities borrowed and securities loaned

agreements. A master netting agreement is a single agreement with a counterparty that permits multiple transactions governed by that agreement to be terminated or accelerated and settled through a single payment in a single currency in the event of a default (e.g., bankruptcy, failure to make a required payment or securities transfer or deliver collateral or margin when due). Upon the exercise of derivatives termination rights by the non-defaulting party (i) all transactions are terminated, (ii) all transactions are valued and the positive values of “in the money” transactions are netted against the negative values of “out of the money” transactions and (iii) the only remaining payment obligation is of one of the parties to pay the netted termination amount. Upon exercise of default rights under repurchase agreements and securities loan agreements in general (i) all transactions are terminated and accelerated, (ii) all values of securities or cash held or to be delivered are calculated, and all such sums are netted against each other and (iii) the only remaining payment obligation is of one of the parties to pay the netted termination amount.

Typical master netting agreements for these types of transactions also often contain a collateral/margin agreement that provides for a security interest in, or title transfer of, securities or cash collateral/margin to the party that has the right to demand margin (the “demanding party”). The collateral/margin agreement typically requires a party to transfer collateral/margin to the demanding party with a value equal to the amount of the margin deficit on a net basis across all transactions governed by the master netting agreement, less any threshold. The collateral/margin agreement grants to the demanding party, upon default by the counterparty, the right to set-off any amounts payable by the counterparty against any posted collateral or the cash equivalent of any posted collateral/margin. It also grants to the demanding party the right to liquidate collateral/margin and to apply the proceeds to an amount payable by the counterparty.

Refer to Note 5 for further discussion of the Firm’s derivative instruments. Refer to Note 11 for further discussion of the Firm’s securities financing agreements.

Statements of cash flows

For JPMorganChase’s Consolidated statements of cash flows, cash is defined as those amounts included in cash and due from banks and deposits with banks on the Consolidated balance sheets.

Accounting standard adopted January 1, 2024 **Equity Method and Joint Ventures: Accounting for Investments in Tax Credit Structures Using the Proportional Amortization Method**

The guidance expanded the types of tax-oriented investments, beyond affordable housing tax credit investments, that the Firm can elect on a program by program basis, to be accounted for using the proportional amortization method. This method requires the cost of eligible investments, within an elected program, to be amortized in proportion to the tax benefits received with the resulting amortization reported directly in income tax expense, which aligns with the associated tax credits and other tax benefits. Eligible investments must meet certain criteria, including that substantially all of the return is from income tax credits and other income tax benefits.

This guidance was adopted on January 1, 2024 under the modified retrospective method. The adoption of this guidance resulted in a change to the classification and timing of the amortization associated with certain of the Firm’s alternative energy tax-oriented investments. As a result of the adoption, the amortization of these investments that was previously recognized in other income is now recognized in income tax expense. The change in accounting resulted in a decrease to retained earnings of \$161 million and increased the Firm’s income tax expense and the effective tax rate by approximately \$450 million and two percentage points, respectively, in the first quarter of 2024, with no material impact to net income.

The guidance requires additional disclosure for all investments that generate income tax credits and other income tax benefits from a tax-oriented investment program for which the Firm has elected to apply the proportional amortization method. The guidance also requires a reevaluation of eligible investments when significant modifications or events occur that result in a change in the nature of the investment or a change in the Firm’s relationship with the underlying project.

Refer to Notes 6, 14 and 25 for additional information.

Accounting standards adopted January 1, 2023 **Derivatives and Hedging: Fair Value Hedging – Portfolio Layer Method**

The adoption of this guidance expanded the ability to hedge a portfolio of fixed-rate assets in a qualifying hedge accounting relationship. As permitted by the guidance, the Firm elected to transfer HTM securities to AFS and designated those securities in a portfolio layer method hedge upon adoption. The adoption impact of the transfer on retained earnings was not material.

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Financial Instruments – Credit Losses: Troubled Debt Restructurings (“TDRs”)

The adoption of this guidance eliminated the requirement to measure the allowance for TDRs using a discounted cash flow (“DCF”) methodology and allowed the option of a non-DCF portfolio-based approach for modified loans to troubled borrowers. The Firm elected this option for all portfolios of modified loans to troubled borrowers except collateral-dependent loans and nonaccrual risk-rated loans, for which the Firm elected to continue applying a DCF methodology. The adoption of this guidance under the modified retrospective method on January 1, 2023, resulted in a \$446 million increase to retained earnings.

Significant accounting policies

The following table identifies JPMorganChase’s other significant accounting policies and the Note and page where a detailed description of each policy can be found.

Fair value measurement	Note 2	page 181
Fair value option	Note 3	page 203
Derivative instruments	Note 5	page 209
Noninterest revenue and noninterest expense	Note 6	page 225
Interest income and Interest expense	Note 7	page 229
Pension and other postretirement employee benefit plans	Note 8	page 230
Employee share-based incentives	Note 9	page 233
Investment securities	Note 10	page 235
Securities financing activities	Note 11	page 240
Loans	Note 12	page 243
Allowance for credit losses	Note 13	page 266
Variable interest entities	Note 14	page 271
Goodwill, mortgage servicing rights, and other intangible assets	Note 15	page 280
Premises and equipment	Note 16	page 285
Leases	Note 18	page 286
Accounts payable & other liabilities	Note 19	page 288
Long-term debt	Note 20	page 289
Earnings per share	Note 23	page 294
Income taxes	Note 25	page 296
Off-balance sheet lending-related financial instruments, guarantees and other commitments	Note 28	page 302
Litigation	Note 30	page 309

Note 2 – Fair value measurement

JPMorganChase carries a portion of its assets and liabilities at fair value. These assets and liabilities are predominantly carried at fair value on a recurring basis (i.e., assets and liabilities that are measured and reported at fair value on the Firm’s Consolidated balance sheets). Certain assets, liabilities and unfunded lending-related commitments are measured at fair value on a nonrecurring basis; that is, they are not measured at fair value on an ongoing basis but are subject to fair value adjustments only in certain circumstances (for example, when there is evidence of impairment).

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is based on quoted market prices or inputs, where available. If prices or quotes are not available, fair value is based on valuation models and other valuation techniques that consider relevant transaction characteristics (such as maturity) and use, as inputs, observable or unobservable market parameters, including yield curves, interest rates, volatilities, prices (such as commodity, equity or debt prices), correlations, foreign exchange rates and credit curves. Fair value may also incorporate valuation adjustments.

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

The Firm uses various methodologies and assumptions in the determination of fair value. The use of different methodologies or assumptions by other market participants compared with those used by the Firm could result in the Firm deriving a different estimate of fair value at the reporting date.

Valuation process

Risk-taking functions are responsible for providing fair value estimates for assets and liabilities carried on the Consolidated balance sheets at fair value. The Firm’s Valuation Control Group (“VCG”), which is part of the Firm’s Finance function and independent of the risk-taking functions, is responsible for verifying these estimates and determining any fair value adjustments that may be required to ensure that the Firm’s positions are recorded at fair value. In addition, the Firm’s Valuation Governance Forum (“VGF”), which is composed of senior finance and risk executives, is responsible for overseeing the management of risks arising from valuation activities conducted across the Firm. The Firmwide VGF is chaired by the Firmwide

head of the VCG (under the direction of the Firm’s Controller), and includes sub-forums covering the CIB, CCB, AWM and certain corporate functions including Treasury and CIO.

Price verification process

The VCG verifies fair value estimates provided by the risk-taking functions by leveraging independently derived prices, valuation inputs and other market data, where available. Where independent prices or inputs are not available, the VCG performs additional review to ensure the reasonableness of the estimates. The additional review may include evaluating the limited market activity including client unwinds, benchmarking valuation inputs to those used for similar instruments, decomposing the valuation of structured instruments into individual components, comparing expected to actual cash flows, reviewing profit and loss trends, and reviewing trends in collateral valuation. There are also additional levels of management review for more significant or complex positions.

The VCG determines any valuation adjustments that may be required to the estimates provided by the risk-taking functions. No adjustments to quoted prices are applied for instruments classified within level 1 of the fair value hierarchy (refer to the discussion of the fair value hierarchy on page 182 for further information). For other positions, judgment is required to assess the need for valuation adjustments to appropriately reflect liquidity considerations, unobservable parameters, and, for certain portfolios that meet specified criteria, the size of the net open risk position. The determination of such adjustments follows a consistent framework across the Firm:

- Liquidity valuation adjustments are considered where an observable external price or valuation parameter exists but is of lower reliability, potentially due to lower market activity. Liquidity valuation adjustments are made based on current market conditions. Factors that may be considered in determining the liquidity adjustment include analysis of: (1) the estimated bid-offer spread for the instrument being traded; (2) alternative pricing points for similar instruments in active markets; and (3) the range of reasonable values that the price or parameter could take.
- The Firm manages certain portfolios of financial instruments on the basis of net open risk exposure and, as permitted by U.S. GAAP, has elected to estimate the fair value of such portfolios on the basis of a transfer of the entire net open risk position in an orderly transaction. Where this is the case, valuation adjustments may be necessary to reflect the cost of exiting a larger-than-normal market-size net open risk position. Where applied, such adjustments are

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based on factors that a relevant market participant would consider in the transfer of the net open risk position, including the size of the adverse market move that is likely to occur during the period required to sufficiently reduce the net open risk position.

- Uncertainty adjustments related to unobservable parameters may be made when positions are valued using prices or input parameters to valuation models that are unobservable due to a lack of market activity or because they cannot be implied from observable market data. Such prices or parameters must be estimated and are, therefore, subject to management judgment. Adjustments are made to reflect the uncertainty inherent in the resulting valuation estimate.
- Where appropriate, the Firm also applies adjustments to its estimates of fair value in order to appropriately reflect counterparty credit quality (CVA), the Firm's own creditworthiness (DVA) and the impact of funding (FVA), using a consistent framework across the Firm. Refer to Credit and funding adjustments on page 198 of this Note for more information on such adjustments.

Valuation model review and approval

If prices or quotes are not available for an instrument or a similar instrument, fair value is generally determined using valuation models that consider relevant transaction terms such as maturity and use as inputs market-based or independently sourced parameters. Where this is the case the price verification process described above is applied to the inputs in those models.

Under the Firm's Estimations and Model Risk Management Policy, MRGR reviews and approves new models, as well as material changes to existing models, prior to implementation in the operating environment. In certain circumstances exceptions may be granted to the Firm's policy to allow a model to be used prior to review or approval. MRGR may also require the user to take appropriate actions to mitigate the model risk if it is to be used in the interim. These actions will depend on the model and may include, for example, limitation of trading activity.

Fair value hierarchy

A three-level fair value hierarchy has been established under U.S. GAAP for disclosure of fair value measurements. The fair value hierarchy is based on the observability of inputs to the valuation of an asset or liability as of the measurement date. The three levels are defined as follows.

- Level 1 – inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.
- Level 2 – inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.
- Level 3 – one or more inputs to the valuation methodology are unobservable and significant to the fair value measurement.

A financial instrument's categorization within the fair value hierarchy is based on the lowest level of input that is significant to the fair value measurement.

The following table describes the valuation methodologies generally used by the Firm to measure its significant products/instruments at fair value, including the general classification of such instruments pursuant to the fair value hierarchy.

Product/instrument	Valuation methodology	Classifications in the fair value hierarchy
Securities financing agreements	<p>Valuations are based on discounted cash flows, which consider:</p> <ul style="list-style-type: none"> • Derivative features: refer to the discussion of derivatives below for further information • Market rates for the respective maturity • Collateral characteristics 	Predominantly level 2
<p>Loans and lending-related commitments — wholesale</p> <p>Loans carried at fair value (trading loans and non-trading loans) and associated lending-related commitments</p>	<p>Where observable market data is available, valuations are based on:</p> <ul style="list-style-type: none"> • Observed market prices (circumstances are infrequent) • Relevant broker quotes • Observed market prices for similar instruments <p>Where observable market data is unavailable or limited, valuations are based on discounted cash flows, which consider the following:</p> <ul style="list-style-type: none"> • Credit spreads derived from the cost of CDS; or benchmark credit curves developed by the Firm, by industry and credit rating • Prepayment speed • Collateral characteristics 	Level 2 or 3
<p>Loans — consumer</p> <p>Loans carried at fair value — residential mortgage loans expected to be sold</p>	<p>Fair value is based on observable market prices for mortgage-backed securities with similar collateral and incorporates adjustments to these prices to account for differences between the securities and the value of the underlying loans, which include credit characteristics, portfolio composition, and liquidity.</p>	Predominantly level 2
Investment and trading securities	<p>Quoted market prices</p> <p>In the absence of quoted market prices, securities are valued based on:</p> <ul style="list-style-type: none"> • Observable market prices for similar securities • Relevant broker quotes • Discounted cash flows <p>In addition, the following inputs to discounted cash flows are used for the following products:</p> <p>Mortgage- and asset-backed securities specific inputs:</p> <ul style="list-style-type: none"> • Collateral characteristics • Deal-specific payment and loss allocations • Current market assumptions related to yield, prepayment speed, conditional default rates and loss severity <p>Collateralized loan obligations (“CLOs”) specific inputs:</p> <ul style="list-style-type: none"> • Collateral characteristics • Deal-specific payment and loss allocations • Expected prepayment speed, conditional default rates, loss severity • Credit spreads • Credit rating data 	<p>Level 1</p> <p>Level 2 or 3</p>
Physical commodities	Valued using observable market prices or data.	Predominantly Level 1 or 2

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Product/instrument	Valuation methodology	Classifications in the fair value hierarchy
Derivatives	Actively traded derivatives, e.g., exchange-traded derivatives, that are valued using quoted prices.	Level 1
	<p>Derivatives that are valued using models such as the Black-Scholes option pricing model, simulation models, or a combination of models that may use observable or unobservable valuation inputs as well as considering the contractual terms.</p> <p>The key valuation inputs used will depend on the type of derivative and the nature of the underlying instruments and may include equity prices, commodity prices, foreign exchange rates, volatilities, correlations, CDS spreads, recovery rates and prepayment speed.</p> <p>In addition, specific inputs used for derivatives that are valued based on models with significant unobservable inputs are as follows:</p> <p>Interest rate and FX exotic derivatives specific inputs include:</p> <ul style="list-style-type: none"> • Interest rate curve • Interest rate volatility • Interest rate spread volatility • Bermudan switch value • Interest rate correlation • Interest rate-FX correlation • Foreign exchange correlation <p>Credit derivatives specific inputs include:</p> <ul style="list-style-type: none"> • Credit correlation between the underlying debt instruments <p>Equity derivatives specific inputs include:</p> <ul style="list-style-type: none"> • Forward equity price • Equity volatility • Equity correlation • Equity-FX correlation • Equity-IR correlation <p>Commodity derivatives specific inputs include:</p> <ul style="list-style-type: none"> • Forward commodity price • Commodity volatility • Commodity correlation <p>Additionally, adjustments are made to reflect counterparty credit quality (CVA) and the impact of funding (FVA). Refer to page 198 of this Note.</p>	Level 2 or 3
Mortgage servicing rights	Refer to Mortgage servicing rights in Note 15.	Level 3
Private equity direct investments	<p>Fair value is estimated using all available information; the range of potential inputs include:</p> <ul style="list-style-type: none"> • Transaction prices • Trading multiples of comparable public companies • Operating performance of the underlying portfolio company • Adjustments as required, since comparable public companies are not identical to the company being valued, and for company-specific issues including lack of liquidity • Additional available inputs relevant to the investment 	Level 2 or 3

Product/instrument	Valuation methodology	Classification in the fair value hierarchy
Fund investments (e.g., mutual/collective investment funds, private equity funds, hedge funds, and real estate funds)	<p>Net asset value</p> <ul style="list-style-type: none"> NAV is supported by the ability to redeem and purchase at the NAV level Adjustments to the NAV as required, for restrictions on redemption (e.g., lock-up periods or withdrawal limitations) or where observable activity is limited 	<p>Level 1</p> <p>Level 2 or 3^(a)</p>
Beneficial interests issued by consolidated VIEs	<p>Valued using observable market information, where available.</p> <p>In the absence of observable market information, valuations are based on the fair value of the underlying assets held by the VIE.</p>	Level 2 or 3
Structured notes (included in deposits, short-term borrowings and long-term debt)	<p>Valuations are based on discounted cash flow analyses that consider the embedded derivative and the terms and payment structure of the note.</p> <p>The embedded derivative features are considered using models such as the Black-Scholes option pricing model, simulation models, or a combination of models that may use observable or unobservable valuation inputs, depending on the embedded derivative. The specific inputs used vary according to the nature of the embedded derivative features, as described in the discussion above regarding derivatives valuation. Adjustments are then made to this base valuation to reflect the Firm's own credit risk (DVA). Refer to page 198 of this Note.</p>	Level 2 or 3

(a) Excludes certain investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient.

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The following table presents the assets and liabilities reported at fair value as of December 31, 2024 and 2023, by major product category and fair value hierarchy.

Assets and liabilities measured at fair value on a recurring basis

December 31, 2024 (in millions)	Fair value hierarchy			Derivative netting adjustments ^(a)	Total fair value
	Level 1	Level 2	Level 3		
Federal funds sold and securities purchased under resale agreements	\$ —	\$ 286,771	\$ —	\$ —	\$ 286,771
Securities borrowed	—	83,962	—	—	83,962
Trading assets:					
Debt instruments:					
Mortgage-backed securities:					
U.S. GSEs and government agencies ^(a)	—	104,312	488	—	104,800
Residential – nonagency	—	2,282	5	—	2,287
Commercial – nonagency	—	1,283	10	—	1,293
Total mortgage-backed securities	—	107,877	503	—	108,380
U.S. Treasury, GSEs and government agencies ^(a)	150,580	11,702	—	—	162,282
Obligations of U.S. states and municipalities	—	6,100	1	—	6,101
Certificates of deposit, bankers' acceptances and commercial paper	—	3,950	—	—	3,950
Non-U.S. government debt securities	34,108	54,335	152	—	88,595
Corporate debt securities	—	33,591	390	—	33,981
Loans	—	10,228	1,088	—	11,316
Asset-backed securities	—	2,813	10	—	2,823
Total debt instruments	184,688	230,596	2,144	—	417,428
Equity securities	130,307	1,359	62	—	131,728
Physical commodities ^(b)	5,957	1,533	26	—	7,516
Other	—	19,935	210	—	20,145
Total debt and equity instruments^(c)	320,952	253,423	2,442	—	576,817
Derivative receivables:					
Interest rate	4,934	282,019	3,781	(265,789)	24,945
Credit	—	10,379	708	(10,273)	814
Foreign exchange	196	261,520	1,204	(237,608)	25,312
Equity	—	82,855	2,365	(79,935)	5,285
Commodity	—	15,232	394	(11,015)	4,611
Total derivative receivables	5,130	652,005	8,452	(604,620)	60,967
Total trading assets^(d)	326,082	905,428	10,894	(604,620)	637,784
Available-for-sale securities:					
Mortgage-backed securities:					
U.S. GSEs and government agencies ^(a)	—	91,893	—	—	91,893
Residential – nonagency	—	4,811	—	—	4,811
Commercial – nonagency	—	4,057	8	—	4,065
Total mortgage-backed securities	—	100,761	8	—	100,769
U.S. Treasury and government agencies	234,491	288	—	—	234,779
Obligations of U.S. states and municipalities	—	17,913	—	—	17,913
Non-U.S. government debt securities	23,973	12,272	—	—	36,245
Corporate debt securities	—	70	—	—	70
Asset-backed securities:					
Collateralized loan obligations	—	14,943	—	—	14,943
Other ^(a)	—	2,133	—	—	2,133
Total available-for-sale securities	258,464	148,380	8	—	406,852
Loans ^(e)	—	38,934	2,416	—	41,350
Mortgage servicing rights	—	—	9,121	—	9,121
Other assets ^(d)	5,732	6,997	1,344	—	14,073
Total assets measured at fair value on a recurring basis	\$ 590,278	\$ 1,470,472	\$ 23,783	\$ (604,620)	\$ 1,479,913
Deposits	\$ —	\$ 31,583	\$ 2,185	\$ —	\$ 33,768
Federal funds purchased and securities loaned or sold under repurchase agreements	—	226,329	—	—	226,329
Short-term borrowings	—	23,045	3,476	—	26,521
Trading liabilities:					
Debt and equity instruments ^(c)	120,719	32,457	46	—	153,222
Derivative payables:					
Interest rate	3,981	266,767	3,480	(264,989)	9,239
Credit	—	12,725	1,071	(11,898)	1,898
Foreign exchange	187	253,196	1,184	(238,970)	15,597
Equity	—	90,908	5,231	(87,491)	8,648
Commodity	—	14,021	467	(10,209)	4,279
Total derivative payables	4,168	637,617	11,433	(613,557)	39,661
Total trading liabilities	124,887	670,074	11,479	(613,557)	192,883
Accounts payable and other liabilities	3,100	2,717	76	—	5,893
Beneficial interests issued by consolidated VIEs	—	1	—	—	1
Long-term debt	—	66,216	34,564	—	100,780
Total liabilities measured at fair value on a recurring basis	\$ 127,987	\$ 1,019,965	\$ 51,780	\$ (613,557)	\$ 586,175

December 31, 2023 (in millions)	Fair value hierarchy			Derivative netting adjustments ^(e)	Total fair value
	Level 1	Level 2	Level 3		
Federal funds sold and securities purchased under resale agreements	\$ —	\$ 259,813	\$ —	\$ —	\$ 259,813
Securities borrowed	—	70,086	—	—	70,086
Trading assets:					
Debt instruments:					
Mortgage-backed securities:					
U.S. GSEs and government agencies ^(a)	—	73,840	758	—	74,598
Residential – nonagency	—	1,921	5	—	1,926
Commercial – nonagency	—	1,362	12	—	1,374
Total mortgage-backed securities	—	77,123	775	—	77,898
U.S. Treasury, GSEs and government agencies ^(a)	133,997	9,998	—	—	143,995
Obligations of U.S. states and municipalities	—	5,858	10	—	5,868
Certificates of deposit, bankers' acceptances and commercial paper	—	756	—	—	756
Non-U.S. government debt securities	24,846	55,557	179	—	80,582
Corporate debt securities	—	32,854	484	—	33,338
Loans	—	7,872	684	—	8,556
Asset-backed securities	—	2,199	6	—	2,205
Total debt instruments	158,843	192,217	2,138	—	353,198
Equity securities	107,926	679	127	—	108,732
Physical commodities ^(b)	2,479	3,305	7	—	5,791
Other	—	17,879	101	—	17,980
Total debt and equity instruments^(c)	269,248	214,080	2,373	—	485,701
Derivative receivables:					
Interest rate	2,815	243,578	4,298	(224,367)	26,324
Credit	—	8,644	1,010	(9,103)	551
Foreign exchange	149	204,737	889	(187,756)	18,019
Equity	—	55,167	2,522	(52,761)	4,928
Commodity	—	15,234	205	(10,397)	5,042
Total derivative receivables	2,964	527,360	8,924	(484,384)	54,864
Total trading assets^(d)	272,212	741,440	11,297	(484,384)	540,565
Available-for-sale securities:					
Mortgage-backed securities:					
U.S. GSEs and government agencies ^(a)	—	85,170	—	—	85,170
Residential – nonagency	—	3,639	—	—	3,639
Commercial – nonagency	—	2,803	—	—	2,803
Total mortgage-backed securities	—	91,612	—	—	91,612
U.S. Treasury and government agencies	57,683	122	—	—	57,805
Obligations of U.S. states and municipalities	—	21,367	—	—	21,367
Non-U.S. government debt securities	13,095	8,187	—	—	21,282
Corporate debt securities	—	100	—	—	100
Asset-backed securities:					
Collateralized loan obligations	—	6,752	—	—	6,752
Other ^(a)	—	2,786	—	—	2,786
Total available-for-sale securities	70,778	130,926	—	—	201,704
Loans ^(e)	—	35,772	3,079	—	38,851
Mortgage servicing rights	—	—	8,522	—	8,522
Other assets ^(d)	6,635	3,929	758	—	11,322
Total assets measured at fair value on a recurring basis	\$ 349,625	\$ 1,241,966	\$ 23,656	\$ (484,384)	\$ 1,130,863
Deposits	\$ —	\$ 76,551	\$ 1,833	\$ —	\$ 78,384
Federal funds purchased and securities loaned or sold under repurchase agreements	—	169,003	—	—	169,003
Short-term borrowings	—	18,284	1,758	—	20,042
Trading liabilities:					
Debt and equity instruments ^(c)					
Derivative payables:					
Interest rate	4,409	232,277	3,796	(228,586)	11,896
Credit	—	11,293	745	(10,949)	1,089
Foreign exchange	147	211,289	827	(199,643)	12,620
Equity	—	60,887	4,924	(56,443)	9,368
Commodity	—	15,894	484	(10,504)	5,874
Total derivative payables	4,556	531,640	10,776	(506,125)	40,847
Total trading liabilities	111,848	563,892	10,813	(506,125)	180,428
Accounts payable and other liabilities	3,968	1,617	52	—	5,637
Beneficial interests issued by consolidated VIEs	—	1	—	—	1
Long-term debt	—	60,198	27,726	—	87,924
Total liabilities measured at fair value on a recurring basis	\$ 115,816	\$ 889,546	\$ 42,182	\$ (506,125)	\$ 541,419

- (a) At December 31, 2024 and 2023, included total U.S. GSE obligations of \$120.1 billion and \$78.5 billion, respectively, which were mortgage-related.
- (b) Physical commodities inventories are generally accounted for at the lower of cost or net realizable value. "Net realizable value" is a term defined in U.S. GAAP as not exceeding fair value less costs to sell ("transaction costs"). Transaction costs for the Firm's physical commodities inventories are either not applicable or immaterial to the value of the inventory. Therefore, net realizable value approximates fair value for the Firm's physical commodities inventories. When fair value hedging has been applied (or when net realizable value is below cost), the carrying value of physical commodities approximates fair value, because under fair value hedge accounting, the cost basis is adjusted for changes in fair value. Refer to Note 5 for a further discussion of the Firm's hedge accounting relationships. To provide consistent fair value disclosure information, all physical commodities inventories have been included in each period presented.

Notes to consolidated financial statements

- (c) Balances reflect the reduction of securities owned (long positions) by the amount of identical securities sold but not yet purchased (short positions).
- (d) Certain investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not required to be classified in the fair value hierarchy. At both December 31, 2024 and 2023, the fair values of these investments, which include certain hedge funds, private equity funds, real estate and other funds, were \$1.0 billion, primarily reported in other assets.
- (e) As permitted under U.S. GAAP, the Firm has elected to net derivative receivables and derivative payables and the related cash collateral received and paid when a legally enforceable master netting agreement exists. The level 3 balances would be reduced if netting were applied, including the netting benefit associated with cash collateral.

Level 3 valuations

The Firm has established well-structured processes for determining fair value, including for instruments where fair value is estimated using significant unobservable inputs (level 3). Refer to pages 181–185 of this Note for further information on the Firm’s valuation process and a detailed discussion of the determination of fair value for individual financial instruments.

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

In arriving at an estimate of fair value for an instrument within level 3, management must first determine the appropriate valuation model or other valuation technique to use. Second, due to the lack of observability of significant inputs, management must assess relevant empirical data in deriving valuation inputs including transaction details, yield curves, interest rates, prepayment speed, default rates, volatilities, correlations, prices (such as commodity, equity or debt prices), valuations of comparable instruments, foreign exchange rates and credit curves.

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

The range of values presented in the table is representative of the highest and lowest level input used to value the significant groups of instruments within a product/instrument classification. Where provided, the weighted averages of the input values presented in the table are calculated based on the fair value of the instruments that the input is being used to value.

In the Firm’s view, the input range, weighted and arithmetic average values do not reflect the degree of input uncertainty or an assessment of the reasonableness of the Firm’s estimates and assumptions. Rather, they reflect the characteristics of the various instruments held by the Firm and the relative distribution of instruments within the range of characteristics. For example, two option contracts may have similar levels of market risk exposure and valuation uncertainty, but may have significantly different implied volatility levels because the option contracts have different underlyings, tenors, or strike prices. The input range and weighted and arithmetic average values will therefore vary from period-to-period and parameter-to-parameter based on the characteristics of the instruments held by the Firm at each balance sheet date.

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Level 3 inputs^(a)

December 31, 2024								
Product/Instrument	Fair value (in millions)	Principal valuation technique	Unobservable inputs ^(g)	Range of input values		Average ⁽ⁱ⁾		
Residential mortgage-backed securities and loans ^(b)	\$ 861	Discounted cash flows	Yield	0%	103%	8%		
			Prepayment speed	3%	13%	8%		
			Conditional default rate	0%	7%	0%		
			Loss severity	0%	110%	5%		
Commercial mortgage-backed securities and loans ^(c)	1,424	Market comparables	Price	\$0	\$90	\$81		
Corporate debt securities	390	Market comparables	Price	\$0	\$148	\$95		
Loans ^(d)	1,730	Market comparables	Price	\$0	\$107	\$79		
Non-U.S. government debt securities	152	Market comparables	Price	\$0	\$103	\$95		
Net interest rate derivatives	293	Option pricing	Interest rate volatility	9bps	1,097bps	115bps		
			Interest rate spread volatility	37bps	77bps	64bps		
			Bermudan switch value	0%	45%	17%		
			Interest rate correlation	(82)%	97%	64%		
			IR-FX correlation	(35)%	60%	8%		
			Prepayment speed	0%	21%	7%		
Net credit derivatives	(393)	Discounted cash flows	Credit correlation	31%	79%	47%		
			Credit spread	0bps	2,717bps	331bps		
			Recovery rate	10%	90%	61%		
			Price	\$0	\$115	\$74		
Net foreign exchange derivatives	62 (42)	Option pricing	IR-FX correlation	(40)%	60%	22%		
			Prepayment speed		11%	11%		
		Discounted cash flows	Interest rate curve	1%	27%	7%		
Net equity derivatives	(2,866)	Option pricing	Forward equity price ^(h)	76%	153%	100%		
			Equity volatility	5%	135%	32%		
			Equity correlation	17%	100%	56%		
			Equity-FX correlation	(80)%	65%	(32)%		
			Equity-IR correlation	5%	25%	14%		
Net commodity derivatives	(73)	Option pricing	Oil commodity forward	\$87 / BBL	\$291 / BBL	\$160 / BBL		
			Natural gas commodity forward	\$2 / MMBTU	\$7 / MMBTU	\$4 / MMBTU		
			Commodity volatility	2%	43%	5%		
			Commodity correlation	(35)%	98%	(9)%		
MSRs	9,121	Discounted cash flows	Refer to Note 15					
Long-term debt, short-term borrowings, and deposits ^(e)	38,901	Option pricing	Interest rate volatility	9bps	1,097bps	115bps		
			Bermudan switch value	0%	45%	17%		
			Interest rate correlation	(82)%	97%	64%		
			IR-FX correlation	(35)%	60%	8%		
			Equity volatility	2%	137%	28%		
			Equity correlation	17%	100%	56%		
			Equity-FX correlation	(80)%	65%	(32)%		
			Equity-IR correlation	5%	25%	14%		
			Discounted cash flows	1,324	Credit correlation	30%	57%	46%
					Credit spread	2bps	270bps	83bps
					Recovery rate	20%	40%	35%
					Yield	5%	20%	10%
					Loss severity	0%	100%	50%
Other level 3 assets and liabilities, net ^(f)	1,531							

- (a) The categories presented in the table have been aggregated based upon the product type, which may differ from their classification on the Consolidated balance sheets. Furthermore, the inputs presented for each valuation technique in the table are, in some cases, not applicable to every instrument valued using the technique as the characteristics of the instruments can differ.
- (b) Comprises U.S. GSE and government agency securities of \$488 million, nonagency securities of \$5 million and non-trading loans of \$368 million.
- (c) Comprises nonagency securities of \$18 million, trading loans of \$65 million and non-trading loans of \$1.3 billion.
- (d) Comprises trading loans of \$1.0 billion and non-trading loans of \$707 million.
- (e) Long-term debt, short-term borrowings and deposits include structured notes issued by the Firm that are financial instruments that typically contain embedded derivatives. The estimation of the fair value of structured notes includes the derivative features embedded within the instrument. The significant unobservable inputs are broadly consistent with those presented for derivative receivables.
- (f) Includes equity securities of \$734 million including \$672 million in Other assets, for which quoted prices are not readily available and the fair value is generally based on internal valuation techniques such as EBITDA multiples and comparable analysis. All other level 3 assets and liabilities are insignificant both individually and in aggregate.
- (g) Price is a significant unobservable input for certain instruments. When quoted market prices are not readily available, reliance is generally placed on price-based internal valuation techniques. The price input is expressed assuming a par value of \$100.
- (h) Forward equity price is expressed as a percentage of the current equity price.
- (i) Amounts represent weighted averages except for derivative related inputs where arithmetic averages are used.

Changes in and ranges of unobservable inputs

The following discussion provides a description of the impact on a fair value measurement of a change in each unobservable input in isolation, and the interrelationship between unobservable inputs, where relevant and significant. The impact of changes in inputs may not be independent, as a change in one unobservable input may give rise to a change in another unobservable input. Where relationships do exist between two unobservable inputs, those relationships are discussed below. Relationships may also exist between observable and unobservable inputs (for example, as observable interest rates rise, unobservable prepayment rates decline); such relationships have not been included in the discussion below. In addition, for each of the individual relationships described below, the inverse relationship would also generally apply.

The following discussion also provides a description of attributes of the underlying instruments and external market factors that affect the range of inputs used in the valuation of the Firm's positions.

Yield – The yield of an asset is the interest rate used to discount future cash flows in a discounted cash flow calculation. An increase in the yield, in isolation, would result in a decrease in a fair value measurement.

Credit spread – The credit spread is the amount of additional annualized return over the market interest rate that a market participant would demand for taking exposure to the credit risk of an instrument. The credit spread for an instrument forms part of the discount rate used in a discounted cash flow calculation. Generally, an increase in the credit spread would result in a decrease in a fair value measurement.

The yield and the credit spread of a particular mortgage-backed security primarily reflect the risk inherent in the instrument. The yield is also impacted by the absolute level of the coupon paid by the instrument (which may not correspond directly to the level of inherent risk). Therefore, the range of yield and credit spreads reflects the range of risk inherent in various instruments owned by the Firm. The risk inherent in mortgage-backed securities is driven by the subordination of the security being valued and the characteristics of the underlying mortgages within the collateralized pool, including borrower FICO scores, LTV ratios for residential mortgages and the nature of the property and/or any tenants for commercial mortgages. For corporate debt securities, obligations of U.S. states and municipalities and other similar instruments, credit spreads reflect the credit quality of the obligor and the tenor of the obligation.

Prepayment speed – The prepayment speed is a measure of the voluntary unscheduled principal repayments of a prepayable obligation in a collateralized pool. Prepayment speeds generally decline as borrower delinquencies rise. An increase in prepayment speeds, in isolation, would result in a decrease in a fair value measurement of assets valued at a premium to par and an increase in a fair value measurement of assets valued at a discount to par.

Prepayment speeds may vary from collateral pool to collateral pool, and are driven by the type and location of the underlying borrower, and the remaining tenor of the obligation as well as the level and type (e.g., fixed or floating) of interest rate being paid by the borrower. Typically collateral pools with higher borrower credit quality have a higher prepayment rate than those with lower borrower credit quality, all other factors being equal.

Conditional default rate – The conditional default rate is a measure of the reduction in the outstanding collateral balance underlying a collateralized obligation as a result of defaults. While there is typically no direct relationship between conditional default rates and prepayment speeds, collateralized obligations for which the underlying collateral has high prepayment speeds will tend to have lower conditional default rates. An increase in conditional default rates would generally be accompanied by an increase in loss severity and an increase in credit spreads. An increase in the conditional default rate, in isolation, would result in a decrease in a fair value measurement. Conditional default rates reflect the quality of the collateral underlying a securitization and the structure of the securitization itself. Based on the types of securities owned in the Firm's market-making portfolios, conditional default rates are most typically at the lower end of the range presented.

Loss severity – The loss severity (the inverse concept is the recovery rate) is the expected amount of future realized losses resulting from the ultimate liquidation of a particular loan, expressed as the net amount of loss relative to the outstanding loan balance. An increase in loss severity is generally accompanied by an increase in conditional default rates. An increase in the loss severity, in isolation, would result in a decrease in a fair value measurement.

The loss severity applied in valuing a mortgage-backed security depends on factors relating to the underlying mortgages, including the LTV ratio, the nature of the lender's lien on the property and other instrument-specific factors.

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Correlation – Correlation is a measure of the relationship between the movements of two variables. Correlation is a pricing input for a derivative product where the payoff is driven by one or more underlying risks. Correlation inputs are related to the type of derivative (e.g., interest rate, credit, equity, foreign exchange and commodity) due to the nature of the underlying risks. When parameters are positively correlated, an increase in one parameter will result in an increase in the other parameter. When parameters are negatively correlated, an increase in one parameter will result in a decrease in the other parameter. An increase in correlation can result in an increase or a decrease in a fair value measurement. Given a short correlation position, an increase in correlation, in isolation, would generally result in a decrease in a fair value measurement.

The level of correlation used in the valuation of derivatives with multiple underlying risks depends on a number of factors including the nature of those risks. For example, the correlation between two credit risk exposures would be different than that between two interest rate risk exposures. Similarly, the tenor of the transaction may also impact the correlation input, as the relationship between the underlying risks may be different over different time periods. Furthermore, correlation levels are dependent on market conditions and could have a relatively wide range of levels within or across asset classes over time, particularly in volatile market conditions.

Volatility – Volatility is a measure of the variability in possible returns for an instrument, parameter or market index given how much the particular instrument, parameter or index changes in value over time. Volatility is a pricing input for options, including equity options, commodity options, and interest rate options. Given a long position in an option, an increase in volatility, in isolation, would generally result in an increase in a fair value measurement.

The level of volatility used in the valuation of a particular option-based derivative depends on a number of factors, including the nature of the risk underlying the option (e.g., the volatility of a particular equity security may be significantly different from that of a particular commodity index), the tenor of the derivative as well as the strike price of the option.

Bermudan switch value – The switch value is the difference between the overall value of a Bermudan swaption, which can be exercised at multiple points in time, and its most expensive European swaption and reflects the additional value that the multiple exercise dates provide the holder. Switch values are dependent on market conditions and can vary greatly depending on a number of factors, such as the tenor of the underlying swap as well as the strike price of the option. An increase in switch value, in isolation, would generally result in an increase in a fair value measurement.

Interest rate curve – The interest rate curve represents the relationship of interest rates over differing tenors. The interest rate curve is used to set interest rate and foreign exchange derivative cash flows and is also a pricing input used in the discounting of any derivative cash flow.

Forward price – The forward price is the price at which the buyer agrees to purchase the asset underlying a forward contract on the predetermined future delivery date, and is such that the value of the contract is zero at inception.

The forward price is used as an input in the valuation of certain derivatives and depends on a number of factors including interest rates, the current price of the underlying asset, and the expected income to be received and costs to be incurred by the seller as a result of holding that asset until the delivery date. An increase in the forward can result in an increase or a decrease in a fair value measurement.

Changes in level 3 recurring fair value measurements

The following tables include a rollforward of the Consolidated balance sheets amounts (including changes in fair value) for financial instruments classified by the Firm within level 3 of the fair value hierarchy for the years ended December 31, 2024, 2023 and 2022. When a determination is made to classify a financial instrument within level 3, the determination is based on the significance of the unobservable inputs to the overall fair value measurement. However, level 3 financial instruments typically include, in addition to the unobservable or level 3 components, observable components (that is, components that are actively quoted and can be validated to external sources); accordingly, the gains and losses in the table below include changes in fair value due in part to observable factors that are part of the valuation methodology. The Firm risk-manages the observable components of level 3 financial instruments using securities and derivative positions that are classified within level 1 or 2 of the fair value hierarchy; as these level 1 and level 2 risk management instruments are not included below, the gains or losses in the following tables do not reflect the effect of the Firm's risk management activities related to such level 3 instruments.

Year ended December 31, 2024 (in millions)	Fair value measurements using significant unobservable inputs								Change in unrealized gains/ (losses) related to financial instruments held at Dec. 31, 2024	
	Fair value at Jan. 1, 2024	Total realized/ unrealized gains/ (losses)	Purchases ^(g)	Sales	Settlements ^(h)	Transfers into level 3	Transfers (out of) level 3	Fair value at Dec. 31, 2024		
Assets:^(a)										
Federal funds sold and securities purchased under resale agreements	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Trading assets:										
Debt instruments:										
Mortgage-backed securities:										
U.S. GSEs and government agencies	758	18	46	(260)	(81)	7	—	488	(3)	
Residential – nonagency	5	7	—	(5)	(2)	4	(4)	5	—	
Commercial – nonagency	12	(2)	—	—	—	—	—	10	(1)	
Total mortgage-backed securities	775	23	46	(265)	(83)	11	(4)	503	(4)	
Obligations of U.S. states and municipalities	10	—	—	—	(3)	—	(6)	1	—	
Non-U.S. government debt securities	179	(6)	175	(183)	—	17	(30)	152	(10)	
Corporate debt securities	484	36	459	(354)	(181)	13	(67)	390	45	
Loans	684	63	800	(642)	(74)	839	(582)	1,088	29	
Asset-backed securities	6	—	9	(5)	(8)	8	—	10	—	
Total debt instruments	2,138	116	1,489	(1,449)	(349)	888	(689)	2,144	60	
Equity securities	127	(21)	138	(123)	(1)	85	(143)	62	(308)	
Physical commodities	7	17	3	—	(1)	—	—	26	16	
Other	101	144	53	—	(68)	28	(48)	210	108	
Total trading assets – debt and equity instruments	2,373	256 ^(c)	1,683	(1,572)	(419)	1,001	(880)	2,442	(124) ^(c)	
Net derivative receivables: ^(b)										
Interest rate	502	745	387	(197)	(608)	(172)	(356)	301	(362)	
Credit	265	(208)	(2)	(17)	(333)	(61)	(7)	(363)	(265)	
Foreign exchange	62	248	178	(538)	(30)	128	(28)	20	353	
Equity	(2,402)	(321)	904	(2,488)	953	(91)	579	(2,866)	783	
Commodity	(279)	64	32	(215)	310	15	—	(73)	102	
Total net derivative receivables	(1,852)	528 ^(c)	1,499	(3,455)	292	(181)	188	(2,981)	611 ^(c)	
Available-for-sale securities:										
Mortgage-backed securities:										
Commercial – nonagency	—	—	—	—	—	8	—	8	—	
Corporate debt securities	—	—	—	—	—	—	—	—	—	
Total available-for-sale securities	—	— ^(d)	—	—	—	8	—	8	— ^(d)	
Loans	3,079	266	431	(756)	(993)	816	(427)	2,416	251	
Mortgage servicing rights	8,522	762	926	(21)	(1,068)	—	—	9,121	762	
Other assets	758	105	623	(62)	(58)	5	(27)	1,344	88	

Year ended December 31, 2024 (in millions)	Fair value measurements using significant unobservable inputs								Change in unrealized (gains)/losses related to financial instruments held at Dec. 31, 2024	
	Fair value at Jan. 1, 2024	Total realized/ unrealized (gains)/ losses	Purchases	Sales	Issuances	Settlements ^(h)	Transfers into level 3	Transfers (out of) level 3		Fair value at Dec. 31, 2024
Liabilities:^(a)										
Deposits	\$ 1,833	\$ (14)	\$ —	\$ —	\$ 2,006	\$ (1,522)	\$ 34	\$ (152)	\$ 2,185	\$ (44)
Short-term borrowings	1,758	180	—	—	7,752	(6,230)	23	(7)	3,476	58
Trading liabilities – debt and equity instruments	37	(47)	(45)	70	—	—	48	(17)	46	18
Accounts payable and other liabilities	52	(6)	(35)	63	—	—	5	(3)	76	(6)
Long-term debt	27,726	1,475	—	—	23,920	(18,432)	738	(863)	34,564	1,212

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Year ended December 31, 2023 (in millions)	Fair value measurements using significant unobservable inputs								Change in unrealized gains/(losses) related to financial instruments held at Dec. 31, 2023	
	Fair value at Jan. 1, 2023	Total realized/ unrealized gains/ (losses)	Purchases ^(a)	Sales	Settlements ^(h)	Transfers into level 3	Transfers (out of) level 3	Fair value at Dec. 31, 2023		
Assets:^(a)										
Federal funds sold and securities purchased under resale agreements	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Trading assets:										
Debt instruments:										
Mortgage-backed securities:										
U.S. GSEs and government agencies	759	4	249	(133)	(107)	—	(14)	758	1	
Residential – nonagency	5	6	—	(6)	(1)	1	—	5	1	
Commercial – nonagency	7	6	—	—	(1)	8	(8)	12	7	
Total mortgage-backed securities	771	16	249	(139)	(109)	9	(22)	775	9	
Obligations of U.S. states and municipalities	7	—	1	—	(1)	3	—	10	—	
Non-U.S. government debt securities	155	74	217	(254)	—	22	(35)	179	74	
Corporate debt securities	463	36	322	(172)	(41)	114	(238)	484	35	
Loans	759	(15)	1,027	(499)	(441)	382	(529)	684	30	
Asset-backed securities	23	—	7	(12)	(1)	5	(16)	6	—	
Total debt instruments	2,178	111	1,823	(1,076)	(593)	535	(840)	2,138	148	
Equity securities	665	(53)	164	(239)	(384)	192	(218)	127	(422)	
Physical commodities	2	—	7	—	(2)	—	—	7	—	
Other	64	(58)	141	—	(5)	1	(42)	101	(28)	
Total trading assets – debt and equity instruments	2,909	—	2,135	(1,315)	(984)	728	(1,100)	2,373	(302)	^(c)
Net derivative receivables: ^(b)										
Interest rate	701	556	251	(255)	654	(1,117)	(288)	502	419	
Credit	13	304	(60)	(25)	47	15	(29)	265	230	
Foreign exchange	489	31	151	(144)	(187)	144	(422)	62	(80)	
Equity	(384)	191	928	(1,931)	(1,306)	700	(600)	(2,402)	(646)	
Commodity	(146)	(59)	59	(290)	(51)	(11)	219	(279)	(144)	
Total net derivative receivables	673	1,023	1,329	(2,645)	(843)	(269)	(1,120)	(1,852)	(221)	^(c)
Available-for-sale securities:										
Mortgage-backed securities:										
Commercial – nonagency	—	—	—	—	—	—	—	—	—	
Corporate debt securities	239	24	—	(225)	—	—	(38)	—	—	
Total available-for-sale securities	239	24	—	(225)	—	—	(38)	—	—	^(d)
Loans	1,418	289	2,398	(120)	(1,147)	1,306	(1,065)	3,079	293	^(c)
Mortgage servicing rights	7,973	467	1,281	(188)	(1,011)	—	—	8,522	467	^(e)
Other assets	405	(36)	525	(20)	(147)	45	(14)	758	(82)	^(c)

Year ended December 31, 2023 (in millions)	Fair value measurements using significant unobservable inputs								Change in unrealized (gains)/losses related to financial instruments held at Dec. 31, 2023	
	Fair value at Jan. 1, 2023	Total realized/ unrealized (gains)/ losses	Purchases	Sales	Issuances	Settlements ^(h)	Transfers into level 3	Transfers (out of) level 3		Fair value at Dec. 31, 2023
Liabilities:^(a)										
Deposits	\$ 2,162	\$ 95	\$ —	\$ —	\$ 940	\$ (1,043)	\$ —	\$ (321)	\$ 1,833	\$ 73
Short-term borrowings	1,401	201	—	—	4,522	(4,345)	3	(24)	1,758	14
Trading liabilities – debt and equity instruments	84	(21)	(32)	9	—	(2)	19	(20)	37	—
Accounts payable and other liabilities	53	(4)	(16)	24	—	—	8	(13)	52	(4)
Long-term debt	24,092	3,010	—	—	12,679	(11,555)	229	(729)	27,726	2,870

Year ended December 31, 2022 (in millions)	Fair value measurements using significant unobservable inputs							Fair value at Dec. 31, 2022	Change in unrealized gains/ (losses) related to financial instruments held at Dec. 31, 2022	
	Fair value at Jan. 1, 2022	Total realized/ unrealized gains/ (losses)	Purchases ^(a)	Sales	Settlements ^(h)	Transfers into level 3	Transfers (out of) level 3			
Assets:^(a)										
Federal funds sold and securities purchased under resale agreements	\$ —	\$ —	\$ 1	\$ (1)	\$ —	\$ (1)	\$ 1	\$ —	\$ —	\$ —
Trading assets:										
Debt instruments:										
Mortgage-backed securities:										
U.S. GSEs and government agencies	265	31	673	(125)	(84)	4	(5)	759	29	
Residential – nonagency	28	(1)	7	(5)	(12)	—	(12)	5	—	
Commercial – nonagency	10	—	—	(1)	—	3	(5)	7	—	
Total mortgage-backed securities	303	30	680	(131)	(96)	7	(22)	771	29	
Obligations of U.S. states and municipalities	7	—	—	—	—	—	—	7	—	
Non-U.S. government debt securities	81	(92)	494	(338)	(4)	84	(70)	155	(153)	
Corporate debt securities	332	(30)	404	(178)	(100)	357	(322)	463	(48)	
Loans	708	(51)	652	(605)	(230)	925	(640)	759	(26)	
Asset-backed securities	26	5	19	(24)	(1)	5	(7)	23	1	
Total debt instruments	1,457	(138)	2,249	(1,276)	(431)	1,378	(1,061)	2,178	(197)	
Equity securities	662	(1,036)	473	(377)	(2)	1,066	(121)	665	(840)	
Physical commodities	—	(1)	3	—	—	—	—	2	(1)	
Other	160	93	37	—	(221)	1	(6)	64	46	
Total trading assets – debt and equity instruments	2,279	(1,082) ^(c)	2,762	(1,653)	(654)	2,445	(1,188)	2,909	(992) ^(c)	
Net derivative receivables: ^(b)										
Interest rate	(16)	187	325	(483)	329	732	(373)	701	332	
Credit	74	226	17	(9)	(271)	5	(29)	13	170	
Foreign exchange	(419)	726	215	(114)	83	3	(5)	489	459	
Equity	(3,626)	5,016	1,226	(2,530)	96	(656)	90	(384)	3,435	
Commodity	(907)	571	110	(331)	350	5	56	(146)	369	
Total net derivative receivables	(4,894)	6,726 ^(c)	1,893	(3,467)	587	89	(261)	673	4,765 ^(c)	
Available-for-sale securities:										
Mortgage-backed securities:										
Commercial – nonagency	—	—	—	—	—	—	—	—	—	
Corporate debt securities	161	5	88	—	(15)	—	—	239	5	
Total available-for-sale securities	161	5 ^(d)	88	—	(15)	—	—	239	5 ^(d)	
Loans	1,933	(158) ^(c)	568	(261)	(886)	1,053	(831)	1,418	(76) ^(c)	
Mortgage servicing rights	5,494	2,039 ^(e)	2,198	(822)	(936)	—	—	7,973	2,039 ^(e)	
Other assets	306	194 ^(c)	50	(38)	(103)	2	(6)	405	191 ^(c)	

Year ended December 31, 2022 (in millions)	Fair value measurements using significant unobservable inputs							Fair value at Dec. 31, 2022	Change in unrealized (gains)/ losses related to financial instruments held at Dec. 31, 2022	
	Fair value at Jan. 1, 2022	Total realized/ unrealized (gains)/ losses	Purchases	Sales	Issuances	Settlements ^(h)	Transfers into level 3			Transfers (out of) level 3
Liabilities:^(a)										
Deposits	\$ 2,317	\$ (292) ^{(c)(f)}	\$ —	\$ —	\$ 531	\$ (114)	\$ —	\$ (280)	\$ 2,162	\$ (76) ^{(c)(f)}
Short-term borrowings	2,481	(358) ^{(c)(f)}	—	—	3,963	(4,685)	15	(15)	1,401	90 ^{(c)(f)}
Trading liabilities – debt and equity instruments	30	(31) ^(c)	(41)	77	—	—	57	(8)	84	101 ^(c)
Accounts payable and other liabilities	69	(16) ^(c)	(37)	42	—	—	1	(6)	53	(16) ^(c)
Long-term debt	24,374	(3,869) ^{(c)(f)}	—	—	12,714	(8,876)	793	(1,044)	24,092	(3,447) ^{(c)(f)}

Notes to consolidated financial statements

- (a) Level 3 assets at fair value as a percentage of total Firm assets at fair value (including assets measured at fair value on a nonrecurring basis) were 2% at December 31, 2024, 2023 and 2022. Level 3 liabilities at fair value as a percentage of total Firm liabilities at fair value (including liabilities measured at fair value on a nonrecurring basis) were 9% at December 31, 2024, and 8% at both December 31, 2023 and 2022.
- (b) All level 3 derivatives are presented on a net basis, irrespective of the underlying counterparty.
- (c) Primarily reported in principal transactions revenue, except for changes in fair value for CCB mortgage loans and lending-related commitments originated with the intent to sell, and mortgage loan purchase commitments, which are reported in mortgage fees and related income.
- (d) Realized gains/(losses) on AFS securities are reported in investment securities gains/(losses). Unrealized gains/(losses) are reported in OCI. Realized and unrealized gains/(losses) recorded on level 3 AFS securities were not material for the years ended December 31, 2024, 2023 and 2022.
- (e) Changes in fair value for MSRs are reported in mortgage fees and related income.
- (f) Realized (gains)/losses due to DVA for fair value option elected liabilities are reported in principal transactions revenue, and were not material for the years ended December 31, 2024, 2023 and 2022. Unrealized (gains)/losses are reported in OCI, and were \$(50) million, \$(158) million and \$(529) million for the years ended December 31, 2024, 2023 and 2022, respectively.
- (g) Loan originations are included in purchases.
- (h) Includes financial assets and liabilities that have matured, been partially or fully repaid, impacts of modifications, deconsolidations associated with beneficial interests in VIEs and other items.

Level 3 analysis

Consolidated balance sheets changes

The following describes significant changes to level 3 assets since December 31, 2023, for those items measured at fair value on a recurring basis. Refer to Assets and liabilities measured at fair value on a nonrecurring basis on page 199 for further information on changes impacting items measured at fair value on a nonrecurring basis.

For the year ended December 31, 2024

Level 3 assets were \$23.8 billion at December 31, 2024, reflecting an increase of \$127 million from December 31, 2023.

The increase for the year ended December 31, 2024 was driven by:

- \$599 million increase in MSRs.
- \$586 million increase in other assets primarily due to purchases,

offset by:

- \$472 million decrease in gross derivative receivables due to sales and settlements predominantly offset by gains, purchases and net transfers.
- \$663 million decrease in non-trading loans due to sales and settlements largely offset by gains, purchases and net transfers.

Refer to Note 15 for information on MSRs.

Refer to the sections below for additional information.

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

During the year ended December 31, 2024, significant transfers from level 2 into level 3 included the following:

- \$1.0 billion of total debt and equity instruments, predominantly trading loans, driven by a decrease in observability.
- \$959 million of gross interest rate derivative receivables and \$1.1 billion of gross interest rate derivative payables as a result of a decrease in observability and an increase in the significance of unobservable inputs.
- \$1.6 billion of gross equity derivative receivables and \$1.7 billion of gross equity derivative payables as a

result of a decrease in observability and an increase in the significance of unobservable inputs.

- \$816 million of non-trading loans driven by a decrease in observability.

During the year ended December 31, 2024, significant transfers from level 3 into level 2 included the following:

- \$880 million of total debt and equity instruments, predominantly trading loans and equity securities, driven by an increase in observability.
- \$1.4 billion of gross equity derivative receivables and \$2.0 billion of gross equity derivative payables as a result of an increase in observability and a decrease in the significance of unobservable inputs.
- \$863 million of long-term debt as a result of an increase in observability and a decrease in the significance of unobservable inputs.

During the year ended December 31, 2023, significant transfers from level 2 into level 3 included the following:

- \$951 million of gross interest rate derivative receivables as a result of a decrease in observability and an increase in the significance of unobservable inputs and \$2.1 billion of gross interest rate derivative payables as a result of transition to term SOFR for certain interest rate options.
- \$1.5 billion of gross equity derivative receivables and \$829 million of gross equity derivative payables as a result of a decrease in observability and an increase in the significance of unobservable inputs.
- \$1.3 billion of non-trading loans driven by a decrease in observability.

During the year ended December 31, 2023, significant transfers from level 3 into level 2 included the following:

- \$1.1 billion of total debt and equity instruments, partially due to trading loans, driven by an increase in observability.
- \$921 million of gross interest rate derivative receivables as a result of an increase in observability and a decrease in the significance of unobservable inputs.
- \$2.3 billion of gross equity derivative receivables and \$1.7 billion of gross equity derivative payables as a result of an increase in observability and a decrease in the significance of unobservable inputs.
- \$1.1 billion of non-trading loans as a result of an increase in observability and a decrease in the significance of unobservable inputs.

During the year ended December 31, 2022, significant transfers from level 2 into level 3 included the following:

- \$2.4 billion of total debt and equity instruments, predominantly due to equity securities of \$1.1 billion driven by a decrease in observability predominantly as a result of restricted access to certain markets and trading loans of \$925 million driven by a decrease in observability.
- \$1.6 billion of gross interest rate derivative receivables and \$878 million of gross interest rate derivative payables as a result of a decrease in observability and an increase in the significance of unobservable inputs.
- \$1.6 billion of gross equity derivative receivables and \$2.3 billion of gross equity derivative payables as a result of a decrease in observability and an increase in the significance of unobservable inputs.
- \$1.1 billion of non-trading loans driven by a decrease in observability.
- \$793 million of long-term debt driven by a decrease in observability and an increase in the significance of unobservable inputs for structured notes.

During the year ended December 31, 2022, significant transfers from level 3 into level 2 included the following:

- \$1.2 billion of total debt and equity instruments, largely due to trading loans, driven by an increase in observability.
- \$1.2 billion of gross interest rate derivative receivables and \$807 million of gross interest rate derivative payables as a result of an increase in observability and a decrease in the significance of unobservable inputs.
- \$2.2 billion of gross equity derivative receivables and \$2.3 billion of gross equity derivative payables as a result of an increase in observability and a decrease in the significance of unobservable inputs.

- \$831 million of non-trading loans driven by an increase in observability.
- \$1.0 billion of long-term debt driven by an increase in observability and a decrease in the significance of unobservable inputs for structured notes.

All transfers are based on changes in the observability and/or significance of the valuation inputs and are assumed to occur at the beginning of the quarterly reporting period in which they occur.

Gains and losses

The following describes significant components of total realized/unrealized gains/(losses) for instruments measured at fair value on a recurring basis for the years ended December 31, 2024, 2023 and 2022. These amounts exclude any effects of the Firm's risk management activities where the financial instruments are classified as level 1 and 2 of the fair value hierarchy. Refer to Changes in level 3 recurring fair value measurements rollforward tables on pages 192–196 for further information on these instruments.

2024

- \$1.9 billion of net gains on assets, predominantly driven by gains in net interest rate derivative receivables due to market movements and gains in MSRs reflecting lower prepayment speeds on higher rates.
- \$1.6 billion of net losses on liabilities, predominantly driven by losses in long-term debt due to market movements.

2023

- \$1.8 billion of net gains on assets, largely driven by gains in net interest rate derivative receivables due to market movements and gains in MSRs reflecting lower prepayment speeds on higher rates.
- \$3.3 billion of net losses on liabilities, predominantly driven by losses in long-term debt due to market movements.

2022

- \$7.7 billion of net gains on assets, predominantly driven by gains in net equity derivative receivables due to market movements and gains in MSRs reflecting lower prepayment speeds on higher rates.
- \$4.6 billion of net gains on liabilities, predominantly driven by a decline in the fair value of long-term debt due to market movements.

Refer to Note 15 for information on MSRs.

Notes to consolidated financial statements

Credit and funding adjustments – derivatives

Derivatives are generally valued using models that use as their basis observable market parameters. These market parameters generally do not consider factors such as counterparty nonperformance risk, the Firm's own credit quality, and funding costs. Therefore, it is generally necessary to make adjustments to the base estimate of fair value to reflect these factors.

CVA represents the adjustment, relative to the relevant benchmark interest rate, necessary to reflect counterparty nonperformance risk. The Firm estimates CVA using a scenario analysis to estimate the expected positive credit exposure across all of the Firm's existing positions with each counterparty, and then estimates losses based on the probability of default and estimated recovery rate as a result of a counterparty credit event considering contractual factors designed to mitigate the Firm's credit exposure, such as collateral and legal rights of offset. The key inputs to this methodology are (i) the probability of a default event occurring for each counterparty, as derived from observed or estimated CDS spreads; and (ii) estimated recovery rates implied by CDS spreads, adjusted to consider the differences in recovery rates as a derivative creditor relative to those reflected in CDS spreads, which generally reflect senior unsecured creditor risk.

FVA represents the adjustment to reflect the impact of funding and is recognized where there is evidence that a market participant in the principal market would incorporate it in a transfer of the instrument. The Firm's FVA framework, applied to uncollateralized (including partially collateralized) over-the-counter ("OTC") derivatives incorporates key inputs such as: (i) the expected funding requirements arising from the Firm's positions with each counterparty and collateral arrangements; and (ii) the estimated market funding cost in the principal market which, for derivative liabilities, considers the Firm's credit risk (DVA). For collateralized derivatives, the fair value is estimated by discounting expected future cash flows at the relevant overnight indexed swap rate given the underlying collateral agreement with the counterparty, and therefore a separate FVA is not necessary.

The following table provides the impact of credit and funding adjustments on principal transactions revenue in the respective periods, excluding the effect of any associated hedging activities. The FVA presented below includes the impact of the Firm's own credit quality on the inception value of liabilities as well as the impact of changes in the Firm's own credit quality over time.

Year ended December 31, (in millions)	2024	2023	2022
Credit and funding adjustments:			
Derivatives CVA	\$ 29	\$ 221	\$ 22
Derivatives FVA	99	114	42

Valuation adjustments on fair value option elected liabilities

The valuation of the Firm's liabilities for which the fair value option has been elected requires consideration of the Firm's own credit risk. DVA on fair value option elected liabilities reflects changes (subsequent to the issuance of the liability) in the Firm's probability of default and LGD, which are estimated based on changes in the Firm's credit spread observed in the bond market. Realized (gains)/losses due to DVA for fair value option elected liabilities are reported in principal transactions revenue. Unrealized (gains)/losses are reported in OCI. Refer to page 196 in this Note and Note 24 for further information.

Assets and liabilities measured at fair value on a nonrecurring basis

The following tables present the assets held as of December 31, 2024 and 2023, for which nonrecurring fair value adjustments were recorded during the years ended December 31, 2024 and 2023, by major product category and fair value hierarchy. There were no liabilities measured at fair value on a nonrecurring basis at both December 31, 2024 and 2023.

December 31, 2024 (in millions)	Fair value hierarchy			Total fair value
	Level 1	Level 2	Level 3	
Loans	\$ —	\$ 738	\$ 694	\$ 1,432
Other assets ^(a)	—	9	1,048	1,057
Total assets measured at fair value on a nonrecurring basis	\$ —	\$ 747	\$ 1,742	\$ 2,489

December 31, 2023 (in millions)	Fair value hierarchy			Total fair value
	Level 1	Level 2	Level 3	
Loans	\$ —	\$ 599	\$ 1,156	\$ 1,755
Other assets	—	52	1,334	1,386
Total assets measured at fair value on a nonrecurring basis	\$ —	\$ 651	\$ 2,490	\$ 3,141

(a) Included equity securities without readily determinable fair values that were adjusted based on observable price changes in orderly transactions from an identical or similar investment of the same issuer (measurement alternative). Of the \$1.0 billion in level 3 assets measured at fair value on a nonrecurring basis as of December 31, 2024, \$668 million related to equity securities adjusted based on the measurement alternative. These equity securities are classified as level 3 due to the infrequency of the observable prices and/or the restrictions on the shares. Also, included impairments on certain equity method investments.

Nonrecurring fair value changes

The following table presents the total change in value of assets and liabilities for which fair value adjustments have been recognized for the years ended December 31, 2024, 2023 and 2022, related to assets and liabilities held at those dates.

December 31, (in millions)	2024	2023	2022
Loans	\$ (302)	\$ (276)	\$ (55)
Other assets ^(a)	(610)	(789)	(409)
Accounts payable and other liabilities	—	—	(83)
Total nonrecurring fair value gains/(losses)	\$ (912)	\$ (1,065)	\$ (547)

(a) Included \$(197) million, \$(232) million and \$(338) million for the years ended December 31, 2024, 2023 and 2022, respectively, of net gains/(losses) as a result of the measurement alternative. The current period also included impairments on certain equity method investments.

Notes to consolidated financial statements

Equity securities without readily determinable fair values

The Firm measures certain equity securities without readily determinable fair values at cost less impairment (if any), plus or minus observable price changes from an identical or similar investment of the same issuer (i.e., measurement alternative), with such changes recognized in other income.

In its determination of the new carrying values upon observable price changes, the Firm may adjust the prices if deemed necessary to arrive at the Firm's estimated fair values. Such adjustments may include adjustments to reflect the different rights and obligations of similar securities, and other adjustments that are consistent with the Firm's valuation techniques for private equity direct investments.

The following table presents the carrying value of equity securities without readily determinable fair values held as of December 31, 2024 and 2023, that are measured under the measurement alternative and the related adjustments recorded during the periods presented for those securities with observable price changes. These securities are included in the nonrecurring fair value tables when applicable price changes are observable.

As of or for the year ended December 31, (in millions)	2024	2023
Other assets		
Carrying value ^(a)	\$ 3,737	\$ 4,457
Upward carrying value changes ^(b)	89	93
Downward carrying value changes/impairment ^(c)	(286)	(325)

(a) The period-end carrying values reflect cumulative purchases and sales in addition to upward and downward carrying value changes.

(b) The cumulative upward carrying value changes between January 1, 2018 and December 31, 2024 were \$1.1 billion.

(c) The cumulative downward carrying value changes/impairment between January 1, 2018 and December 31, 2024 were \$(1.5) billion.

Included in other assets above is the Firm's interest in approximately 18.6 million Visa Class B-2 common shares ("Visa B-2 shares") and 37.2 million Visa Class B common shares ("Visa B shares") reflected in the Firm's principal investment portfolio as of December 31, 2024 and 2023, respectively.

The Visa B shares were redenominated to Visa Class B-1 common shares ("Visa B-1 shares") on January 24, 2024. On April 8, 2024, Visa commenced an initial exchange offer for any and all outstanding Visa B-1 shares. On May 6, 2024, the Firm announced that Visa had accepted the Firm's tender of its 37.2 million Visa B-1 shares in exchange for a combination of Visa B-2 shares and Visa Class C common shares ("Visa C shares"), resulting in an initial gain of \$8.0 billion based on the fair value of the Visa C shares. In addition, the second quarter of 2024 also reflected other Visa-related activity, including the fair value changes of the Visa C shares and derivative instruments, as well as dividends, resulting in the \$7.9 billion net gain on Visa shares in the quarter. As of September 30, 2024, the Firm had disposed of all of its Visa C shares through sales in the second and third quarters of 2024 and through a \$1.0 billion contribution to the Firm's Foundation in the second quarter of 2024.

The Visa B-2 shares are subject to certain transfer restrictions and are convertible into Visa Class A common shares ("Visa A shares") at a specified conversion rate upon final resolution of certain litigation matters involving Visa. The conversion rate of Visa B-2 shares to Visa A shares was 1.5430 at December 31, 2024 and may be adjusted by Visa depending on developments related to the litigation matters. The outcome of those litigation matters, and the effect that the resolution of those matters may have on the conversion rate, is unknown. Accordingly, as of December 31, 2024, there is significant uncertainty regarding when the transfer restrictions on Visa B-2 shares may be terminated and what the final conversion rate for the Visa B-2 shares will be. As a result of these considerations, as well as differences in voting rights, Visa B-2 shares are not considered to be similar to Visa A shares, and are held at their nominal carryover basis.

Separately, in connection with sales of Visa B shares prior to 2024, the Firm has entered into derivative instruments with the purchasers of the shares under which the Firm retains the risk associated with changes in the conversion rate. Under the terms of the derivative instruments, the Firm will (a) make or receive payments based on subsequent changes in the conversion rate and (b) make periodic interest payments to the purchasers of the Visa B shares. The payments under the derivative instruments will continue as long as the Visa B-2 shares associated with the previously sold Visa B shares remain subject to transfer restrictions. The derivative instruments are accounted for at fair value using a discounted cash flow methodology based upon the Firm's estimate of the timing and magnitude of final resolution of the litigation matters. The derivative instruments are recorded in trading liabilities, and changes in fair value are recognized in other income. The notional amount of shares associated with those derivative instruments has been adjusted as a result of the Visa exchange offer. As of December 31, 2024, the Firm held derivative instruments associated with 11.6 million Visa B-2 shares related to Visa B share sales prior to 2024, which are all subject to similar terms and conditions.

Additional disclosures about the fair value of financial instruments that are not carried on the Consolidated balance sheets at fair value

U.S. GAAP requires disclosure of the estimated fair value of certain financial instruments, which are included in the following table. However, this table does not include other items, such as nonfinancial assets, intangible assets, certain financial instruments, and customer relationships. In the opinion of management, these items, in the aggregate, add significant value to JPMorganChase.

Financial instruments for which carrying value approximates fair value

Certain financial instruments that are not carried at fair value on the Consolidated balance sheets are carried

at amounts that approximate fair value, due to their short-term nature and generally negligible credit risk. These instruments include cash and due from banks, deposits with banks, federal funds sold, securities purchased under resale agreements and securities borrowed, short-term receivables and accrued interest receivable, short-term borrowings, federal funds purchased, securities loaned and sold under repurchase agreements, accounts payable, and accrued liabilities. In addition, U.S. GAAP requires that the fair value of deposit liabilities with no stated maturity (i.e., demand, savings and certain money market deposits) be equal to their carrying value; recognition of the inherent funding value of these instruments is not permitted.

The following table presents, by fair value hierarchy classification, the carrying values and estimated fair values at December 31, 2024 and 2023, of financial assets and liabilities, excluding financial instruments that are carried at fair value on a recurring basis, and their classification within the fair value hierarchy.

(in billions)	December 31, 2024					December 31, 2023				
	Estimated fair value hierarchy					Estimated fair value hierarchy				
	Carrying value	Level 1	Level 2	Level 3	Total estimated fair value	Carrying value	Level 1	Level 2	Level 3	Total estimated fair value
Financial assets										
Cash and due from banks	\$ 23.4	\$ 23.4	\$ —	\$ —	\$ 23.4	\$ 29.1	\$ 29.1	\$ —	\$ —	\$ 29.1
Deposits with banks	445.9	445.8	0.1	—	445.9	595.1	594.6	0.5	—	595.1
Accrued interest and accounts receivable	101.1	—	101.0	0.1	101.1	107.1	—	107.0	0.1	107.1
Federal funds sold and securities purchased under resale agreements	8.2	—	8.2	—	8.2	16.3	—	16.3	—	16.3
Securities borrowed	135.6	—	135.6	—	135.6	130.3	—	130.3	—	130.3
Investment securities, held-to-maturity	274.5	97.4	150.5	—	247.9	369.8	160.6	182.2	—	342.8
Loans, net of allowance for loan losses ^(a)	1,282.3	—	268.7	1,007.8	1,276.5	1,262.5	—	285.6	964.6	1,250.2
Other	82.7	—	81.3	1.6	82.9	76.1	—	74.9	1.4	76.3
Financial liabilities										
Deposits	\$2,372.3	\$ —	\$2,372.5	\$ —	\$ 2,372.5	\$ 2,322.3	\$ —	\$ 2,322.6	\$ —	\$ 2,322.6
Federal funds purchased and securities loaned or sold under repurchase agreements	70.5	—	70.5	—	70.5	47.5	—	47.5	—	47.5
Short-term borrowings	26.4	—	26.3	—	26.3	24.7	—	24.7	—	24.7
Accounts payable and other liabilities ^(b)	232.8	—	219.6	12.6	232.2	241.8	—	233.3	8.1	241.4
Beneficial interests issued by consolidated VIEs	27.3	—	27.4	—	27.4	23.0	—	23.0	—	23.0
Long-term debt	300.6	—	251.2	50.7	301.9	303.9	—	252.2	51.3	303.5

(a) Fair value is typically estimated using a discounted cash flow model that incorporates the characteristics of the underlying loans (including principal, contractual interest rate and contractual fees) and other key inputs, including expected lifetime credit losses, interest rates, prepayment rates, and primary origination or secondary market spreads. For certain loans, the fair value is measured based on the value of the underlying collateral. Carrying value of the loan takes into account the loan's allowance for loan losses, which represents the loan's expected credit losses over its remaining expected life. The difference between the estimated fair value and carrying value of a loan is generally attributable to changes in market interest rates, including credit spreads, market liquidity premiums and other factors that affect the fair value of a loan but do not affect its carrying value.

(b) Excludes lending-related commitments disclosed in the table below.

Notes to consolidated financial statements

The majority of the Firm's lending-related commitments are not carried at fair value on a recurring basis on the Consolidated balance sheets. The carrying value and the estimated fair value of these wholesale lending-related commitments were as follows for the periods indicated.

(in billions)	December 31, 2024					December 31, 2023				
	Estimated fair value hierarchy				Total estimated fair value	Estimated fair value hierarchy				Total estimated fair value
	Carrying value ^{(a)(b)(c)}	Level 1	Level 2	Level 3		Carrying value ^{(a)(b)(c)}	Level 1	Level 2	Level 3	
Wholesale lending- related commitments	\$ 2.7	\$ —	\$ —	\$ 4.4	\$ 4.4	\$ 3.0	\$ —	\$ —	\$ 4.8	\$ 4.8

(a) Excludes the current carrying values of the guarantee liability and the offsetting asset, each of which is recognized at fair value at the inception of the guarantees.

(b) Includes the wholesale allowance for lending-related commitments.

(c) As of December 31, 2024 and 2023, included fair value adjustments associated with First Republic for other unfunded commitments to extend credit totaling \$699 million and \$1.1 billion, respectively, recorded in accounts payable and other liabilities on the Consolidated balance sheets. Refer to Notes 28 and 34 for additional information.

The Firm does not estimate the fair value of consumer off-balance sheet lending-related commitments. In many cases, the Firm can reduce or cancel these commitments with or without notice to the borrower, as permitted by law, or in accordance with the contract. Refer to page 183 of this Note for a further discussion of the valuation of lending-related commitments.

Note 3 – Fair value option

The fair value option provides an option to elect fair value for selected financial assets, financial liabilities, unrecognized firm commitments, and written loan commitments.

The Firm has elected to measure certain instruments at fair value for several reasons including to mitigate income statement volatility caused by the differences between the measurement basis of elected instruments (e.g., certain instruments that otherwise would be accounted for on an accrual basis) and the associated risk management arrangements that are accounted for on a fair value basis, as well as to better reflect those instruments that are managed on a fair value basis.

The Firm's election of fair value includes the following instruments:

- Loans purchased or originated as part of securitization warehousing activity, subject to bifurcation accounting, or managed on a fair value basis, including lending-related commitments
- Certain securities financing agreements
- Owned beneficial interests in securitized financial assets that contain embedded credit derivatives, which would otherwise be required to be separately accounted for as a derivative instrument
- Structured notes and other hybrid instruments, which are predominantly financial instruments that contain embedded derivatives, that are issued or transacted as part of client-driven activities
- Certain long-term beneficial interests issued by CIB's consolidated securitization trusts where the underlying assets are carried at fair value

Notes to consolidated financial statements

Changes in fair value under the fair value option election

The following table presents the changes in fair value included in the Consolidated statements of income for the years ended December 31, 2024, 2023 and 2022, for items for which the fair value option was elected. The profit and loss information presented below only includes the financial instruments that were elected to be measured at fair value; related risk management instruments, which are required to be measured at fair value, are not included in the table.

December 31, (in millions)	2024			2023			2022		
	Principal transactions	All other income	Total changes in fair value recorded ^(e)	Principal transactions	All other income	Total changes in fair value recorded ^(e)	Principal transactions	All other income	Total changes in fair value recorded ^(e)
Federal funds sold and securities purchased under resale agreements	\$ 144	\$ —	\$ 144	\$ 300	\$ —	\$ 300	\$ (384)	\$ —	\$ (384)
Securities borrowed	347	—	347	164	—	164	(499)	—	(499)
Trading assets:									
Debt and equity instruments, excluding loans	7,205	—	7,205	3,656	—	3,656	(1,703)	—	(1,703)
Loans reported as trading assets:									
Changes in instrument-specific credit risk	346	—	346	248	—	248	(136)	—	(136)
Other changes in fair value	9	10 ^(c)	19	3	5 ^(c)	8	(59)	—	(59)
Loans:									
Changes in instrument-specific credit risk	517	(6) ^(c)	511	322	(4) ^(c)	318	(242)	21 ^(c)	(221)
Other changes in fair value	75	371 ^(c)	446	427	216 ^(c)	643	(1,421)	(794) ^(c)	(2,215)
Other assets	63	—	63	282	(4) ^(d)	278	39	(6) ^(d)	33
Deposits ^(a)	(3,398)	—	(3,398)	(2,582)	—	(2,582)	901	—	901
Federal funds purchased and securities loaned or sold under repurchase agreements	(12)	—	(12)	(121)	—	(121)	181	—	181
Short-term borrowings ^(a)	(922)	—	(922)	(567)	—	(567)	473	—	473
Trading liabilities	(1)	—	(1)	(24)	—	(24)	43	—	43
Beneficial interests issued by consolidated VIEs	—	—	—	—	—	—	(1)	—	(1)
Other liabilities	(11)	—	(11)	(16)	—	(16)	(11)	—	(11)
Long-term debt ^{(a)(b)}	(2,711)	(6) ^{(c)(d)}	(2,717)	(5,875)	(78) ^{(c)(d)}	(5,953)	8,990	98 ^{(c)(d)}	9,088

- (a) Unrealized gains/(losses) due to instrument-specific credit risk (DVA) for liabilities for which the fair value option has been elected are recorded in OCI, while realized gains/(losses) are recorded in principal transactions revenue. Realized gains/(losses) due to instrument-specific credit risk recorded in principal transactions revenue were not material for the years ended December 31, 2024, 2023 and 2022.
- (b) Long-term debt measured at fair value predominantly relates to structured notes. Although the risk associated with the structured notes is actively managed, the gains/(losses) reported in this table do not include the income statement impact of the risk management instruments used to manage such risk.
- (c) Reported in mortgage fees and related income.
- (d) Reported in other income.
- (e) Changes in fair value exclude contractual interest, which is included in interest income and interest expense for all instruments other than certain hybrid financial instruments in CIB. Refer to Note 7 for further information regarding interest income and interest expense.

Determination of instrument-specific credit risk for items for which the fair value option was elected

The following describes how the gains and losses that are attributable to changes in instrument-specific credit risk, were determined.

- Loans and lending-related commitments: For floating-rate instruments, all changes in value are attributed to instrument-specific credit risk. For fixed-rate instruments, an allocation of the changes in value for the period is made between those changes in value that are interest rate-related and changes in value that are credit-related. Allocations are generally based on an analysis of borrower-specific credit spread and recovery information,

where available, or benchmarking to similar entities or industries.

- Long-term debt: Changes in value attributable to instrument-specific credit risk were derived principally from observable changes in the Firm's credit spread as observed in the bond market.
- Securities financing agreements: Generally, for these types of agreements, there is a requirement that collateral be maintained with a market value equal to or in excess of the principal amount loaned; as a result, there would be no adjustment or an immaterial adjustment for instrument-specific credit risk related to these agreements.

Difference between aggregate fair value and aggregate remaining contractual principal balance outstanding

The following table reflects the difference between the aggregate fair value and the aggregate remaining contractual principal balance outstanding as of December 31, 2024 and 2023, for loans, long-term debt and long-term beneficial interests for which the fair value option has been elected.

December 31, (in millions)	2024			2023		
	Contractual principal outstanding	Fair value	Fair value over/(under) contractual principal outstanding	Contractual principal outstanding	Fair value	Fair value over/(under) contractual principal outstanding
Loans						
Nonaccrual loans						
Loans reported as trading assets	\$ 3,429	\$ 464	\$ (2,965)	\$ 2,987	\$ 588	\$ (2,399)
Loans	1,711	1,492	(219)	838	732	(106)
Subtotal	5,140	1,956	(3,184)	3,825	1,320	(2,505)
90 or more days past due and government guaranteed						
Loans ^(a)	50	45	(5)	65	59	(6)
All other performing loans^(b)						
Loans reported as trading assets	12,171	10,852	(1,319)	9,547	7,968	(1,579)
Loans ^(c)	40,342	39,813	(529)	38,948	38,060	(888)
Subtotal	52,513	50,665	(1,848)	48,495	46,028	(2,467)
Total loans	\$ 57,703	\$ 52,666	\$ (5,037)	\$ 52,385	\$ 47,407	\$ (4,978)
Long-term debt						
Principal-protected debt	\$ 57,414 ^(e)	\$ 47,780	\$ (9,634)	\$ 47,768 ^(e)	\$ 38,882	\$ (8,886)
Nonprincipal-protected debt ^(d)	NA	53,000	NA	NA	49,042	NA
Total long-term debt	NA	\$ 100,780	NA	NA	\$ 87,924	NA
Long-term beneficial interests						
Nonprincipal-protected debt ^(d)	NA	\$ 1	NA	NA	\$ 1	NA
Total long-term beneficial interests	NA	\$ 1	NA	NA	\$ 1	NA

(a) These balances are excluded from nonaccrual loans as the loans are insured and/or guaranteed by U.S. government agencies.

(b) There were no performing loans that were ninety days or more past due as of December 31, 2024 and 2023.

(c) Includes loans insured and/or guaranteed by U.S. government agencies less than 90 days past due.

(d) Remaining contractual principal is not applicable to nonprincipal-protected structured notes and long-term beneficial interests. Unlike principal-protected structured notes and long-term beneficial interests, for which the Firm is obligated to return a stated amount of principal at maturity, nonprincipal-protected structured notes and long-term beneficial interests do not obligate the Firm to return a stated amount of principal at maturity, but for structured notes to return an amount based on the performance of an underlying variable or derivative feature embedded in the note. However, investors are exposed to the credit risk of the Firm as issuer for both nonprincipal-protected and principal-protected notes.

(e) Where the Firm issues principal-protected zero-coupon or discount notes, the balance reflects the contractual principal payment at maturity or, if applicable, the contractual principal payment at the Firm's next call date.

At December 31, 2024 and 2023, the contractual amount of lending-related commitments for which the fair value option was elected was \$12.2 billion and \$9.7 billion, respectively, with a corresponding fair value of \$50 million and \$97 million, respectively. Refer to Note 28 for further information regarding off-balance sheet lending-related financial instruments.

Notes to consolidated financial statements

Structured note products by balance sheet classification and risk component

The following table presents the fair value of structured notes, by balance sheet classification and the primary risk type.

(in millions)	December 31, 2024				December 31, 2023			
	Long-term debt	Short-term borrowings	Deposits	Total	Long-term debt	Short-term borrowings	Deposits	Total
Risk exposure								
Interest rate	\$ 46,220	\$ 1,065	\$ 28,871	\$ 76,156	\$ 38,604	\$ 654	\$ 74,526	\$ 113,784
Credit	6,213	1,242	—	7,455	5,444	350	—	5,794
Foreign exchange	2,309	1,058	416	3,783	2,605	941	187	3,733
Equity	44,149	7,881	2,986	55,016	38,685	5,483	2,905	47,073
Commodity	1,331	62	1 ^(a)	1,394	1,862	11	1 ^(a)	1,874
Total structured notes	\$ 100,222	\$ 11,308	\$ 32,274	\$ 143,804	\$ 87,200	\$ 7,439	\$ 77,619	\$ 172,258

(a) Excludes deposits linked to precious metals for which the fair value option has not been elected of \$869 million and \$627 million for the years ended December 31, 2024 and 2023, respectively.

Note 4 – 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.

JPMorganChase 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. Refer to Note 12 for additional information on the geographic composition of the Firm's consumer loan portfolios. In the wholesale portfolio, credit risk concentrations are evaluated primarily by industry and monitored regularly on both an aggregate portfolio level and on an individual client or counterparty basis.

The Firm's wholesale exposure is managed through loan syndications and participations, loan sales, securitizations, credit derivatives, master netting agreements, collateral and other risk-reduction techniques. Refer to Note 12 for additional information on loans.

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

Terms of loan products and collateral coverage are included in the Firm's assessment when extending credit and establishing its allowance for credit losses. Refer to Note 13 for additional information on the allowance for credit losses.

Notes to consolidated financial statements

The table below presents both on-balance sheet and off-balance sheet consumer and wholesale credit exposure by the Firm's three credit portfolio segments as of December 31, 2024 and 2023. The wholesale industry of risk category is generally based on the client or counterparty's primary business activity.

December 31, (in millions)	2024				2023			
	Credit exposure ^(h)	On-balance sheet		Off-balance sheet ⁽ⁱ⁾	Credit exposure ^(h)	On-balance sheet		Off-balance sheet ⁽ⁱ⁾
		Loans	Derivatives			Loans	Derivatives	
Consumer, excluding credit card	\$ 437,654	\$ 392,810	\$ —	\$ 44,844	\$ 455,496	\$ 410,093	\$ —	\$ 45,403
Credit card^(a)	1,234,171	232,860	—	1,001,311	1,126,781	211,123	—	915,658
Total consumer^(a)	1,671,825	625,670	—	1,046,155	1,582,277	621,216	—	961,061
Wholesale^(b)								
Real Estate	207,050	169,506	310	37,234	208,261	166,372	420	41,469
Individuals and Individual Entities ^(c)	144,145	130,317	1,259	12,569	145,849	126,339	725	18,785
Asset Managers	135,541	58,720	15,695	61,126	129,574	52,178	9,925	67,471
Consumer & Retail	129,815	46,509	1,608	81,698	127,086	46,274	2,013	78,799
Technology, Media & Telecommunications	84,716	21,449	2,448	60,819	77,296	22,450	2,451	52,395
Industrials	72,530	24,011	2,035	46,484	75,092	26,548	1,335	47,209
Healthcare	64,224	23,243	616	40,365	65,025	23,169	1,577	40,279
Banks & Finance Companies	61,287	40,239	3,890	17,158	57,177	33,941	2,898	20,338
Utilities	35,871	6,172	2,631	27,068	36,061	7,067	3,396	25,598
State & Municipal Govt ^(d)	35,039	19,279	372	15,388	35,986	20,019	442	15,525
Automotive	34,336	17,696	794	15,846	33,977	17,459	428	16,090
Oil & Gas	31,724	7,226	1,153	23,345	34,475	8,480	705	25,290
Insurance	24,267	2,533	9,703	12,031	20,501	2,535	7,138	10,828
Chemicals & Plastics	20,782	6,176	267	14,339	20,773	6,458	441	13,874
Transportation	17,019	5,380	769	10,870	16,060	5,080	555	10,425
Metals & Mining	15,860	4,425	564	10,871	15,508	4,655	274	10,579
Central Govt	13,862	4,715	6,285	2,862	17,704	5,463	10,669	1,572
Securities Firms	9,443	1,878	3,197	4,368	8,689	865	3,285	4,539
Financial Markets Infrastructure	4,446	16	2,410	2,020	4,251	86	2,155	2,010
All other ^(e)	140,873	100,906	4,961	35,006	134,777	97,034	4,032	33,711
Subtotal	1,282,830	690,396	60,967	531,467	1,264,122	672,472	54,864	536,786
Loans held-for-sale and loans at fair value	31,922	31,922	—	—	30,018	30,018	—	—
Receivables from customers ^(f)	51,929	—	—	—	47,625	—	—	—
Total wholesale	1,366,681	722,318	60,967	531,467	1,341,765	702,490	54,864	536,786
Total exposure^(g)	\$3,038,506	\$1,347,988	\$ 60,967	\$1,577,622	\$2,924,042	\$1,323,706	\$ 54,864	\$1,497,847

(a) Also includes commercial card lending-related commitments primarily in CIB.

(b) The industry rankings presented in the table as of December 31, 2023, are based on the industry rankings of the corresponding exposures at December 31, 2024, not actual rankings of such exposures at December 31, 2023.

(c) Individuals and Individual Entities predominantly consists of Global Private Bank clients within AWM and J.P. Morgan Wealth Management within CCB, and includes exposure to personal investment companies and personal and testamentary trusts.

(d) In addition to the credit risk exposure to states and municipal governments (both U.S. and non-U.S.) at December 31, 2024 and 2023, noted above, the Firm held: \$6.1 billion and \$5.9 billion, respectively, of trading assets; \$17.9 billion and \$21.4 billion, respectively, of AFS securities; and \$9.3 billion and \$9.9 billion, respectively, of HTM securities, issued by U.S. state and municipal governments. Refer to Note 2 and Note 10 for further information.

(e) All other includes: SPEs and Private education and civic organizations, representing approximately 94% and 6%, respectively, at both December 31, 2024 and 2023. Refer to Note 14 for more information on exposures to SPEs.

(f) Receivables from customers reflect held-for-investment margin loans to brokerage clients in CIB, CCB and AWM that are collateralized by assets maintained in the clients' brokerage accounts (including cash on deposit, and primarily liquid and readily marketable debt or equity securities).

(g) Excludes cash placed with banks of \$459.2 billion and \$614.1 billion, at December 31, 2024 and 2023, respectively, which is predominantly placed with various central banks, primarily Federal Reserve Banks.

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

(i) Represents lending-related financial instruments.

Note 5 – Derivative instruments

Derivative contracts derive their value from underlying asset prices, indices, reference rates, other inputs or a combination of these factors and may expose counterparties to risks and rewards of an underlying asset or liability without having to initially invest in, own or exchange the asset or liability. JPMorganChase makes markets in derivatives for clients and also uses derivatives to hedge or manage its own risk exposures. Predominantly all of the Firm's derivatives are entered into for market-making or risk management purposes.

Market-making derivatives

The majority of the Firm's derivatives are entered into for market-making purposes. Clients use derivatives to mitigate or modify interest rate, credit, foreign exchange, equity and commodity risks. The Firm actively manages the risks from its exposure to these derivatives by entering into other derivative contracts or by purchasing or selling other financial instruments that partially or fully offset the exposure from client derivatives.

Risk management derivatives

The Firm manages certain market and credit risk exposures using derivative instruments, including derivatives in hedge accounting relationships and other derivatives that are used to manage risks associated with specified assets and liabilities.

The Firm generally uses interest rate derivatives to manage the risk associated with changes in interest rates. Fixed-rate assets and liabilities appreciate or depreciate in market value as interest rates change. Similarly, interest income and expense increase or decrease as a result of variable-rate assets and liabilities resetting to current market rates, and as a result of the repayment and subsequent origination or issuance of fixed-rate assets and liabilities at current market rates. Gains and losses on the derivative instruments related to these assets and liabilities are expected to substantially offset this variability.

Foreign currency derivatives are used to manage the foreign exchange risk associated with certain foreign currency-denominated (i.e., non-U.S. dollar) assets and liabilities and forecasted transactions, as well as the Firm's net investments in certain non-U.S. subsidiaries or branches whose functional currencies are not the U.S. dollar. As a result of fluctuations in foreign currencies, the U.S. dollar-equivalent values of the foreign currency-denominated assets and liabilities or the forecasted revenues or expenses increase or decrease. Gains or losses on the derivative instruments related to these foreign currency-denominated assets or liabilities, or forecasted transactions, are expected to substantially offset this variability.

Commodities derivatives are used to manage the price risk of certain commodities inventories. Gains or losses on these derivative instruments are expected to

substantially offset the depreciation or appreciation of the related inventory.

Credit derivatives are used to manage the counterparty credit risk associated with loans and lending-related commitments. Credit derivatives compensate the purchaser when the entity referenced in the contract experiences a credit event, such as bankruptcy or a failure to pay an obligation when due. Credit derivatives primarily consist of CDS. Refer to the Credit derivatives section on pages 222–224 of this Note for a further discussion of credit derivatives.

Refer to the risk management derivatives gains and losses table on page 221 and the hedge accounting gains and losses tables on pages 218–221 of this Note for more information about risk management derivatives.

Derivative counterparties and settlement types

The Firm enters into OTC derivatives, which are negotiated and settled bilaterally with the derivative counterparty. The Firm also enters into, as principal, certain ETD such as futures and options, and OTC-cleared derivative contracts with CCPs. ETD contracts are generally standardized contracts traded on an exchange and cleared by the CCP, which is the Firm's counterparty from the inception of the transactions. OTC-cleared derivatives are traded on a bilateral basis and then novated to the CCP for clearing.

Derivative clearing services

The Firm provides clearing services for clients in which the Firm acts as a clearing member at certain exchanges and clearing houses. The Firm does not reflect the clients' derivative contracts in its Consolidated Financial Statements. Refer to Note 28 for further information on the Firm's clearing services.

Accounting for derivatives

All free-standing derivatives that the Firm executes for its own account are required to be recorded on the Consolidated balance sheets at fair value.

As permitted under U.S. GAAP, the Firm nets derivative assets and liabilities, and the related cash collateral receivables and payables, when a legally enforceable master netting agreement exists between the Firm and the derivative counterparty. Refer to Note 1 for further discussion of the offsetting of assets and liabilities. The accounting for changes in value of a derivative depends on whether or not the transaction has been designated and qualifies for hedge accounting. Derivatives that are not designated as hedges are reported and measured at fair value through earnings. The tabular disclosures on pages 213–221 of this Note provide additional information on the amount of, and reporting for, derivative assets, liabilities, gains and losses. Refer to Notes 2 and 3 for a further discussion of derivatives embedded in structured notes.

Notes to consolidated financial statements

Derivatives designated as hedges

The Firm applies hedge accounting to certain derivatives executed for risk management purposes – generally interest rate, foreign exchange and commodity derivatives. However, JPMorganChase does not seek to apply hedge accounting to all of the derivatives associated with the Firm's risk management activities. For example, the Firm does not apply hedge accounting to purchased CDS used to manage the credit risk of loans and lending-related commitments, because of the difficulties in qualifying such contracts as hedges. For the same reason, the Firm does not apply hedge accounting to certain interest rate, foreign exchange, and commodity derivatives used for risk management purposes.

To qualify for hedge accounting, a derivative must be highly effective at reducing the risk associated with the exposure being hedged. In addition, for a derivative to be designated as a hedge, the risk management objective and strategy must be documented. Hedge documentation must identify the derivative hedging instrument, the asset or liability or forecasted transaction and type of risk to be hedged, and how the effectiveness of the derivative is assessed prospectively and retrospectively. To assess effectiveness, the Firm uses statistical methods such as regression analysis, nonstatistical methods such as dollar-value comparisons of the change in the fair value of the derivative to the change in the fair value or cash flows of the hedged item, and qualitative comparisons of critical terms and the evaluation of any changes in those terms. The extent to which a derivative has been, and is expected to continue to be, highly effective at offsetting changes in the fair value or cash flows of the hedged item must be assessed and documented at least quarterly. If it is determined that a derivative is not highly effective at hedging the designated exposure, hedge accounting is discontinued.

There are three types of hedge accounting designations: fair value hedges, cash flow hedges and net investment hedges. JPMorganChase uses fair value hedges primarily to hedge fixed-rate long-term debt, AFS securities and certain commodities inventories. For qualifying fair value hedges, the changes in the fair value of the derivative, and in the value of the hedged item for the risk being hedged, are recognized in earnings. Certain amounts excluded from the assessment of effectiveness are recorded in OCI and recognized in earnings over the life of the derivative. If the hedge relationship is terminated, then the adjustment to the hedged item continues to be reported as part of the basis of the hedged item and, for interest-bearing financial instruments, is amortized to earnings as a yield adjustment. Derivative amounts affecting earnings are recognized consistent with the classification of the hedged item – primarily net interest income and principal transactions revenue.

The Firm employs the portfolio layer method to manage the interest rate risk of portfolios of fixed-rate assets. Throughout the life of the open hedge, basis adjustments are maintained at the portfolio level and are only allocated to individual assets under certain circumstances. These include instances where the portfolio amount falls below the hedged layer amounts, or in cases of voluntary de-designation.

JPMorganChase uses cash flow hedges primarily to hedge the exposure to variability in forecasted cash flows from floating-rate assets and liabilities and foreign currency-denominated revenue and expense. For qualifying cash flow hedges, changes in the fair value of the derivative are recorded in OCI and recognized in earnings as the hedged item affects earnings. Derivative amounts affecting earnings are recognized consistent with the classification of the hedged item – primarily noninterest revenue, net interest income and compensation expense. If the hedge relationship is terminated, then the change in value of the derivative recorded in AOCI is recognized in earnings when the cash flows that were hedged affect earnings. For hedge relationships that are discontinued because a forecasted transaction is expected to not occur according to the original hedge forecast, any related derivative values recorded in AOCI are immediately recognized in earnings.

JPMorganChase uses net investment hedges to protect the value of the Firm's net investments in certain non-U.S. subsidiaries or branches whose functional currencies are not the U.S. dollar. For qualifying net investment hedges, changes in the fair value of the derivatives due to changes in spot foreign exchange rates are recorded in OCI as translation adjustments. Amounts excluded from the assessment of effectiveness are recorded directly in earnings.

The following table outlines the Firm's primary uses of derivatives and the related hedge accounting designation or disclosure category.

Type of Derivative	Use of Derivative	Designation and disclosure	Affected segment or unit	Page reference
Manage specifically identified risk exposures in qualifying hedge accounting relationships:				
• Interest rate	Hedge fixed rate assets and liabilities	Fair value hedge	Corporate	218-219
• Interest rate	Hedge floating-rate assets and liabilities	Cash flow hedge	Corporate	220
• Foreign exchange	Hedge foreign currency-denominated assets and liabilities	Fair value hedge	Corporate	218-219
• Foreign exchange	Hedge foreign currency-denominated forecasted revenue and expense	Cash flow hedge	Corporate	220
• Foreign exchange	Hedge the value of the Firm's investments in non-U.S. dollar functional currency entities	Net investment hedge	Corporate	221
• Commodity	Hedge commodity inventory	Fair value hedge	CIB, AWM	218-219
Manage specifically identified risk exposures not designated in qualifying hedge accounting relationships:				
• Interest rate	Manage the risk associated with mortgage commitments, warehouse loans and MSRs	Specified risk management	CCB	221
• Credit	Manage the credit risk associated with wholesale lending exposures	Specified risk management	CIB, AWM	221
• Interest rate and foreign exchange	Manage the risk associated with certain other specified assets and liabilities	Specified risk management	Corporate, CIB	221
Market-making derivatives and other activities:				
• Various	Market-making and related risk management	Market-making and other	CIB	221
• Various	Other derivatives	Market-making and other	CIB, AWM, Corporate	221

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Notional amount of derivative contracts

The following table summarizes the notional amount of free-standing derivative contracts outstanding as of December 31, 2024 and 2023.

December 31, (in billions)	Notional amounts ^(b)	
	2024	2023
Interest rate contracts		
Swaps	\$ 20,437	\$ 23,251
Futures and forwards	3,067	2,690
Written options	3,067	3,370
Purchased options	3,089	3,362
Total interest rate contracts	29,660	32,673
Credit derivatives^(a)	1,191	1,045
Foreign exchange contracts		
Cross-currency swaps	4,509	4,721
Spot, futures and forwards	7,005	6,957
Written options	1,015	830
Purchased options	984	798
Total foreign exchange contracts	13,513	13,306
Equity contracts		
Swaps	850	639
Futures and forwards	206	157
Written options	914	778
Purchased options	788	698
Total equity contracts	2,758	2,272
Commodity contracts		
Swaps	148	115
Spot, futures and forwards	191	157
Written options	137	130
Purchased options	125	115
Total commodity contracts	601	517
Total derivative notional amounts	\$ 47,723	\$ 49,813

(a) Refer to the Credit derivatives discussion on pages 222–224 for more information on volumes and types of credit derivative contracts.

(b) Represents the sum of gross long and gross short third-party notional derivative contracts.

While the notional amounts disclosed above give an indication of the volume of the Firm's derivatives activity, the notional amounts significantly exceed, in the Firm's view, the possible losses that could arise from such transactions. For most derivative contracts, the notional amount is not exchanged; it is simply a reference amount used to calculate payments.

Impact of derivatives on the Consolidated balance sheets

The following table summarizes information on derivative receivables and payables (before and after netting adjustments) that are reflected on the Firm's Consolidated balance sheets as of December 31, 2024 and 2023, by accounting designation (e.g., whether the derivatives were designated in qualifying hedge accounting relationships or not) and contract type.

Free-standing derivative receivables and payables^(a)

December 31, 2024 (in millions)	Gross derivative receivables				Gross derivative payables			
	Not designated as hedges	Designated as hedges	Total derivative receivables	Net derivative receivables ^(b)	Not designated as hedges	Designated as hedges	Total derivative payables	Net derivative payables ^(b)
Trading assets and liabilities								
Interest rate	\$ 290,734	\$ —	\$ 290,734	\$ 24,945	\$ 274,226	\$ 2	\$ 274,228	\$ 9,239
Credit	11,087	—	11,087	814	13,796	—	13,796	1,898
Foreign exchange	261,035	1,885	262,920	25,312	253,289	1,278	254,567	15,597
Equity	85,220	—	85,220	5,285	96,139	—	96,139	8,648
Commodity	15,490	136	15,626	4,611	14,415	73	14,488	4,279
Total fair value of trading assets and liabilities	\$ 663,566	\$ 2,021	\$ 665,587	\$ 60,967	\$ 651,865	\$ 1,353	\$ 653,218	\$ 39,661

December 31, 2023 (in millions)	Gross derivative receivables				Gross derivative payables			
	Not designated as hedges	Designated as hedges	Total derivative receivables	Net derivative receivables ^(b)	Not designated as hedges	Designated as hedges	Total derivative payables	Net derivative payables ^(b)
Trading assets and liabilities								
Interest rate	\$ 250,689	\$ 2	\$ 250,691	\$ 26,324	\$ 240,482	\$ —	\$ 240,482	\$ 11,896
Credit	9,654	—	9,654	551	12,038	—	12,038	1,089
Foreign exchange	205,010	765	205,775	18,019	210,623	1,640	212,263	12,620
Equity	57,689	—	57,689	4,928	65,811	—	65,811	9,368
Commodity	15,228	211	15,439	5,042	16,286	92	16,378	5,874
Total fair value of trading assets and liabilities	\$ 538,270	\$ 978	\$ 539,248	\$ 54,864	\$ 545,240	\$ 1,732	\$ 546,972	\$ 40,847

(a) Balances exclude structured notes for which the fair value option has been elected. Refer to Note 3 for further information.

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

Notes to consolidated financial statements

Derivatives netting

The following tables present, as of December 31, 2024 and 2023, gross and net derivative receivables and payables by contract and settlement type. Derivative receivables and payables, as well as the related cash collateral from the same counterparty, have been netted on the Consolidated balance sheets where the Firm has obtained an appropriate legal opinion with respect to the master netting agreement. Where such a legal opinion has not been either sought or obtained, amounts are not eligible for netting on the Consolidated balance sheets, and those derivative receivables and payables are shown separately in the tables.

In addition to the cash collateral received and transferred that is presented on a net basis with derivative receivables and payables, the Firm receives and transfers additional collateral (financial instruments and cash). These amounts mitigate counterparty credit risk associated with the Firm's derivative instruments, but are not eligible for net presentation:

- collateral that consists of liquid securities and other cash collateral held at third-party custodians, which are shown separately as "Collateral not nettable on the Consolidated balance sheets" in the tables, up to the fair value exposure amount. For the purpose of this disclosure, the definition of liquid securities is consistent with the definition of high quality liquid assets as defined in the LCR rule;
- the amount of collateral held or transferred that exceeds the fair value exposure at the individual counterparty level, as of the date presented, which is excluded from the tables; and
- collateral held or transferred that relates to derivative receivables or payables where an appropriate legal opinion has not been either sought or obtained with respect to the master netting agreement, which is excluded from the tables.

December 31, (in millions)	2024			2023		
	Gross derivative receivables	Amounts netted on the Consolidated balance sheets	Net derivative receivables	Gross derivative receivables	Amounts netted on the Consolidated balance sheets	Net derivative receivables
U.S. GAAP nettable derivative receivables						
Interest rate contracts:						
OTC	\$ 158,202	\$ (134,791)	\$ 23,411	\$ 176,901	\$ (152,703)	\$ 24,198
OTC-cleared	130,989	(130,810)	179	71,419	(71,275)	144
Exchange-traded ^(a)	190	(188)	2	402	(389)	13
Total interest rate contracts	289,381	(265,789)	23,592	248,722	(224,367)	24,355
Credit contracts:						
OTC	8,680	(8,030)	650	7,637	(7,226)	411
OTC-cleared	2,267	(2,243)	24	1,904	(1,877)	27
Total credit contracts	10,947	(10,273)	674	9,541	(9,103)	438
Foreign exchange contracts:						
OTC	259,608	(236,931)	22,677	203,624	(187,295)	16,329
OTC-cleared	685	(677)	8	469	(459)	10
Exchange-traded ^(a)	34	—	34	6	(2)	4
Total foreign exchange contracts	260,327	(237,608)	22,719	204,099	(187,756)	16,343
Equity contracts:						
OTC	33,269	(30,742)	2,527	25,001	(23,677)	1,324
Exchange-traded ^(a)	51,040	(49,193)	1,847	30,462	(29,084)	1,378
Total equity contracts	84,309	(79,935)	4,374	55,463	(52,761)	2,702
Commodity contracts:						
OTC	8,340	(5,848)	2,492	8,049	(5,084)	2,965
OTC-cleared	126	(84)	42	133	(123)	10
Exchange-traded ^(a)	5,179	(5,083)	96	5,214	(5,190)	24
Total commodity contracts	13,645	(11,015)	2,630	13,396	(10,397)	2,999
Derivative receivables with appropriate legal opinion	658,609	(604,620)	53,989 ^(d)	531,221	(484,384)	46,837 ^(d)
Derivative receivables where an appropriate legal opinion has not been either sought or obtained	6,978		6,978	8,027		8,027
Total derivative receivables recognized on the Consolidated balance sheets	\$ 665,587		\$ 60,967	\$ 539,248		\$ 54,864
Collateral not nettable on the Consolidated balance sheets ^{(b)(c)}			(28,160)			(22,461)
Net amounts			\$ 32,807			\$ 32,403

Notes to consolidated financial statements

December 31, (in millions)	2024			2023		
	Gross derivative payables	Amounts netted on the Consolidated balance sheets	Net derivative payables	Gross derivative payables	Amounts netted on the Consolidated balance sheets	Net derivative payables
U.S. GAAP nettable derivative payables						
Interest rate contracts:						
OTC	\$ 138,215	\$ (130,375)	\$ 7,840	\$ 161,901	\$ (152,467)	\$ 9,434
OTC-cleared	134,555	(134,262)	293	76,007	(75,729)	278
Exchange-traded ^(a)	363	(352)	11	436	(390)	46
Total interest rate contracts	273,133	(264,989)	8,144	238,344	(228,586)	9,758
Credit contracts:						
OTC	11,381	(10,133)	1,248	10,332	(9,313)	1,019
OTC-cleared	1,779	(1,765)	14	1,639	(1,636)	3
Total credit contracts	13,160	(11,898)	1,262	11,971	(10,949)	1,022
Foreign exchange contracts:						
OTC	251,860	(238,292)	13,568	209,386	(199,173)	10,213
OTC-cleared	772	(678)	94	552	(470)	82
Exchange-traded ^(a)	14	—	14	6	—	6
Total foreign exchange contracts	252,646	(238,970)	13,676	209,944	(199,643)	10,301
Equity contracts:						
OTC	44,394	(38,298)	6,096	29,999	(27,360)	2,639
Exchange-traded ^(a)	49,578	(49,193)	385	33,137	(29,083)	4,054
Total equity contracts	93,972	(87,491)	6,481	63,136	(56,443)	6,693
Commodity contracts:						
OTC	6,918	(5,206)	1,712	8,788	(5,192)	3,596
OTC-cleared	84	(84)	—	120	(120)	—
Exchange-traded ^(a)	5,182	(4,919)	263	5,376	(5,192)	184
Total commodity contracts	12,184	(10,209)	1,975	14,284	(10,504)	3,780
Derivative payables with appropriate legal opinion	645,095	(613,557)	31,538	537,679	(506,125)	31,554
Derivative payables where an appropriate legal opinion has not been either sought or obtained	8,123		8,123	9,293		9,293
Total derivative payables recognized on the Consolidated balance sheets	\$ 653,218		\$ 39,661	\$ 546,972		\$ 40,847
Collateral not nettable on the Consolidated balance sheets ^{(b)(c)}			(10,163)			(4,547)
Net amounts			\$ 29,498			\$ 36,300

(a) Exchange-traded derivative balances that relate to futures contracts are settled daily.

(b) Includes liquid securities and other cash collateral held at third-party custodians related to derivative instruments where an appropriate legal opinion has been obtained. For some counterparties, the collateral amounts of financial instruments may exceed the derivative receivables and derivative payables balances. Where this is the case, the total amount reported is limited to the net derivative receivables and net derivative payables balances with that counterparty.

(c) Derivative collateral relates only to OTC and OTC-cleared derivative instruments.

(d) Net derivatives receivable included cash collateral netted of \$51.9 billion and \$48.3 billion at December 31, 2024 and 2023, respectively. Net derivatives payable included cash collateral netted of \$60.8 billion and \$70.0 billion at December 31, 2024 and 2023, respectively. Derivative cash collateral relates to OTC and OTC-cleared derivative instruments.

Liquidity risk and credit-related contingent features

In addition to the specific market risks introduced by each derivative contract type, derivatives expose JPMorganChase to credit risk — the risk that derivative counterparties may fail to meet their payment obligations under the derivative contracts and the collateral, if any, held by the Firm proves to be of insufficient value to cover the payment obligation. It is the policy of JPMorganChase to actively pursue, where possible, the use of legally enforceable master netting arrangements and collateral agreements to mitigate derivative counterparty credit risk inherent in derivative receivables.

While derivative receivables expose the Firm to credit risk, derivative payables expose the Firm to liquidity risk, as the derivative contracts typically require the Firm to post cash or securities collateral with counterparties as the fair value of the contracts moves in the counterparties' favor or upon specified downgrades in the Firm's and its subsidiaries' respective credit ratings. Certain derivative contracts also provide for termination of the contract, generally upon a downgrade of either the Firm or the counterparty, at the fair value of the derivative contracts. The following table shows the aggregate fair value of net derivative payables related to OTC and OTC-cleared derivatives that contain contingent collateral or termination features that may be triggered upon a ratings downgrade, and the associated collateral the Firm has posted in the normal course of business, at December 31, 2024 and 2023.

OTC and OTC-cleared derivative payables containing downgrade triggers

(in millions)	December 31, 2024	December 31, 2023
Aggregate fair value of net derivative payables	\$ 15,371	\$ 14,655
Collateral posted	15,204	14,673

The following table shows the impact of a single-notch and two-notch downgrade of the long-term issuer ratings of JPMorgan Chase & Co. and its subsidiaries, predominantly JPMorgan Chase Bank, N.A., at December 31, 2024 and 2023, related to OTC and OTC-cleared derivative contracts with contingent collateral or termination features that may be triggered upon a ratings downgrade. Derivatives contracts generally require additional collateral to be posted or terminations to be triggered when the predefined rating threshold is breached. A downgrade by a single rating agency that does not result in a rating lower than a preexisting corresponding rating provided by another major rating agency will generally not result in additional collateral (except in certain instances in which additional initial margin may be required upon a ratings downgrade), nor in termination payment requirements. The liquidity impact in the table is calculated based upon a downgrade below the lowest current rating of the rating agencies referred to in the derivative contract.

Liquidity impact of downgrade triggers on OTC and OTC-cleared derivatives

(in millions)	December 31, 2024		December 31, 2023	
	Single-notch downgrade	Two-notch downgrade	Single-notch downgrade	Two-notch downgrade
Amount of additional collateral to be posted upon downgrade ^(a)	\$ 119	\$ 1,205	\$ 75	\$ 1,153
Amount required to settle contracts with termination triggers upon downgrade ^(b)	78	458	93	592

(a) Includes the additional collateral to be posted for initial margin.

(b) Amounts represent fair values of derivative payables, and do not reflect collateral posted.

Derivatives executed in contemplation of a sale of the underlying financial asset

In certain instances the Firm enters into transactions in which it transfers financial assets but maintains the economic exposure to the transferred assets by entering into a derivative with the same counterparty in contemplation of the initial transfer. The Firm generally accounts for such transfers as collateralized financing transactions as described in Note 11, but in limited circumstances they may qualify to be accounted for as a sale and a derivative under U.S. GAAP. The amount of such transfers accounted for as a sale where the associated derivative was outstanding was not material at December 31, 2024 and 2023.

Notes to consolidated financial statements

Impact of derivatives on the Consolidated statements of income

The following tables provide information related to gains and losses recorded on derivatives based on their hedge accounting designation or purpose.

Fair value hedge gains and losses

The following tables present derivative instruments, by contract type, used in fair value hedge accounting relationships, as well as pre-tax gains/(losses) recorded on such derivatives and the related hedged items for the years ended December 31, 2024, 2023 and 2022, respectively. The Firm includes gains/(losses) on the hedging derivative in the same line item in the Consolidated statements of income as the related hedged item.

Year ended December 31, 2024 (in millions)	Gains/(losses) recorded in income			Income statement impact of excluded components ^(e)		OCI impact
	Derivatives	Hedged items	Income statement impact	Amortization approach	Changes in fair value	Derivatives - Gains/(losses) recorded in OCI ^(f)
Contract type						
Interest rate ^{(a),(b)}	\$ 711	\$ (65)	\$ 646	\$ —	\$ 699	\$ —
Foreign exchange ^(c)	(177)	402	225	(532)	225	(115)
Commodity ^(d)	293	(160)	133	—	122	—
Total	\$ 827	\$ 177	\$ 1,004	\$ (532)	\$ 1,046	\$ (115)

Year ended December 31, 2023 (in millions)	Gains/(losses) recorded in income			Income statement impact of excluded components ^(e)		OCI impact
	Derivatives	Hedged items	Income statement impact	Amortization approach	Changes in fair value	Derivatives - Gains/(losses) recorded in OCI ^(f)
Contract type						
Interest rate ^{(a),(b)}	\$ 1,554	\$ (1,248)	\$ 306	\$ —	\$ 157	\$ —
Foreign exchange ^(c)	722	(483)	239	(601)	239	(134)
Commodity ^(d)	1,227	(706)	521	—	525	—
Total	\$ 3,503	\$ (2,437)	\$ 1,066	\$ (601)	\$ 921	\$ (134)

Year ended December 31, 2022 (in millions)	Gains/(losses) recorded in income			Income statement impact of excluded components ^(e)		OCI impact
	Derivatives	Hedged items	Income statement impact	Amortization approach	Changes in fair value	Derivatives - Gains/(losses) recorded in OCI ^(f)
Contract type						
Interest rate ^{(a),(b)}	\$ (14,352)	\$ 14,047	\$ (305)	\$ —	\$ (262)	\$ —
Foreign exchange ^(c)	(1,317)	1,423	106	(528)	106	130
Commodity ^(d)	106	(70)	36	—	48	—
Total	\$ (15,563)	\$ 15,400	\$ (163)	\$ (528)	\$ (108)	\$ 130

- (a) Primarily consists of hedges of the benchmark (e.g., Secured Overnight Financing Rate (“SOFR”)) interest rate risk of fixed-rate long-term debt and AFS securities. Gains and losses were recorded in net interest income.
- (b) Includes the amortization of income/expense associated with the inception hedge accounting adjustment applied to the hedged item. Excludes the accrual of interest on interest rate swaps and the related hedged items.
- (c) Primarily consists of hedges of the foreign currency risk of long-term debt and AFS securities for changes in spot foreign currency rates. Gains and losses related to the derivatives and the hedged items due to changes in foreign currency rates and the income statement impact of excluded components were recorded primarily in principal transactions revenue and net interest income.
- (d) Consists of overall fair value hedges of physical commodities inventories that are generally carried at the lower of cost or net realizable value (net realizable value approximates fair value). Gains and losses were recorded in principal transactions revenue.
- (e) The assessment of hedge effectiveness excludes certain components of the changes in fair values of the derivatives and hedged items such as forward points on foreign exchange forward contracts, time values and cross-currency basis spreads. Excluded components may impact earnings either through amortization of the initial amount over the life of the derivative or through fair value changes recognized in the current period.
- (f) Represents the change in value of amounts excluded from the assessment of effectiveness under the amortization approach, predominantly cross-currency basis spreads. The amount excluded at inception of the hedge is recognized in earnings over the life of the derivative.

As of December 31, 2024 and 2023, the following amounts were recorded on the Consolidated balance sheets related to certain cumulative fair value hedge basis adjustments that are expected to reverse through the income statement in future periods as an adjustment to yield.

December 31, 2024 (in millions)	Carrying amount of the hedged items ^{(a)(b)}	Cumulative amount of fair value hedging adjustments included in the carrying amount of hedged items: ^(d)		
		Active hedging relationships	Discontinued hedging relationships ^(e)	Total
Assets				
Investment securities - AFS	\$ 203,141 ^(c)	\$ (1,675)	\$ (1,959)	\$ (3,634)
Liabilities				
Long-term debt	\$ 211,288	\$ (3,711)	\$ (9,332)	\$ (13,043)
Beneficial interests issued by consolidated VIEs	\$ 5,312	\$ (30)	\$ (5)	\$ (35)
<hr/>				
December 31, 2023 (in millions)	Carrying amount of the hedged items ^{(a)(b)}	Cumulative amount of fair value hedging adjustments included in the carrying amount of hedged items: ^(d)		
		Active hedging relationships	Discontinued hedging relationships ^(e)	Total
Assets				
Investment securities - AFS	\$ 151,752 ^(c)	\$ 549	\$ (2,010)	\$ (1,461)
Liabilities				
Long-term debt	\$ 195,455	\$ (2,042)	\$ (9,727)	\$ (11,769)
Beneficial interests issued by consolidated VIEs	\$ —	\$ —	\$ —	\$ —

- (a) Excludes physical commodities with a carrying value of \$6.2 billion and \$5.6 billion at December 31, 2024 and 2023, respectively, to which the Firm applies fair value hedge accounting. As a result of the application of hedge accounting, these inventories are carried at fair value, thus recognizing unrealized gains and losses in current periods. Since the Firm exits these positions at fair value, there is no incremental impact to net income in future periods.
- (b) Excludes hedged items where only foreign currency risk is the designated hedged risk, as basis adjustments related to foreign currency hedges will not reverse through the income statement in future periods. At December 31, 2024 and 2023, the carrying amount excluded for AFS securities was \$28.7 billion and \$19.3 billion, respectively. At December 31, 2024 and 2023, the carrying amount excluded for long-term debt was \$518 million and zero, respectively.
- (c) Carrying amount represents the amortized cost, net of allowance if applicable. At December 31, 2024 and December 31, 2023, the amortized cost of the portfolio layer method closed portfolios was \$72.8 billion and \$83.9 billion, of which \$41.2 billion and \$68.0 billion was designated as hedged, respectively. The amount designated as hedged is the sum of the notional amounts of all outstanding layers in each portfolio, which includes both spot starting and forward starting layers. At December 31, 2024 and December 31, 2023, the cumulative amount of basis adjustments was \$(1.7) billion and \$(165) million, which is comprised of \$(1.2) billion and \$73 million for active hedging relationships, and \$(566) million and \$(238) million for discontinued hedging relationships, respectively. Refer to Note 10 for additional information.
- (d) Positive (negative) amounts related to assets represent cumulative fair value hedge basis adjustments that will reduce (increase) net interest income in future periods. Positive (negative) amounts related to liabilities represent cumulative fair value hedge basis adjustments that will increase (reduce) net interest income in future periods.
- (e) Represents basis adjustments existing on the balance sheet date associated with hedged items that have been de-designated from qualifying fair value hedging relationships.

Notes to consolidated financial statements

Cash flow hedge gains and losses

The following tables present derivative instruments, by contract type, used in cash flow hedge accounting relationships, and the pre-tax gains/(losses) recorded on such derivatives, for the years ended December 31, 2024, 2023 and 2022, respectively. The Firm includes the gains/(losses) on the hedging derivative in the same line item in the Consolidated statements of income as the change in cash flows on the related hedged item.

Year ended December 31, 2024 (in millions)	Derivatives gains/(losses) recorded in income and other comprehensive income/(loss)		
	Amounts reclassified from AOCI to income	Amounts recorded in OCI	Total change in OCI for period
Contract type			
Interest rate ^(a)	\$ (2,668)	\$ (3,603)	\$ (935)
Foreign exchange ^(b)	89	(139)	(228)
Total	\$ (2,579)	\$ (3,742)	\$ (1,163)

Year ended December 31, 2023 (in millions)	Derivatives gains/(losses) recorded in income and other comprehensive income/(loss)		
	Amounts reclassified from AOCI to income	Amounts recorded in OCI	Total change in OCI for period
Contract type			
Interest rate ^(a)	\$ (1,839)	\$ 274	\$ 2,113
Foreign exchange ^(b)	64	209	145
Total	\$ (1,775)	\$ 483	\$ 2,258

Year ended December 31, 2022 (in millions)	Derivatives gains/(losses) recorded in income and other comprehensive income/(loss)		
	Amounts reclassified from AOCI to income	Amounts recorded in OCI	Total change in OCI for period
Contract type			
Interest rate ^(a)	\$ (153)	\$ (7,131)	\$ (6,978)
Foreign exchange ^(b)	(267)	(342)	(75)
Total	\$ (420)	\$ (7,473)	\$ (7,053)

(a) Primarily consists of hedges of SOFR-indexed floating-rate assets. Gains and losses were recorded in net interest income.

(b) Primarily consists of hedges of the foreign currency risk of non-U.S. dollar-denominated revenue and expense. The income statement classification of gains and losses follows the hedged item – primarily noninterest revenue and compensation expense.

The Firm did not experience any forecasted transactions that failed to occur for the years ended 2024, 2023 and 2022.

Over the next 12 months, the Firm expects that approximately \$(1.6) billion (after-tax) of net losses recorded in AOCI at December 31, 2024, related to cash flow hedges will be recognized in income. For cash flow hedges that have been terminated, the maximum length of time over which the derivative results recorded in AOCI will be recognized in earnings is approximately seven years, corresponding to the timing of the originally hedged forecasted cash flows. For open cash flow hedges, the maximum length of time over which forecasted transactions are hedged is approximately seven years. The Firm's longer-dated forecasted transactions relate to core lending and borrowing activities.

Net investment hedge gains and losses

The following table presents hedging instruments, by contract type, that were used in net investment hedge accounting relationships, and the pre-tax gains/(losses) recorded on such instruments for the years ended December 31, 2024, 2023 and 2022.

Year ended December 31, (in millions)	2024		2023		2022	
	Amounts recorded in income ^{(a),(b)}	Amounts recorded in OCI	Amounts recorded in income ^{(a),(b)}	Amounts recorded in OCI	Amounts recorded in income ^{(a),(b)}	Amounts recorded in OCI
Foreign exchange derivatives	\$467	\$4,411	\$384	\$(1,732)	\$(123)	\$3,591

- (a) Certain components of hedging derivatives are permitted to be excluded from the assessment of hedge effectiveness, such as forward points on foreign exchange forward contracts. The Firm elects to record changes in fair value of these amounts directly in other income.
- (b) Excludes amounts reclassified from AOCI to income on the sale or liquidation of hedged entities. During the year ended December 31, 2024, the Firm reclassified a net pre-tax gain of \$89 million to other income/expense. During the year ended December 31, 2023, the Firm reclassified a net pre-tax loss of \$(35) million to other revenue including the impact of the acquisition of CIFM. During the year ended December 31, 2022, the Firm reclassified net pre-tax gains of \$38 million to other income/expense related to the liquidation of certain legal entities. Refer to Note 24 for further information.

Gains and losses on derivatives used for specified risk management purposes

The following table presents pre-tax gains/(losses) recorded on a limited number of derivatives, not designated in hedge accounting relationships, that are used to manage risks associated with certain specified assets and liabilities, including certain risks arising from mortgage commitments, warehouse loans, MSR, wholesale lending exposures, and foreign currency denominated assets and liabilities.

Year ended December 31, (in millions)	Derivatives gains/(losses) recorded in income		
	2024	2023	2022
Contract type			
Interest rate ^(a)	\$ (425)	\$ (135)	\$ (827)
Credit ^(b)	(604)	(441)	51
Foreign exchange ^(c)	(10)	(2)	(48)
Total	\$ (1,039)	\$ (578)	\$ (824)

- (a) Primarily represents interest rate derivatives used to hedge the interest rate risk inherent in mortgage commitments, warehouse loans and MSR, as well as written commitments to originate warehouse loans. Gains and losses were recorded predominantly in mortgage fees and related income.
- (b) Relates to credit derivatives used to mitigate credit risk associated with lending exposures in the Firm's wholesale businesses. These derivatives do not include credit derivatives used to mitigate counterparty credit risk arising from derivative receivables, which is included in gains and losses on derivatives related to market-making activities and other derivatives. Gains and losses were recorded in principal transactions revenue.
- (c) Primarily relates to derivatives used to mitigate foreign exchange risk of specified foreign currency-denominated assets and liabilities. Gains and losses were recorded in principal transactions revenue.

Gains and losses on derivatives related to market-making activities and other derivatives

The Firm makes markets in derivatives in order to meet the needs of customers and uses derivatives to manage certain risks associated with net open risk positions from its market-making activities, including the counterparty credit risk arising from derivative receivables. All derivatives not included in the hedge accounting or specified risk management categories above are included in this category. Gains and losses on these derivatives are primarily recorded in principal transactions revenue. Refer to Note 6 for information on principal transactions revenue.

Credit derivatives

Credit derivatives are financial instruments whose value is derived from the credit risk associated with the debt of a third-party issuer (the reference entity) and which allow one party (the protection purchaser) to transfer that risk to another party (the protection seller). Credit derivatives expose the protection purchaser to the creditworthiness of the protection seller, as the protection seller is required to make payments under the contract when the reference entity experiences a credit event, such as a bankruptcy, a failure to pay its obligation or a restructuring. The seller of credit protection receives a premium for providing protection but has the risk that the underlying instrument referenced in the contract will be subject to a credit event.

The Firm is both a purchaser and seller of protection in the credit derivatives market and uses these derivatives for two primary purposes. First, in its capacity as a market-maker, the Firm actively manages a portfolio of credit derivatives by purchasing and selling credit protection, predominantly on corporate debt obligations, to meet the needs of customers. Second, as an end-user, the Firm uses credit derivatives to manage credit risk associated with lending exposures (loans and unfunded commitments) in its wholesale and consumer businesses and derivatives counterparty exposures in its wholesale businesses, and to manage the credit risk arising from certain financial instruments in the Firm's market-making businesses. Following is a summary of various types of credit derivatives.

Credit default swaps

Credit derivatives may reference the credit of either a single reference entity ("single-name"), broad-based index or portfolio. The Firm purchases and sells protection on both single-name and index-reference obligations. Single-name CDS and index CDS contracts are either OTC or OTC-cleared derivative contracts. Single-name CDS are used to manage the default risk of a single reference entity, while index CDS contracts are used to manage the credit risk associated with the broader credit markets or credit market segments. Like the S&P 500 and other market indices, a CDS index consists of a portfolio of CDS across many reference entities. New series of CDS indices are periodically established with a new underlying portfolio of reference entities to reflect changes in the credit markets. If one of the reference entities in the index experiences a credit event, then the reference entity that defaulted is removed from the index. CDS can also be referenced against specific portfolios of reference names or against customized exposure levels: for example, to provide protection against the first \$1 million of realized credit losses in a

\$10 million portfolio of exposure. Such structures are commonly known as tranche CDS.

For both single-name CDS contracts and index CDS contracts, upon the occurrence of a credit event, under the terms of a CDS contract neither party to the CDS contract has recourse to the reference entity. The protection purchaser has recourse to the protection seller for the difference between the face value of the CDS contract and the fair value of the reference obligation at settlement of the credit derivative contract, also known as the recovery value. The protection purchaser does not need to hold the debt instrument of the underlying reference entity in order to receive amounts due under the CDS contract when a credit event occurs.

Credit-related notes

A credit-related note is a funded derivative with a credit risk component where the issuer of the credit-related note purchases from the note investor credit protection on a reference entity or an index. Under the contract, the investor pays the issuer the par value of the note at the inception of the transaction, and in return, the issuer makes periodic payments to the investor, based on the credit risk of the referenced entity. The issuer also repays the investor the par value of the note at maturity unless the reference entity (or one of the entities that makes up a reference index) experiences a specified credit event. If a credit event occurs, the issuer is not obligated to repay the par value of the note, but rather, the issuer pays the investor the difference between the par value of the note and the fair value of the defaulted reference obligation at the time of settlement. Neither party to the credit-related note has recourse to the defaulting reference entity.

The following tables present a summary of the notional amounts of credit derivatives and credit-related notes the Firm sold and purchased as of December 31, 2024 and 2023. Upon a credit event, the Firm as a seller of protection would typically pay out a percentage of the full notional amount of net protection sold, as the amount actually required to be paid on the contracts takes into account the recovery value of the reference obligation at the time of settlement. The Firm manages the credit risk on contracts to sell protection by purchasing protection with identical or similar underlying reference entities. Other purchased protection referenced in the following tables includes credit derivatives bought on related, but not identical, reference positions (including indices, portfolio coverage and other reference points) as well as protection purchased by CIB through credit-related notes. Other purchased protection also includes credit protection against certain loans in the retained lending portfolio through the issuance of credit derivatives and credit-related notes.

The Firm does not use notional amounts of credit derivatives as the primary measure of risk management for such derivatives, because the notional amount does not take into account the probability of the occurrence of a credit event, the recovery value of the reference obligation, or related cash instruments and economic hedges, each of which reduces, in the Firm's view, the risks associated with such derivatives.

Total credit derivatives and credit-related notes

December 31, 2024 (in millions)	Maximum payout/Notional amount			
	Protection sold	Protection purchased with identical underlyings ^(c)	Net protection (sold)/ purchased ^(d)	Other protection purchased ^(e)
Credit derivatives				
Credit default swaps	\$ (450,184)	\$ 474,554	\$ 24,370	\$ 6,858
Other credit derivatives ^(a)	(110,913)	137,927	27,014	10,169
Total credit derivatives	(561,097)	612,481	51,384	17,027
Credit-related notes ^(b)	—	—	—	10,471
Total	\$ (561,097)	\$ 612,481	\$ 51,384	\$ 27,498

December 31, 2023 (in millions)	Maximum payout/Notional amount			
	Protection sold	Protection purchased with identical underlyings ^(c)	Net protection (sold)/ purchased ^(d)	Other protection purchased ^(e)
Credit derivatives				
Credit default swaps	\$ (450,172)	\$ 473,823	\$ 23,651	\$ 7,517
Other credit derivatives ^(a)	(38,846)	45,416	6,570	29,206
Total credit derivatives	(489,018)	519,239	30,221	36,723
Credit-related notes ^(b)	—	—	—	9,788
Total	\$ (489,018)	\$ 519,239	\$ 30,221	\$ 46,511

(a) Other credit derivatives predominantly consist of credit swap options and total return swaps.

(b) Predominantly represents Other protection purchased by CIB.

(c) Represents the total notional amount of protection purchased where the underlying reference instrument is identical to the reference instrument on protection sold; the notional amount of protection purchased for each individual identical underlying reference instrument may be greater or lower than the notional amount of protection sold.

(d) Does not take into account the fair value of the reference obligation at the time of settlement, which would generally reduce the amount the seller of protection pays to the buyer of protection in determining settlement value.

(e) Represents protection purchased by the Firm on referenced instruments (single-name, portfolio or index) where the Firm has not sold any protection on the identical reference instrument. Also includes credit protection against certain loans and lending-related commitments in the retained lending portfolio through the issuance of credit derivatives and credit-related notes.

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The following tables summarize the notional amounts by the ratings, maturity profile, and total fair value, of credit derivatives as of December 31, 2024 and 2023, where JPMorganChase is the seller of protection. The maturity profile is based on the remaining contractual maturity of the credit derivative contracts. The ratings profile is based on the rating of the reference entity on which the credit derivative contract is based. The ratings and maturity profile of credit derivatives where JPMorganChase is the purchaser of protection are comparable to the profile reflected below.

Protection sold – credit derivatives ratings^(a)/maturity profile

December 31, 2024 (in millions)	<1 year	1–5 years	>5 years	Total notional amount	Fair value of receivables ^(b)	Fair value of payables ^(b)	Net fair value
Risk rating of reference entity							
Investment-grade	\$ (135,950)	\$ (277,052)	\$ (33,379)	\$ (446,381)	\$ 4,593	\$ (904)	\$ 3,689
Noninvestment-grade	(42,149)	(70,525)	(2,042)	(114,716)	1,889	(1,738)	151
Total	\$ (178,099)	\$ (347,577)	\$ (35,421)	\$ (561,097)	\$ 6,482	\$ (2,642)	\$ 3,840
December 31, 2023 (in millions)	<1 year	1–5 years	>5 years	Total notional amount	Fair value of receivables ^(b)	Fair value of payables ^(b)	Net fair value
Risk rating of reference entity							
Investment-grade	\$ (89,981)	\$ (263,834)	\$ (29,470)	\$ (383,285)	\$ 3,659	\$ (1,144)	\$ 2,515
Noninvestment-grade	(31,419)	(69,515)	(4,799)	(105,733)	2,466	(1,583)	883
Total	\$ (121,400)	\$ (333,349)	\$ (34,269)	\$ (489,018)	\$ 6,125	\$ (2,727)	\$ 3,398

(a) The ratings scale is primarily based on external credit ratings defined by S&P and Moody's.

(b) Amounts are shown on a gross basis, before the benefit of legally enforceable master netting agreements including cash collateral netting.

Note 6 – Noninterest revenue and noninterest expense

Noninterest revenue

The Firm records noninterest revenue from certain contracts with customers in investment banking fees, deposit-related fees, asset management fees, commissions and other fees, and components of card income. The related contracts are often terminable on demand and the Firm has no remaining obligation to deliver future services. For arrangements with a fixed term, the Firm may commit to deliver services in the future. Revenue associated with these remaining performance obligations typically depends on the occurrence of future events or underlying asset values, and is not recognized until the outcome of those events or values are known.

Investment banking fees

This revenue category includes debt and equity underwriting and advisory fees. As an underwriter, the Firm helps clients raise capital via public offering and private placement of various types of debt and equity instruments. Underwriting fees are primarily based on the issuance price and quantity of the underlying instruments, and are recognized as revenue typically upon execution of the client's transaction. The Firm also manages and syndicates loan arrangements. Credit arrangement and syndication fees, included within debt underwriting fees, are recorded as revenue after satisfying certain retention, timing and yield criteria.

The Firm also provides advisory services by assisting its clients with mergers and acquisitions, divestitures, restructuring and other complex transactions. Advisory fees are recognized as revenue typically upon execution of the client's transaction.

The following table presents the components of investment banking fees.

Year ended December 31, (in millions)	2024	2023	2022
Underwriting			
Equity	\$ 1,687	\$ 1,149	\$ 975
Debt	3,945	2,610	2,732
Total underwriting	5,632	3,759	3,707
Advisory	3,278	2,760	2,979
Total investment banking fees	\$ 8,910	\$ 6,519	\$ 6,686

Investment banking fees are earned primarily by CIB.

Principal transactions

Principal transactions revenue is driven by many factors, including:

- the bid-offer spread, which is the difference between the price at which a market participant is willing and able to sell an instrument to the Firm and the price at which another market participant is willing and able to buy it from the Firm, and vice versa; and
- realized and unrealized gains and losses on financial instruments and commodities transactions, including those accounted for under the fair value option, primarily used in client-driven market-making activities.
 - Realized gains and losses result from the sale of instruments, closing out or termination of transactions, or interim cash payments.
 - Unrealized gains and losses result from changes in valuation.

In connection with its client-driven market-making activities, the Firm transacts in debt and equity instruments, derivatives and commodities, including physical commodities inventories and financial instruments that reference commodities.

Principal transactions revenue also includes realized and unrealized gains and losses related to:

- derivatives designated in qualifying hedge accounting relationships, primarily fair value hedges of commodity and foreign exchange risk;
- derivatives used for specific risk management purposes, primarily to mitigate credit, foreign exchange and interest rate risks.

Refer to Note 5 for further information on the income statement classification of gains and losses from derivatives activities.

In the financial commodity markets, the Firm transacts in OTC derivatives (e.g., swaps, forwards, options) and ETD that reference a wide range of underlying commodities. In the physical commodity markets, the Firm primarily purchases and sells precious and base metals, natural gas, and may hold other commodities inventories under financing and other arrangements with clients.

The following table presents all realized and unrealized gains and losses recorded in principal transactions revenue. This table excludes interest income and interest expense on trading assets and liabilities, which are an integral part of the overall performance of the Firm's client-driven market-making activities in CIB and fund deployment activities in Treasury and CIO. Refer to Note 7 for further information on interest income and interest expense.

Trading revenue is presented primarily by instrument type. The Firm's client-driven market-making businesses generally utilize a variety of instrument

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types in connection with their market-making and related risk-management activities; accordingly, the trading revenue presented in the table below is not representative of the total revenue of any individual LOB.

Year ended December 31, (in millions)	2024	2023	2022
Trading revenue by instrument type			
Interest rate ^(a)	\$ 3,631	\$ 5,607	\$ 3,010
Credit ^(b)	1,545	1,434	1,412 ^(c)
Foreign exchange	4,874	5,082	5,119
Equity	13,476	10,229	8,068
Commodity	1,194	2,202	2,348
Total trading revenue	24,720	24,554	19,957
Private equity gains/(losses)	67	(94)	(45)
Principal transactions	\$24,787	\$ 24,460	\$ 19,912

- (a) Includes the impact of changes in funding valuation adjustments on derivatives.
(b) Includes the impact of changes in credit valuation adjustments on derivatives, net of the associated hedging activities.
(c) Includes net markdowns on held-for-sale positions, primarily unfunded commitments, in the bridge financing portfolio.

Principal transactions revenue is earned primarily by CIB.

Lending- and deposit-related fees

Lending-related fees include fees earned from loan commitments, standby letters of credit, financial guarantees, and other loan-servicing activities. Deposit-related fees include fees earned from performing cash management activities, and providing overdraft and other deposit account services. Deposit-related fees also include the impact of credits earned by clients that reduce such fees. Lending- and deposit-related fees are recognized over the period in which the related service is provided. Refer to Note 28 for further information on lending-related commitments.

The following table presents the components of lending- and deposit-related fees.

Year ended December 31, (in millions)	2024	2023	2022
Lending-related fees	\$ 2,192 ^(a)	\$ 2,365 ^(a)	\$ 1,468
Deposit-related fees	5,414	5,048	5,630
Total lending- and deposit-related fees	\$7,606	\$ 7,413	\$ 7,098

- (a) Includes the amortization of the fair value discount on certain acquired lending-related commitments associated with First Republic, predominantly in AWM and CIB. The discount is deferred in other liabilities and recognized on a straight-line basis over the commitment period and was largely recognized in 2023 as the commitments were generally short term. Refer to Note 34 for additional information.

Lending- and deposit-related fees are earned by CCB, CIB and AWM.

Asset management fees

Investment management fees include fees associated with assets the Firm manages on behalf of its clients, including investors in Firm-sponsored funds and owners of separately managed investment accounts. Management fees are typically based on the value of assets under management and are collected and recognized at the end of each period over which the management services are provided and the value of the managed assets is known. The Firm also receives performance-based management fees, which are earned based on exceeding certain benchmarks or other performance targets and are accrued and recognized when the probability of reversal is remote, typically at the end of the related billing period.

All other asset management fees include commissions earned on the sales or distribution of mutual funds to clients. These fees are recorded as revenue at the time the service is rendered or, in the case of certain distribution fees, based on the underlying fund's asset value or investor redemption activity.

The following table presents the components of asset management fees.

Year ended December 31, (in millions)	2024	2023	2022
Asset management fees			
Investment management fees	\$ 17,425	\$ 14,908	\$ 13,765
All other asset management fees	376	312	331
Total asset management fees	\$ 17,801	\$ 15,220	\$ 14,096

Asset management fees earned primarily by AWM and CCB.

Commissions and other fees

This revenue category includes commissions and fees from brokerage and custody services, and other products.

Brokerage commissions represents commissions earned when the Firm acts as a broker, by facilitating its clients' purchases and sales of securities and other financial instruments. Brokerage commissions are collected and recognized as revenue upon occurrence of the client transaction. The Firm reports certain costs paid to third-party clearing houses and exchanges net against commission revenue.

Administration fees predominantly include fees for custody, funds services, securities lending and securities clearance. These fees are recorded as revenue over the period in which the related service is provided.

The following table presents the components of commissions and other fees.

Year ended December 31, (in millions)	2024	2023	2022
Commissions and other fees			
Brokerage commissions and fees	\$ 3,119	\$ 2,820	\$ 2,831
Administration fees	2,526	2,310	2,348
All other commissions and fees ^(a)	1,885	1,706	1,402
Total commissions and other fees	\$ 7,530	\$ 6,836	\$ 6,581

(a) Includes annuity sales commissions, depository receipt-related service fees and travel-related sales commissions, as well as other service fees, which are recognized as revenue when the services are rendered.

Commissions and other fees are earned primarily by CIB, CCB and AWM.

Mortgage fees and related income

This revenue category reflects CCB's Home Lending production and net mortgage servicing revenue.

Production revenue includes fees and income recognized as earned on mortgage loans originated with the intent to sell, and the impact of risk management activities associated with the mortgage pipeline and warehouse loans. Production revenue also includes gains and losses on sales and lower of cost or fair value adjustments on mortgage loans held-for-sale (excluding certain repurchased loans insured by U.S. government agencies), and changes in the fair value of financial instruments measured under the fair value option. Net mortgage servicing revenue includes operating revenue earned from servicing third-party mortgage loans, which is recognized over the period in which the service is provided; changes in the fair value of MSRs; the impact of risk management activities associated with MSRs; and gains and losses on securitization of excess mortgage servicing. Net mortgage servicing revenue also includes gains and losses on sales and lower of cost or fair value adjustments of certain repurchased loans insured by U.S. government agencies.

Refer to Note 15 for further information on risk management activities and MSRs.

Net interest income from mortgage loans is recorded in interest income.

Card income

This revenue category includes interchange and other income from credit and debit card transactions; and fees earned from processing card transactions for merchants, both of which are recognized when purchases are made by a cardholder and presented net of certain transaction-related costs. Card income also includes account origination costs and annual fees, which are deferred and recognized on a straight-line basis over a 12-month period.

Certain credit card products offer the cardholder the ability to earn points based on account activity, which the cardholder can choose to redeem for cash and non-cash rewards. The cost to the Firm related to these proprietary rewards programs varies based on multiple factors including the terms and conditions of the rewards programs, cardholder activity, cardholder reward redemption rates and cardholder reward selections. The Firm maintains a liability for its obligations under its rewards programs and reports the current-period cost as a reduction of card income.

Credit card revenue sharing agreements

The Firm has contractual agreements with numerous co-brand partners that grant the Firm exclusive rights to issue co-branded credit card products and market them to the customers of such partners. These partners endorse the co-brand credit card programs and provide their customer or member lists to the Firm. The partners may also conduct marketing activities and provide rewards redeemable under their own loyalty programs that the Firm will grant to co-brand credit cardholders based on account activity. The terms of these agreements generally range from five to ten years.

The Firm typically makes payments to the co-brand credit card partners based on the cost of partners' marketing activities and loyalty program rewards provided to credit cardholders, new account originations and sales volumes. Payments to partners based on marketing efforts undertaken by the partners are expensed by the Firm as incurred and reported as marketing expense. Payments for partner loyalty program rewards are reported as a reduction of card income when incurred. Payments to partners based on new credit card account originations are accounted for as direct loan origination costs and are deferred and recognized as a reduction of card income on a straight-line basis over a 12-month period. Payments to partners based on sales volumes are reported as a reduction of card income when the related interchange income is earned.

The following table presents the components of card income:

Year ended December 31, (in millions)	2024	2023	2022
Interchange and merchant processing income	\$ 33,847	\$ 31,021	\$ 28,085
Reward costs and partner payments	(26,784)	(24,601)	(22,162)
All other ^(a)	(1,566)	(1,636)	(1,503)
Total card income	\$ 5,497	\$ 4,784	\$ 4,420

(a) Predominantly represents the amortization of account origination costs and annual fees, which are deferred and recognized on a straight-line basis over a 12-month period.

Card income is earned primarily by CCB and CIB.

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Other income

This revenue category includes operating lease income, as well as losses associated with the Firm's tax-oriented investments, predominantly alternative energy equity-method investments in CIB. The losses associated with these tax-oriented investments are more than offset by lower income tax expense from the associated tax credits.

The following table presents certain components of other income:

Year ended December 31, (in millions)	2024	2023	2022
Operating lease income	\$ 2,795	\$ 2,843	\$ 3,654
Losses on tax-oriented investments	(97)	(1,538)	(1,491)
Gain on Visa shares	7,990 ^(b)	—	914 ^(c)
Estimated bargain purchase gain associated with the First Republic acquisition	103	2,775	—
Gain related to the acquisition of CIFM ^(a)	—	339	—

(a) Gain on the original minority interest in CIFM upon the Firm's acquisition of the remaining 51% of the entity.

(b) Relates to the initial gain recognized on May 6, 2024 on the Visa C shares. Refer to Note 2 for additional information.

(c) Relates to the sale of Visa B shares.

Refer to Note 18 for additional information on operating leases.

Proportional Amortization Method: Effective January 1, 2024, as a result of adopting updates to the Accounting for Investments in Tax Credit Structures Using the Proportional Amortization Method guidance, the amortization of certain of the Firm's alternative energy tax-oriented investments that was previously recognized in other income is now recognized in income tax expense, which aligns with the associated tax credits and other tax benefits. Refer to Notes 1, 14 and 25 for additional information.

Noninterest expense

Other expense

Other expense on the Firm's Consolidated statements of income included:

Year ended December 31, (in millions)	2024	2023	2022
Legal expense	\$ 740	\$ 1,436	\$ 266
FDIC-related expense	1,893 ^(c)	4,203 ^(c)	860
Operating losses	1,417	1,228	1,101
Contribution of Visa shares ^(a)	1,000	—	—
First Republic-related expense ^(b)	777	1,060	—

(a) Represents the contribution of a portion of Visa C shares to the JPMorgan Chase Foundation recorded in the second quarter of 2024. Refer to Note 2 for additional information.

(b) Reflects the expenses classified within other expense, including \$488 million and \$360 million of integration and restructuring costs associated with First Republic for the full years ended December 31, 2024 and 2023, respectively. Additionally, the second quarter of 2023 included payments to the FDIC for the First Republic individuals who were not employees of the Firm until July 2, 2023. Refer to Note 34 for additional information on the First Republic acquisition.

(c) The first quarter of 2024 included an increase of \$725 million to the FDIC special assessment reflecting the FDIC's revised estimate of Deposit Insurance Fund losses. The fourth quarter of 2023 included the \$2.9 billion FDIC special assessment.

Refer to Note 32 for additional information on noninterest revenue and expense by segment.

Note 7 – Interest income and interest expense

Interest income and interest expense are recorded in the Consolidated statements of income and classified based on the nature of the underlying asset or liability.

Interest income and interest expense includes the current-period interest accruals for financial instruments measured at fair value, except for derivatives and certain financial instruments containing embedded derivatives; for those instruments, all changes in fair value including any interest elements, are primarily reported in principal transactions revenue. For financial instruments that are not measured at fair value, the related interest is included within interest income or interest expense, as applicable. Interest income and interest expense also includes the effect of derivatives that qualify for hedge accounting where applicable.

Interest income on loans and securities include the amortization and accretion of purchase premiums and discounts, as well as net deferred fees and costs on loans. These amounts are deferred in loans and investment securities, respectively, and recognized on a level-yield basis.

Refer to Notes 5, 10, 11, 12, and 20 for further information on accounting for interest income and interest expense related to hedge accounting, investment securities, securities financing activities (i.e., securities purchased or sold under resale or repurchase agreements; securities borrowed; and securities loaned), loans and long-term debt, respectively.

The following table presents the components of interest income and interest expense:

Year ended December 31, (in millions)	2024	2023	2022
Interest income			
Loans	\$ 92,353 ^(d)	\$ 83,384 ^(d)	\$ 52,736
Taxable securities	21,947	17,390	10,372
Non-taxable securities ^(a)	1,197	1,336	975
Total investment securities	23,144 ^(d)	18,726 ^(d)	11,347
Trading assets - debt instruments	20,327	15,950	9,053
Federal funds sold and securities purchased under resale agreements	18,299	15,079	4,632
Securities borrowed	9,208	7,983	2,237
Deposits with banks	22,297	21,797	9,039
All other interest-earning assets ^(b)	8,305	7,669	3,763
Total interest income	\$193,933	\$170,588	\$ 92,807
Interest expense			
Interest bearing deposits	\$ 49,559	\$ 40,016	\$ 10,082
Federal funds purchased and securities loaned or sold under repurchase agreements	19,149	13,259	3,721
Short-term borrowings	2,101	1,894	747
Trading liabilities - debt and all other interest-bearing liabilities ^(c)	10,238	9,396	3,246
Long-term debt	18,920	15,803	8,075
Beneficial interest issued by consolidated VIEs	1,383	953	226
Total interest expense	\$101,350	\$ 81,321	\$ 26,097
Net interest income	\$ 92,583	\$ 89,267	\$ 66,710
Provision for credit losses	10,678	9,320	6,389
Net interest income after provision for credit losses	\$ 81,905	\$ 79,947	\$ 60,321

- (a) Represents securities that are tax-exempt for U.S. federal income tax purposes.
- (b) Includes interest earned on brokerage-related held-for-investment customer receivables, which are classified in accrued interest and accounts receivable, and all other interest-earning assets, which are classified in other assets on the Consolidated balance sheets.
- (c) All other interest-bearing liabilities includes interest expense on brokerage-related customer payables.
- (d) Includes the accretion of the purchase discount on certain acquired loans and investment securities associated with First Republic. Refer to Note 34 for additional information.

Note 8 – Pension and other postretirement employee benefit plans

The Firm has various defined benefit pension plans and OPEB plans that provide benefits to its employees in the U.S. and certain non-U.S. locations. Substantially all the defined benefit pension plans are closed to new participants. The principal defined benefit pension plan in the U.S., which covered substantially all U.S. employees, was closed to new participants and frozen for existing participants on January 1, 2020, (and January 1, 2019 for new hires on or after December 2, 2017). Interest credits continue to accrue to participants' accounts based on their accumulated balances.

The Firm maintains funded and unfunded postretirement benefit plans that provide medical and life insurance for certain eligible employees and retirees

The following table presents the pretax benefit obligations, plan assets, the net funded status, and the amounts recorded in AOCI on the Consolidated balance sheets for the Firm's significant defined benefit pension and OPEB plans.

As of or for the year ended December 31, (in millions)	2024	2023
Projected benefit obligations	\$ (14,459)	\$ (14,740)
Fair value of plan assets	22,201	22,013
Net funded status	7,742	7,273
Accumulated other comprehensive income/(loss)	(1,649)	(1,517)

The weighted-average discount rate used to value the benefit obligations as of December 31, 2024 and 2023, was 5.49% and 5.16%, respectively.

Gains and losses

Gains or losses resulting from changes in the benefit obligation and the fair value of plan assets are recorded in OCI. Amortization of net gains or losses are recognized as part of the net periodic benefit cost over subsequent periods, if, as of the beginning of the year, the net gain or loss exceeds 10% of the greater of the projected benefit obligation or the fair value of the plan assets. Amortization is generally over the average expected remaining lifetime of plan participants, given the frozen status of most plans. For the year ended

as well as their dependents covered under these programs. None of these plans have a material impact on the Firm's Consolidated Financial Statements.

The Firm also provides a qualified defined contribution plan in the U.S. and maintains other similar arrangements in certain non-U.S. locations. The most significant of these plans is the JPMorgan Chase 401(k) Savings Plan ("the 401(k) Savings Plan"), which covers substantially all U.S. employees. Employees can contribute to the 401(k) Savings Plan on a pretax and/or Roth 401(k) after-tax basis. The Firm makes annual matching and pay credit contributions to the 401(k) Savings Plan on behalf of eligible participants.

December 31, 2024, the net loss was attributable to lower than expected returns on plan assets, partially offset by projected benefit obligation net gains primarily related to changes in the discount rate. For the year ended December 31, 2023, the net gain was attributable to market-driven increases in the fair value of plan assets, partially offset by changes in the discount rate and interest crediting rate.

The following table presents the net periodic benefit costs reported in the Consolidated statements of income for the Firm's defined benefit pension, defined contribution and OPEB plans, and in other comprehensive income for the defined benefit pension and OPEB plans.

Year ended December 31, (in millions)	2024	2023	2022
Total net periodic defined benefit plan cost/(credit) ^(a)	\$ (462)	\$ (393)	\$ (192) ^(b)
Total defined contribution plans	1,733	1,609	1,408
Total pension and OPEB cost included in noninterest expense	\$ 1,271	\$ 1,216	\$ 1,216
Total recognized in other comprehensive (income)/loss	\$ 131	\$ (421)	\$ 1,459

(a) The service cost component of net periodic defined benefit cost is reported in compensation expense; all other components of net periodic defined benefit costs are reported in other expense in the Consolidated statements of income.

(b) Includes pension settlement losses of \$92 million for the year ended December 31, 2022.

The following table presents the weighted-average actuarial assumptions used to determine the net periodic benefit costs for the defined benefit pension and OPEB plans.

Year ended December 31,	2024	2023	2022
Discount rate	5.16 %	5.14 %	2.54 %
Expected long-term rate of return on plan assets	6.15 %	5.74 %	3.68 %

Plan assumptions

The Firm's expected long-term rate of return is a blended weighted average, by asset allocation of the projected long-term returns for the various asset classes, taking into consideration local market conditions and the specific allocation of plan assets. Returns on asset classes are developed using a forward-looking approach and are not strictly based on historical returns, with consideration given to current market conditions and the portfolio mix of each plan.

The discount rates used in determining the benefit obligations are generally provided by the Firm's actuaries, with the Firm's principal defined benefit pension plan using a rate that was selected by reference to the yields on portfolios of bonds with maturity dates and coupons that closely match the plan's projected annual cash flows.

Investment strategy and asset allocation

The assets of the Firm's defined benefit pension plans are held in various trusts and are invested in well-diversified portfolios of equity and fixed income securities, cash and cash equivalents, and alternative investments. The Firm regularly reviews the asset allocations and asset managers, as well as other factors that could impact the portfolios, which are rebalanced when deemed necessary. As of December 31, 2024, the approved asset allocation ranges by asset class for the Firm's principal defined benefit plan are 41-100% debt securities, 0-40% equity securities, 0-1% real estate, and 0-8% alternatives.

Assets held by the Firm's defined benefit pension and OPEB plans do not include securities issued by JPMorganChase or its affiliates, except through indirect exposures through investments in exchange traded funds, mutual funds and collective investment funds managed by third-parties. The defined benefit pension and OPEB plans hold investments that are sponsored or managed by affiliates of JPMorganChase in the amount of \$1.8 billion as of both December 31, 2024 and 2023.

Fair value measurement of the plans' assets and liabilities

Refer to Note 2 for information on fair value measurements, including descriptions of level 1, 2, and 3 of the fair value hierarchy and the valuation methods employed by the Firm.

Defined benefit pension and OPEB plans assets and liabilities measured at fair value

December 31, (in millions)	2024				2023			
	Level 1 ^(a)	Level 2 ^(b)	Level 3 ^(c)	Total fair value	Level 1 ^(a)	Level 2 ^(b)	Level 3 ^(c)	Total fair value
Assets measured at fair value classified in the fair value hierarchy	\$ 6,910	\$ 9,693	\$ 3,956	\$ 20,559	\$ 6,521	\$ 10,713	\$ 3,124	\$ 20,358
Assets measured at fair value using NAV as a practical expedient				2,101				2,097
Net defined benefit pension plan payables				(459)				(442)
Total fair value of plan assets				\$ 22,201				\$ 22,013

(a) Consists predominantly of equity securities, U.S. federal, state, and local and non-U.S. government debt securities, and cash equivalents.

(b) Consists of corporate debt securities, fund investments, mortgage-backed securities, and U.S. federal, state, and local and non-U.S. government debt securities.

(c) Consists predominantly of corporate-owned life insurance policies.

Notes to consolidated financial statements

Changes in level 3 fair value measurements using significant unobservable inputs

Investments classified in level 3 of the fair value hierarchy increased in 2024 to \$4.0 billion, due to \$536 million of transfers in and \$415 million in unrealized gains, partially offset by \$123 million in settlements. The net increase in 2023 was due to \$400 million in unrealized gains and \$173 million of transfers in, partially offset by \$59 million in settlements.

Estimated future benefit payments

The following table presents benefit payments expected to be paid for the defined benefit pension and OPEB plans for the years indicated.

Year ended December 31, (in millions)	
2025	\$ 1,186
2026	1,155
2027	1,134
2028	1,095
2029	1,093
Years 2030–2034	5,229

Note 9 – Employee share-based incentives

Employee share-based awards

In 2024, 2023 and 2022, JPMorganChase granted long-term share-based awards to certain employees under its LTIP, as amended and restated effective May 18, 2021, and subsequently amended effective May 21, 2024. Under the terms of the LTIP, as of December 31, 2024, 81 million shares of common stock were available for issuance through May 2028. The LTIP is the only active plan under which the Firm is currently granting share-based incentive awards. In the following discussion, the LTIP constitutes the Firm's share-based incentive plans.

RSUs are awarded at no cost to the recipient upon their grant. Generally, RSUs are granted annually and vest at a rate of 50% after two years and 50% after three years and are converted into shares of common stock as of the vesting date. In addition, RSUs typically include full-career eligibility provisions, which allow employees to continue to vest upon voluntary termination based on age and/or service-related requirements, subject to post-employment and other restrictions. All RSU awards are subject to forfeiture until vested and contain clawback provisions that may result in cancellation under certain specified circumstances. Predominantly all RSUs entitle the recipient to receive cash payments equivalent to any dividends paid on the underlying common stock during the period the RSUs are outstanding.

Performance share units ("PSUs") are granted annually, and approved by the Firm's Board of Directors, to members of the Firm's Operating Committee under the variable compensation program. PSUs are subject to the Firm's achievement of specified performance criteria over a three-year period. The number of awards that vest can range from zero to 150% of the grant amount. In addition, dividends that accrue during the vesting period are reinvested in dividend equivalent share units. PSUs and the related dividend equivalent share units are converted into shares of common stock after vesting.

Once the PSUs and dividend equivalent share units have vested, the shares of common stock that are delivered, after applicable tax withholding, must be retained for an additional holding period, for a total combined vesting and holding period of approximately five to eight years from the grant date depending on regulations in certain countries.

Under the LTI Plans, stock appreciation rights ("SARs") were granted with an exercise price equal to the fair value of JPMorganChase's common stock on the grant date. SARs expire ten years after the grant date. There were no grants of SARs in 2024, 2023 or 2022.

The Firm separately recognizes compensation expense for each tranche of each award, net of estimated forfeitures, as if it were a separate award with its own vesting date. Generally, for each tranche granted, compensation expense is recognized on a straight-line basis from the grant date until the vesting date of the respective tranche, provided that the employees will not become full-career eligible during the vesting period. For awards with full-career eligibility provisions and awards granted with no future substantive service requirement, the Firm accrues the estimated value of awards expected to be awarded to employees as of the grant date without giving consideration to the impact of post-employment restrictions. For each tranche granted to employees who will become full-career eligible during the vesting period, compensation expense is recognized on a straight-line basis from the grant date until the earlier of the employee's full-career eligibility date or the vesting date of the respective tranche.

The Firm's policy for issuing shares upon settlement of employee share-based incentive awards is to issue either new shares of common stock or treasury shares. During 2024, 2023 and 2022, the Firm settled all of its employee share-based awards by issuing treasury shares.

Refer to Note 23 for further information on the classification of share-based awards for purposes of calculating earnings per share.

Notes to consolidated financial statements

RSUs, PSUs and SARs activity

Generally, compensation expense for RSUs and PSUs is measured based on the number of units granted multiplied by the stock price at the grant date, and for SARs, is measured at the grant date using the Black-Scholes valuation model. Compensation expense for these awards is recognized in net income as described previously. The following table summarizes JPMorganChase's RSUs, PSUs and SARs activity for 2024.

Year ended December 31, 2024 (in thousands, except weighted-average data, and where otherwise stated)	RSUs/PSUs		SARs			
	Number of units	Weighted-average grant date fair value	Number of awards	Weighted-average exercise price	Weighted-average remaining contractual life (in years)	Aggregate intrinsic value
Outstanding, January 1	52,243	\$ 141.31	2,250	\$ 152.19		
Granted	20,020	166.74	—	—		
Exercised or vested	(19,542)	143.02	—	—		
Forfeited	(2,112)	147.41	—	—		
Canceled	NA	NA	—	—		
Outstanding, December 31	50,609	\$ 150.41	2,250	\$ 152.19	6.7	\$ 198,113
Exercisable, December 31	NA	NA	—	—	—	—

The total fair value of RSUs and PSUs that vested during the years ended December 31, 2024, 2023 and 2022, was \$3.5 billion, \$2.5 billion and \$3.2 billion, respectively. There were no SARs exercised in 2024. The total intrinsic value of SARs exercised during the years ended December 31, 2023 and 2022, was \$24 million and \$75 million, respectively.

Compensation expense

The Firm recognized the following noncash compensation expense related to its various employee share-based incentive plans in its Consolidated statements of income.

Year ended December 31, (in millions)	2024	2023	2022
Cost of prior grants of RSUs, PSUs and SARs that are amortized over their applicable vesting periods	\$ 1,622	\$ 1,510	\$ 1,253
Accrual of estimated costs of share-based awards to be granted in future periods, predominantly those to full-career eligible employees	1,882	1,607	1,541
Total noncash compensation expense related to employee share-based incentive plans	\$3,504	\$ 3,117	\$ 2,794

At December 31, 2024, approximately \$963 million (pretax) of compensation expense related to unvested awards had not yet been charged to net income. That cost is expected to be amortized into compensation expense over a weighted-average period of 1.6 years. The Firm does not capitalize any compensation expense related to share-based compensation awards to employees.

Tax benefits

Income tax benefits (including tax benefits from dividends or dividend equivalents) related to share-based incentive arrangements recognized in the Firm's Consolidated statements of income for the years ended December 31, 2024, 2023 and 2022, were \$1.0 billion, \$836 million and \$901 million, respectively.

Note 10 – Investment securities

Investment securities consist of debt securities that are classified as AFS or HTM. Debt securities classified as trading assets are discussed in Note 2. Predominantly all of the Firm's AFS and HTM securities are held by Treasury and CIO in connection with its asset-liability management activities.

AFS securities are carried at fair value on the Consolidated balance sheets. Unrealized gains and losses, after any applicable hedge accounting adjustments or allowance for credit losses, are reported in AOCI. The specific identification method is used to determine realized gains and losses on AFS securities, which are included in investment securities gains/(losses) on the Consolidated statements of income. HTM securities, which the Firm has the intent and ability to hold until maturity, are carried at amortized cost, net of allowance for credit losses, on the Consolidated balance sheets.

For both AFS and HTM securities, purchase discounts or premiums are generally amortized into interest income on a level-yield basis over the contractual life of the security. However, premiums on certain callable debt securities are amortized to the earliest call date.

Notes to consolidated financial statements

The amortized costs and estimated fair values of the investment securities portfolio were as follows for the dates indicated.

December 31, (in millions)	2024				2023			
	Amortized cost ^{(d)(e)}	Gross unrealized gains	Gross unrealized losses	Fair value	Amortized cost ^{(d)(e)}	Gross unrealized gains	Gross unrealized losses	Fair value
Available-for-sale securities								
Mortgage-backed securities:								
U.S. GSEs and government agencies	\$ 95,671	\$ 251	\$ 4,029	\$ 91,893	\$ 88,377	\$ 870	\$ 4,077	\$ 85,170
Residential:								
U.S.	4,242	16	50	4,208	2,086	10	68	2,028
Non-U.S.	600	3	—	603	1,608	4	1	1,611
Commercial	4,115	20	70	4,065	2,930	12	139	2,803
Total mortgage-backed securities	104,628	290	4,149	100,769	95,001	896	4,285	91,612
U.S. Treasury and government agencies	235,495	545	1,261	234,779	58,051	276	522	57,805
Obligations of U.S. states and municipalities	18,337	110	534	17,913	21,243	390	266	21,367
Non-U.S. government debt securities	36,655	94	504	36,245	21,387	254	359	21,282
Corporate debt securities	71	—	1	70	128	—	28	100
Asset-backed securities:								
Collateralized loan obligations	14,887	59	3	14,943	6,769	11	28	6,752
Other	2,125	17	9	2,133	2,804	8	26	2,786
Unallocated portfolio layer fair value basis adjustments ^(a)	(1,153)	—	(1,153)	NA	73	(73)	—	NA
Total available-for-sale securities	411,045	1,115	5,308	406,852	205,456	1,762	5,514	201,704
Held-to-maturity securities^(b)								
Mortgage-backed securities:								
U.S. GSEs and government agencies	97,177	6	13,531	83,652	105,614	39	11,643	94,010
U.S. Residential	8,605	4	904	7,705	9,709	4	970	8,743
Commercial	8,817	24	389	8,452	10,534	13	581	9,966
Total mortgage-backed securities	114,599	34	14,824	99,809	125,857	56	13,194	112,719
U.S. Treasury and government agencies	108,632	—	11,212	97,420	173,666	—	13,074	160,592
Obligations of U.S. states and municipalities	9,310	32	631	8,711	9,945	74	591	9,428
Asset-backed securities:								
Collateralized loan obligations	40,573	84	14	40,643	58,565	47	352	58,260
Other	1,354	2	39	1,317	1,815	1	61	1,755
Total held-to-maturity securities^(c)	274,468	152	26,720	247,900	369,848	178	27,272	342,754
Total investment securities, net of allowance for credit losses	\$ 685,513	\$ 1,267	\$ 32,028	\$ 654,752	\$ 575,304	\$ 1,940	\$ 32,786	\$ 544,458

- (a) Represents the amount of portfolio layer method basis adjustments related to AFS securities hedged in a closed portfolio. Under U.S. GAAP portfolio layer method basis adjustments are not allocated to individual securities, however the amounts impact the unrealized gains or losses in the table for the types of securities being hedged. Refer to Note 1 and Note 5 for additional information.
- (b) The Firm purchased \$4.7 billion, \$4.1 billion and \$33.7 billion of HTM securities for the years ended December 31, 2024, 2023 and 2022, respectively.
- (c) Effective January 1, 2023, the Firm adopted the portfolio layer method hedge accounting guidance which permitted a transfer of HTM securities to AFS upon adoption. The Firm transferred obligations of U.S. states and municipalities with a carrying value of \$7.1 billion resulting in the recognition of \$38 million net pre-tax unrealized losses in AOCI. This transfer was a non-cash transaction. Refer to Note 24 for additional information.
- (d) The amortized cost of investment securities is reported net of allowance for credit losses of \$152 million, \$128 million and \$96 million at December 31, 2024, 2023 and 2022, respectively.
- (e) Excludes \$3.7 billion and \$2.8 billion of accrued interest receivable at December 31, 2024 and 2023, respectively, included in accrued interest and accounts receivable on the Consolidated balance sheets. The Firm generally does not recognize an allowance for credit losses on accrued interest receivable, consistent with its policy to write them off no later than 90 days past due by reversing interest income. The Firm did not reverse through interest income any accrued interest receivable for the years ended December 31, 2024 and 2023.

At December 31, 2024, the investment securities portfolio consisted of debt securities with an average credit rating of AA+ (based upon external ratings where available, and where not available, based primarily upon internal risk ratings). Risk ratings are used to identify the credit quality of securities and differentiate risk within the portfolio. The Firm's internal risk ratings generally align with the qualitative characteristics (e.g., borrower capacity to meet financial commitments and vulnerability to changes in the economic environment) defined by S&P and

Moody's, however the quantitative characteristics (e.g., probability of default ("PD") and loss given default ("LGD")) may differ as they reflect internal historical experiences and assumptions. Risk ratings are assigned at acquisition, reviewed on a regular and ongoing basis by Credit Risk Management and adjusted as necessary over the life of the investment for updated information affecting the issuer's ability to fulfill its obligations.

AFS securities impairment

The following tables present the fair value and gross unrealized losses by aging category for AFS securities at December 31, 2024 and 2023. The tables exclude U.S. Treasury and government agency securities and U.S. GSE and government agency MBS with unrealized losses of \$5.3 billion and \$4.6 billion, at December 31, 2024 and 2023, respectively; changes in the value of these securities are generally driven by changes in interest rates rather than changes in their credit profile given the explicit or implicit guarantees provided by the U.S. government.

Year ended December 31, 2024 (in millions)	Available-for-sale securities with gross unrealized losses					
	Less than 12 months		12 months or more		Total fair value	Total gross unrealized losses
	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses		
Available-for-sale securities						
Mortgage-backed securities:						
Residential:						
U.S.	\$ 1,505	\$ 6	\$ 925	\$ 44	\$ 2,430	\$ 50
Non-U.S.	—	—	30	—	30	—
Commercial	763	8	1,184	62	1,947	70
Total mortgage-backed securities	2,268	14	2,139	106	4,407	120
Obligations of U.S. states and municipalities	10,037	233	2,412	301	12,449	534
Non-U.S. government debt securities	14,234	234	4,184	270	18,418	504
Corporate debt securities	9	—	30	1	39	1
Asset-backed securities:						
Collateralized loan obligations	2	—	375	3	377	3
Other	214	1	200	8	414	9
Total available-for-sale securities with gross unrealized losses	\$ 26,764	\$ 482	\$ 9,340	\$ 689	\$ 36,104	\$ 1,171

Year ended December 31, 2023 (in millions)	Available-for-sale securities with gross unrealized losses					
	Less than 12 months		12 months or more		Total fair value	Total gross unrealized losses
	Fair value	Gross unrealized losses	Fair value	Gross unrealized losses		
Available-for-sale securities						
Mortgage-backed securities:						
Residential:						
U.S.	\$ 81	\$ —	\$ 1,160	\$ 68	\$ 1,241	\$ 68
Non-U.S.	—	—	722	1	722	1
Commercial	228	3	1,775	136	2,003	139
Total mortgage-backed securities	309	3	3,657	205	3,966	208
Obligations of U.S. states and municipalities	2,134	20	2,278	246	4,412	266
Non-U.S. government debt securities	7,145	23	4,987	336	12,132	359
Corporate debt securities	9	—	79	28	88	28
Asset-backed securities:						
Collateralized loan obligations	932	2	3,744	26	4,676	28
Other	208	1	1,288	25	1,496	26
Total available-for-sale securities with gross unrealized losses	\$ 10,737	\$ 49	\$ 16,033	\$ 866	\$ 26,770	\$ 915

Notes to consolidated financial statements

AFS securities are considered impaired if the fair value is less than the amortized cost.

The Firm recognizes impairment losses in earnings if the Firm has the intent to sell the debt security, or if it is more likely than not that the Firm will be required to sell the debt security before recovery of its amortized cost. In these circumstances the impairment loss is recognized in investment securities gains/(losses) in the Consolidated Statements of Income and is equal to the full difference between the amortized cost (net of allowance if applicable) and the fair value of the security.

For impaired debt securities that the Firm has the intent and ability to hold, the securities are evaluated to determine if a credit loss exists. If it is determined that a credit loss exists, that loss is recognized as an allowance for credit losses through the provision for credit losses in the Consolidated Statements of Income, limited by the amount of impairment. Any impairment on debt securities that the Firm has the intent and ability to hold not due to credit losses is recorded in OCI.

Factors considered in evaluating credit losses include adverse conditions specifically related to the industry, geographic area or financial condition of the issuer or underlying collateral of a security; and payment structure of the security.

When assessing securities issued in a securitization for credit losses, the Firm estimates cash flows considering relevant market and economic data, underlying loan-level data, and structural features of the securitization, such as subordination, excess spread, overcollateralization or other forms of credit enhancement, and compares the losses projected for the underlying collateral (“pool losses”) against the level of credit enhancement in the securitization structure to determine whether these features are sufficient to absorb the pool losses, or whether a credit loss exists.

For beneficial interests in securitizations that are rated below “AA” at their acquisition, or that can be contractually prepaid or otherwise settled in such a way that the Firm would not recover substantially all of its recorded investment, the Firm evaluates impairment for credit losses when there is an adverse change in expected cash flows.

HTM securities – credit risk

Allowance for credit losses

The allowance for credit losses on HTM securities represents expected credit losses over the remaining expected life of the securities.

The allowance for credit losses on HTM obligations of U.S. states and municipalities and commercial mortgage-backed securities is calculated by applying statistical credit loss factors (estimated PD and LGD)

to the amortized cost. The credit loss factors are derived using a weighted average of five internally developed eight-quarter macroeconomic scenarios, followed by a single year straight-line interpolation to revert to long run historical information for periods beyond the forecast period. Refer to Note 13 for further information on the eight-quarter macroeconomic forecast.

The allowance for credit losses on HTM collateralized loan obligations and U.S. residential mortgage-backed securities is calculated as the difference between the amortized cost and the present value of the cash flows expected to be collected, discounted at the security’s effective interest rate. These cash flow estimates are developed based on expectations of underlying collateral performance derived using the eight-quarter macroeconomic forecast and the single year straight-line interpolation, as well as considering the structural features of the security.

The application of different inputs and assumptions into the calculation of the allowance for credit losses is subject to significant management judgment, and emphasizing one input or assumption over another, or considering other inputs or assumptions, could affect the estimate of the allowance for credit losses on HTM securities.

Credit quality indicator

The primary credit quality indicator for HTM securities is the risk rating assigned to each security. At both December 31, 2024 and 2023, all HTM securities were rated investment grade and were current and accruing, with approximately 99% rated at least AA+ (based upon external ratings where available, and where not available, based primarily upon internal risk ratings).

Allowance for credit losses on investment securities

The allowance for credit losses on investment securities was \$152 million, \$128 million and \$96 million as of December 31, 2024, 2023 and 2022, respectively, which included a cumulative-effect adjustment to retained earnings related to the transfer of HTM securities to AFS for the year ended December 31, 2023.

Selected impacts of investment securities on the Consolidated statements of income

Year ended December 31, (in millions)	2024	2023	2022
Realized gains	\$ 593	\$ 622	\$ 198
Realized losses	(1,614)	(3,802)	(2,578)
Investment securities losses	\$(1,021)	\$(3,180)	\$(2,380)
Provision for credit losses	\$ 24	\$ 38	\$ 54

Contractual maturities and yields

The following table presents the amortized cost and estimated fair value at December 31, 2024, of JPMorganChase's investment securities portfolio by contractual maturity.

By remaining maturity December 31, 2024 (in millions)	Due in one year or less	Due after one year through five years	Due after five years through 10 years	Due after 10 years ^(c)	Total
Available-for-sale securities					
Mortgage-backed securities					
Amortized cost	\$ 132	\$ 9,410	\$ 4,059	\$ 91,027	\$ 104,628
Fair value	130	9,345	4,041	87,253	100,769
Average yield ^(a)	3.32 %	4.58 %	5.25 %	4.75 %	4.75 %
U.S. Treasury and government agencies					
Amortized cost	\$ 20,685	\$ 169,162	\$ 38,667	\$ 6,981	\$ 235,495
Fair value	20,730	169,145	38,619	6,285	234,779
Average yield ^(a)	4.50 %	4.57 %	4.96 %	5.53 %	4.65 %
Obligations of U.S. states and municipalities					
Amortized cost	\$ 4	\$ 16	\$ 92	\$ 18,225	\$ 18,337
Fair value	4	16	90	17,803	17,913
Average yield ^(a)	1.59 %	3.95 %	4.46 %	5.32 %	5.32 %
Non-U.S. government debt securities					
Amortized cost	\$ 13,331	\$ 11,769	\$ 7,609	\$ 3,946	\$ 36,655
Fair value	13,327	11,701	7,403	3,814	36,245
Average yield ^(a)	4.24 %	4.32 %	2.82 %	4.15 %	3.96 %
Corporate debt securities					
Amortized cost	\$ 106	\$ 9	\$ 5	\$ —	\$ 120
Fair value	57	9	4	—	70
Average yield ^(a)	14.09 %	4.06 %	4.19 %	— %	12.92 %
Asset-backed securities					
Amortized cost	\$ —	\$ 368	\$ 1,609	\$ 15,035	\$ 17,012
Fair value	—	370	1,619	15,087	17,076
Average yield ^(a)	— %	6.14 %	6.04 %	5.96 %	5.97 %
Total available-for-sale securities					
Amortized cost ^(b)	\$ 34,258	\$ 190,734	\$ 52,041	\$ 135,214	\$ 412,247
Fair value	34,248	190,586	51,776	130,242	406,852
Average yield ^(a)	4.42 %	4.56 %	4.70 %	4.98 %	4.70 %
Held-to-maturity securities					
Mortgage-backed securities					
Amortized cost	\$ 104	\$ 7,994	\$ 6,077	\$ 100,495	\$ 114,670
Fair value	101	7,453	5,352	86,903	99,809
Average yield ^(a)	0.97 %	2.63 %	2.67 %	2.95 %	2.92 %
U.S. Treasury and government agencies					
Amortized cost	\$ 20,083	\$ 40,497	\$ 48,052	\$ —	\$ 108,632
Fair value	19,500	37,715	40,205	—	97,420
Average yield ^(a)	0.43 %	1.23 %	1.25 %	— %	1.09 %
Obligations of U.S. states and municipalities					
Amortized cost	\$ —	\$ 9	\$ 307	\$ 9,026	\$ 9,342
Fair value	—	9	276	8,426	8,711
Average yield ^(a)	— %	4.76 %	3.25 %	3.97 %	3.95 %
Asset-backed securities					
Amortized cost	\$ —	\$ 134	\$ 22,433	\$ 19,360	\$ 41,927
Fair value	—	134	22,466	19,360	41,960
Average yield ^(a)	— %	5.94 %	5.57 %	5.73 %	5.65 %
Total held-to-maturity securities					
Amortized cost ^(d)	\$ 20,187	\$ 48,634	\$ 76,869	\$ 128,881	\$ 274,571
Fair value	19,601	45,311	68,299	114,689	247,900
Average yield ^(a)	0.43 %	1.47 %	2.63 %	3.44 %	2.64 %

- (a) Average yield is computed using the effective yield of each security owned at the end of the period, weighted based on the amortized cost of each security. The effective yield considers the contractual coupon, amortization of premiums and accretion of discounts, and the effect of related hedging derivatives, including closed portfolio hedges. Taxable-equivalent amounts are used where applicable. The effective yield excludes unscheduled principal prepayments; and accordingly, actual maturities of securities may differ from their contractual or expected maturities as certain securities may be prepaid. However, for certain callable debt securities, the average yield is calculated to the earliest call date.
- (b) For purposes of this table, the amortized cost of available-for-sale securities excludes the allowance for credit losses of \$49 million and the portfolio layer fair value hedge basis adjustments of \$(1.2) billion at December 31, 2024. The amortized cost of held-to-maturity securities also excludes the allowance for credit losses of \$103 million at December 31, 2024.
- (c) Substantially all of the Firm's U.S. residential MBS and collateralized mortgage obligations are due in 10 years or more, based on contractual maturity. The estimated weighted-average life, which reflects anticipated future prepayments, is approximately eight years for agency residential MBS, six years for agency residential collateralized mortgage obligations, and five years for nonagency residential collateralized mortgage obligations.

Note 11 – Securities financing activities

JPMorganChase enters into resale, repurchase, securities borrowed and securities loaned agreements (collectively, “securities financing agreements”) primarily to finance the Firm’s inventory positions, acquire securities to cover short sales, accommodate customers’ financing needs, settle other securities obligations and to deploy the Firm’s excess cash.

Securities financing agreements are treated as collateralized financings on the Firm’s Consolidated balance sheets. Where appropriate under applicable accounting guidance, securities financing agreements with the same counterparty are reported on a net basis. Refer to Note 1 for further discussion of the offsetting of assets and liabilities. Fees received and paid in connection with securities financing agreements are recorded over the life of the agreement in interest income and interest expense on the Consolidated statements of income.

The Firm has elected the fair value option for certain securities financing agreements. Refer to Note 3 for further information regarding the fair value option. The securities financing agreements for which the fair value option has been elected are reported within securities purchased under resale agreements, securities loaned or sold under repurchase agreements, and securities borrowed on the Consolidated balance sheets. Generally, for agreements carried at fair value, current-period interest accruals are recorded within interest income and interest expense, with changes in fair value reported in principal transactions revenue. However, for financial instruments containing embedded derivatives that would be separately accounted for in accordance with accounting guidance for hybrid instruments, all changes in fair value, including any interest elements, are reported in principal transactions revenue.

Securities financing agreements not elected under the fair value option are measured at amortized cost. As a result of the Firm’s credit risk mitigation practices described below, the Firm did not hold any allowance for credit losses with respect to resale and securities borrowed arrangements as of December 31, 2024 and 2023.

Credit risk mitigation practices

Securities financing agreements expose the Firm primarily to credit and liquidity risk. To manage these risks, the Firm monitors the value of the underlying securities (predominantly high-quality securities collateral, including government-issued debt and U.S. GSEs and government agencies MBS) that it has received from or provided to its counterparties compared to the value of cash proceeds and exchanged collateral, and either requests additional collateral or returns securities or collateral when appropriate. Margin levels are initially established based upon the counterparty, the type of underlying securities, and the permissible collateral, and are monitored on an ongoing basis.

In resale and securities borrowed agreements, the Firm is exposed to credit risk to the extent that the value of the securities received is less than initial cash principal advanced and any collateral amounts exchanged. In repurchase and securities loaned agreements, credit risk exposure arises to the extent that the value of underlying securities advanced exceeds the value of the initial cash principal received, and any collateral amounts exchanged.

Additionally, the Firm typically enters into master netting agreements and other similar arrangements with its counterparties, which provide for the right to liquidate the underlying securities and any collateral amounts exchanged in the event of a counterparty default. It is also the Firm’s policy to take possession, where possible, of the securities underlying resale and securities borrowed agreements. Refer to Note 29 for further information regarding assets pledged and collateral received in securities financing agreements.

The table below summarizes the gross and net amounts of the Firm's securities financing agreements, as of December 31, 2024 and 2023. When the Firm has obtained an appropriate legal opinion with respect to a master netting agreement with a counterparty and where other relevant netting criteria under U.S. GAAP are met, the Firm nets, on the Consolidated balance sheets, the balances outstanding under its securities financing agreements with the same counterparty. In addition, the Firm exchanges securities and/or cash collateral with its counterparty to reduce the economic exposure with the counterparty, but such collateral is not eligible for net Consolidated balance sheet presentation. Where the Firm has obtained an appropriate legal opinion with respect to the counterparty master netting agreement, such

collateral, along with securities financing balances that do not meet all these relevant netting criteria under U.S. GAAP, is presented in the table below as "Amounts not nettable on the Consolidated balance sheets," and reduces the "Net amounts" presented. Where a legal opinion has not been either sought or obtained, the securities financing balances are presented gross in the "Net amounts" below. In transactions where the Firm is acting as the lender in a securities-for-securities lending agreement and receives securities that can be pledged or sold as collateral, the Firm recognizes the securities received at fair value within other assets and the obligation to return those securities within accounts payable and other liabilities on the Consolidated balance sheets.

		December 31, 2024				
(in millions)	Gross amounts	Amounts netted on the Consolidated balance sheets	Amounts presented on the Consolidated balance sheets	Amounts not nettable on the Consolidated balance sheets ^(b)	Net amounts ^(c)	
Assets						
Securities purchased under resale agreements	\$ 607,154	\$ (312,183)	\$ 294,971	\$ (282,220)	\$ 12,751	
Securities borrowed	267,917	(48,371)	219,546	(170,702)	48,844	
Liabilities						
Securities sold under repurchase agreements	\$ 603,683	\$ (312,183)	\$ 291,500	\$ (249,763)	\$ 41,737	
Securities loaned and other ^(a)	58,989	(48,371)	10,618	(10,557)	61	
		December 31, 2023				
(in millions)	Gross amounts	Amounts netted on the Consolidated balance sheets	Amounts presented on the Consolidated balance sheets	Amounts not nettable on the Consolidated balance sheets ^(b)	Net amounts ^(c)	
Assets						
Securities purchased under resale agreements	\$ 523,308	\$ (247,181)	\$ 276,127	\$ (267,582)	\$ 8,545	
Securities borrowed	244,046	(43,610)	200,436	(144,543)	55,893	
Liabilities						
Securities sold under repurchase agreements	\$ 459,985	\$ (247,181)	\$ 212,804	\$ (182,011)	\$ 30,793	
Securities loaned and other ^(a)	52,142	(43,610)	8,532	(8,501)	31	

(a) Includes securities-for-securities lending agreements of \$5.9 billion and \$5.6 billion at December 31, 2024 and 2023, respectively, accounted for at fair value, where the Firm is acting as lender.

(b) In some cases, collateral exchanged with a counterparty exceeds the net asset or liability balance with that counterparty. In such cases, the amounts reported in this column are limited to the related net asset or liability with that counterparty.

(c) Includes securities financing agreements that provide collateral rights, but where an appropriate legal opinion with respect to the master netting agreement has not been either sought or obtained. At December 31, 2024 and 2023, included \$8.7 billion and \$7.1 billion, respectively, of securities purchased under resale agreements; \$42.9 billion and \$50.7 billion, respectively, of securities borrowed; \$40.9 billion and \$30.0 billion, respectively, of securities sold under repurchase agreements; and securities loaned and other which were not material.

Notes to consolidated financial statements

The tables below present as of December 31, 2024 and 2023 the types of financial assets pledged in securities financing agreements and the remaining contractual maturity of the securities financing agreements.

December 31, (in millions)	Gross liability balance			
	2024		2023	
	Securities sold under repurchase agreements	Securities loaned and other	Securities sold under repurchase agreements	Securities loaned and other
Mortgage-backed securities:				
U.S. GSEs and government agencies	\$ 82,645	\$ —	\$ 71,064	\$ —
Residential - nonagency	2,610	—	2,292	—
Commercial - nonagency	2,344	—	2,669	—
U.S. Treasury, GSEs and government agencies	300,022	759	216,467	1,034
Obligations of U.S. states and municipalities	1,872	—	2,323	—
Non-U.S. government debt	117,614	1,852	97,400	1,455
Corporate debt securities	44,495	4,033	39,247	2,025
Asset-backed securities	4,619	—	2,703	—
Equity securities	47,462	52,345	25,820	47,628
Total	\$ 603,683	\$ 58,989	\$ 459,985	\$ 52,142

December 31, 2024 (in millions)	Remaining contractual maturity of the agreements				
	Overnight and continuous	Up to 30 days	30 – 90 days	Greater than 90 days	Total
Total securities sold under repurchase agreements	\$ 308,392	\$ 171,346	\$ 19,932	\$ 104,013	\$ 603,683
Total securities loaned and other	54,066	1,463	1	3,459	58,989

December 31, 2023 (in millions)	Remaining contractual maturity of the agreements				
	Overnight and continuous	Up to 30 days	30 – 90 days	Greater than 90 days	Total
Total securities sold under repurchase agreements	\$ 259,048	\$ 102,941	\$ 20,960	\$ 77,036	\$ 459,985
Total securities loaned and other	49,610	1,544	—	988	52,142

Transfers not qualifying for sale accounting

At December 31, 2024 and 2023, the Firm held \$805 million and \$505 million, respectively, of financial assets for which the rights have been transferred to third parties; however, the transfers did not qualify as a sale in accordance with U.S. GAAP. These transfers have been recognized as collateralized financing transactions. The transferred assets are recorded in trading assets and loans, and the corresponding liabilities are recorded primarily in short-term borrowings and long-term debt on the Consolidated balance sheets.

Note 12 – Loans

Loan accounting framework

The accounting for a loan depends on management's strategy for the loan. The Firm accounts for loans based on the following categories:

- Originated or purchased loans held-for-investment (i.e., "retained")
- Loans held-for-sale
- Loans at fair value

The following provides a detailed accounting discussion of the Firm's loans by category:

Loans held-for-investment

Originated or purchased loans held-for-investment, including PCD, are recorded at amortized cost, reflecting the principal amount outstanding, net of the following: unamortized deferred loan fees, costs, premiums or discounts; charge-offs; collection of cash; and foreign exchange. Credit card loans also include billed finance charges and fees.

Interest income

Interest income on performing loans held-for-investment is accrued and recognized as interest income at the contractual rate of interest. Purchase price discounts or premiums, as well as net deferred loan fees or costs, are recognized in interest income over the contractual life of the loan as an adjustment of yield.

The Firm classifies accrued interest on loans, including accrued but unbilled interest on credit card loans, in accrued interest and accounts receivables on the Consolidated balance sheets. For credit card loans, accrued interest once billed is then recognized in the loan balances, with the related allowance recorded in the allowance for credit losses. Changes in the allowance for credit losses on accrued interest on credit card loans are recognized in the provision for credit losses and charge-offs are recognized by reversing interest income. For other loans, the Firm generally does not recognize an allowance for credit losses on accrued interest receivables, consistent with its policy to write them off no later than 90 days past due by reversing interest income.

Nonaccrual loans

Nonaccrual loans are those on which the accrual of interest has been suspended. Loans (other than credit card loans and certain consumer loans insured by U.S. government agencies) are placed on nonaccrual status and considered nonperforming when full payment of principal and interest is not expected, regardless of delinquency status, or when principal and interest has been in default for a period of 90 days or more, unless the loan is both well-secured and in the process of collection. A loan is determined to be past due when the minimum payment is not received from

the borrower by the contractually specified due date or for certain loans (e.g., residential real estate loans), when a monthly payment is due and unpaid for 30 days or more. Finally, collateral-dependent loans are typically maintained on nonaccrual status.

On the date a loan is placed on nonaccrual status, all interest accrued but not collected is reversed against interest income. In addition, the amortization of deferred amounts is suspended. Interest income on nonaccrual loans may be recognized as cash interest payments are received (i.e., on a cash basis) if the recorded loan balance is deemed fully collectible; however, if there is doubt regarding the ultimate collectibility of the recorded loan balance, all interest cash receipts are applied to reduce the carrying value of the loan (the cost recovery method). For consumer loans, application of this policy typically results in the Firm recognizing interest income on nonaccrual consumer loans on a cash basis.

A loan may be returned to accrual status when repayment is reasonably assured and there has been demonstrated performance under the terms of the loan or, if applicable, the terms of the restructured loan.

As permitted by regulatory guidance, credit card loans are generally exempt from being placed on nonaccrual status; accordingly, interest and fees related to credit card loans continue to accrue until the loan is charged off or paid in full.

Allowance for loan losses

The allowance for loan losses represents the estimated expected credit losses in the held-for-investment loan portfolio at the balance sheet date and is recognized on the balance sheet as a contra asset, which brings the amortized cost to the net carrying value. Changes in the allowance for loan losses resulting from lending-related activity, macroeconomic variables, changes in credit and other inputs are recorded in the provision for credit losses on the Firm's Consolidated statements of income. Refer to Note 13 for further information on the Firm's accounting policies for the allowance for loan losses.

Charge-offs

Consumer loans are generally charged off or charged down to the lower of the amortized cost or the net realizable value of the underlying collateral (i.e., fair value less estimated costs to sell), with an offset to the allowance for loan losses, upon reaching specified stages of delinquency in accordance with standards established by the FFIEC. Residential real estate loans, unmodified credit card loans and scored business banking loans are generally charged off no later than 180 days past due. Scored auto and closed-end consumer loans, including modified credit card

Notes to consolidated financial statements

accounts placed on a fixed payment plan, are charged off no later than 120 days past due.

Certain consumer loans are charged off or charged down to their net realizable value earlier than the FFIEC charge-off standards in the following circumstances:

- Loans modified to borrowers experiencing financial difficulty that are determined to be collateral-dependent.
- Loans to borrowers who have experienced an event that suggests a loss is either known or highly certain are subject to accelerated charge-off standards (e.g., residential real estate and auto loans are charged off or charged down within 60 days of receiving notification of a bankruptcy filing).
- Auto loans upon repossession of the automobile.

Other than in certain limited circumstances, the Firm typically does not recognize charge-offs on the government-guaranteed portion of loans.

Wholesale loans are charged off when it is highly certain that a loss has been realized. The determination of whether to recognize a charge-off includes many factors, including the prioritization of the Firm's claim in bankruptcy, expectations of the workout/restructuring of the loan and valuation of the borrower's equity or the loan collateral.

When a loan is charged down to the lower of its amortized cost or the estimated net realizable value of the underlying collateral, the determination of the fair value of the collateral depends on the type of collateral (e.g., securities, real estate). In cases where the collateral is in the form of liquid securities, the fair value is based on quoted market prices or broker quotes. For illiquid securities or other financial assets, the fair value of the collateral is generally estimated using a discounted cash flow model.

For residential real estate loans, collateral values are based upon external valuation sources. When it becomes likely that a borrower is either unable or unwilling to pay, the Firm utilizes a broker's price opinion, appraisal and/or an automated valuation model of the home based on an exterior-only valuation ("exterior opinions"), which is then updated at least every 12 months, or more frequently depending on various market factors. As soon as practicable after the Firm receives the property in satisfaction of a debt (e.g., by taking legal title or physical possession), the Firm generally obtains an appraisal based on an inspection that includes the interior of the home ("interior appraisals"). Exterior opinions and interior appraisals are discounted based upon the Firm's experience with actual liquidation values as compared with the estimated values provided by exterior opinions and interior appraisals, considering state-specific factors.

For commercial real estate loans, collateral values are generally based on appraisals from internal and external valuation sources. Collateral values are typically updated every six to twelve months, either by obtaining a new appraisal or by performing an internal analysis, in accordance with the Firm's policies. The Firm also considers both borrower- and market-specific factors, which may result in obtaining appraisal updates or broker price opinions at more frequent intervals.

Loans held-for-sale

Loans held-for-sale are measured at the lower of cost or fair value, with valuation changes recorded in noninterest revenue. For consumer loans, the valuation is performed on a portfolio basis. For wholesale loans, the valuation is performed on an individual loan basis.

Interest income on loans held-for-sale is accrued and recognized based on the contractual rate of interest.

Loan origination fees or costs and purchase price discounts or premiums are deferred in a contra loan account until the related loan is sold. The deferred fees or costs and discounts or premiums are an adjustment to the basis of the loan and therefore are included in the periodic determination of the lower of cost or fair value adjustments and/or the gain or loss recognized at the time of sale.

Because these loans are recognized at the lower of cost or fair value, the Firm's allowance for loan losses and charge-off policies do not apply to these loans. However, loans held-for-sale are subject to the Firm's nonaccrual policies.

Loans at fair value

Loans for which the fair value option has been elected are measured at fair value, with changes in fair value recorded in noninterest revenue.

Interest income on these loans is accrued and recognized based on the contractual rate of interest. Changes in fair value are recognized in noninterest revenue. Loan origination fees are recognized upfront in noninterest revenue. Loan origination costs are recognized in the associated expense category as incurred.

Because these loans are recognized at fair value, the Firm's allowance for loan losses and charge-off policies do not apply to these loans. However, loans at fair value are subject to the Firm's nonaccrual policies.

Refer to Note 3 for further information on the Firm's elections of fair value accounting under the fair value option. Refer to Note 2 and Note 3 for further information on loans carried at fair value and classified as trading assets.

Loan classification changes

Loans in the held-for-investment portfolio that management decides to sell are transferred to the held-for-sale portfolio at the lower of cost or fair value on the date of transfer. Credit-related losses are charged against the allowance for loan losses; non-credit related losses such as those due to changes in interest rates or foreign currency exchange rates are recognized in noninterest revenue.

In the event that management decides to retain a loan in the held-for-sale portfolio, the loan is transferred to the held-for-investment portfolio at amortized cost on the date of transfer. These loans are subsequently assessed for impairment based on the Firm's allowance methodology. Refer to Note 13 for a further discussion of the methodologies used in establishing the Firm's allowance for loan losses.

Loan modifications

The Firm seeks to modify certain loans in conjunction with its loss mitigation activities. Through the modification, JPMorganChase grants one or more concessions to a borrower who is experiencing financial difficulty in order to minimize the Firm's economic loss and avoid foreclosure or repossession of the collateral, and to ultimately maximize payments received by the Firm from the borrower. The concessions granted vary by program and by borrower-specific characteristics, and may include interest rate reductions, term extensions, other-than-insignificant payment delays or principal forgiveness.

Loans, except for credit card loans, reported as FDMs are generally placed on nonaccrual status, although in many cases such loans were already on nonaccrual status prior to modification. These loans may be returned to performing status (the accrual of interest is resumed) if the following criteria are met: (i) the borrower has performed under the modified terms for a minimum of six months and/or six payments, and (ii) the Firm has an expectation that repayment of the modified loan is reasonably assured based on, for example, the borrower's debt capacity and level of future earnings, collateral values, LTV ratios, and other current market considerations. In certain limited and well-defined circumstances in which the loan is current at the modification date, such loans are not placed on nonaccrual status at the time of modification.

The allowance for credit losses associated with FDMs is measured using the Firm's established allowance methodology, which considers the expected default rates for the modified loans. Refer to Note 13 for further discussion.

Foreclosed property

The Firm acquires property from borrowers through loan restructurings, workouts, and foreclosures. Property acquired may include real property (e.g., residential real estate, land, and buildings) and other commercial and personal property (e.g., automobiles, aircraft, railcars, and ships).

The Firm recognizes foreclosed property upon receiving assets in satisfaction of a loan (e.g., by taking legal title or physical possession). For loans collateralized by real property, the Firm generally recognizes the asset received at foreclosure sale or upon the execution of a deed in lieu of foreclosure transaction with the borrower. Foreclosed assets are reported in other assets on the Consolidated balance sheets and initially recognized at fair value less estimated costs to sell. Each quarter the fair value of the acquired property is reviewed and adjusted, if necessary, to the lower of cost or fair value. Subsequent adjustments to fair value are charged/credited to noninterest revenue. Operating expense, such as real estate taxes and maintenance, are charged to other expense.

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Loan portfolio

The Firm's loan portfolio is divided into three portfolio segments, which are the same segments used by the Firm to determine the allowance for loan losses: Consumer, excluding credit card; Credit card; and Wholesale. Within each portfolio segment the Firm monitors and assesses the credit risk in the following classes of loans, based on the risk characteristics of each loan class.

Consumer, excluding credit card	Credit card	Wholesale ^{(c)(d)}
<ul style="list-style-type: none"> Residential real estate^(a) Auto and other^(b) 	<ul style="list-style-type: none"> Credit card loans 	<ul style="list-style-type: none"> Secured by real estate Commercial and industrial Other^(e)

(a) Includes scored mortgage and home equity loans held in CCB and AWM, and scored mortgage loans held in CIB.

(b) Includes scored auto, business banking and consumer unsecured loans as well as overdrafts, primarily in CCB.

(c) Includes loans held in CIB, AWM, Corporate, and risk-rated exposure held in CCB, for which the wholesale methodology is applied when determining the allowance for loan losses.

(d) The wholesale portfolio segment's classes align with loan classifications as defined by the bank regulatory agencies, based on the loan's collateral, purpose, and type of borrower.

(e) Includes loans to financial institutions, SPEs, personal investment companies and trusts, individuals and individual entities (predominantly Global Private Bank clients within AWM and J.P. Morgan Wealth Management within CCB), states and political subdivisions, as well as loans to nonprofits. Refer to Note 14 for more information on SPEs.

The following tables summarize the Firm's loan balances by portfolio segment.

December 31, 2024				
(in millions)	Consumer, excluding credit card	Credit card	Wholesale	Total ^{(a)(b)}
Retained	\$ 376,334	\$ 232,860	\$ 690,396	\$ 1,299,590
Held-for-sale	945	—	6,103	7,048
At fair value	15,531	—	25,819	41,350
Total	\$ 392,810	\$ 232,860	\$ 722,318	\$ 1,347,988

December 31, 2023				
(in millions)	Consumer, excluding credit card	Credit card	Wholesale	Total ^{(a)(b)}
Retained	\$ 397,275	\$ 211,123	\$ 672,472	\$ 1,280,870
Held-for-sale	487	—	3,498	3,985
At fair value	12,331	—	26,520	38,851
Total	\$ 410,093	\$ 211,123	\$ 702,490	\$ 1,323,706

(a) Excludes \$6.6 billion and \$6.8 billion of accrued interest receivable at December 31, 2024 and 2023, respectively. The Firm wrote off accrued interest receivable of \$84 million and \$49 million for the years ended December 31, 2024 and 2023, respectively.

(b) Loans (other than those for which the fair value option has been elected) are presented net of unamortized discounts and premiums and net deferred loan fees or costs. These amounts were not material as of December 31, 2024 and 2023. For the discount associated with First Republic loans, refer to Note 34 on pages 319–321.

The following tables provide information about the carrying value of retained loans purchased, sold and reclassified to held-for-sale during the periods indicated. Loans that were reclassified to held-for-sale and sold in a subsequent period are excluded from the sales line of these tables.

2024				
Year ended December 31, (in millions)	Consumer, excluding credit card	Credit card	Wholesale	Total
Purchases	\$ 647 ^{(b)(c)}	\$ —	\$ 1,432	\$ 2,079
Sales	10,440	—	45,147	55,587
Retained loans reclassified to held-for-sale ^(a)	1,656	—	749	2,405

2023				
Year ended December 31, (in millions)	Consumer, excluding credit card	Credit card	Wholesale	Total
Purchases	\$ 92,205 ^{(b)(c)(d)}	\$ —	\$ 60,300 ^(d)	\$ 152,505
Sales	2,202	—	43,949	46,151
Retained loans reclassified to held-for-sale ^(a)	274	—	1,486	1,760

Year ended December 31, (in millions)	2022			
	Consumer, excluding credit card	Credit card	Wholesale	Total
Purchases	\$ 1,625 ^{(b)(c)}	\$ —	\$ 1,088	\$ 2,713
Sales	2,884	—	41,934	44,818
Retained loans reclassified to held-for-sale ^(a)	229	—	1,055	1,284

(a) Reclassifications of loans to held-for-sale are non-cash transactions.

(b) Includes purchases of residential real estate loans, including the Firm's voluntary repurchases of certain delinquent loans from loan pools as permitted by Government National Mortgage Association ("Ginnie Mae") guidelines for the years ended December 31, 2024, 2023 and 2022. The Firm typically elects to repurchase these delinquent loans as it continues to service them and/or manage the foreclosure process in accordance with applicable requirements of Ginnie Mae, FHA, RHS, and/or VA.

(c) Excludes purchases of retained loans of \$902 million, \$5.1 billion and \$12.4 billion for the years ended December 31, 2024, 2023 and 2022, respectively, which are predominantly sourced through the correspondent origination channel and underwritten in accordance with the Firm's standards.

(d) Includes loans acquired in the First Republic acquisition consisting of \$91.9 billion in Consumer, excluding credit card and \$59.2 billion in Wholesale. Refer to Note 34 for additional information.

Gains and losses on sales of loans

Net gains/(losses) on sales of loans and lending-related commitments (including adjustments to record loans and lending-related commitments held-for-sale at the lower of cost or fair value) recognized in noninterest revenue were \$154 million for the year ended December 31, 2024, of which \$113 million were related to loans. Net gains/(losses) on sales of loans and lending-related commitments were \$56 million for the year ended December 31, 2023, of which \$62 million were related to loans. Net gains/(losses) on sales of loans and lending-related commitments were \$(186) million for the year ended December 31, 2022, of which \$(48) million were related to loans. In addition, the sale of loans may also result in write downs, recoveries or changes in the allowance recognized in the provision for credit losses.

Consumer, excluding credit card loan portfolio

Consumer loans, excluding credit card loans, consist primarily of scored residential mortgages, home equity loans and lines of credit, auto and business banking loans, with a focus on serving the prime consumer credit market. These loans include home equity loans secured by junior liens, prime mortgage loans with an interest-only payment period, and certain payment-option loans that may result in negative amortization.

The following table provides information about retained consumer loans, excluding credit card, by class.

December 31, (in millions)	2024	2023
Residential real estate	\$ 309,513	\$ 326,409
Auto and other	66,821	70,866
Total retained loans	\$ 376,334	\$ 397,275

Delinquency rates are the primary credit quality indicator for consumer loans. Loans that are more than 30 days past due provide an early warning of borrowers who may be experiencing financial difficulties and/or who may be unable or unwilling to repay the loan. As the loan continues to age, it becomes more clear whether the borrower is likely to be unable or unwilling to pay. In the case of residential real estate loans, late-stage delinquencies (greater than 150 days past due) are a strong indicator of loans that will ultimately result in a foreclosure or similar liquidation transaction. In addition to delinquency rates, other credit quality indicators for consumer loans vary based on the class of loan, as follows:

- For residential real estate loans, the current estimated LTV ratio, or the combined LTV ratio in the case of junior lien loans, is an indicator of the potential loss severity in the event of default. Additionally, LTV or combined LTV ratios can provide insight into a borrower’s continued willingness to pay, as the delinquency rate of high-LTV loans tends to be greater than that for loans where the borrower has equity in the collateral. The geographic distribution of the loan collateral also provides insight as to the credit quality of the portfolio, as factors such as the regional economy, home price changes and specific events such as natural disasters, will affect credit quality. The borrower’s current or “refreshed” FICO score is a secondary credit quality indicator for certain loans, as FICO scores are an indication of the borrower’s credit payment history. Thus, a loan to a borrower with a low FICO score (less than 660) is considered to be of higher risk than a loan to a borrower with a higher FICO score. Further, a loan to a borrower with a high LTV ratio and a low FICO score is at greater risk of default than a loan to a borrower that has both a high LTV ratio and a high FICO score.
- For scored auto and business banking loans, geographic distribution is an indicator of the credit performance of the portfolio. Similar to residential real estate loans, geographic distribution provides insights into the portfolio performance based on regional economic activity and events.

Residential real estate

Delinquency is the primary credit quality indicator for retained residential real estate loans. The following tables provide information on delinquency and gross charge-offs.

December 31, 2024									
(in millions, except ratios)	Term loans by origination year ^(c)						Revolving loans		Total
	2024	2023	2022	2021	2020	Prior to 2020	Within the revolving period	Converted to term loans	
Loan delinquency^(a)									
Current	\$ 12,301	\$ 17,280	\$ 61,337	\$ 79,760	\$ 52,289	\$ 70,270	\$ 6,974	\$ 7,088	\$ 307,299
30–149 days past due	13	54	139	110	59	747	53	204	1,379
150 or more days past due	—	11	71	68	49	501	8	127	835
Total retained loans	\$ 12,314	\$ 17,345	\$ 61,547	\$ 79,938	\$ 52,397	\$ 71,518	\$ 7,035	\$ 7,419	\$ 309,513
% of 30+ days past due to total retained loans ^(b)	0.11 %	0.37 %	0.34 %	0.22 %	0.21 %	1.72 %	0.87 %	4.46 %	0.71 %
Gross charge-offs	\$ —	\$ —	\$ 1	\$ 1	\$ —	\$ 176	\$ 21	\$ 7	\$ 206

December 31, 2023									
(in millions, except ratios)	Term loans by origination year ^(c)						Revolving loans		Total
	2023	2022	2021	2020	2019	Prior to 2019	Within the revolving period	Converted to term loans	
Loan delinquency^(a)									
Current	\$ 23,216	\$ 64,366	\$ 84,496	\$ 55,546	\$ 21,530	\$ 59,563	\$ 7,479	\$ 8,151	\$ 324,347
30–149 days past due	33	74	89	70	41	801	49	223	1,380
150 or more days past due	1	10	17	8	21	456	5	164	682
Total retained loans	\$ 23,250	\$ 64,450	\$ 84,602	\$ 55,624	\$ 21,592	\$ 60,820	\$ 7,533	\$ 8,538	\$ 326,409
% of 30+ days past due to total retained loans ^(b)	0.15 %	0.13 %	0.13 %	0.14 %	0.29 %	2.04 %	0.72 %	4.53 %	0.63 %
Gross charge-offs	\$ —	\$ —	\$ —	\$ —	\$ 4	\$ 167	\$ 26	\$ 7	\$ 204

(a) Individual delinquency classifications include mortgage loans insured by U.S. government agencies which were not material at December 31, 2024 and 2023.

(b) Excludes mortgage loans that are 30 or more days past due insured by U.S. government agencies which were not material at December 31, 2024 and 2023. These amounts have been excluded based upon the government guarantee.

(c) Purchased loans are included in the year in which they were originated.

Approximately 38% of the total revolving loans are senior lien loans; the remaining balance are junior lien loans. The lien position the Firm holds is considered in the Firm's allowance for credit losses. Revolving loans that have been converted to term loans have higher delinquency rates than those that are still within the revolving period. That is primarily because the fully-amortizing payment that is generally required for those products is higher than the minimum payment options available for revolving loans within the revolving period.

Notes to consolidated financial statements

Nonaccrual loans and other credit quality indicators

The following table provides information on nonaccrual and other credit quality indicators for retained residential real estate loans.

(in millions, except weighted-average data)	December 31, 2024		December 31, 2023	
Nonaccrual loans ^{(a)(b)(c)(d)}	\$	2,984	\$	3,466
Current estimated LTV ratios^{(e)(f)(g)}				
Greater than 125% and refreshed FICO scores:				
Equal to or greater than 660	\$	72	\$	72
Less than 660		3		—
101% to 125% and refreshed FICO scores:				
Equal to or greater than 660		161		223
Less than 660		5		4
80% to 100% and refreshed FICO scores:				
Equal to or greater than 660		4,962		6,491
Less than 660		73		102
Less than 80% and refreshed FICO scores:				
Equal to or greater than 660		294,797		309,251
Less than 660		8,534		9,277
No FICO/LTV available ^(h)		906		989
Total retained loans	\$	309,513	\$	326,409
Weighted-average LTV ratio ^{(e)(i)}		47 %		49 %
Weighted-average FICO ^{(f)(j)}		774		770
Geographic region^{(h)(k)}				
California	\$	120,944	\$	127,072
New York		46,854		48,815
Florida		21,820		22,778
Texas		14,531		15,506
Massachusetts		13,511		14,213
Colorado		10,465		10,800
Illinois		9,835		10,856
Washington		9,372		9,923
New Jersey		7,554		8,050
Connecticut		6,854		7,163
All other		47,773		51,233
Total retained loans	\$	309,513	\$	326,409

(a) Includes collateral-dependent residential real estate loans that are charged down to the fair value of the underlying collateral less costs to sell. The Firm reports, in accordance with regulatory guidance, residential real estate loans that have been discharged under Chapter 7 bankruptcy and not reaffirmed by the borrower ("Chapter 7 loans") as collateral-dependent nonaccrual loans, regardless of their delinquency status. At December 31, 2024, approximately 8% of Chapter 7 residential real estate loans were 30 days or more past due.

(b) Mortgage loans insured by U.S. government agencies excluded from nonaccrual loans were not material at December 31, 2024 and 2023.

(c) Generally, all consumer nonaccrual loans have an allowance. In accordance with regulatory guidance, certain nonaccrual loans that are considered collateral-dependent have been charged down to the lower of amortized cost or the fair value of their underlying collateral less costs to sell. If the value of the underlying collateral improves subsequent to charge down, the related allowance may be negative.

(d) Interest income on nonaccrual loans recognized on a cash basis was \$160 million and \$180 million for the years ended December 31, 2024 and 2023, respectively.

(e) Represents the aggregate unpaid principal balance of loans divided by the estimated current property value. Current property values are estimated, at a minimum, quarterly, based on home valuation models using nationally recognized home price index valuation estimates incorporating actual data to the extent available and forecasted data where actual data is not available. Current estimated combined LTV for junior lien home equity loans considers all available lien positions, as well as unused lines, related to the property.

(f) Refreshed FICO scores represent each borrower's most recent credit score, which is obtained by the Firm on at least a quarterly basis.

(g) Includes residential real estate loans, primarily held in LLCs in AWM that did not have a refreshed FICO score. These loans have been included in a FICO band based on management's estimation of the borrower's credit quality.

(h) Included U.S. government-guaranteed loans as of December 31, 2024 and 2023.

(i) Excludes loans with no FICO and/or LTV data available.

(j) The geographic regions presented in the table are ordered based on the magnitude of the corresponding loan balances at December 31, 2024.

Loan modifications

The Firm grants certain modifications of residential real estate loans to borrowers experiencing financial difficulty. The Firm's proprietary modification programs as well as government programs, including U.S. GSE programs, that generally provide various modifications to borrowers experiencing financial difficulty including, but not limited to, interest rate reductions, term extensions, other-than-insignificant payment deferral and principal forgiveness that would otherwise have been required under the terms of the original agreement, are considered FDMs.

In addition, the Firm offers trial modifications of residential real estate loans, which generally include a three-month trial payment period during which the borrower makes monthly payments under the proposed modified loan terms. Loans in a trial payment period continue to age and accrue interest in accordance with the original contractual terms. At the completion of a trial period, the loan modification is considered permanent.

Financial effects of FDMs

For the year ended December 31, 2024, retained residential real estate FDMs were \$206 million. The financial effects of the FDMs, which were predominantly in the form of term extensions and interest rate reductions, included extending the weighted-average life of the loans by 15 years, and reducing the weighted-average contractual interest rate from 7.53% to 5.44% for the year ended December 31, 2024.

For the year ended December 31, 2023, retained residential real estate FDMs were \$136 million. The financial effects of the FDMs, which were predominantly in the form of term extensions and interest rate reductions, included extending the weighted-average life of the loans by 20 years, and reducing the weighted-average contractual interest rate from 7.21% to 4.44% for the year ended December 31, 2023.

As of December 31, 2024 and 2023, there were no additional commitments to lend to borrowers experiencing financial difficulty whose loans have been modified as FDMs.

For the years ended December 31, 2024 and 2023, loans subject to a trial modification, where the terms of the loans have not been permanently modified, and Chapter 7 loans were not material.

Payment status of FDMs

The following table provides information on the payment status of retained residential real estate FDMs during the years ended December 31, 2024 and 2023.

Year ended December 31, (in millions)	Amortized cost basis	
	2024	2023
Current	\$ 139	\$ 107
30-149 days past due	47	13
150 or more days past due	20	16
Total	\$ 206	\$ 136

Defaults of FDMs

Retained residential real estate FDMs that defaulted during the year ended December 31, 2024 and that were reported as FDMs in the twelve months prior to the default were \$93 million. Retained residential real estate FDMs that defaulted during the year ended December 31, 2023 and that were reported as FDMs on or after January 1, 2023, the date that the Firm adopted the changes to the TDR accounting guidance were not material. Refer to Note 1 for further information.

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Nature and extent of TDRs

For periods ending prior to January 1, 2023, modifications of residential real estate loans where the Firm granted concessions to borrowers who were experiencing financial difficulty were generally accounted for and reported as TDRs. Loans with short-term or other insignificant modifications that were not considered concessions were not TDRs. For the year ended December 31, 2022, new TDRs were \$362 million, and there were no additional commitments to lend to borrowers whose residential real estate loans were modified in TDRs.

The Firm's proprietary modification programs as well as government programs, including U.S. GSE programs, generally provide various concessions to financially troubled borrowers including, but not limited to, interest rate reductions, term or payment extensions and delays of principal and/or interest payments that would otherwise have been required under the terms of the original agreement.

The following table provides information about how residential real estate loans were modified in TDRs during the period presented. This table excludes loans with short-term or other insignificant modifications that are not considered concessions.

Year ended December 31,	2022
Number of loans approved for a trial modification	3,902
Number of loans permanently modified	4,182
Concession granted:^(a)	
Interest rate reduction	54 %
Term or payment extension	67
Principal and/or interest deferred	10
Principal forgiveness	1
Other ^(b)	37

(a) Represents concessions granted in permanent modifications as a percentage of the number of loans permanently modified. The sum of the percentages exceeds 100% because predominantly all of the modifications include more than one type of concession. Concessions offered on trial modifications are generally consistent with those granted on permanent modifications.

(b) Includes variable interest rate to fixed interest rate modifications and payment delays that meet the definition of a TDR.

Financial effects of TDRs and defaults

The following table provides information about the financial effects of the various concessions granted in modifications of residential real estate loans and about defaults of certain loans modified in TDRs for the period presented. The following table presents only the financial effects of permanent modifications and does not include temporary concessions offered through trial modifications. This table also excludes loans with short-term or other insignificant modifications that were not considered concessions.

Year ended December 31, (in millions, except weighted - average data)	2022
Weighted-average interest rate of loans with interest rate reductions - before TDR	4.75 %
Weighted-average interest rate of loans with interest rate reductions - after TDR	3.35
Weighted-average remaining contractual term (in years) of loans with term or payment extensions - before TDR	22
Weighted-average remaining contractual term (in years) of loans with term or payment extensions - after TDR	38
Charge-offs recognized upon permanent modification	\$ 1
Principal deferred	16
Principal forgiven	2
Balance of loans that defaulted within one year of permanent modification ^(a)	\$ 147

(a) Represents loans permanently modified in TDRs that experienced a payment default in the periods presented, and for which the payment default occurred within one year of the modification. The dollar amounts presented represent the balance of such loans at the end of the reporting period in which such loans defaulted.

Active and suspended foreclosure

At December 31, 2024 and 2023, the Firm had retained residential real estate loans, excluding those insured by U.S. government agencies, with a carrying value of \$576 million and \$566 million, respectively, that were not included in REO, but were in the process of active or suspended foreclosure.

Auto and other

Delinquency is the primary credit quality indicator for retained auto and other loans. The following tables provide information on delinquency and gross charge-offs.

December 31, 2024									
(in millions, except ratios)	Term loans by origination year						Revolving loans		Total
	2024	2023	2022	2021	2020	Prior to 2020	Within the revolving period	Converted to term loans	
Loan delinquency									
Current	\$26,165	\$15,953	\$ 9,201	\$ 7,014	\$ 2,895	\$ 624	\$ 3,714	\$ 148	\$65,714
30–119 days past due	190	283	259	179	53	23	40	34	1,061
120 or more days past due	1	1	—	5	6	—	3	30	46
Total retained loans	\$26,356	\$16,237	\$ 9,460	\$ 7,198	\$ 2,954	\$ 647	\$ 3,757	\$ 212	\$66,821
% of 30+ days past due to total retained loans	0.72 %	1.75 %	2.74	2.50 %	1.76 %	3.55 %	1.14 %	30.19 %	1.64 %
Gross charge-offs	\$ 269	\$ 348	\$ 224	\$ 126	\$ 37	\$ 82	\$ 1	\$ 6	\$ 1,093
December 31, 2023									
(in millions, except ratios)	Term loans by origination year						Revolving loans		Total
	2023	2022	2021	2020	2019	Prior to 2019	Within the revolving period	Converted to term loans	
Loan delinquency									
Current	\$30,328	\$14,797	\$12,825	\$ 6,538	\$ 1,777	\$ 511	\$ 2,984	\$ 102	\$69,862
30–119 days past due	276	279	231	78	43	17	19	24	967
120 or more days past due	1	1	7	8	—	—	3	17	37
Total retained loans	\$30,605	\$15,077	\$13,063	\$ 6,624	\$ 1,820	\$ 528	\$ 3,006	\$ 143	\$70,866
% of 30+ days past due to total retained loans	0.91 %	1.86 %	1.75 %	1.15 %	2.36 %	3.22 %	0.73 %	28.67 %	1.39 %
Gross charge-offs	\$ 333	\$ 297	\$ 161	\$ 53	\$ 35	\$ 64	\$ —	\$ 4	\$ 947

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Nonaccrual loans and other credit quality indicators

The following table provides information on nonaccrual and geographic region as a credit quality indicator for retained auto and other consumer loans.

(in millions)	Total Auto and other	
	December 31, 2024	December 31, 2023
Nonaccrual loans^{(a)(b)}	\$ 249	\$ 177
Geographic region^(c)		
California	\$ 10,321	10,959
Texas	7,772	8,502
Florida	5,428	5,684
New York	4,905	4,938
Illinois	2,890	3,147
New Jersey	2,468	2,609
Pennsylvania	2,012	1,900
Georgia	1,716	1,912
Arizona	1,643	1,779
North Carolina	1,597	1,714
All other	26,069	27,722
Total retained loans	\$ 66,821	\$ 70,866

- (a) Generally, all consumer nonaccrual loans have an allowance. In accordance with regulatory guidance, certain nonaccrual loans that are considered collateral-dependent have been charged down to the lower of amortized cost or the fair value of their underlying collateral less costs to sell. If the value of the underlying collateral improves subsequent to charge down, the related allowance may be negative.
- (b) Interest income on nonaccrual loans recognized on a cash basis was not material for the years ended December 31, 2024 and 2023.
- (c) The geographic regions presented in this table are ordered based on the magnitude of the corresponding loan balances at December 31, 2024.

Loan modifications

The Firm grants certain modifications of auto and other loans to borrowers experiencing financial difficulty.

For the years ended December 31, 2024 and 2023, retained auto and other FDMs were not material.

As of December 31, 2024 and 2023, there were no additional commitments to lend to borrowers modified as FDMs.

For periods ending prior to January 1, 2023, modifications of auto and other loans where the Firm granted concessions to borrowers who were experiencing financial difficulty were generally accounted for and reported as TDRs. Loans with short-term or other insignificant modifications that were not considered concessions were not TDRs. For the year ended December 31, 2022, auto and other TDRs were not material.

Credit card loan portfolio

The credit card portfolio segment includes credit card loans originated and purchased by the Firm.

Delinquency rates are the primary credit quality indicator for credit card loans as they provide an early warning that borrowers may be experiencing difficulties (30 days past due); information on those borrowers that have been delinquent for a longer period of time (90 days past due) is also considered. In addition to delinquency rates, the geographic distribution of the loans provides insight as to the credit quality of the portfolio based on the regional economy.

While the borrower's credit score is another general indicator of credit quality, the Firm does not view credit scores as a primary indicator of credit quality because the borrower's credit score tends to be a

lagging indicator. The distribution of such scores provides a general indicator of credit quality trends within the portfolio; however, the score does not capture all factors that would be predictive of future credit performance. Refreshed FICO score information, which is obtained at least quarterly, for a statistically significant random sample of the credit card portfolio is indicated in other credit quality indicators. FICO is considered to be the industry benchmark for credit scores.

The Firm generally originates new credit card accounts to prime consumer borrowers. However, certain cardholders' FICO scores may decrease over time, depending on the performance of the cardholder and changes in the credit score calculation.

The following tables provide information on delinquency and gross charge-offs.

(in millions, except ratios)	December 31, 2024		
	Within the revolving period	Converted to term loans	Total
Loan delinquency			
Current and less than 30 days past due and still accruing	\$ 226,532	\$ 1,284	\$ 227,816
30–89 days past due and still accruing	2,291	109	2,400
90 or more days past due and still accruing	2,591	53	2,644
Total retained loans	\$ 231,414	\$ 1,446	\$ 232,860
Loan delinquency ratios			
% of 30+ days past due to total retained loans	2.11 %	11.20 %	2.17 %
% of 90+ days past due to total retained loans	1.12	3.67	1.14
Gross charge-offs	\$ 7,951	\$ 247	\$ 8,198
December 31, 2023			
(in millions, except ratios)	Within the revolving period	Converted to term loans	Total
Loan delinquency			
Current and less than 30 days past due and still accruing	\$ 205,731	\$ 882	\$ 206,613
30–89 days past due and still accruing	2,217	84	2,301
90 or more days past due and still accruing	2,169	40	2,209
Total retained loans	\$ 210,117	\$ 1,006	\$ 211,123
Loan delinquency ratios			
% of 30+ days past due to total retained loans	2.09 %	12.33 %	2.14 %
% of 90+ days past due to total retained loans	1.03	3.98	1.05
Gross charge-offs	\$ 5,325	\$ 166	\$ 5,491

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Other credit quality indicators

The following table provides information on other credit quality indicators for retained credit card loans.

(in millions, except ratios)	December 31, 2024		December 31, 2023	
Geographic region^(a)				
California	\$	36,385	\$	32,652
Texas		24,423		22,086
New York		18,525		16,915
Florida		17,236		15,103
Illinois		12,442		11,364
New Jersey		9,644		8,688
Ohio		6,976		6,424
Colorado		6,962		6,307
Pennsylvania		6,558		6,088
Arizona		5,796		5,209
All other		87,913		80,287
Total retained loans	\$	232,860	\$	211,123
Percentage of portfolio based on carrying value with estimated refreshed FICO scores				
Equal to or greater than 660		85.5 %		85.8 %
Less than 660		14.3		14.0
No FICO available		0.2		0.2

(a) The geographic regions presented in the table are ordered based on the magnitude of the corresponding loan balances at December 31, 2024.

Loan modifications

The Firm grants certain modifications of credit card loans to borrowers experiencing financial difficulty. These modifications may involve placing the customer's credit card account on a fixed payment plan, generally for 60 months, which typically includes reducing the interest rate on the credit card account. If the borrower does not make the contractual payments when due under the modified payment terms, the credit card loan continues to age and will be charged-off in accordance with the Firm's standard charge-off policy. In most cases, the Firm does not reinstate the borrower's line of credit.

Financial effects of FDMs

The following table provides information on retained credit card FDMs.

Year ended December 31, (in millions)	Loan modifications	
	2024	2023
Term extension and interest rate reduction^{(a)(b)}		
Amortized cost basis	\$ 926	\$ 648
% of total modifications to total retained credit card loans	0.40 %	0.31 %
Financial effect of loan modifications	Term extension with a reduction in the weighted average contractual interest rate from 23.64% to 3.20%	Term extension with a reduction in the weighted average contractual interest rate from 23.19% to 3.64%

(a) Term extension includes credit card loans whose terms have been modified under long-term programs by placing the customer's credit card account on a fixed payment plan.

(b) The interest rates represent weighted average at the time of modification.

Payment status of FDMs

The following table provides information on the payment status of retained credit card FDMs during the years ended December 31, 2024 and 2023.

Year ended December 31, (in millions)	Amortized cost basis	
	2024	2023
Current and less than 30 days past due and still accruing	\$ 811	\$ 558
30-89 days past due and still accruing	74	59
90 or more days past due and still accruing	41	31
Total	\$ 926	\$ 648

Defaults of FDMs

Retained credit card FDMs that defaulted during the year ended December 31, 2024 and that were reported as FDMs in the twelve months prior to the default were not material. Retained credit card FDMs that defaulted during the year ended December 31, 2023 and that were reported as FDMs on or after January 1, 2023, the date that the Firm adopted the changes to the TDR accounting guidance were not material. Refer to Note 1 for further information.

For credit card loans modified as FDMs, payment default is deemed to have occurred when the borrower misses two consecutive contractual payments. Defaulted modified credit card loans remain in the modification program and continue to be charged off in accordance with the Firm's standard charge-off policy.

Financial effects of TDRs and defaults

For periods ending prior to January 1, 2023, modifications of credit card loans where the Firm granted concessions to borrowers who were experiencing financial difficulty were generally accounted for and reported as TDRs. The Firm granted concessions for most of the credit card loans under long-term programs. These concessions involved placing the customer's credit card account on a fixed payment plan, generally for 60 months, and typically included reducing the interest rate on the credit card account. Substantially all modifications under the Firm's long-term programs were considered to be TDRs. Loans with short-term or other insignificant modifications that were not considered concessions were not reported as TDRs.

The following table provides information about the financial effects of the concessions granted on credit card loans modified in TDRs and defaults for the periods presented. For the period disclosed, new enrollments were less than 1% of total retained credit card loans.

Year ended December 31, (in millions, except weighted-average data)	2022
Balance of new TDRs ^(a)	\$ 418
Weighted-average interest rate of loans – before TDR	19.86 %
Weighted-average interest rate of loans – after TDR	4.13
Balance of loans ^(b) that defaulted within one year of modification	\$ 34

(a) Represents the outstanding balance prior to modification.

(b) Represents loans modified in TDRs that experienced a payment default in the periods presented, and for which the payment default occurred within one year of the modification. The amounts presented represent the balance of such loans as of the end of the quarter in which they defaulted.

For credit card loans modified in TDRs, payment default was deemed to have occurred when the borrower missed two consecutive contractual payments. Defaulted modified credit card loans remained in the modification program and continued to be charged off in accordance with the Firm's standard charge-off policy.

Wholesale loan portfolio

Wholesale loans include loans made to a variety of clients, ranging from large corporate and institutional clients to small businesses and high-net-worth individuals.

The primary credit quality indicator for wholesale loans is the internal risk rating assigned to each loan. Risk ratings are used to identify the credit quality of loans and differentiate risk within the portfolio. Risk ratings on loans consider the PD and the LGD. The PD is the likelihood that a loan will default. The LGD is the estimated loss on the loan that would be realized upon the default of the borrower and takes into consideration collateral and structural support for each credit facility.

Management considers several factors to determine an appropriate internal risk rating, including the obligor's debt capacity and financial flexibility, the level of the obligor's earnings, the amount and sources for repayment, the level and nature of contingencies, management strength, and the industry and geography in which the obligor operates. The Firm's internal risk ratings generally align with the qualitative characteristics (e.g., borrower capacity to meet financial commitments and vulnerability to changes in the economic environment) defined by S&P and Moody's, however the quantitative characteristics (e.g., PD and LGD) may differ as they reflect internal historical experiences and assumptions. The Firm generally considers internal ratings with qualitative characteristics equivalent to BBB-/Baa3 or higher as investment grade, and these ratings have a lower PD and/or lower LGD than non-investment grade ratings.

Noninvestment-grade ratings are further classified as noncriticized and criticized, and the criticized portion is further subdivided into performing and nonaccrual loans, representing management's assessment of the collectibility of principal and interest. Criticized loans have a higher PD than noncriticized loans. The Firm's definition of criticized aligns with the U.S. banking regulatory definition of criticized exposures, which consist of special mention, substandard and doubtful categories. Refer to Note 1 for additional information.

Risk ratings are reviewed on a regular and ongoing basis by Credit Risk Management and are adjusted as necessary for updated information affecting the obligor's ability to fulfill its obligations.

As noted above, the risk rating of a loan considers the industry in which the obligor conducts its operations. As part of the overall credit risk management framework, the Firm focuses on the management and diversification of its industry and client exposures, with particular attention paid to industries with an actual or potential credit concern. Refer to Note 4 for further detail on industry concentrations.

Internal risk rating is the primary credit quality indicator for retained wholesale loans. The following tables provide information on internal risk rating and gross charge-offs for the year ended December 31, 2024.

December 31, (in millions, except ratios)	Secured by real estate		Commercial and industrial		Other ^(a)		Total retained loans	
	2024	2023	2024	2023	2024	2023	2024	2023
Loans by risk ratings								
Investment-grade	\$ 114,280	\$ 120,405	\$ 70,862	\$ 72,624	\$ 286,528	\$ 265,809	\$ 471,670	\$ 458,838
Noninvestment-grade:								
Noncriticized	37,422	34,241	83,191	80,637	72,743	75,178	193,356	190,056
Criticized performing	9,291	7,291	10,977	12,684	1,160	1,257	21,428	21,232
Criticized nonaccrual	1,439	401	1,760	1,221	743	724	3,942	2,346
Total noninvestment-grade	48,152	41,933	95,928	94,542	74,646	77,159	218,726	213,634
Total retained loans	\$ 162,432	\$ 162,338	\$ 166,790	\$ 167,166	\$ 361,174	\$ 342,968	\$ 690,396	\$ 672,472
% of investment-grade to total retained loans	70.36 %	74.17 %	42.49 %	43.44 %	79.33 %	77.50 %	68.32 %	68.23 %
% of total criticized to total retained loans	6.61	4.74	7.64	8.32	0.53	0.58	3.67	3.51
% of criticized nonaccrual to total retained loans	0.89	0.25	1.06	0.73	0.21	0.21	0.57	0.35

(a) Includes loans to financial institutions, SPEs, personal investment companies and trusts, individuals and individual entities (predominantly Global Private Bank clients within AWM and J.P. Morgan Wealth Management within CCB), states and political subdivisions, as well as loans to nonprofits. As of December 31, 2024, predominantly consisted of \$114.8 billion to individuals and individual entities, \$94.0 billion to financial institutions, and \$92.5 billion to SPEs. Refer to Note 14 for more information on SPEs.

(in millions)	Secured by real estate								
	December 31, 2024								
	Term loans by origination year						Revolving loans		
	2024	2023	2022	2021	2020	Prior to 2020	Within the revolving period	Converted to term loans	Total
Loans by risk ratings									
Investment-grade	\$ 10,002	\$ 9,834	\$ 25,284	\$ 22,796	\$ 15,548	\$ 29,488	\$ 1,328	\$ —	\$ 114,280
Noninvestment-grade	4,238	5,366	14,717	8,567	3,462	10,392	1,317	93	48,152
Total retained loans	\$ 14,240	\$ 15,200	\$ 40,001	\$ 31,363	\$ 19,010	\$ 39,880	\$ 2,645	\$ 93	\$ 162,432
Gross charge-offs	\$ 72	\$ 18	\$ 43	\$ 2	\$ 109	\$ 80	\$ —	\$ —	\$ 324

(in millions)	Secured by real estate								
	December 31, 2023								
	Term loans by origination year						Revolving loans		
	2023	2022	2021	2020	2019	Prior to 2019	Within the revolving period	Converted to term loans	Total
Loans by risk ratings									
Investment-grade	\$ 10,687	\$ 28,874	\$ 25,784	\$ 16,820	\$ 15,677	\$ 21,108	\$ 1,455	\$ —	\$ 120,405
Noninvestment-grade	4,477	12,579	7,839	3,840	3,987	7,918	1,291	2	41,933
Total retained loans	\$ 15,164	\$ 41,453	\$ 33,623	\$ 20,660	\$ 19,664	\$ 29,026	\$ 2,746	\$ 2	\$ 162,338
Gross charge-offs	\$ 20	\$ 48	\$ 22	\$ —	\$ 23	\$ 78	\$ —	\$ 1	\$ 192

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Commercial and industrial									
December 31, 2024									
(in millions)	Term loans by origination year					Revolving loans			
	2024	2023	2022	2021	2020	Prior to 2020	Within the revolving period	Converted to term loans	Total
Loans by risk ratings									
Investment-grade	\$ 11,564	\$ 6,285	\$ 6,588	\$ 3,119	\$ 1,067	\$ 1,139	\$ 41,099	\$ 1	\$ 70,862
Noninvestment-grade	21,251	11,350	10,942	5,322	783	975	45,181	124	95,928
Total retained loans	\$ 32,815	\$ 17,635	\$ 17,530	\$ 8,441	\$ 1,850	\$ 2,114	\$ 86,280	\$ 125	\$ 166,790
Gross charge-offs	\$ 25	\$ 22	\$ 128	\$ 24	\$ 1	\$ 50	\$ 270	\$ 5	\$ 525

Commercial and industrial									
December 31, 2023									
(in millions)	Term loans by origination year					Revolving loans			
	2023	2022	2021	2020	2019	Prior to 2019	Within the revolving period	Converted to term loans	Total
Loans by risk ratings									
Investment-grade	\$ 14,875	\$ 10,642	\$ 4,276	\$ 2,291	\$ 1,030	\$ 1,115	\$ 38,394	\$ 1	\$ 72,624
Noninvestment-grade	18,890	16,444	9,299	1,989	1,144	1,006	45,696	74	94,542
Total retained loans	\$ 33,765	\$ 27,086	\$ 13,575	\$ 4,280	\$ 2,174	\$ 2,121	\$ 84,090	\$ 75	\$ 167,166
Gross charge-offs	\$ 25	\$ 8	\$ 110	\$ 55	\$ 2	\$ 12	\$ 259	\$ 8	\$ 479

Other ^(a)									
December 31, 2024									
(in millions)	Term loans by origination year					Revolving loans			
	2024	2023	2022	2021	2020	Prior to 2020	Within the revolving period	Converted to term loans	Total
Loans by risk ratings									
Investment-grade	\$ 30,484	\$ 17,039	\$ 13,272	\$ 6,288	\$ 8,632	\$ 7,382	\$ 201,949	\$ 1,482	\$ 286,528
Noninvestment-grade	11,784	7,248	5,918	3,296	1,366	1,886	42,954	194	74,646
Total retained loans	\$ 42,268	\$ 24,287	\$ 19,190	\$ 9,584	\$ 9,998	\$ 9,268	\$ 244,903	\$ 1,676	\$ 361,174
Gross charge-offs	\$ —	\$ 38	\$ 3	\$ 36	\$ 40	\$ 50	\$ 6	\$ —	\$ 173

Other ^(a)									
December 31, 2023									
(in millions)	Term loans by origination year					Revolving loans			
	2023	2022	2021	2020	2019	Prior to 2019	Within the revolving period	Converted to term loans	Total
Loans by risk ratings									
Investment-grade	\$ 38,338	\$ 18,034	\$ 10,033	\$ 10,099	\$ 3,721	\$ 6,662	\$ 176,728	\$ 2,194	\$ 265,809
Noninvestment-grade	14,054	8,092	6,169	2,172	811	2,001	43,801	59	77,159
Total retained loans	\$ 52,392	\$ 26,126	\$ 16,202	\$ 12,271	\$ 4,532	\$ 8,663	\$ 220,529	\$ 2,253	\$ 342,968
Gross charge-offs	\$ 5	\$ 298	\$ 8	\$ 8	\$ —	\$ 8	\$ 13	\$ —	\$ 340

(a) Includes loans to financial institutions, SPEs, personal investment companies and trusts, individuals and individual entities (predominantly Global Private Bank clients within AWM and J.P. Morgan Wealth Management within CCB), states and political subdivisions, as well as loans to nonprofits. Refer to Note 14 for more information on SPEs.

The following table presents additional information on retained loans secured by real estate, which consists of loans secured wholly or substantially by a lien or liens on real property at origination. Multifamily lending includes financing for acquisition, leasing and construction of apartment buildings. Other commercial lending largely includes financing for acquisition, leasing and construction, largely for office, retail and industrial real estate. Included in secured by real estate loans were \$12.2 billion and \$10.2 billion as of December 31, 2024 and 2023, respectively, of construction and development loans made to finance land development and on-site construction of commercial, industrial, residential, or farm buildings.

December 31, (in millions, except ratios)	Multifamily		Other Commercial		Total retained loans secured by real estate	
	2024	2023	2024	2023	2024	2023
Retained loans secured by real estate	\$ 101,114	\$ 100,725	\$ 61,318	\$ 61,613	\$ 162,432	\$ 162,338
Criticized	4,700	3,596	6,030	4,096	10,730	7,692
% of criticized to total retained loans secured by real estate	4.65 %	3.57 %	9.83 %	6.65 %	6.61 %	4.74 %
Criticized nonaccrual	\$ 337	\$ 76	\$ 1,102	\$ 325	\$ 1,439	\$ 401
% of criticized nonaccrual loans to total retained loans secured by real estate	0.33 %	0.08 %	1.80 %	0.53 %	0.89 %	0.25 %

Geographic distribution and delinquency

The following table provides information on the geographic distribution and delinquency for retained wholesale loans.

December 31, (in millions)	Secured by real estate		Commercial and industrial		Other		Total retained loans	
	2024	2023	2024	2023	2024	2023	2024	2023
Loans by geographic distribution^(a)								
Total U.S.	\$ 159,209	\$ 159,499	\$ 127,626	\$ 127,638	\$ 278,077	\$ 262,499	\$ 564,912	\$ 549,636
Total non-U.S.	3,223	2,839	39,164	39,528	83,097	80,469	125,484	122,836
Total retained loans	\$ 162,432	\$ 162,338	\$ 166,790	\$ 167,166	\$ 361,174	\$ 342,968	\$ 690,396	\$ 672,472
Loan delinquency								
Current and less than 30 days past due and still accruing	\$ 159,949	\$ 161,314	\$ 164,104	\$ 164,899	\$ 359,191	\$ 341,128	\$ 683,244	\$ 667,341
30–89 days past due and still accruing	918	473	868	884	1,152	1,090	2,938	2,447
90 or more days past due and still accruing ^(b)	126	150	58	162	88	26	272	338
Criticized nonaccrual	1,439	401	1,760	1,221	743	724	3,942	2,346
Total retained loans	\$ 162,432	\$ 162,338	\$ 166,790	\$ 167,166	\$ 361,174	\$ 342,968	\$ 690,396	\$ 672,472

(a) The U.S. and non-U.S. distribution is determined based predominantly on the domicile of the borrower.

(b) Represents loans that are considered well-collateralized and therefore still accruing interest.

Nonaccrual loans

The following table provides information on retained wholesale nonaccrual loans.

December 31, (in millions)	Secured by real estate		Commercial and industrial		Other		Total retained loans	
	2024	2023	2024	2023	2024	2023	2024	2023
Nonaccrual loans								
With an allowance	\$ 366	\$ 129	\$ 1,362	\$ 776	\$ 555	\$ 492	\$ 2,283	\$ 1,397
Without an allowance ^(a)	1,073	272	398	445	188	232	1,659	949
Total nonaccrual loans^(b)	\$ 1,439	\$ 401	\$ 1,760	\$ 1,221	\$ 743	\$ 724	\$ 3,942	\$ 2,346

(a) When the discounted cash flows or collateral value equals or exceeds the amortized cost of the loan, the loan does not require an allowance. This typically occurs when the loans have been partially charged off and/or there have been interest payments received and applied to the loan balance.

(b) Interest income on nonaccrual loans recognized on a cash basis was \$51 million and \$19 million for the years ended December 31, 2024 and 2023, respectively.

Notes to consolidated financial statements

Loan modifications

The Firm grants certain modifications of wholesale loans to borrowers experiencing financial difficulty.

Financial effects of FDMs

The following tables provide information on retained wholesale loan modifications considered FDMs.

Secured by real estate			
Year ended December 31, 2024			
(in millions, except ratios)	Amortized cost basis	% of loan modifications to total retained Secured by real estate loans	Financial effect of loan modifications
Single modifications			
Term extension	\$ 271	0.17 %	Extended loans by a weighted-average of 21 months
Other-than-insignificant payment deferral	37	0.02	Provided payment deferrals with delayed amounts re-amortized over the remaining tenor
Multiple modifications			
Other-than-insignificant payment deferral and interest rate reduction	46	0.03	Provided payment deferrals with delayed amounts recaptured at maturity and reduced weighted-average contractual interest by 162 bps
Total	\$ 354		

Secured by real estate			
Year ended December 31, 2023			
(in millions, except ratios)	Amortized cost basis	% of loan modifications to total retained Secured by real estate loans	Financial effect of loan modifications
Single modifications			
Term extension	\$ 149	0.09 %	Extended loans by a weighted-average of 14 months
Other-than-insignificant payment deferral	3	—	Provided payment deferrals with delayed amounts primarily re-amortized over the remaining life of the loan
Multiple modifications			
Other-than-insignificant payment deferral and interest rate reduction	5	—	Provided payment deferrals with delayed amounts primarily recaptured at maturity and reduced weighted-average contractual interest by 184 bps
Other ^(a)	3	—	NM
Total	\$ 160		

(a) Includes a loan with multiple modifications.

Commercial and industrial			
Year ended December 31, 2024			
(in millions, except ratios)	Amortized cost basis	% of loan modifications to total retained Commercial and industrial loans	Financial effect of loan modifications
Single modifications			
Term extension	\$ 1,180	0.71 %	Extended loans by a weighted-average of 20 months
Other-than-insignificant payment deferral	464	0.28	Provided payment deferrals with delayed amounts primarily re-amortized over the remaining tenor
Multiple modifications			
Other-than-insignificant payment deferral and term extension	175	0.10	Provided payment deferrals with delayed amounts recaptured at maturity and extended loans by a weighted-average of 18 months
Interest rate reduction and term extension	51	0.03	Reduced weighted-average contractual interest by 434 bps and extended loans by a weighted-average of 36 months
Other ^(a)	30	0.02	NM
Total	\$ 1,900		

(a) Includes loans with single and multiple modifications.

Commercial and industrial			
Year ended December 31, 2023			
(in millions, except ratios)	Amortized cost basis	% of loan modifications to total retained Commercial and industrial loans	Financial effect of loan modifications
Single modifications			
Term extension	\$ 916	0.55 %	Extended loans by a weighted-average of 17 months
Other-than-insignificant payment deferral	402	0.24	Provided payment deferrals with delayed amounts primarily recaptured at the end of the deferral period
Multiple modifications			
Other-than-insignificant payment deferral and term extension	35	0.02	Provided payment deferrals with delayed amounts primarily re-amortized over the remaining life of the loan and extended loans by a weighted-average of 7 months
Interest rate reduction and term extension	1	—	Reduced weighted average contractual interest rate over the life of the loan as a result of converting from variable to fixed rate and extended loans by a weighted-average of 16 months
Other ^(a)	9	—	NM
Total	\$ 1,363		

(a) Include loans with multiple modifications.

Notes to consolidated financial statements

(in millions, except ratios)	Other		
	Year ended December 31, 2024		
	Amortized cost basis	% of loan modifications to total retained Other loans	Financial effect of loan modification
Single modifications			
Term extension	\$ 268	0.07 %	Extended loans by a weighted-average of 28 months
Multiple modifications			
Other-than-insignificant payment deferral and term extension	2	—	Provided payment deferrals with delayed amounts recaptured at maturity and extended loans by a weighted-average of 6 months
Other ^(a)	5	—	NM
Total	\$ 275		

(a) Includes loans with a single modification.

(in millions, except ratios)	Other		
	Year ended December 31, 2023		
	Amortized cost basis	% of loan modifications to total retained Other loans	Financial effect of loan modifications
Single modifications			
Term extension	\$ 355	0.10 %	Extended loans by a weighted-average of 23 months
Multiple modifications			
Other-than-insignificant payment deferral and term extension	245	0.07	Provided payment deferrals with delayed amounts primarily recaptured at the end of the deferral period and extended loans by a weighted-average of 137 months
Other ^(a)	\$ 9	—	NM
Total	\$ 609		

(a) Includes a loan with a single modification.

Payment status of FDMs

The following table provides information on the payment status of retained wholesale FDMs during the year ended December 31, 2024 and 2023.

(in millions)	Amortized cost basis					
	Secured by real estate	Commercial and industrial	Other	Secured by real estate	Commercial and industrial	Other
	Year ended December 31, 2024			Year ended December 31, 2023		
Current and less than 30 days past due and still accruing	\$ 264	\$ 1,215	\$ 240	\$ 118	\$ 947	\$ 400
30-89 days past due and still accruing	3	13	9	2	42	—
Criticized nonaccrual	87	672	26	40	374	209
Total	\$ 354	\$ 1,900	\$ 275	\$ 160	\$ 1,363	\$ 609

Defaults of FDMs

The following table provides information on retained wholesale FDMs that defaulted during the year ended December 31, 2024 that were reported as FDMs in the twelve months prior to the default, and FDMs that defaulted during the year ended December 31, 2023 that were reported as FDMs on or after January 1, 2023, the date that the Firm adopted the changes to the TDR accounting guidance.

(in millions)	Amortized cost basis					
	Secured by real estate	Commercial and industrial	Other	Secured by real estate	Commercial and industrial	Other
	Year ended December 31, 2024			Year ended December 31, 2023		
Term extension	\$ 3	\$ 92	\$ 22	\$ 1	\$ 49	\$ 31
Other-than-insignificant payment deferral	—	118	—	2	—	—
Interest rate reduction and term extension	—	—	—	3	1	—
Total^(a)	\$ 3	\$ 210	\$ 22	\$ 6	\$ 50	\$ 31

(a) Represents FDMs that were 30 days or more past due.

As of December 31, 2024 and 2023, additional unfunded commitments on modified loans to borrowers experiencing financial difficulty were \$1.8 billion at each period in Commercial and industrial, and \$69 million and \$4 million, respectively, in Other loan class. Additional commitments on modified loans to borrowers experiencing financial difficulty whose loans have been modified as FDMs in Secured by real estate were not material at each period.

Nature and extent of TDRs

Prior to January 1, 2023, certain loan modifications were considered TDRs. These loan modifications provided various concessions to borrower who were experiencing financial difficulty. Loans with short-term or other insignificant modifications that were not considered concessions were not TDRs nor were loans for which the Firm elected to suspend TDR accounting guidance under the option provided by the CARES Act.

For the year ended December 31, 2022, new TDRs were \$801 million. New TDRs for the year ended December 31, 2022 reflected extended maturity dates and covenant waivers primarily in the Commercial and Industrial loan class. For the year ended December 31, 2022, the impact of these modifications resulting in new TDRs was not material to the Firm.

As a result of the elimination of the requirement to assess whether a modification is reasonably expected or involves a concession, the population of loans considered FDMs is greater than the population previously considered TDRs.

Note 13 – Allowance for credit losses

The Firm's allowance for credit losses represents management's estimate of expected credit losses over the remaining expected life of the Firm's financial assets measured at amortized cost and certain off-balance sheet lending-related commitments. The allowance for credit losses generally comprises:

- the allowance for loan losses, which covers the Firm's retained loan portfolios (scored and risk-rated),
- the allowance for lending-related commitments, which is presented on the Consolidated balance sheets in accounts payable and other liabilities, and
- the allowance for credit losses on investment securities, which is reflected in investment securities on the Consolidated balance sheets.

The income statement effect of all changes in the allowance for credit losses is recognized in the provision for credit losses.

Determining the appropriateness of the allowance for credit losses is complex and requires significant judgment by management about the effect of matters that are inherently uncertain. At least quarterly, the allowance for credit losses is reviewed by the CRO, the CFO and the Controller of the Firm. Subsequent evaluations of credit exposures, considering the macroeconomic conditions, forecasts and other factors then prevailing, may result in significant changes in the allowance for credit losses in future periods. The Firm's policies used to determine its allowance for loan losses and its allowance for lending-related commitments are described in the following paragraphs. Refer to Note 10 for a description of the policies used to determine the allowance for credit losses on investment securities.

Methodology for allowances for loan losses and lending-related commitments

The allowance for loan losses and allowance for lending-related commitments represents expected credit losses over the remaining expected life of retained loans and lending-related commitments that are not unconditionally cancellable. The Firm does not record an allowance for future draws on unconditionally cancellable lending-related commitments (e.g., credit cards). Expected losses related to accrued interest on credit card loans are considered in the Firm's allowance for loan losses. However, the Firm does not record an allowance on other accrued interest receivables, due to its policy to write these receivables off no later than 90 days past due by reversing interest income.

The expected life of each instrument is determined by considering its contractual term, expected prepayments, cancellation features, and certain extension and call options. The expected life of funded credit card loans is generally estimated by considering expected future payments on the credit card account, and determining how much of those amounts should be allocated to repayments of the funded loan balance (as

of the balance sheet date) versus other account activity. This allocation is made using an approach that incorporates the payment application requirements of the Credit Card Accountability Responsibility and Disclosure Act of 2009, generally paying down the highest interest rate balances first.

The estimate of expected credit losses includes expected recoveries of amounts previously charged off or expected to be charged off, even if such recoveries result in a negative allowance.

Collective and Individual Assessments

When calculating the allowance for loan losses and the allowance for lending-related commitments, the Firm assesses whether exposures share similar risk characteristics. If similar risk characteristics exist, the Firm estimates expected credit losses collectively, considering the risk associated with a particular pool and the probability that the exposures within the pool will deteriorate or default. The assessment of risk characteristics is subject to significant management judgment. Emphasizing one characteristic over another or considering additional characteristics could affect the allowance.

- Relevant risk characteristics for the consumer portfolio include product type, delinquency status, current FICO scores, geographic distribution, and, for collateralized loans, current LTV ratios.
- Relevant risk characteristics for the wholesale portfolio include risk rating, delinquency status, tenor, level and type of collateral, LOB, geography, industry, credit enhancement, product type, facility purpose, and payment terms.

The majority of the Firm's credit exposures share risk characteristics with other similar exposures, and as a result are collectively assessed for impairment ("portfolio-based component"). The portfolio-based component covers consumer loans, performing risk-rated loans and certain lending-related commitments.

If an exposure does not share risk characteristics with other exposures, the Firm generally estimates expected credit losses on an individual basis, considering expected repayment and conditions impacting that individual exposure ("asset-specific component"). The asset-specific component covers collateral-dependent loans and risk-rated loans that have been placed on nonaccrual status.

Portfolio-based component

The portfolio-based component begins with a quantitative calculation that considers the likelihood of the borrower changing delinquency status or moving from one risk rating to another. The quantitative calculation covers expected credit losses over an instrument's expected life and is estimated by applying credit loss factors to the Firm's estimated exposure at default. The credit loss factors incorporate the

probability of borrower default as well as loss severity in the event of default. They are derived using a weighted average of five internally developed macroeconomic scenarios over an eight-quarter forecast period, followed by a single year straight-line interpolation to revert to long run historical information for periods beyond the eight-quarter forecast period. The five macroeconomic scenarios consist of a central, relative adverse, extreme adverse, relative upside and extreme upside scenario, and are updated by the Firm's central forecasting team. The scenarios take into consideration the Firm's macroeconomic outlook, internal perspectives from subject matter experts across the Firm, and market consensus and involve a governed process that incorporates feedback from senior management across LOBs, Corporate Finance and Risk Management.

The quantitative calculation is adjusted to take into consideration model imprecision, emerging risk assessments, trends and other subjective factors that are not yet reflected in the calculation. These adjustments are accomplished in part by analyzing the historical loss experience, including during stressed periods, for each major product or model. Management applies judgment in making this adjustment, including taking into account uncertainties associated with the economic and political conditions, quality of underwriting standards, borrower behavior, credit concentrations or deterioration within an industry, product or portfolio, as well as other relevant internal and external factors affecting the credit quality of the portfolio. In certain instances, the interrelationships between these factors create further uncertainties.

The application of different inputs into the quantitative calculation, and the assumptions used by management to adjust the quantitative calculation, are subject to significant management judgment, and emphasizing one input or assumption over another, or considering other inputs or assumptions, could affect the estimate of the allowance for loan losses and the allowance for lending-related commitments.

Asset-specific component

To determine the asset-specific component of the allowance, collateral-dependent loans (including those loans for which foreclosure is probable) and nonaccrual risk-rated loans in the wholesale portfolio segment are generally evaluated individually.

For collateral-dependent loans, the fair value of collateral less estimated costs to sell, as applicable, is used to determine the charge-off amount for declines in value (to reduce the amortized cost of the loan to the fair value of collateral) or the amount of negative allowance that should be recognized (for recoveries of prior charge-offs associated with improvements in the fair value of the collateral).

For non-collateral dependent loans, the Firm generally measures the asset-specific allowance as the

difference between the amortized cost of the loan and the present value of the cash flows expected to be collected, discounted at the loan's effective interest rate. Subsequent changes in impairment are generally recognized as an adjustment to the allowance for loan losses. The asset-specific component of the allowance for non-collateral dependent loans incorporates the effect of the modification on the loan's expected cash flows including changes in interest rates, principal forgiveness, and other concessions, as well as management's expectation of the borrower's ability to repay under the modified terms.

Estimating the timing and amounts of future cash flows is highly judgmental as these cash flow projections rely upon estimates such as loss severities, asset valuations, the amounts and timing of interest or principal payments (including any expected prepayments) or other factors that are reflective of current and expected market conditions. These estimates are, in turn, dependent on factors such as the duration of current overall economic conditions, industry, portfolio, or borrower-specific factors, the expected outcome of insolvency proceedings as well as, in certain circumstances, other economic factors. All of these estimates and assumptions require significant management judgment and certain assumptions are highly subjective.

Other financial assets

In addition to loans and investment securities, the Firm holds other financial assets that are measured at amortized cost on the Consolidated balance sheets, including credit exposures arising from lending activities subject to collateral maintenance requirements. Management estimates the allowance for other financial assets using various techniques considering historical losses and current economic conditions.

Credit risk arising from lending activities subject to collateral maintenance requirements is generally mitigated by factors such as the short-term nature of the activity, the fair value of collateral held and the Firm's right to call for, and the borrower's obligation to provide additional margin when the fair value of the collateral declines. Because of these mitigating factors, these exposures generally do not require an allowance for credit losses. However, management may also consider other factors such as the borrower's ongoing ability to provide collateral to satisfy margin requirements, or whether collateral is significantly concentrated in an individual issuer or in securities with similar risk characteristics. If in management's judgment, an allowance for credit losses for these exposures is required, the Firm estimates expected credit losses based on the value of the collateral and probability of borrower default.

Notes to consolidated financial statements

Allowance for credit losses and related information

The table below summarizes information about the allowances for credit losses and includes a breakdown of loans and lending-related commitments by impairment methodology. Refer to Note 10 for further information on the allowance for credit losses on investment securities.

(Table continued on next page)

Year ended December 31, (in millions)	2024			
	Consumer, excluding credit card	Credit card	Wholesale	Total
Allowance for loan losses				
Beginning balance at January 1,	\$ 1,856	\$ 12,450	\$ 8,114	\$ 22,420
Cumulative effect of a change in accounting principle ^(a)	NA	NA	NA	NA
Gross charge-offs	1,299	8,198	1,022	10,519
Gross recoveries collected	(625)	(1,056)	(200)	(1,881)
Net charge-offs	674	7,142	822	8,638
Provision for loan losses	624	9,292	578	10,494
Other	1	—	68	69
Ending balance at December 31,	\$ 1,807	\$ 14,600	\$ 7,938	\$ 24,345
Allowance for lending-related commitments				
Beginning balance at January 1,	\$ 75	\$ —	\$ 1,899	\$ 1,974
Provision for lending-related commitments	7	—	121	128
Other	—	—	(1)	(1)
Ending balance at December 31,	\$ 82	\$ —	\$ 2,019	\$ 2,101
Total allowance for investment securities	NA	NA	NA	\$ 152
Total allowance for credit losses^(b)	\$ 1,889	\$ 14,600	\$ 9,957	\$ 26,598
Allowance for loan losses by impairment methodology				
Asset-specific ^(c)	\$ (728)	\$ —	\$ 526	\$ (202)
Portfolio-based	2,535	14,600	7,412	24,547
Total allowance for loan losses	\$ 1,807	\$ 14,600	\$ 7,938	\$ 24,345
Loans by impairment methodology				
Asset-specific ^(c)	\$ 2,805	\$ —	\$ 3,912	\$ 6,717
Portfolio-based	373,529	232,860	686,484	1,292,873
Total retained loans	\$ 376,334	\$ 232,860	\$ 690,396	\$ 1,299,590
Collateral-dependent loans				
Net charge-offs	\$ 1	\$ —	\$ 324	\$ 325
Loans measured at fair value of collateral less cost to sell	2,696	—	1,834	4,530
Allowance for lending-related commitments by impairment methodology				
Asset-specific	\$ —	\$ —	\$ 109	\$ 109
Portfolio-based	82	—	1,910	1,992
Total allowance for lending-related commitments^(d)	\$ 82	\$ —	\$ 2,019	\$ 2,101
Lending-related commitments by impairment methodology				
Asset-specific	\$ —	\$ —	\$ 737	\$ 737
Portfolio-based ^(e)	25,608	19	510,254	535,881
Total lending-related commitments	\$ 25,608	\$ 19	\$ 510,991	\$ 536,618

(a) Represents the impact to the allowance for loan losses upon the adoption of the Financial Instruments - Credit Losses: Troubled Debt Restructurings accounting guidance. Refer to Note 1 for further information.

(b) At December 31, 2024 and 2023 and 2022, in addition to the allowance for credit losses in the table above, the Firm also had an allowance for credit losses of \$268 million, \$243 million and \$21 million, respectively, associated with certain accounts receivable in CIB.

(c) Includes collateral-dependent loans, including those for which foreclosure is deemed probable, and nonaccrual risk-rated loans.

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

(e) At December 31, 2024, 2023 and 2022, lending-related commitments excluded \$19.2 billion, \$17.2 billion and \$13.1 billion, respectively, for the consumer, excluding credit card portfolio segment; \$1.0 trillion, \$915.7 billion and \$821.3 billion, respectively, for the credit card portfolio segment; and \$20.5 billion, \$19.7 billion and \$9.8 billion, respectively, for the wholesale portfolio segment, which were not subject to the allowance for lending-related commitments.

(table continued from previous page)

2023				2022			
Consumer, excluding credit card	Credit card	Wholesale	Total	Consumer, excluding credit card	Credit card	Wholesale	Total
\$ 2,040	\$ 11,200	\$ 6,486	\$ 19,726	\$ 1,765	\$ 10,250	\$ 4,371	\$ 16,386
(489)	(100)	2	(587)	NA	NA	NA	NA
1,151	5,491	1,011	7,653	812	3,192	322	4,326
(519)	(793)	(132)	(1,444)	(543)	(789)	(141)	(1,473)
632	4,698	879	6,209	269	2,403	181	2,853
936	6,048	2,484	9,468	543	3,353	2,293	6,189
1	—	21	22	1	—	3	4
\$ 1,856	\$ 12,450	\$ 8,114	\$ 22,420	\$ 2,040	\$ 11,200	\$ 6,486	\$ 19,726
\$ 76	\$ —	\$ 2,306	\$ 2,382	\$ 113	\$ —	\$ 2,148	\$ 2,261
(1)	—	(407)	(408)	(37)	—	157	120
—	—	—	—	—	—	1	1
\$ 75	\$ —	\$ 1,899	\$ 1,974	\$ 76	\$ —	\$ 2,306	\$ 2,382
NA	NA	NA	\$ 128	NA	NA	NA	\$ 96
\$ 1,931	\$ 12,450	\$ 10,013	\$ 24,522	\$ 2,116	\$ 11,200	\$ 8,792	\$ 22,204
\$ (876)	\$ —	\$ 392	\$ (484)	\$ (624)	\$ 223	\$ 467	\$ 66
2,732	12,450	7,722	22,904	2,664	10,977	6,019	19,660
\$ 1,856	\$ 12,450	\$ 8,114	\$ 22,420	\$ 2,040	\$ 11,200	\$ 6,486	\$ 19,726
\$ 3,287	\$ —	\$ 2,338	\$ 5,625	\$ 11,978	\$ 796	\$ 2,189	\$ 14,963
393,988	211,123	670,134	1,275,245	288,775	184,379	601,481	1,074,635
\$ 397,275	\$ 211,123	\$ 672,472	\$ 1,280,870	\$ 300,753	\$ 185,175	\$ 603,670	\$ 1,089,598
\$ 6	\$ —	\$ 180	\$ 186	\$ (33)	\$ —	\$ 16	\$ (17)
3,216	—	1,012	4,228	3,585	—	464	4,049
\$ —	\$ —	\$ 89	\$ 89	\$ —	\$ —	\$ 90	\$ 90
75	—	1,810	1,885	76	—	2,216	2,292
\$ 75	\$ —	\$ 1,899	\$ 1,974	\$ 76	\$ —	\$ 2,306	\$ 2,382
\$ —	\$ —	\$ 464	\$ 464	\$ —	\$ —	\$ 455	\$ 455
28,248	—	516,577	544,825	20,423	—	461,688	482,111
\$ 28,248	\$ —	\$ 517,041	\$ 545,289	\$ 20,423	\$ —	\$ 462,143	\$ 482,566

Notes to consolidated financial statements

Discussion of changes in the allowance

The allowance for credit losses as of December 31, 2024 was \$26.9 billion, reflecting a net addition of \$2.1 billion from December 31, 2023.

The net addition to the allowance for credit losses included:

- \$2.1 billion in **consumer**, reflecting:
 - a \$2.2 billion net addition in Card Services, predominantly driven by loan growth, reflecting higher revolving balances, including the seasoning of vintages originated in recent years, partially offset by
 - a \$125 million net reduction in Home Lending in the first quarter of 2024, and
- a net reduction of \$30 million in **wholesale**, reflecting:
 - changes in certain macroeconomic variables, an update to loss assumptions on certain loans in Markets, and a reduction due to charge-offs largely from collateral-dependent loans, predominantly offset by
 - net downgrade activity, primarily in Real Estate, and the impact of incorporating the First Republic portfolio into the Firm's modeled credit loss estimates in the second quarter of 2024.

The Firm's qualitative adjustments continued to include additional weight placed on the adverse scenarios to reflect ongoing uncertainties and downside risks related to the geopolitical and macroeconomic environment.

The Firm's allowance for credit losses is estimated using a weighted average of five internally developed macroeconomic scenarios. The adverse scenarios incorporate more punitive macroeconomic factors than the central case assumptions provided in the table below, resulting in:

- a weighted average U.S. unemployment rate peaking at 5.5% in the fourth quarter of 2025, and
- a weighted average U.S. real GDP level that is 1.9% lower than the central case at the end of the second quarter of 2026.

The following table presents the Firm's central case assumptions for the periods presented:

	Central case assumptions at December 31, 2024		
	2Q25	4Q25	2Q26
U.S. unemployment rate ^(a)	4.5 %	4.3 %	4.3 %
YoY growth in U.S. real GDP ^(b)	2.0 %	1.9 %	1.8 %
	Central case assumptions at December 31, 2023		
	2Q24	4Q24	2Q25
U.S. unemployment rate ^(a)	4.1 %	4.4 %	4.1 %
YoY growth in U.S. real GDP ^(b)	1.8 %	0.7 %	1.0 %

(a) Reflects quarterly average of forecasted U.S. unemployment rate.

(b) The year over year growth in U.S. real GDP in the forecast horizon of the central scenario is calculated as the percentage change in U.S. real GDP levels from the prior year.

Subsequent changes to this forecast and related estimates will be reflected in the provision for credit losses in future periods.

Refer to Note 12 for additional information on the consumer and wholesale credit portfolios.

Refer to Critical Accounting Estimates Used by the Firm on pages 161–164 for further information on the allowance for credit losses and related management judgments.

Note 14 – Variable interest entities

Refer to Note 1 on page 177 for a further description of the Firm’s accounting policies regarding consolidation of and involvement with VIEs.

The following table summarizes the most significant types of Firm-sponsored VIEs by business segment. The Firm considers a “Firm-sponsored” VIE to include any entity where: (1) JPMorganChase is the primary beneficiary of the structure; (2) the VIE is used by JPMorganChase to securitize Firm assets; (3) the VIE issues financial instruments with the JPMorganChase name; or (4) the entity is a JPMorganChase-administered asset-backed commercial paper conduit.

Line of Business	Transaction Type	Activity	2024 Form 10-K page references
CCB	Credit card securitization trusts	Securitization of originated credit card receivables	pages 271–272
	Mortgage securitization trusts	Servicing and securitization of both originated and purchased residential mortgages	pages 272–274
CIB	Mortgage and other securitization trusts	Securitization of both originated and purchased residential and commercial mortgages, and other consumer loans	pages 272–274
	Multi-seller conduits	Assisting clients in accessing the financial markets in a cost-efficient manner and structuring transactions to meet investor needs	page 274
	Municipal bond vehicles	Financing of municipal bond investments	pages 274–275

The Firm’s other business segments and Corporate are also involved with VIEs (both third-party and Firm-sponsored), but to a lesser extent, as follows:

- **Asset & Wealth Management:** AWM sponsors and manages certain funds that are deemed VIEs. As asset manager of the funds, AWM earns a fee based on assets managed; the fee varies with each fund’s investment objective and is competitively priced. For fund entities that qualify as VIEs, AWM’s interests are, in certain cases, considered to be significant variable interests that result in consolidation of the financial results of these entities.
- **Corporate:** Corporate is involved with entities that may meet the definition of VIEs; however these entities are generally subject to specialized investment company accounting, which does not require the consolidation of investments, including VIEs. In addition, Treasury and CIO invest in securities generally issued by third parties which may meet the definition of VIEs (e.g., issuers of asset-backed securities). In general, the Firm does not have the power to direct the significant activities of these entities and therefore does not consolidate these entities. Refer to Note 10 for further information on the Firm’s investment securities portfolio.

In addition, CIB also invests in and provides financing, lending-related services and other services to VIEs sponsored by third parties. Refer to page 276 of this Note for more information on the VIEs sponsored by third parties.

Significant Firm-sponsored VIEs

Credit card securitizations

CCB’s Card Services business may securitize originated credit card loans, primarily through the Chase Issuance Trust (the “Trust”). The Firm’s continuing involvement in credit card securitizations includes servicing the receivables, retaining an undivided seller’s interest in the receivables, retaining certain senior and subordinated securities and maintaining escrow accounts.

The Firm consolidates the assets and liabilities of its sponsored credit card trusts as it is considered to be the primary beneficiary of these securitization trusts based on the Firm’s ability to direct the activities of these VIEs through its servicing responsibilities and other duties, including making decisions as to the receivables that are transferred into those trusts and as to any related modifications and workouts. Additionally, the nature and extent of the Firm’s other

continuing involvement with the trusts, as indicated above, obligates the Firm to absorb losses and gives the Firm the right to receive certain benefits from these VIEs that could potentially be significant.

The underlying securitized credit card receivables and other assets of the securitization trusts are available only for payment of the beneficial interests issued by the securitization trusts; they are not available to pay the Firm’s other obligations or the claims of the Firm’s creditors.

The agreements with the credit card securitization trusts require the Firm to maintain a minimum undivided interest in the credit card trusts (generally 5%). As of December 31, 2024 and 2023, the Firm held undivided interests in Firm-sponsored credit card securitization trusts of \$6.6 billion and \$4.9 billion, respectively. The Firm maintained an average undivided interest in principal receivables owned by

Notes to consolidated financial statements

those trusts of approximately 45% and 65% for the years ended December 31, 2024 and 2023, respectively. The Firm did not retain any senior securities and retained \$1.5 billion of subordinated securities in certain of its credit card securitization trusts at both December 31, 2024 and 2023. The Firm's undivided interests in the credit card trusts and securities retained are eliminated in consolidation.

Firm-sponsored mortgage and other securitization trusts

The Firm securitizes (or has securitized) originated and purchased residential mortgages, commercial mortgages and other consumer loans primarily in its CCB and CIB businesses. Depending on the particular transaction, as well as the respective business involved, the Firm may act as the servicer of the loans and/or retain certain beneficial interests in the securitization trusts.

The following tables present the total unpaid principal amount of assets held in Firm-sponsored private-label securitization entities, including those in which the Firm has continuing involvement, and those that are consolidated by the Firm. Continuing involvement includes servicing the loans, holding senior interests or subordinated interests (including amounts required to be held pursuant to credit risk retention rules), recourse or guarantee arrangements, and derivative contracts. In certain instances, the Firm's only continuing involvement is servicing the loans. The Firm's maximum loss exposure from retained and purchased interests is the carrying value of these interests. Refer to page 279 of this Note for information on the securitization-related loan delinquencies and liquidation losses.

December 31, 2024 (in millions)	Principal amount outstanding			JPMorganChase interest in securitized assets in nonconsolidated VIEs ^{(c)(d)(e)}			
	Total assets held by securitization VIEs	Assets held in consolidated securitization VIEs	Assets held in nonconsolidated securitization VIEs with continuing involvement	Trading assets	Investment securities	Other financial assets	Total interests held by JPMorgan Chase
Securitization-related^(a)							
Residential mortgage:							
Prime/Alt-A and option ARMs	\$ 71,085	\$ 615	\$ 50,846	\$ 613	\$ 1,850	\$ 614	\$ 3,077
Subprime	8,824	—	1,847	44	19	—	63
Commercial and other ^(b)	186,293	243	125,510	530	5,768	1,074	7,372
Total	\$ 266,202	\$ 858	\$ 178,203	\$ 1,187	\$ 7,637	\$ 1,688	\$ 10,512

December 31, 2023 (in millions)	Principal amount outstanding			JPMorganChase interest in securitized assets in nonconsolidated VIEs ^{(c)(d)(e)}			
	Total assets held by securitization VIEs	Assets held in consolidated securitization VIEs	Assets held in nonconsolidated securitization VIEs with continuing involvement	Trading assets	Investment securities	Other financial assets	Total interests held by JPMorgan Chase
Securitization-related^(a)							
Residential mortgage:							
Prime/Alt-A and option ARMs	\$ 58,570	\$ 675	\$ 39,319	\$ 595	\$ 1,981	\$ 60	\$ 2,636
Subprime	8,881	—	1,312	3	—	—	3
Commercial and other ^(b)	168,042	—	120,262	831	5,638	1,354	7,823
Total	\$ 235,493	\$ 675	\$ 160,893	\$ 1,429	\$ 7,619	\$ 1,414	\$ 10,462

(a) Excludes U.S. GSEs and government agency securitizations and re-securitizations, which are not Firm-sponsored.

(b) Consists of securities backed by commercial real estate loans and non-mortgage-related consumer receivables.

(c) Excludes the following: retained servicing; securities retained from loan sales and securitization activity related to U.S. GSEs and government agencies; interest rate and foreign exchange derivatives primarily used to manage interest rate and foreign exchange risks of securitization entities; senior securities of \$256 million and \$52 million at December 31, 2024 and 2023, respectively, and subordinated securities which were not material at December 31, 2024 and 2023, which the Firm purchased in connection with CIB's secondary market-making activities.

(d) Includes interests held in re-securitization transactions.

(e) At both December 31, 2024 and 2023, 77% of the Firm's retained securitization interests, which are predominantly carried at fair value and include amounts required to be held pursuant to credit risk retention rules, were risk-rated "A" or better, on an S&P-equivalent basis. The retained interests in prime residential mortgages consisted of \$2.9 billion and \$2.5 billion of investment-grade retained interests at December 31, 2024 and 2023, respectively, and \$216 million and \$88 million of noninvestment-grade retained interests at December 31, 2024 and 2023, respectively. The retained interests in commercial and other securitization trusts consisted of \$6.0 billion and \$6.1 billion of investment-grade retained interests, and \$1.4 billion and \$1.7 billion of noninvestment-grade retained interests at December 31, 2024 and 2023, respectively.

Residential mortgage

The Firm securitizes residential mortgage loans originated by CCB, as well as residential mortgage loans purchased from third parties by either CCB or CIB. CCB generally retains servicing for all residential mortgage loans it originated or purchased, and for certain mortgage loans purchased by CIB. For securitizations of loans serviced by CCB, the Firm has the power to direct the significant activities of the VIE because it is responsible for decisions related to loan modifications and workouts. CCB may also retain an interest upon securitization.

In addition, CIB engages in underwriting and trading activities involving securities issued by Firm-sponsored securitization trusts. As a result, CIB at times retains senior and/or subordinated interests (including residual interests and amounts required to be held pursuant to credit risk retention rules) in residential mortgage securitizations at the time of securitization, and/or reacquires positions in the secondary market in the normal course of business. In certain instances, as a result of the positions retained or reacquired by CIB or held by Treasury and CIO or CCB, when considered together with the servicing arrangements entered into by CCB, the Firm is deemed to be the primary beneficiary of certain securitization trusts.

The Firm does not consolidate residential mortgage securitizations (Firm-sponsored or third-party-sponsored) when it is not the servicer (and therefore does not have the power to direct the most significant activities of the trust) or does not hold a beneficial interest in the trust that could potentially be significant to the trust.

Commercial mortgages and other consumer securitizations

CIB originates and securitizes commercial mortgage loans, and engages in underwriting and trading activities involving the securities issued by securitization trusts. CIB may retain unsold senior and/or subordinated interests (including amounts required to be held pursuant to credit risk retention rules) in commercial mortgage securitizations at the time of securitization but, generally, the Firm does not service commercial loan securitizations. Treasury and CIO may choose to invest in these securitizations as well. For commercial mortgage securitizations the power to direct the significant activities of the VIE generally is held by the servicer or investors in a specified class of securities ("controlling class"). The Firm generally does not retain an interest in the controlling class in its sponsored commercial mortgage securitization transactions.

Re-securitizations

The Firm engages in certain re-securitization transactions in which debt securities are transferred to a VIE in exchange for new beneficial interests. These transfers occur in connection with both U.S. GSEs and government agency sponsored VIEs, which are backed by residential mortgages. The Firm's consolidation analysis is largely dependent on the Firm's role and interest in the re-securitization trusts.

The following table presents the principal amount of securities transferred to re-securitization VIEs.

Year ended December 31, (in millions)	2024	2023	2022
Transfers of securities to VIEs			
U.S. GSEs and government agencies	\$ 44,456	\$ 18,864	\$ 16,128

Most re-securitizations with which the Firm is involved are client-driven transactions in which a specific client or group of clients is seeking a specific return or risk profile. For these transactions, the Firm has concluded that the decision-making power of the entity is shared between the Firm and its clients, considering the joint effort and decisions in establishing the re-securitization trust and its assets, as well as the significant economic interest the client holds in the re-securitization trust; therefore the Firm does not consolidate the re-securitization VIE.

The Firm did not transfer any private label securities to re-securitization VIEs during 2024, 2023 and 2022, and retained interests in any such Firm-sponsored VIEs as of December 31, 2024 and 2023 were not material.

Additionally, the Firm may invest in beneficial interests of third-party-sponsored re-securitizations and generally purchases these interests in the secondary market. In these circumstances, the Firm does not have the unilateral ability to direct the most significant activities of the re-securitization trust, either because it was not involved in the initial design of the trust, or the Firm was involved with an independent third-party sponsor and demonstrated shared power over the creation of the trust; therefore, the Firm does not consolidate the re-securitization VIE.

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The following table presents information on the Firm's interests in nonconsolidated re-securitization VIEs.

December 31, (in millions)	Nonconsolidated re-securitization VIEs	
	2024	2023
U.S. GSEs and government agencies		
Interest in VIEs	\$ 3,219	\$ 3,371

As of December 31, 2024 and 2023, the Firm did not consolidate any U.S. GSE and government agency re-securitization VIEs or any Firm-sponsored private-label re-securitization VIEs.

Multi-seller conduits

Multi-seller conduit entities are separate bankruptcy remote entities that provide secured financing, collateralized by pools of receivables and other financial assets, to customers of the Firm. The conduits fund their financing facilities through the issuance of highly rated commercial paper. The primary source of repayment of the commercial paper is the cash flows from the pools of assets. In most instances, the assets are structured with deal-specific credit enhancements provided to the conduits by the customers (i.e., sellers) or other third parties. Deal-specific credit enhancements are generally structured to cover a multiple of historical losses expected on the pool of assets, and are typically in the form of overcollateralization provided by the seller. The deal-specific credit enhancements mitigate the Firm's potential losses on its agreements with the conduits.

To ensure timely repayment of the commercial paper, and to provide the conduits with funding to provide financing to customers in the event that the conduits do not obtain funding in the commercial paper market, each asset pool financed by the conduits has a minimum 100% deal-specific liquidity facility associated with it provided by JPMorgan Chase Bank, N.A. JPMorgan Chase Bank, N.A. also provides the multi-seller conduit vehicles with uncommitted program-wide liquidity facilities and program-wide credit enhancement in the form of standby letters of credit. The amount of program-wide credit enhancement required is based upon commercial paper issuance and approximates 10% of the outstanding balance of commercial paper.

The Firm consolidates its Firm-administered multi-seller conduits, as the Firm has both the power to direct the significant activities of the conduits and a potentially significant economic interest in the conduits. As administrative agent and in its role in structuring transactions, the Firm makes decisions regarding asset types and credit quality, and manages the commercial paper funding needs of the conduits. The Firm's interests that could potentially be significant to the VIEs include the fees received as administrative agent and liquidity and program-wide

credit enhancement provider, as well as the potential exposure created by the liquidity and credit enhancement facilities provided to the conduits.

In the normal course of business, JPMorganChase makes markets in and invests in commercial paper issued by the Firm-administered multi-seller conduits. The Firm held \$2.9 billion and \$9.8 billion of the commercial paper issued by the Firm-administered multi-seller conduits at December 31, 2024 and 2023, respectively, which have been eliminated in consolidation. The Firm's investments reflect the Firm's funding needs and capacity and were not driven by market illiquidity. Other than the amounts required to be held pursuant to credit risk retention rules, the Firm is not obligated under any agreement to purchase the commercial paper issued by the Firm-administered multi-seller conduits.

Deal-specific liquidity facilities, program-wide liquidity and credit enhancement provided by the Firm have been eliminated in consolidation. The Firm or the Firm-administered multi-seller conduits provide lending-related commitments to certain clients of the Firm-administered multi-seller conduits. The unfunded commitments were \$10.3 billion and \$10.8 billion at December 31, 2024 and 2023, respectively, and are reported as off-balance sheet lending-related commitments in other unfunded commitments to extend credit. Refer to Note 28 for more information on off-balance sheet lending-related commitments.

Municipal bond vehicles

Municipal bond vehicles or tender option bond ("TOB") trusts allow institutions to finance their municipal bond investments at short-term rates. In a typical TOB transaction, the trust purchases highly rated municipal bond(s) of a single issuer and funds the purchase by issuing two types of securities: (1) puttable floating-rate certificates ("floaters") and (2) inverse floating-rate residual interests ("residuals"). The floaters are typically purchased by money market funds or other short-term investors and may be tendered, with requisite notice, to the TOB trust. The residuals are retained by the investor seeking to finance its municipal bond investment. TOB transactions where the residual is held by a third-party investor are typically known as customer TOB trusts, and non-customer TOB trusts are transactions where the Residual is retained by the Firm. Customer TOB trusts are sponsored by a third party. The Firm serves as sponsor for all non-customer TOB transactions. The Firm may provide various services to a TOB trust, including remarketing agent, liquidity or tender option provider, and/or sponsor.

J.P. Morgan Securities LLC may serve as a remarketing agent on the floaters for TOB trusts. The remarketing agent is responsible for establishing the periodic variable rate on the floaters, conducting the initial

placement and remarketing tendered floaters. The remarketing agent may, but is not obligated to, make markets in floaters. Floaters held by the Firm were not material during 2024 and 2023.

JPMorgan Chase Bank, N.A. or J.P. Morgan Securities LLC often serves as the sole liquidity or tender option provider for the TOB trusts. The liquidity provider's obligation to perform is conditional and is limited by certain events ("Termination Events"), which include bankruptcy or failure to pay by the municipal bond issuer or credit enhancement provider, an event of taxability on the municipal bonds or the immediate downgrade of the municipal bond to below investment grade. In addition, the liquidity provider's exposure is typically further limited by the high credit quality of the underlying municipal bonds, the excess collateralization in the vehicle, or, in certain

transactions, the reimbursement agreements with the Residual holders.

Holders of the floaters may "put," or tender, their floaters to the TOB trust. If the remarketing agent cannot successfully remarket the floaters to another investor, the liquidity provider either provides a loan to the TOB trust for the TOB trust's purchase of the floaters, or it directly purchases the tendered floaters.

TOB trusts are considered to be variable interest entities. The Firm consolidates non-customer TOB trusts because as the Residual holder, the Firm has the right to make decisions that significantly impact the economic performance of the municipal bond vehicle, and it has the right to receive benefits and bear losses that could potentially be significant to the municipal bond vehicle.

Consolidated VIE assets and liabilities

The following table presents information on assets and liabilities related to VIEs consolidated by the Firm as of December 31, 2024 and 2023.

December 31, 2024 (in millions)	Assets				Liabilities		
	Trading assets	Loans	Other ^(c)	Total assets ^(d)	Beneficial interests in VIE assets ^(e)	Other ^(f)	Total liabilities
VIE program type							
Firm-sponsored credit card trusts	\$ —	\$ 13,531	\$ 168	\$ 13,699	\$ 5,312	\$ 10	\$ 5,322
Firm-administered multi-seller conduits	1	20,383	133	20,517	18,228	26	18,254
Municipal bond vehicles	3,388	—	22	3,410	3,617	15	3,632
Mortgage securitization entities ^(a)	—	630	8	638	115	48	163
Other	496	1,966 ^(b)	350	2,812	51	355	406
Total	\$ 3,885	\$ 36,510	\$ 681	\$ 41,076	\$ 27,323	\$ 454	\$ 27,777
December 31, 2023							
December 31, 2023 (in millions)	Assets				Liabilities		
	Trading assets	Loans	Other ^(c)	Total assets ^(d)	Beneficial interests in VIE assets ^(e)	Other ^(f)	Total liabilities
VIE program type							
Firm-sponsored credit card trusts	\$ —	\$ 9,460	\$ 117	\$ 9,577	\$ 2,998	\$ 6	\$ 3,004
Firm-administered multi-seller conduits	1	27,372	194	27,567	17,781	30	17,811
Municipal bond vehicles	2,056	—	22	2,078	2,116	11	2,127
Mortgage securitization entities ^(a)	—	693	8	701	125	57	182
Other	113	86	250	449	—	159	159
Total	\$ 2,170	\$ 37,611	\$ 591	\$ 40,372	\$ 23,020	\$ 263	\$ 23,283

(a) Includes residential mortgage securitizations.

(b) Primarily includes consumer loans in CIB.

(c) Includes assets classified as cash and other assets on the Consolidated balance sheets.

(d) The assets of the consolidated VIEs included in the program types above are used to settle the liabilities of those entities. The assets and liabilities include third-party assets and liabilities of consolidated VIEs and exclude intercompany balances that eliminate in consolidation.

(e) The interest-bearing beneficial interest liabilities issued by consolidated VIEs are classified on the Consolidated balance sheets as "Beneficial interests issued by consolidated VIEs". The holders of these beneficial interests generally do not have recourse to the general credit of JPMorganChase. Included in beneficial interests in VIE assets are long-term beneficial interests of \$5.5 billion and \$3.1 billion at December 31, 2024 and 2023, respectively.

(f) Includes liabilities classified as accounts payable and other liabilities on the Consolidated balance sheets.

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VIEs sponsored by third parties

The Firm enters into transactions with VIEs structured by other parties. These include, for example, acting as a derivative counterparty, liquidity provider, investor, underwriter, placement agent, remarketing agent, trustee or custodian. These transactions are conducted at arm's-length, and individual credit decisions are based on the analysis of the specific VIE, taking into consideration the quality of the underlying assets. Where the Firm does not have the power to direct the activities of the VIE that most significantly impact the VIE's economic performance, or a variable interest that could potentially be significant, the Firm generally does not consolidate the VIE, but it records and reports these positions on its Consolidated balance sheets in the same manner it would record and report positions in respect of any other third-party transaction.

Tax credit vehicles

The Firm holds investments in unconsolidated tax credit vehicles, which are limited partnerships and similar entities that own and operate affordable housing, alternative energy, and other projects. These entities are primarily considered VIEs. A third party is typically the general partner or managing member and has control over the significant activities of the tax credit vehicles, and accordingly the Firm does not consolidate tax credit vehicles. The Firm generally invests in these partnerships as a limited partner and earns a return primarily through the receipt of tax credits allocated to the projects. The maximum loss exposure, represented by equity investments and funding commitments, was \$35.2 billion and \$35.1 billion, of which \$15.0 billion and \$14.7 billion was unfunded at December 31, 2024 and 2023, respectively. The Firm assesses each project and to reduce the risk of loss, may withhold varying amounts of its capital investment until the project qualifies for tax credits. Refer to Note 28 for more information on off-balance sheet lending-related commitments.

Effective January 1, 2024, the Firm adopted updates to the Accounting for Investments in Tax Credit Structures Using the Proportional Amortization Method guidance which expanded the types of tax-oriented investments, beyond affordable housing tax credit investments, that the Firm can elect on a program by program basis, to be accounted for using the proportional amortization method. Refer to Notes 1, 6 and 25 for further information.

The proportional amortization method requires the cost of eligible investments, within an elected program, be amortized in proportion to the tax benefits received with the resulting amortization reported directly in income tax expense, which aligns with the associated tax credits and other tax benefits. Investments must meet certain criteria to be eligible,

including that substantially all of the return is from income tax credits and other income tax benefits.

In addition, under this method deferred taxes are generally not recorded as the investment is now amortized in proportion to the income tax credits and other income tax benefits received. Delayed equity contributions that are unconditional and legally binding or conditional and probable of occurring are recorded in other liabilities with a corresponding increase in the carrying value of the investment. The guidance also requires a reevaluation of eligible investments when significant modifications or events occur that result in a change in the nature of the investment or a change in the Firm's relationship with the underlying project. During the period, there were no significant modifications or events that resulted in a change in the nature of an eligible investment or a change in the Firm's relationship with the underlying project.

The following table provides information on tax-oriented investments for which the Firm elected to apply the proportional amortization method.

Year ended December 31, (in millions)	Alternative energy and affordable housing programs ^(d)		
	2024	2023	2022
Programs for which the Firm elected proportional amortization:			
Carrying value ^(a)	\$ 31,978	\$ 14,644	\$ 12,052
Tax credits and other tax benefits ^(b)	6,379	2,044	1,786
Investments that qualify to be accounted for using proportional amortization:			
Amortization losses recognized as a component of income tax expense	(5,018)	(1,561)	(1,353)
Non-income-tax-related gains/ (losses) and other returns received that are recognized outside of income tax expense ^(c)	142	(1)	(1)

- (a) Recorded in Other assets on the Consolidated balance sheets. Excludes programs to which the Firm does not apply the proportional amortization method, such as historic tax credit and new market tax credit programs.
- (b) Reflected in Income tax expense on the Consolidated statements of income and Operating activities on the Consolidated statements of cash flows.
- (c) Recorded in Other income on the Consolidated statements of income and Operating activities on the Consolidated statements of cash flows.
- (d) As of December 31, 2023 and 2022 represents eligible affordable housing investments.

Customer municipal bond vehicles (TOB trusts)

The Firm may provide various services to customer TOB trusts, including remarketing agent, liquidity or tender option provider. In certain customer TOB transactions, the Firm, as liquidity provider, has entered into a reimbursement agreement with the Residual holder. In those transactions, upon the termination of the vehicle, the Firm has recourse to the third-party Residual holders for any shortfall. The Firm does not have any intent to protect Residual holders from potential losses on any of the underlying municipal bonds. The Firm does not consolidate customer TOB trusts, since the Firm does not have the power to make decisions that significantly impact the economic performance of the municipal bond vehicle.

The Firm's maximum exposure as a liquidity provider to customer TOB trusts at December 31, 2024 and 2023, was \$5.8 billion and \$5.1 billion, respectively. The fair value of assets held by such VIEs at December 31, 2024 and 2023 was \$8.1 billion and \$7.3 billion, respectively.

Loan securitizations

The Firm has securitized and sold a variety of loans, including residential mortgages, credit card receivables, commercial mortgages and other consumer loans. The purposes of these securitization transactions were to satisfy investor demand and to generate liquidity for the Firm.

For loan securitizations in which the Firm is not required to consolidate the trust, the Firm records the transfer of the loan receivable to the trust as a sale when all of the following accounting criteria for a sale are met: (1) the transferred financial assets are legally isolated from the Firm's creditors; (2) the transferee or beneficial interest holder can pledge or exchange the transferred financial assets; and (3) the Firm does not maintain effective control over the transferred financial assets (e.g., the Firm cannot repurchase the transferred assets before their maturity and it does not have the ability to unilaterally cause the holder to return the transferred assets).

For loan securitizations accounted for as a sale, the Firm recognizes a gain or loss based on the difference between the value of proceeds received (including cash, beneficial interests, or servicing assets received) and the carrying value of the assets sold. Gains and losses on securitizations are reported in noninterest revenue.

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Securitization activity

The following table provides information related to the Firm's securitization activities for the years ended December 31, 2024, 2023 and 2022, related to assets held in Firm-sponsored securitization entities that were not consolidated by the Firm, and where sale accounting was achieved at the time of the securitization.

Year ended December 31, (in millions)	2024		2023		2022	
	Residential mortgage ^(d)	Commercial and other ^(e)	Residential mortgage ^(d)	Commercial and other ^(e)	Residential mortgage ^(d)	Commercial and other ^(e)
Principal securitized	\$ 19,988	\$ 17,683	\$ 7,678	\$ 3,901	\$ 10,218	\$ 9,036
All cash flows during the period:^(a)						
Proceeds received from loan sales as financial instruments ^{(b)(c)}	\$ 19,870	\$ 17,346	\$ 7,251	\$ 3,896	\$ 9,783	\$ 8,921
Servicing fees collected	35	35	24	5	62	2
Cash flows received on interests	405	1,303	325	425	489	285

(a) Excludes re-securitization transactions.

(b) Primarily includes Level 2 assets.

(c) The carrying value of the loans accounted for at fair value approximated the proceeds received upon loan sale.

(d) Represents prime mortgages. Excludes loan securitization activity related to U.S. GSEs and government agencies.

(e) Includes commercial mortgages and auto loans.

Key assumptions used to value retained interests originated during the year are shown in the table below.

Year ended December 31,	2024	2023	2022
Residential mortgage retained interest:			
Weighted-average life (in years)	4.3	9.6	10.8
Weighted-average discount rate	7.1 %	4.8 %	4.0 %
Commercial and other retained interest:			
Weighted-average life (in years)	4.5	3.0	5.9
Weighted-average discount rate	6.2 %	4.6 %	2.9 %

Loans and excess MSR sold to U.S. government-sponsored enterprises and loans in securitization transactions pursuant to Ginnie Mae guidelines

In addition to the amounts reported in the securitization activity tables above, the Firm, in the normal course of business, sells originated and purchased mortgage loans and certain originated excess MSR on a nonrecourse basis, predominantly to U.S. GSEs. These loans and excess MSR are sold primarily for the purpose of securitization by the U.S. GSEs, who provide certain guarantee provisions (e.g., credit enhancement of the loans). The Firm also sells loans into securitization transactions pursuant to Ginnie Mae guidelines; these loans are typically insured or guaranteed by another U.S. government agency. The Firm does not consolidate the securitization vehicles underlying these transactions as it is not the primary beneficiary. For a limited number of loan sales, the Firm is obligated to share a portion of the credit risk associated with the sold loans with the purchaser. Refer to Note 28 for additional information about the Firm's loan sales- and securitization-related indemnifications and Note 15 for additional information about the impact of the Firm's sale of certain excess MSR.

The following table summarizes the activities related to loans sold to the U.S. GSEs, and loans in securitization transactions pursuant to Ginnie Mae guidelines.

Year ended December 31, (in millions)	2024	2023	2022
Carrying value of loans sold	\$ 25,765	\$ 19,906	\$ 48,891
Proceeds received from loan sales as cash	\$ 2,380	\$ 300	\$ 22
Proceeds from loan sales as securities ^{(a)(b)}	23,178	19,389	48,096
Total proceeds received from loan sales^(c)	\$ 25,558	\$ 19,689	\$ 48,118
Gains/(losses) on loan sales ^{(d)(e)}	\$ —	\$ —	\$ (25)

(a) Includes securities from U.S. GSEs and Ginnie Mae that are generally sold shortly after receipt or retained as part of the Firm's investment securities portfolio.

(b) Included in level 2 assets.

(c) Excludes the value of MSR retained upon the sale of loans.

(d) Gains/(losses) on loan sales include the value of MSR.

(e) The carrying value of the loans accounted for at fair value approximated the proceeds received upon loan sale.

Options to repurchase delinquent loans

In addition to the Firm's obligation to repurchase certain loans due to material breaches of representations and warranties as discussed in Note 28, the Firm also has the option to repurchase delinquent loans that it services for Ginnie Mae loan pools, as well as for other U.S. government agencies under certain arrangements. The Firm typically elects to repurchase delinquent loans from Ginnie Mae loan pools as it continues to service them and/or manage the foreclosure process in accordance with the applicable requirements, and such loans continue to be insured or guaranteed. When the Firm's repurchase option becomes exercisable, such loans must be reported on the Consolidated balance sheets as a loan with a corresponding liability. Refer to Note 12 for additional information.

The following table presents loans the Firm repurchased or had an option to repurchase, real estate owned, and foreclosed government-guaranteed residential mortgage loans recognized on the Firm's Consolidated balance sheets as of December 31, 2024 and 2023. Substantially all of these loans and real estate are insured or guaranteed by U.S. government agencies.

December 31, (in millions)	2024	2023
Loans repurchased or option to repurchase ^(a)	\$ 577	\$ 597
Real estate owned	6	8
Foreclosed government-guaranteed residential mortgage loans ^(b)	10	22

(a) Primarily all of these amounts relate to loans that have been repurchased from Ginnie Mae loan pools.

(b) Relates to voluntary repurchases of loans, which are included in accrued interest and accounts receivable.

Loan delinquencies and liquidation losses

The table below includes information about components of and delinquencies related to nonconsolidated securitized financial assets held in Firm-sponsored private-label securitization entities, in which the Firm has continuing involvement as of December 31, 2024 and 2023. For loans sold or securitized where servicing is the Firm's only form of continuing involvement, the Firm generally experiences a loss only if the Firm was required to repurchase a delinquent loan or foreclosed asset due to a breach in representations and warranties associated with its loan sale or servicing contracts.

As of or for the year ended December 31, (in millions)	Securitized assets		90 days past due		Net liquidation losses / (recoveries)	
	2024	2023	2024	2023	2024	2023
Securitized loans						
Residential mortgage:						
Prime/ Alt-A & option ARMs	\$ 50,846	\$ 39,319	\$ 501	\$ 440	\$ 10	\$ 14
Subprime	1,847	1,312	113	131	2	5
Commercial and other	125,510	120,262	1,715	2,874	77	60
Total loans securitized	\$ 178,203	\$ 160,893	\$ 2,329	\$ 3,445	\$ 89	\$ 79

Note 15 – Goodwill, mortgage servicing rights, and other intangible assets

Goodwill

Goodwill is recorded upon completion of a business combination as the difference between the purchase price and the fair value of the net assets acquired, and can be adjusted up to one year from the acquisition date as additional information pertaining to facts and circumstances that existed as of the acquisition date is obtained about the fair value of assets acquired and liabilities assumed. Subsequent to initial recognition, goodwill is not amortized but is tested for impairment during the fourth quarter of each fiscal year, or more often if events or circumstances, such as adverse changes in the business climate, indicate that there may be an impairment.

The goodwill associated with each business combination is allocated to the related reporting units, which are generally determined based on how the Firm’s businesses are managed and how they are reviewed. The following table presents goodwill attributed to the reportable business segments and Corporate.

December 31, (in millions)	2024	2023	2022
Consumer & Community Banking	\$ 32,116	\$ 32,116	\$ 32,121
Commercial & Investment Bank	11,236	11,251	10,993
Asset & Wealth Management	8,521	8,582	7,902
Corporate	692	685	646
Total goodwill	\$ 52,565	\$ 52,634	\$ 51,662

The following table presents changes in the carrying amount of goodwill.

(in millions)	2024	2023	2022
Balance at beginning of period	\$ 52,634	\$ 51,662	\$ 50,315
Changes during the period from:			
Business combinations ^(a)	29	917	1,426
Other ^(b)	(98)	55	(79)
Balance at December 31,	\$ 52,565	\$ 52,634	\$ 51,662

(a) For 2024, includes estimated goodwill associated with the acquisition of LayerOne Financial in CIB. For 2023, predominantly represents estimated goodwill associated with the acquisition of the remaining 51% interest in CIFM in AWM and the acquisition of Aumni Inc., predominantly in CIB. For 2022, represents estimated goodwill associated with the acquisitions of Global Shares PLC in AWM, Frosch Travel Group, LLC and Figg, Inc. in CCB, and Renovite Technologies, Inc. and Volkswagen Payments S.A. in CIB.

(b) Primarily foreign currency adjustments.

Goodwill impairment testing

The Firm’s goodwill was not impaired at December 31, 2024, 2023 and 2022.

The goodwill impairment test is generally performed by comparing the current fair value of each reporting unit with its carrying value. If the fair value is in excess of the carrying value, then the reporting unit’s goodwill is considered not to be impaired. If the fair value is less than the carrying value, then an impairment is recognized for the amount by which the reporting unit’s carrying value exceeds its fair value, up to the amount of goodwill allocated to that reporting unit.

The Firm uses the reporting units’ allocated capital plus goodwill and other intangible assets as a proxy for the carrying values of equity for the reporting units in the goodwill impairment testing. Reporting unit equity is determined on a similar basis as the allocation of capital to the LOBs which takes into consideration a variety of factors including capital levels of similarly rated peers and applicable regulatory capital requirements. LOB’s allocated capital levels are incorporated into the Firm’s annual budget process, which is reviewed by the Firm’s Board of Directors and Operating Committee.

The primary method the Firm uses to estimate the fair value of its reporting units is the income approach. This approach projects cash flows for the forecast period and uses the perpetuity growth method to calculate terminal values. These cash flows and terminal values, which are based on the reporting units’ annual budgets and forecasts are then discounted using an appropriate discount rate. The discount rate used for each reporting unit represents an estimate of the cost of equity for that reporting unit and is determined considering the Firm’s overall estimated cost of equity (estimated using the Capital Asset Pricing Model), as adjusted for the risk characteristics specific to each reporting unit (for example, for higher levels of risk or uncertainty associated with the business or management’s forecasts and assumptions). To assess the reasonableness of the discount rates used for each reporting unit, management compares the discount rate to the estimated cost of equity for publicly traded institutions with similar businesses and risk characteristics. In addition, the weighted average cost of equity (aggregating the various reporting units) is compared with the Firm’s overall estimated cost of equity for reasonableness. The valuations derived from the discounted cash flow analysis are then compared with market-based trading and transaction multiples for relevant competitors. Trading and transaction comparables are used as general indicators to assess the overall reasonableness of the estimated fair values, although precise conclusions generally cannot be drawn due to the differences that

naturally exist between the Firm's businesses and competitor institutions.

The Firm also takes into consideration a comparison between the aggregate fair values of the Firm's reporting units and JPMorganChase's market capitalization. In evaluating this comparison, the Firm considers several factors, including (i) a control premium that would exist in a market transaction, (ii) factors related to the level of execution risk that would exist at the Firmwide level that do not exist at the reporting unit level and (iii) short-term market volatility and other factors that do not directly affect the value of individual reporting units.

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

Mortgage servicing rights

MSRs represent the fair value of expected future cash flows for performing servicing activities for others. The fair value considers estimated future servicing fees and ancillary revenue, offset by estimated costs to service the loans, and generally declines over time as net servicing cash flows are received, effectively amortizing the MSR asset against contractual servicing and ancillary fee income. MSRs are either purchased from third parties or recognized upon sale or securitization of mortgage loans if servicing is retained.

As permitted by U.S. GAAP, the Firm has elected to account for its MSRs at fair value. The Firm treats its MSRs as a single class of servicing assets based on the availability of market inputs used to measure the fair value of its MSR asset and its treatment of MSRs as one aggregate pool for risk management purposes. The Firm estimates the fair value of MSRs using an option-adjusted spread ("OAS") model, which projects MSR cash flows over multiple interest rate scenarios in conjunction with the Firm's prepayment model, and then discounts these cash flows at risk-adjusted rates. The model considers portfolio characteristics, contractually specified servicing fees, prepayment assumptions, delinquency rates, costs to service, late charges and other ancillary revenue, and other economic factors. The Firm compares fair value estimates and assumptions to observable market data where available, and also considers recent market activity and actual portfolio experience.

Notes to consolidated financial statements

The fair value of MSR is sensitive to changes in interest rates, including their effect on prepayment speeds. MSRs typically decrease in value when interest rates decline because declining interest rates tend to increase prepayments and therefore reduce the expected life of the net servicing cash flows that comprise the MSR asset. Conversely, securities (e.g., mortgage-backed securities), and certain derivatives (e.g., those for which the Firm receives fixed-rate

interest payments) increase in value when interest rates decline. JPMorganChase uses combinations of derivatives and securities to manage the risk of changes in the fair value of MSRs. The intent is to offset any interest-rate related changes in the fair value of MSRs with changes in the fair value of the related risk management instruments.

The following table summarizes MSR activity for the years ended December 31, 2024, 2023 and 2022.

As of or for the year ended December 31, (in millions, except where otherwise noted)	2024	2023	2022
Fair value at beginning of period	\$ 8,522	\$ 7,973	\$ 5,494
MSR activity:			
Originations of MSRs	325	253	798
Purchase of MSRs ^(a)	601	1,028	1,400
Disposition of MSRs ^(b)	(21)	(188)	(822)
Net additions/(dispositions)	905	1,093	1,376
Changes due to collection/realization of expected cash flows	(1,068)	(1,011)	(936)
Changes in valuation due to inputs and assumptions:			
Changes due to market interest rates and other ^(c)	670	424	2,022
Changes in valuation due to other inputs and assumptions:			
Projected cash flows (e.g., cost to service)	102	(22)	14
Discount rates	14	14	—
Prepayment model changes and other ^(d)	(24)	51	3
Total changes in valuation due to other inputs and assumptions	92	43	17
Total changes in valuation due to inputs and assumptions	762	467	2,039
Fair value at December 31,	\$ 9,121	\$ 8,522	\$ 7,973
Change in unrealized gains/(losses) included in income related to MSRs held at December 31,	\$ 762	\$ 467	\$ 2,039
Contractual service fees, late fees and other ancillary fees included in income	1,606	1,590	1,535
Third-party mortgage loans serviced at December 31, (in billions)	652	632	584
Servicer advances, net of an allowance for uncollectible amounts, at December 31 ^(e)	577	659	758

(a) Includes purchase price adjustments associated with MSRs purchased, primarily as a result of loans that prepaid within 90 days of settlement, allowing the Firm to recover the purchase price.

(b) Includes excess MSRs transferred to agency-sponsored trusts in exchange for stripped mortgage-backed securities ("SMBS"). In each transaction, a portion of the SMBS was acquired by third parties at the transaction date; the Firm acquired the remaining balance of those SMBS as trading securities.

(c) Represents both the impact of changes in estimated future prepayments due to changes in market interest rates, and the difference between actual and expected prepayments.

(d) Represents changes in prepayments other than those attributable to changes in market interest rates.

(e) Represents amounts the Firm pays as the servicer (e.g., scheduled principal and interest, taxes and insurance), which will generally be reimbursed within a short period of time after the advance from future cash flows from the trust or the underlying loans. The Firm's credit risk associated with these servicer advances is minimal because reimbursement of the advances is typically senior to all cash payments to investors. In addition, the Firm maintains the right to stop payment to investors if the collateral is insufficient to cover the advance. However, certain of these servicer advances may not be recoverable if they were not made in accordance with applicable rules and agreements.

The following table presents the components of mortgage fees and related income (including the impact of MSR risk management activities) for the years ended December 31, 2024, 2023 and 2022.

Year ended December 31, (in millions)	2024	2023	2022
CCB mortgage fees and related income			
Production revenue	\$ 627	\$ 421	\$ 497
Net mortgage servicing revenue:			
Operating revenue:			
Loan servicing revenue	1,659	1,634	1,582
Changes in MSR asset fair value due to collection/realization of expected cash flows	(1,067)	(1,011)	(936)
Total operating revenue	592	623	646
Risk management:			
Changes in MSR asset fair value due to market interest rates and other ^(a)	670	424	2,022
Other changes in MSR asset fair value due to other inputs and assumptions in model ^(b)	92	43	17
Change in derivative fair value and other	(603)	(336)	(1,946)
Total risk management	159	131	93
Total net mortgage servicing revenue	751	754	739
Total CCB mortgage fees and related income	1,378	1,175	1,236
All other	23	1	14
Mortgage fees and related income	\$ 1,401	\$ 1,176	\$ 1,250

- (a) Represents both the impact of changes in estimated future prepayments due to changes in market interest rates, and the difference between actual and expected prepayments.
- (b) Represents the aggregate impact of changes in model inputs and assumptions such as projected cash flows (e.g., cost to service), discount rates and changes in prepayments other than those attributable to changes in market interest rates (e.g., changes in prepayments due to changes in home prices).

Changes in fair value based on variations in assumptions generally cannot be easily extrapolated, because the relationship of the change in the assumptions to the change in fair value are often highly interrelated and may not be linear. In the following table, the effect that a change in a particular assumption may have on the fair value is calculated without changing any other assumption. In reality, changes in one factor may result in changes in another, which would either magnify or counteract the impact of the initial change.

The table below outlines the key economic assumptions used to determine the fair value of the Firm's MSR's at December 31, 2024 and 2023, and outlines the sensitivities of those fair values to immediate adverse changes in those assumptions, as defined below.

December 31, (in millions, except rates)	2024	2023
Weighted-average prepayment speed assumption (constant prepayment rate)	6.19 %	6.29 %
Impact on fair value of 10% adverse change	\$ (209)	\$ (206)
Impact on fair value of 20% adverse change	(406)	(401)
Weighted-average option adjusted spread ^(a)	5.97 %	6.10 %
Impact on fair value of 100 basis points adverse change	\$ (391)	\$ (369)
Impact on fair value of 200 basis points adverse change	(751)	(709)

- (a) Includes the impact of operational risk and regulatory capital.

Notes to consolidated financial statements

Other intangible assets

The Firm's finite-lived and indefinite-lived other intangible assets are initially recorded at their fair value primarily upon completion of a business combination. Subsequently, the Firm's finite-lived intangible assets, including core deposit intangibles, customer relationship intangibles, and certain other intangible assets, are amortized over their useful lives, estimated based on the expected future economic benefits to the Firm of the intangible asset. The Firm's intangible assets with indefinite lives, such as asset management contracts, are not subject to amortization and are assessed periodically for impairment.

As of December 31, 2024 and 2023, the gross carrying values of other intangible assets were \$3.8 billion and \$4.2 billion, respectively, and the accumulated amortization was \$879 million and \$994 million, respectively.

As of December 31, 2024 and 2023, the net carrying values consist of finite-lived intangible assets of \$1.7 billion and \$2.0 billion, respectively, as well as indefinite-lived intangible assets, which are not subject to amortization, of \$1.2 billion at both periods.

As of December 31, 2024, other intangible assets reflected core deposit and certain wealth management customer relationship intangibles related to the First Republic acquisition, and asset management contracts related to the Firm's acquisition of the remaining 51% interest in CIFM. Refer to Note 34 for additional information on the First Republic acquisition.

For the years ended December 31, 2024 and 2023, amortization expense was \$339 million and \$315 million, respectively.

The following table presents estimated future amortization expense.

December 31, (in millions)	Finite-lived intangible assets
2025	\$ 288
2026	285
2027	284
2028	267
2029	261

Impairment testing

The Firm's finite-lived and indefinite-lived other intangible assets are assessed for impairment annually or more often if events or changes in circumstances indicate that the asset might be impaired. Once the Firm determines that an impairment exists for an intangible asset, the impairment is recognized in other expense.

Note 16 – Premises and equipment

Premises and equipment includes land carried at cost, as well as buildings, leasehold improvements, internal-use software and furniture and equipment carried at cost less accumulated depreciation and amortization. The Firm's operating lease right-of-use assets are also included in Premises and equipment. Refer to Note 18 for a further discussion of the Firm's right-of-use assets.

The following table presents certain components of Premises and equipment.

December 31, (in millions)	2024	2023
Land, buildings and leasehold improvements	\$ 16,874	\$ 14,862
Right-of-use assets ^(a)	7,930	7,917
Other premises and equipment ^(b)	7,419	7,378
Total premises and equipment	\$ 32,223	\$ 30,157

(a) Excluded \$564 million and \$514 million of right-of-use assets that were recorded in Other assets at December 31, 2024 and 2023, respectively.

(b) Other premises and equipment is comprised of internal-use software and furniture and equipment.

JPMorganChase computes depreciation using the straight-line method over the estimated useful life for buildings and furniture and equipment. The Firm depreciates leasehold improvements over the lesser of the remainder of the lease term or the estimated useful life. The Firm also capitalizes certain costs associated with the acquisition or development of internal-use software. Once the software is ready for its intended use, these costs are amortized on a straight-line basis over the software's expected useful life. The estimated useful lives range from 10 to 50 years for buildings and leasehold improvements, and 3 to 10 years for internal-use software and furniture and equipment.

Impairment is assessed when events or changes in circumstances indicate that the carrying value of an asset may not be fully recoverable.

Note 17 – Deposits

As of December 31, 2024 and 2023, noninterest-bearing and interest-bearing deposits were as follows:

December 31, (in millions)	2024	2023
U.S. offices		
Noninterest-bearing (included \$28,904 and \$75,393 at fair value) ^(a)	\$ 592,500	\$ 643,748
Interest-bearing (included \$1,101 and \$573 at fair value) ^(a)	1,345,914	1,303,100
Total deposits in U.S. offices	1,938,414	1,946,848
Non-U.S. offices		
Noninterest-bearing (included \$2,255 and \$1,737 at fair value) ^(a)	26,806	23,097
Interest-bearing (included \$1,508 and \$681 at fair value) ^(a)	440,812	430,743
Total deposits in non-U.S. offices	467,618	453,840
Total deposits	\$2,406,032	\$ 2,400,688

(a) Includes structured notes classified as deposits for which the fair value option has been elected. Refer to Note 3 for further discussion.

As of December 31, 2024 and 2023, time deposits in denominations that met or exceeded the insured limit were as follows:

December 31, (in millions)	2024	2023
U.S. offices	\$ 149,239	\$ 132,654
Non-U.S. offices ^(a)	92,639	90,187
Total	\$ 241,878	\$ 222,841

(a) Represents all time deposits in non-U.S. offices as these deposits typically exceed the insured limit.

As of December 31, 2024, the remaining maturities of interest-bearing time deposits were as follows:

December 31, (in millions)	U.S.	Non-U.S.	Total
2025	\$222,676	\$ 89,427	\$ 312,103
2026	749	87	836
2027	482	2	484
2028	149	18	167
2029	314	721	1,035
After 5 years	162	129	291
Total	\$224,532	\$ 90,384	\$ 314,916

Notes to consolidated financial statements

Note 18 - Leases

Firm as lessee

At December 31, 2024, JPMorganChase and its subsidiaries were obligated under a number of noncancellable leases, predominantly operating leases for premises and equipment used primarily for business purposes. These leases generally have terms of 20 years or less, determined based on the contractual maturity of the lease, and include periods covered by options to extend or terminate the lease when the Firm is reasonably certain that it will exercise those options. All leases with lease terms greater than twelve months are reported as a lease liability with a corresponding right-of-use ("ROU") asset. None of these lease agreements impose restrictions on the Firm's ability to pay dividends, engage in debt or equity financing transactions or enter into further lease agreements. Certain of these leases contain escalation clauses that will increase rental payments based on maintenance, utility and tax increases, which are non-lease components. The Firm elected not to separate lease and non-lease components of a contract for its real estate leases. As such, real estate lease payments represent payments on both lease and non-lease components.

Operating lease liabilities and ROU assets are recognized at the lease commencement date based on the present value of the future minimum lease payments over the lease term. The future lease payments are discounted at a rate that estimates the Firm's collateralized borrowing rate for financing instruments of a similar term and are included in accounts payable and other liabilities. The operating lease ROU assets, predominantly included in premises and equipment, also include any lease prepayments made, plus initial direct costs incurred, less any lease incentives received. Rental expense associated with operating leases is recognized on a straight-line basis over the lease term, and generally included in occupancy expense in the Consolidated statements of income.

The carrying values of the Firm's operating leases were as follows:

December 31, (in millions, except where otherwise noted)	2024	2023
Right-of-use assets	\$ 8,494	\$ 8,431
Lease liabilities	8,900	8,833
Weighted average remaining lease term (in years)	8.3	8.4
Weighted average discount rate	4.24 %	4.01 %

Supplemental cash flow information

Cash paid for amounts included in the measurement of lease liabilities - operating cash flows	\$ 1,734	\$ 1,662
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Supplemental non-cash information

Right-of-use assets obtained in exchange for operating lease obligations	\$ 1,565	\$ 2,094
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Year ended December 31, (in millions)	2024	2023
Rental expense		
Gross rental expense	\$ 2,231	\$ 2,079
Sublease rental income	(41)	(72)
Net rental expense	\$ 2,190	\$ 2,007

The following table presents future payments under operating leases as of December 31, 2024.

Year ended December 31, (in millions)	
2025	1,709
2026	1,553
2027	1,412
2028	1,248
2029	1,048
After 2029	3,721
Total future minimum lease payments	10,691
Less: Imputed interest	(1,791)
Total	\$ 8,900

In addition to the table above, as of December 31, 2024, the Firm had additional future operating lease commitments of \$887 million that were signed but had not yet commenced. These operating leases will commence between 2025 and 2027 with lease terms up to 21 years.

Firm as lessor

The Firm provides auto and equipment lease financing to its customers through lease arrangements with lease terms that may contain renewal, termination and/or purchase options. The Firm's lease financings are predominantly auto operating leases. These assets subject to operating leases are recognized in other assets on the Firm's Consolidated balance sheets and are depreciated on a straight-line basis over the lease term to reduce the asset to its estimated residual value. Depreciation expense is included in technology, communications and equipment expense in the Consolidated statements of income. The Firm's lease income is generally recognized on a straight-line basis over the lease term and is included in other income in the Consolidated statements of income.

On a periodic basis, the Firm assesses leased assets for impairment, and if the carrying amount of the leased asset exceeds the undiscounted cash flows from the lease payments and the estimated residual value upon disposition of the leased asset, an impairment is recognized.

The risk of loss on auto and equipment leased assets relating to the residual value of the leased assets is monitored through projections of the asset residual values at lease origination and periodic review of residual values, and is mitigated through arrangements with certain manufacturers or lessees.

The following table presents the carrying value of assets subject to leases reported on the Consolidated balance sheets.

December 31, (in millions)	2024	2023
Carrying value of assets subject to operating leases, net of accumulated depreciation	\$ 12,988	\$ 10,663
Accumulated depreciation	2,509	3,288

The following table presents the Firm's operating lease income and the related depreciation expense on the Consolidated statements of income.

Year ended December 31, (in millions)	2024	2023	2022
Operating lease income	\$ 2,795	\$ 2,843	\$ 3,654
Depreciation expense	1,685	1,778	2,475

The following table presents future receipts under operating leases as of December 31, 2024.

Year ended December 31, (in millions)	
2025	\$ 2,381
2026	1,707
2027	704
2028	47
2029	5
After 2029	4
Total future minimum lease receipts	\$ 4,848

Notes to consolidated financial statements

Note 19 – Accounts payable and other liabilities

Accounts payable and other liabilities consist of brokerage payables, which include payables to customers and payables related to security purchases that did not settle, as well as other accrued expenses, such as compensation accruals, credit card rewards liability, merchant servicing payables, operating lease liabilities, accrued interest payables, income tax payables and litigation reserves.

The following table presents the components of accounts payable and other liabilities.

December 31, (in millions)	2024	2023
Brokerage payables	\$ 153,153	\$ 161,960
Other payables and liabilities ^(a)	127,519	128,347
Total accounts payable and other liabilities	\$ 280,672	\$ 290,307

(a) Includes credit card rewards liability of \$14.4 billion and \$13.2 billion at December 31, 2024 and 2023, respectively.

The credit card rewards liability represents the estimated cost of rewards points earned and expected to be redeemed by cardholders. The liability is accrued as the cardholder earns the benefit and is reduced when the cardholder redeems points. The redemption rate and cost per point assumptions are key assumptions to estimate the liability and the current period impact is recognized in Card Income.

Refer to Notes 7, 18, 25 and 30 for additional information on accrued interest, operating lease liabilities, income taxes and litigation reserves, respectively.

Note 20 – Long-term debt

JPMorganChase issues long-term debt denominated in various currencies, predominantly U.S. dollars, with both fixed and variable interest rates. Included in senior and subordinated debt below are various equity-linked or other indexed instruments, which the Firm has elected to measure at fair value. Changes in fair value are recorded in principal transactions revenue in the Consolidated statements of income, except for unrealized gains/(losses) due to DVA which are recorded in OCI. The following table is a summary of long-term debt carrying values (including unamortized premiums and discounts, issuance costs, valuation adjustments and fair value adjustments, where applicable) by remaining contractual maturity as of December 31, 2024.

By remaining maturity at December 31, (in millions, except rates)	2024				2023	
	Under 1 year	1-5 years	After 5 years	Total	Total	
Parent company						
Senior debt:	Fixed rate	\$ 7,112	\$ 90,132	\$ 117,667	\$ 214,911	\$ 200,984
	Variable rate	255	6,838	1,562	8,655	8,105
	Interest rates ^(f)	3.04 %	3.40 %	4.02 %	3.71 %	3.32 %
Subordinated debt:	Fixed rate	\$ 302	\$ 5,582	\$ 8,573	\$ 14,457	\$ 17,725
	Variable rate	—	—	—	—	—
	Interest rates ^(f)	7.75 %	4.72 %	4.69 %	4.76 %	4.62 %
	Subtotal	\$ 7,669	\$ 102,552	\$ 127,802	\$ 238,023	\$ 226,814
Subsidiaries						
Federal Home Loan Banks advances:	Fixed rate	\$ 7,582	\$ 1,651	\$ 24	\$ 9,257	\$ 23,246
	Variable rate	4,000	16,000	—	20,000	18,000
	Interest rates ^(f)	4.42 %	4.84 %	5.91 %	4.67 %	4.89 %
Purchase Money Note ^(a) :	Fixed rate	\$ —	\$ 49,208	\$ —	\$ 49,208	\$ 48,989
	Interest rates ^(f)	— %	3.40 %	— %	3.40 %	3.40 %
Senior debt:	Fixed rate	\$ 2,361	\$ 16,695	\$ 7,489	\$ 26,545	\$ 20,745
	Variable rate	19,350	30,981	6,451	56,782	52,048
	Interest rates ^(f)	5.39 %	5.18 %	1.44 %	3.81 %	3.91 %
Subordinated debt:	Fixed rate	\$ —	\$ —	\$ —	\$ —	\$ 255
	Variable rate	—	—	—	—	—
	Interest rates ^(f)	— %	— %	— %	— %	8.25 %
	Subtotal	\$ 33,293	\$ 114,535	\$ 13,964	\$ 161,792	\$ 163,283
Junior subordinated debt:	Fixed rate	\$ —	\$ —	\$ 488	\$ 488	\$ 518
	Variable rate	—	421	694	1,115	1,210
	Interest rates ^(f)	— %	5.35 %	7.01 %	6.58 %	7.14 %
	Subtotal	\$ —	\$ 421	\$ 1,182	\$ 1,603	\$ 1,728
Total long-term debt^{(b)(c)(d)}		\$ 40,962	\$ 217,508	\$ 142,948	\$ 401,418	\$ 391,825
Long-term beneficial interests:						
	Fixed rate	\$ 999	\$ 4,313	\$ —	\$ 5,312	\$ 2,998
	Variable rate	—	27	139	166	125
	Interest rates ^(f)	3.97 %	4.82 %	2.92 %	4.62 %	4.69 %
Total long-term beneficial interests^(e)		\$ 999	\$ 4,340	\$ 139	\$ 5,478	\$ 3,123

(a) Reflects the Purchase Money Note associated with First Republic. Refer to Note 34 for additional information.

(b) Included long-term debt of \$80.9 billion and \$93.0 billion secured by assets totaling \$185.5 billion and \$218.5 billion at December 31, 2024 and 2023, respectively. The amount of long-term debt secured by assets does not include amounts related to hybrid instruments.

(c) Included \$100.8 billion and \$87.9 billion of long-term debt accounted for at fair value at December 31, 2024 and 2023, respectively.

(d) Included \$13.5 billion and \$12.5 billion of outstanding zero-coupon notes at December 31, 2024 and 2023, respectively. The aggregate principal amount of these notes at their respective maturities is \$50.2 billion and \$47.9 billion, respectively. The aggregate principal amount reflects the contractual principal payment at maturity, which may exceed the contractual principal payment at the Firm's next call date, if applicable.

(e) Included on the Consolidated balance sheets in beneficial interests issued by consolidated VIEs. Also included amounts accounted for at fair value which were not material as of December 31, 2024 and 2023. Excluded short-term commercial paper and other short-term beneficial interests of \$21.8 billion and \$19.9 billion at December 31, 2024 and 2023, respectively.

(f) The interest rates shown are the weighted average of contractual rates in effect at December 31, 2024 and 2023, respectively, including non-U.S. dollar fixed- and variable-rate issuances, which excludes the effects of the associated derivative instruments used in hedge accounting relationships, if applicable. The interest rates shown exclude structured notes accounted for at fair value.

(g) As of December 31, 2024, long-term debt in the aggregate of \$297.1 billion was redeemable at the option of JPMorganChase, in whole or in part, prior to maturity, based on the terms specified in the respective instruments.

(h) The aggregate carrying values of debt that matures in each of the five years subsequent to 2024 is \$41.0 billion in 2025, \$64.5 billion in 2026, \$32.7 billion in 2027, \$93.4 billion in 2028 and \$26.9 billion in 2029.

Notes to consolidated financial statements

The weighted-average contractual interest rates for total long-term debt excluding structured notes accounted for at fair value were 3.82% and 3.65% as of December 31, 2024 and 2023, respectively. In order to modify exposure to interest rate and currency exchange rate movements, JPMorganChase utilizes derivative instruments, primarily interest rate and cross-currency interest rate swaps, in conjunction with some of its debt issuances. The use of these instruments modifies the Firm's interest expense on the associated debt. The modified weighted-average interest rates for total long-term debt, including the effects of related derivative instruments, were 5.15% and 5.20% as of December 31, 2024 and 2023, respectively.

JPMorgan Chase & Co. has guaranteed certain long-term debt of its subsidiaries, including structured notes. These guarantees rank pari passu with the Firm's other unsecured and unsubordinated indebtedness. The amount of such guaranteed long-term debt and structured notes was \$41.2 billion and \$41.1 billion at December 31, 2024 and 2023, respectively.

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

Note 21 – Preferred stock

At December 31, 2024 and 2023, JPMorganChase was authorized to issue 200 million shares of preferred stock, in one or more series, with a par value of \$1 per share. In the event of a liquidation or dissolution of the Firm, JPMorganChase's preferred stock then outstanding takes precedence over the Firm's common stock with respect to the payment of dividends and the distribution of assets.

The following is a summary of JPMorganChase's non-cumulative preferred stock outstanding as of December 31, 2024 and 2023, and the quarterly dividend declarations for the years ended December 31, 2024, 2023 and 2022.

	Shares ^(a)		Carrying value (in millions)		Issue date	Contractual rate in effect at December 31, 2024	Earliest redemption date ^(b)	Floating annualized rate ^(c)	Dividend declared per share ^(d)		
	December 31,		December 31,						Year ended December 31,		
	2024	2023	2024	2023					2024	2023	2022
Fixed-rate:											
Series DD	169,625	169,625	1,696	1,696	9/21/2018	5.750	12/1/2023	NA	575.00	575.00	575.00
Series EE	185,000	185,000	1,850	1,850	1/24/2019	6.000	3/1/2024	NA	600.00	600.00	600.00
Series GG	90,000	90,000	900	900	11/7/2019	4.750	12/1/2024	NA	475.00	475.00	475.00
Series JJ	150,000	150,000	1,500	1,500	3/17/2021	4.550	6/1/2026	NA	455.00	455.00	455.00
Series LL	185,000	185,000	1,850	1,850	5/20/2021	4.625	6/1/2026	NA	462.52	462.52	462.52
Series MM	200,000	200,000	2,000	2,000	7/29/2021	4.200	9/1/2026	NA	420.00	420.00	420.00
Fixed-to-floating rate:											
Series I	—	—	\$ —	\$ —	4/23/2008	— %	4/30/2018	— %	\$ —	\$ —	\$ 375.03
Series Q	—	150,000	—	1,500	4/23/2013	—	5/1/2023	SOFR + 3.25	220.45	801.41 ^(g)	515.00
Series R	—	150,000	—	1,500	7/29/2013	—	8/1/2023	SOFR + 3.30	221.70	756.73 ^(h)	600.00
Series S	—	200,000	—	2,000	1/22/2014	—	2/1/2024	SOFR + 3.78	233.70 ^(e)	675.00	675.00
Series U	—	100,000	—	1,000	3/10/2014	—	4/30/2024	SOFR + 3.33	153.13	612.50	612.50
Series V	—	—	—	—	6/9/2014	—	7/1/2019	—	—	—	340.91
Series X	—	160,000	—	1,600	9/23/2014	—	10/1/2024	SOFR + 3.33	457.50	610.00	610.00
Series CC	125,750	125,750	1,258	1,258	10/20/2017	SOFR + 2.58	11/1/2022	SOFR + 2.58	812.73	804.08	526.27 ⁽ⁱ⁾
Series FF	—	225,000	—	2,250	7/31/2019	—	8/1/2024	SOFR + 3.38	250.00	500.00	500.00
Series HH	300,000	300,000	3,000	3,000	1/23/2020	4.600	2/1/2025	SOFR + 3.125	460.00	460.00	460.00
Series II	150,000	150,000	1,500	1,500	2/24/2020	4.000	4/1/2025	SOFR + 2.745	400.00	400.00	400.00
Series KK	200,000	200,000	2,000	2,000	5/12/2021	3.650	6/1/2026	CMT + 2.85	365.00	365.00	365.00
Series NN	250,000	NA	2,496	NA	3/12/2024	6.875	6/1/2029	CMT + 2.737	494.63 ^(f)	NA	NA
Total preferred stock	2,005,375	2,740,375	\$20,050	\$ 27,404							

(a) Represented by depositary shares.

(b) Each series of fixed-to-floating rate preferred stock converts to a floating rate at the earliest redemption date.

(c) Effective June 30, 2023, CME Term SOFR became the replacement reference rate for fixed-to-floating rate preferred stock issued by the Firm that formerly referenced U.S. dollar LIBOR. References in the table to "SOFR" mean a floating annualized rate equal to three-month term SOFR (plus a spread adjustment of 0.26% per annum) plus the spreads noted. References to "CMT" mean a floating annualized rate equal to the five-year Constant Maturity Treasury ("CMT") rate plus the spreads noted.

(d) Dividends on preferred stock are discretionary and non-cumulative. When declared, dividends are declared quarterly. Dividends are payable quarterly on fixed-rate preferred stock. Dividends are payable semiannually on fixed-to-floating rate preferred stock while at a fixed rate, and payable quarterly after converting to a floating rate.

(e) The dividend rate for Series S preferred stock became floating and payable quarterly starting on February 1, 2024; prior to which the dividend rate was fixed at 6.75% or \$337.50 per share payable semiannually. The dividend rate for each quarterly dividend period commencing on February 1, 2024 was three-month term SOFR (plus a spread adjustment of 0.26% per annum) plus the spread of 3.78%.

(f) The initial dividend declared was prorated based on the number of days outstanding for the period. Dividends were declared quarterly thereafter at the contractual rate.

(g) The dividend rate for Series Q preferred stock became floating and payable quarterly starting on May 1, 2023; prior to which the dividend rate was fixed at 5.15% or \$257.50 per share payable semiannually. The dividend rate for each quarterly dividend period commencing on August 1, 2023 was three-month term SOFR (plus a spread adjustment of 0.26% per annum) plus the spread of 3.25%.

(h) The dividend rate for Series R preferred stock became floating and payable quarterly starting on August 1, 2023; prior to which the dividend rate was fixed at 6.00% or \$300.00 per share payable semiannually. The dividend rate for each quarterly dividend period commencing on August 1, 2023 was three-month term SOFR (plus a spread adjustment of 0.26% per annum) plus the spread of 3.30%.

(i) The dividend rate for Series CC preferred stock became floating and payable quarterly starting on November 1, 2022; prior to which the dividend rate was fixed at 4.625% or \$231.25 per share payable semiannually. The dividend rate for each quarterly dividend period commencing on August 1, 2023 was three-month term SOFR (plus a spread adjustment of 0.26% per annum) plus the spread of 2.58%.

Notes to consolidated financial statements

Each series of preferred stock has a liquidation value and redemption price per share of \$10,000, plus accrued but unpaid dividends. The aggregate liquidation value was \$20.2 billion at December 31, 2024.

Issuances

On February 4, 2025, the Firm issued \$3.0 billion of fixed-rate reset non-cumulative preferred stock, Series OO.

On March 12, 2024, the Firm issued \$2.5 billion of fixed-rate reset non-cumulative preferred stock, Series NN.

Redemptions

On February 1, 2025, the Firm redeemed all \$3.0 billion of its fixed-to-floating rate non-cumulative preferred stock, Series HH.

On October 1, 2024, the Firm redeemed all \$1.6 billion of its fixed-to-floating rate non-cumulative preferred stock, Series X.

On August 1, 2024, the Firm redeemed all \$2.3 billion of its fixed-to-floating rate non-cumulative preferred stock, Series FF.

On May 1, 2024, the Firm redeemed all \$5.0 billion of its fixed-to-floating rate non-cumulative preferred stock, Series Q, Series R and Series S.

On April 30, 2024, the Firm redeemed all \$1.0 billion of its fixed-to-floating rate non-cumulative preferred stock, Series U.

Redemption rights

Each series of the Firm's preferred stock may be redeemed on any dividend payment date on or after the earliest redemption date for that series. All outstanding preferred stock series may also be redeemed following a "capital treatment event," as described in the terms of each series. Any redemption of the Firm's preferred stock is subject to non-objection from the Board of Governors of the Federal Reserve System (the "Federal Reserve").

Note 22 – Common stock

At December 31, 2024 and 2023, JPMorganChase was authorized to issue 9.0 billion shares of common stock with a par value of \$1 per share.

Common shares issued which were reissued from treasury by the Firm during the years ended December 31, 2024, 2023 and 2022 were as follows.

Year ended December 31, (in millions)	2024	2023	2022
Total issued – balance at January 1	4,104.9	4,104.9	4,104.9
Treasury – balance at January 1	(1,228.3)	(1,170.7)	(1,160.8)
Repurchase	(91.7)	(69.5)	(23.1)
Reissuance:			
Employee benefits and compensation plans	11.9	10.9	12.0
Employee stock purchase plans	0.8	1.0	1.2
Total reissuance	12.7	11.9	13.2
Total treasury – balance at December 31	(1,307.3)	(1,228.3)	(1,170.7)
Outstanding at December 31	2,797.6	2,876.6	2,934.2

On June 28, 2024, the Firm announced that its Board of Directors had authorized a new \$30 billion common share repurchase program, effective July 1, 2024. Through June 30, 2024, the Firm was authorized to purchase up to \$30 billion of common shares under its previously-approved common share repurchase program that was announced on April 13, 2022.

The following table sets forth the Firm's repurchases of common stock for the years ended December 31, 2024, 2023 and 2022.

Year ended December 31, (in millions)	2024	2023	2022 ^(b)
Total number of shares of common stock repurchased	91.7	69.5	23.1
Aggregate purchase price of common stock repurchases ^(a)	\$18,841	\$ 9,898	\$ 3,122

(a) Excludes excise tax and commissions. As part of the Inflation Reduction Act of 2022, a 1% excise tax is imposed on net share repurchases commencing January 1, 2023.

(b) In the second half of 2022, the Firm temporarily suspended share repurchases, which it resumed in the first quarter of 2023 under its common share repurchase program.

The Board of Directors' authorization to repurchase common shares is utilized at management's discretion. The \$30 billion common share repurchase program approved by the Board of Directors does not establish specific price targets or timetables. Management determines the amount and timing of common share repurchases based on various factors, including market conditions; legal and regulatory considerations affecting the amount and timing of repurchase activity; the Firm's capital position (taking into account goodwill and intangibles); organic capital generation; current and proposed future capital requirements; and other investment opportunities. The amount of common shares that the Firm repurchases in any period may be substantially more or less than the amounts estimated or actually repurchased in prior periods, reflecting the dynamic nature of the decision-making process. The Firm's common share repurchases may be suspended by management at any time; and may be executed through open market purchases or privately negotiated transactions, or utilizing Rule 10b5-1 plans, which are written trading plans that the Firm may enter into from time to time under Rule 10b5-1 of the Securities Exchange Act of 1934 and which allow the Firm to repurchase its common shares during periods when it may otherwise not be repurchasing common shares — for example, during internal trading blackout periods.

As of December 31, 2024, approximately 58.8 million shares of common stock were reserved for issuance under various employee incentive, compensation, option and stock purchase plans, and directors' compensation plans.

Notes to consolidated financial statements

Note 23 – Earnings per share

Basic earnings per share (“EPS”) is calculated using the two-class method. Under the two-class method, all earnings (distributed and undistributed) are allocated to common stock and participating securities. JPMorganChase grants RSUs under its share-based compensation programs, predominantly all of which entitle recipients to receive nonforfeitable dividends during the vesting period on a basis equivalent to dividends paid to holders of the Firm’s common stock. These unvested RSUs meet the definition of participating securities based on their respective rights to receive nonforfeitable dividends, and they are treated as a separate class of securities in computing basic EPS. Participating securities are not included as incremental shares in computing diluted EPS; refer to Note 9 for additional information.

Diluted EPS incorporates the potential impact of contingently issuable shares, including awards which require future service as a condition of delivery of the underlying common stock. Diluted EPS is calculated under both the two-class and treasury stock methods, and the more dilutive amount is reported. For each of the periods presented in the table below, diluted EPS calculated under the two-class method was more dilutive.

The following table presents the calculation of net income applicable to common stockholders and basic and diluted EPS for the years ended December 31, 2024, 2023 and 2022.

Year ended December 31, (in millions, except per share amounts)	2024	2023	2022
Basic earnings per share			
Net income	\$ 58,471	\$ 49,552	\$ 37,676
Less: Preferred stock dividends	1,259	1,501	1,595
Net income applicable to common equity	57,212	48,051	36,081
Less: Dividends and undistributed earnings allocated to participating securities	344	291	189
Net income applicable to common stockholders	\$ 56,868	\$ 47,760	\$ 35,892
Total weighted-average basic shares outstanding	2,873.9	2,938.6	2,965.8
Net income per share	\$ 19.79	\$ 16.25	\$ 12.10
Diluted earnings per share			
Net income applicable to common stockholders	\$ 56,868	\$ 47,760	\$ 35,892
Total weighted-average basic shares outstanding	2,873.9	2,938.6	2,965.8
Add: Dilutive impact of unvested PSUs, nondividend-earning RSUs and SARs	5.1	4.5	4.2
Total weighted-average diluted shares outstanding	2,879.0	2,943.1	2,970.0
Net income per share	\$ 19.75	\$ 16.23	\$ 12.09

Note 24 – Accumulated other comprehensive income/(loss)

AOCI includes the after-tax change in unrealized gains and losses on investment securities, foreign currency translation adjustments (including the impact of related derivatives), fair value changes of excluded components on fair value hedges, cash flow hedging activities, net gain/(loss) related to the Firm's defined benefit pension and OPEB plans, and fair value option-elected liabilities arising from changes in the Firm's own credit risk (DVA).

Year ended December 31, (in millions)	Unrealized gains/(losses) on investment securities	Translation adjustments, net of hedges	Fair value hedges	Cash flow hedges	Defined benefit pension and OPEB plans	DVA on fair value option elected liabilities	Accumulated other comprehensive income/(loss)
Balance at December 31, 2021	\$ 2,640	\$ (934)	\$ (131)	\$ (296)	\$ (210)	\$ (1,153)	\$ (84)
Net change	(11,764)	(611)	98	(5,360)	(1,241)	1,621	(17,257)
Balance at December 31, 2022	\$ (9,124) ^(a)	\$ (1,545)	\$ (33)	\$ (5,656)	\$ (1,451)	\$ 468	\$ (17,341)
Net change	5,381	329	(101)	1,724	373	(808)	6,898
Balance at December 31, 2023	\$ (3,743) ^(a)	\$ (1,216)	\$ (134)	\$ (3,932)	\$ (1,078)	\$ (340)	\$ (10,443)
Net change	(87)	(858)	(87)	(882)	(63)	(36)	(2,013)
Balance at December 31, 2024	\$ (3,830) ^(a)	\$ (2,074)	\$ (221)	\$ (4,814)	\$ (1,141)	\$ (376)	\$ (12,456)

(a) Included after-tax net unamortized unrealized gains/(losses) of \$(651) million, \$(895) million, and \$(1.3) billion for the years ended 2024, 2023 and 2022, respectively, related to AFS securities that have been transferred to HTM. As of December 31, 2023 included after-tax net unamortized unrealized gains/(losses) of \$(29) million related to HTM securities that have been transferred to AFS as permitted by the new hedge accounting guidance adopted on January 1, 2023. Refer to Note 10 for further information.

The following table presents the pre-tax and after-tax changes in the components of OCI.

Year ended December 31, (in millions)	2024			2023			2022		
	Pre-tax	Tax effect	After-tax	Pre-tax	Tax effect	After-tax	Pre-tax	Tax effect	After-tax
Unrealized gains/(losses) on investment securities:									
Net unrealized gains/(losses) arising during the period	\$ (1,135)	\$ 274	\$ (861)	\$ 3,891	\$ (922)	\$ 2,969	\$ (17,862)	\$ 4,290	\$ (13,572)
Reclassification adjustment for realized (gains)/ losses included in net income ^(a)	1,021	(247)	774	3,180	(768)	2,412	2,380	(572)	1,808
Net change	(114)	27	(87)	7,071	(1,690)	5,381	(15,482)	3,718	(11,764)
Translation adjustments ^(b):									
Translation	(4,385)	250	(4,135)	1,714	(95)	1,619	(3,574)	265	(3,309)
Hedges	4,322	(1,045)	3,277	(1,697)	407	(1,290)	3,553	(855)	2,698
Net change	(63)	(795)	(858)	17	312	329	(21)	(590)	(611)
Fair value hedges, net change ^(c)	(115)	28	(87)	(134)	33	(101)	130	(32)	98
Cash flow hedges:									
Net unrealized gains/(losses) arising during the period	(3,742)	904	(2,838)	483	(114)	369	(7,473)	1,794	(5,679)
Reclassification adjustment for realized (gains)/ losses included in net income ^(d)	2,579	(623)	1,956	1,775	(420)	1,355	420	(101)	319
Net change	(1,163)	281	(882)	2,258	(534)	1,724	(7,053)	1,693	(5,360)
Defined benefit pension and OPEB plans, net change ^(e)	(131)	68	(63)	421	(48)	373	(1,459)	218	(1,241)
DVA on fair value option elected liabilities, net change	(45)	9	(36)	(1,066)	258	(808)	2,141	(520)	1,621
Total other comprehensive income/(loss)	\$ (1,631)	\$ (382)	\$ (2,013)	\$ 8,567	\$ (1,669)	\$ 6,898	\$ (21,744)	\$ 4,487	\$ (17,257)

- (a) The pre-tax amount is reported in Investment securities gains/(losses) in the Consolidated statements of income.
- (b) Reclassifications of pre-tax realized gains/(losses) on translation adjustments and related hedges are reported in other income/expense in the Consolidated statements of income. During the year ended December 31, 2024, the Firm reclassified a net pre-tax gain of \$7 million to other income/expense, of which \$89 million gain related to net investment hedges and \$(82) million loss related to cumulative translation adjustments. During the year ended December 31, 2023, the Firm reclassified a net pre-tax loss of \$(3) million. During the year ended December 31, 2022, the Firm reclassified a net pre-tax loss of \$(8) million.
- (c) Represents changes in fair value of cross-currency swaps attributable to changes in cross-currency basis spreads, which are excluded from the assessment of hedge effectiveness and recorded in other comprehensive income. The initial cost of cross-currency basis spreads is recognized in earnings as part of the accrual of interest on the cross-currency swaps.
- (d) The pre-tax amounts are primarily recorded in noninterest revenue, net interest income and compensation expense in the Consolidated statements of income.
- (e) During the year ended December 31, 2022, a remeasurement of the Firm's U.S. principal defined benefit plan in the third quarter, was required as a result of a pension settlement. The remeasurement resulted in a net decrease of \$1.4 billion in pre-tax AOCI.

Notes to consolidated financial statements

Note 25 – Income taxes

JPMorganChase and its eligible subsidiaries file a consolidated U.S. federal income tax return. JPMorganChase uses the asset and liability method to provide for income taxes on all transactions recorded in the Consolidated Financial Statements. This method requires that income taxes reflect the expected future tax consequences of temporary differences between the carrying amounts of assets or liabilities for book and tax purposes. Accordingly, a deferred tax asset or liability for each temporary difference is determined based on the tax rates that the Firm expects to be in effect when the underlying items of income and expense are realized. JPMorganChase's expense for income taxes includes the current and deferred portions of that expense. A valuation allowance is established to reduce deferred tax assets to the amount the Firm expects to realize.

Due to the inherent complexities arising from the nature of the Firm's businesses, and from conducting business and being taxed in a substantial number of jurisdictions, significant judgments and estimates are required to be made. Agreement of tax liabilities between JPMorganChase and the many tax jurisdictions in which the Firm files tax returns may not be finalized for several years. Thus, the Firm's final tax-related assets and liabilities may ultimately be different from those currently reported.

Effective January 1, 2024, the Firm adopted updates to the Accounting for Investments in Tax Credit Structures Using the Proportional Amortization Method guidance, under the modified retrospective method. Refer to Notes 1, 6 and 14 for additional information.

Effective tax rate and expense

The following table presents a reconciliation of the applicable statutory U.S. federal income tax rate to the effective tax rate.

Year ended December 31,	2024	2023	2022
Statutory U.S. federal tax rate	21.0 %	21.0 %	21.0 %
Increase/(decrease) in tax rate resulting from:			
U.S. state and local income taxes, net of U.S. federal income tax benefit	3.1	2.8	3.5
Tax-exempt income	(0.7)	(0.9)	(0.9)
Non-U.S. earnings	1.4	1.5	0.4
Business tax credits	(2.4)	(4.4)	(5.4)
Other, net	(0.3)	(0.4)	(0.2)
Effective tax rate	22.1 %	19.6 % ^(a)	18.4 %

(a) Income tax expense associated with the First Republic acquisition was reflected in the estimated bargain purchase gain, which resulted in a reduction in the Firm's effective tax rate.

The following table reflects the components of income tax expense/(benefit) included in the Consolidated statements of income.

Income tax expense/(benefit)

Year ended December 31, (in millions)	2024	2023	2022
Current income tax expense/(benefit)			
U.S. federal	\$ 7,091	\$ 8,973	\$ 5,606
Non-U.S.	4,753	4,355	2,992
U.S. state and local	2,762	3,266	2,630
Total current income tax expense/(benefit)	14,606	16,594	11,228
Deferred income tax expense/(benefit)			
U.S. federal	1,771	(3,475)	(2,004)
Non-U.S.	72	35	(154)
U.S. state and local	161	(1,094)	(580)
Total deferred income tax expense/(benefit)	2,004	(4,534)	(2,738)
Total income tax expense	\$ 16,610	\$ 12,060	\$ 8,490

Total income tax expense includes \$314 million, \$68 million and \$331 million of tax benefits in 2024, 2023, and 2022, respectively, resulting from the resolution of tax audits.

Tax effect of items recorded in stockholders' equity

The preceding table does not reflect the tax effect of certain items that are recorded each period directly in stockholders' equity, which are predominantly reflected in OCI as disclosed in Note 24. For the year ended December 31, 2024, stockholders' equity reflected the tax effect associated with the Firm's adoption of the Accounting for Investments in Tax Credit Structures Using the Proportional Amortization Method guidance. For the year ended December 31, 2023, stockholders' equity reflected the tax effect associated with the Firm's adoption of the TDR accounting guidance. Both of the respective adoptions were recognized in retained earnings. Refer to Note 1, 6 and 14 for further information.

Results from U.S. and non-U.S. earnings

The following table presents the U.S. and non-U.S. components of income before income tax expense.

Year ended December 31, (in millions)	2024	2023	2022
U.S.	\$ 59,472	\$ 46,868	\$ 34,626
Non-U.S. ^(a)	15,609	14,744	11,540
Income before income tax expense	\$ 75,081	\$ 61,612	\$ 46,166

(a) For purposes of this table, non-U.S. income is defined as income generated from operations located outside the U.S.

The Firm will recognize any U.S. income tax expense it may incur on global intangible low tax income as income tax expense in the period in which the tax is incurred.

Deferred taxes

Deferred income tax expense/(benefit) reflects the differences between assets and liabilities measured for financial reporting purposes versus income tax return purposes. Deferred tax assets are recognized if, in management's judgment, their realizability is determined to be more likely than not. If a deferred tax asset is determined to be unrealizable, a valuation allowance is established. The significant components of deferred tax assets and liabilities are reflected in the following table, the net deferred tax assets are reflected in other assets on the Firm's Consolidated balance sheets.

December 31, (in millions)	2024	2023
Deferred tax assets		
Allowance for loan losses	\$ 6,117	\$ 5,809
Employee benefits	1,165	1,247
Accrued expenses and other	8,881	9,887 ^(a)
Depreciation and amortization	386	—
Non-U.S. operations	948	860
Tax attribute carryforwards	352	290
Gross deferred tax assets	17,849	18,093
Valuation allowance	(249)	(183)
Deferred tax assets, net of valuation allowance	\$ 17,600	\$ 17,910
Deferred tax liabilities		
Depreciation and amortization	\$ —	\$ 779
Mortgage servicing rights, net of hedges	1,912	1,794
Leasing transactions	2,249	2,254
Other, net	1,264	2,935
Gross deferred tax liabilities	5,425	7,762
Net deferred tax assets	\$ 12,175	\$ 10,148

(a) Includes the estimated net deferred tax asset associated with the First Republic acquisition.

JPMorganChase has recorded deferred tax assets of \$352 million at December 31, 2024 in connection with tax attribute carryforwards. State and local capital loss carryforwards were \$914 million, U.S. federal NOL carryforwards were \$496 million, non-U.S. NOL carryforwards were \$958 million, and other U.S. federal tax attributes were \$111 million. If not utilized, a portion of the U.S. federal NOL carryforwards and other U.S. federal tax attributes will expire between 2026 and 2036 whereas others have an unlimited carryforward period. Similarly, certain non-U.S. NOL carryforwards will expire between 2026 and 2041 whereas others have an unlimited carryforward period. The state and local capital loss carryforwards will expire in 2026.

The valuation allowance at December 31, 2024, was predominantly driven by certain non-U.S. deferred tax assets, including NOL carryforwards.

Notes to consolidated financial statements

Unrecognized tax benefits

At December 31, 2024, 2023 and 2022, JPMorganChase's unrecognized tax benefits, excluding related interest expense and penalties, were \$6.2 billion, \$5.4 billion and \$5.0 billion, respectively, of which \$4.4 billion, \$3.9 billion and \$3.8 billion, respectively, if recognized, would reduce the annual effective tax rate. Included in the amount of unrecognized tax benefits are certain items that would not affect the effective tax rate if they were recognized in the Consolidated statements of income. These unrecognized items include the tax effect of certain temporary differences, the portion of gross state and local unrecognized tax benefits that would be offset by the benefit from associated U.S. federal income tax deductions, and the portion of gross non-U.S. unrecognized tax benefits that would have offsets in other jurisdictions. JPMorganChase evaluates the need for changes in unrecognized tax benefits based on its anticipated tax return filing positions as part of its U.S. federal and state and local tax returns. In addition, the Firm is presently under audit by a number of taxing authorities, most notably by the Internal Revenue Service, as summarized in the Tax examination status table below. The evaluation of unrecognized tax benefits as well as the potential for audit settlements make it reasonably possible that over the next 12 months the gross balance of unrecognized tax benefits may increase or decrease by as much as approximately \$2.4 billion. The change in the unrecognized tax benefit would result in a payment or income statement recognition.

The following table presents a reconciliation of the beginning and ending amount of unrecognized tax benefits.

(in millions)	2024	2023	2022
Balance at January 1,	\$ 5,401	\$ 5,043	\$ 4,636
Increases based on tax positions related to the current period	1,721	1,440	1,234
Increases based on tax positions related to prior periods	92	37	123
Decreases based on tax positions related to prior periods	(907)	(1,110)	(824)
Decreases related to cash settlements with taxing authorities	(148)	(9)	(126)
Balance at December 31,	\$ 6,159	\$ 5,401	\$ 5,043

After-tax interest expense/(benefit) and penalties related to income tax liabilities recognized in income tax expense were \$288 million, \$229 million and \$141 million in 2024, 2023 and 2022, respectively.

At December 31, 2024 and 2023, in addition to the liability for unrecognized tax benefits, the Firm had accrued \$1.7 billion and \$1.6 billion, respectively, for income tax-related interest and penalties.

Tax examination status

JPMorganChase is continually under examination by the Internal Revenue Service, by taxing authorities throughout the world, and by many state and local jurisdictions throughout the U.S. The following table summarizes the status of tax years that remain subject to income tax examination of JPMorganChase and its consolidated subsidiaries by significant jurisdictions as of December 31, 2024.

	Periods under examination	Status
JPMorganChase – U.S.	2011 – 2013	Field examination of amended returns; certain matters at Appellate level
JPMorganChase – U.S.	2014 - 2020	Field examination of original and amended returns; certain matters at Appellate level
JPMorganChase – New York City	2015 - 2018	Field Examination
JPMorganChase – U.K.	2017 – 2022	Field examination of certain select entities

Note 26 – Restricted cash, other restricted assets and intercompany funds transfers

Restricted cash and other restricted assets

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.

The business of JPMorgan Chase Bank, N.A. is subject to examination and regulation by the OCC. The Bank is a member of the U.S. Federal Reserve System, and its deposits in the U.S. are insured by the FDIC, subject to applicable limits.

The Firm is required to maintain cash reserves at certain non-US central banks.

The Firm is also subject to rules and regulations established by other U.S. and non U.S. regulators. As part of its compliance with the respective regulatory requirements, the Firm's broker-dealer activities are subject to certain restrictions on cash and other assets.

The following table presents the components of the Firm's restricted cash:

December 31, (in billions)	2024	2023
Segregated for the benefit of securities and cleared derivative customers	18.7	10.3
Cash reserves at non-U.S. central banks and held for other general purposes	8.8	9.3
Total restricted cash^(a)	\$ 27.5	\$ 19.6

(a) Comprises \$26.1 billion and \$18.2 billion in deposits with banks, and \$1.4 billion and \$1.4 billion in cash and due from banks on the Consolidated balance sheets as of December 31, 2024 and 2023, respectively.

Also, as of December 31, 2024 and 2023, the Firm had the following other restricted assets:

- Cash and securities pledged with clearing organizations for the benefit of customers of \$40.7 billion and \$40.5 billion, respectively.
- Securities with a fair value of \$26.8 billion and \$20.5 billion, respectively, were also restricted in relation to customer activity.

Intercompany funds transfers

Restrictions imposed by U.S. federal law prohibit JPMorgan Chase Bank, N.A., and its subsidiaries, from lending to JPMorgan Chase & Co. ("Parent Company") and certain of its affiliates unless the loans are secured in specified amounts. Such secured loans provided by any banking subsidiary to the Parent Company or to any particular affiliate, together with certain other transactions with such affiliate (collectively referred to as "covered transactions"), must be made on terms and conditions that are consistent with safe and sound banking practices. In addition, unless collateralized with cash or US Government debt obligations, covered transactions are generally limited to 10% of the banking subsidiary's total capital, as determined by the risk-based capital guidelines; the aggregate amount of covered transactions between any banking subsidiary and all of its affiliates is limited to 20% of the banking subsidiary's total capital.

The Parent Company's two principal subsidiaries are JPMorgan Chase Bank, N.A. and JPMorgan Chase Holdings LLC, an intermediate holding company (the "IHC"). The IHC generally holds the stock of JPMorgan Chase's subsidiaries other than JPMorgan Chase Bank, N.A. and its subsidiaries. The IHC also owns other assets and provides intercompany loans to the Parent Company. The Parent Company is obligated to contribute to the IHC substantially all the net proceeds received from securities issuances (including issuances of senior and subordinated debt securities and of preferred and common stock).

The principal sources of income and funding for the Parent Company are dividends from JPMorgan Chase Bank, N.A. and dividends and extensions of credit from the IHC. In addition to dividend restrictions set forth in statutes and regulations, the Federal Reserve, the OCC and the FDIC have authority under the Financial Institutions Supervisory Act to prohibit or to limit the payment of dividends by the banking organizations they supervise, including the Parent Company and its subsidiaries that are banks or bank holding companies, if, in the banking regulator's opinion, payment of a dividend would constitute an unsafe or unsound practice in light of the financial condition of the banking organization. The IHC is prohibited from paying dividends or extending credit to the Parent Company if certain capital or liquidity "thresholds" are breached or if limits are otherwise imposed by the Parent Company's management or Board of Directors.

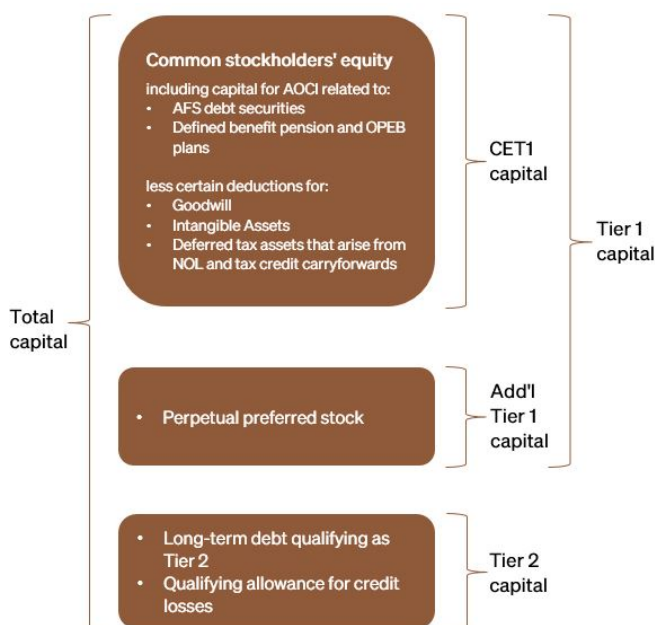
At January 1, 2025, the Parent Company's banking subsidiaries could pay, in the aggregate, approximately \$15.5 billion in dividends to their respective bank holding companies without the prior approval of their relevant banking regulators. The capacity to pay dividends in 2025 will be supplemented by the banking subsidiaries' earnings during the year.

Note 27 – Regulatory capital

The Federal Reserve establishes capital requirements, including well-capitalized standards, for the Firm as a consolidated financial holding company. The OCC establishes similar minimum capital requirements and standards for the Firm’s principal IDI subsidiary, JPMorgan Chase Bank, N.A.

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 and banks, including the Firm and JPMorgan Chase Bank, N.A. Under the rules currently in effect, two comprehensive approaches are prescribed for calculating RWA: a standardized approach (“Basel III Standardized”), and an advanced approach (“Basel III Advanced”). For each of these risk-based capital ratios, the capital adequacy of the Firm and JPMorgan Chase Bank, N.A. is evaluated against the lower of the Standardized or Advanced approaches compared to their respective regulatory capital ratio requirements.

The three components of regulatory capital under the Basel III rules and their primary drivers are as illustrated below:



Under the risk-based capital and leverage-based guidelines of the Federal Reserve, JPMorgan Chase & Co. is required to maintain minimum ratios for CET1 capital, Tier 1 capital, Total capital, Tier 1 leverage and the SLR. Failure to meet these minimum requirements could cause the Federal Reserve to take action. JPMorgan Chase Bank, N.A. is also subject to these capital requirements established by its primary regulators.

The following table presents the risk-based regulatory capital ratio requirements and well-capitalized ratios to which the Firm and JPMorgan Chase Bank, N.A. were subject as of December 31, 2024 and 2023.

	Standardized capital ratio requirements		Advanced capital ratio requirements		Well-capitalized ratios	
	BHC ^{(a)(b)}	IDI ^(c)	BHC ^{(a)(b)}	IDI ^(c)	BHC ^(d)	IDI ^(e)
Risk-based capital ratios						
CET1 capital	12.3 %	7.0 %	11.5 %	7.0 %	NA	6.5 %
Tier 1 capital	13.8	8.5	13.0	8.5	6.0 %	8.0
Total capital	15.8	10.5	15.0	10.5	10.0	10.0

Note: The table above is as defined by the regulations issued by the Federal Reserve, OCC and FDIC and to which the Firm and JPMorgan Chase Bank, N.A. are subject.

- (a) Represents the regulatory capital ratio requirements applicable to the Firm. The CET1, Tier 1 and Total capital ratio requirements each include a respective minimum requirement plus a GSIB surcharge of 4.5% as calculated under Method 2; plus a 3.3% SCB for Basel III Standardized ratios and 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.
- (b) For the period ended December 31, 2023, the CET1, Tier 1, and Total capital ratio requirements under Basel III Standardized applicable to the Firm were 11.4%, 12.9%, and 14.9%, respectively; the Basel III Advanced CET1, Tier 1, and Total capital ratio requirements applicable to the Firm were 11.0%, 12.5%, and 14.5%, respectively.
- (c) Represents requirements for JPMorgan Chase Bank, N.A. The CET1, Tier 1 and Total capital ratio requirements include a fixed capital conservation buffer requirement of 2.5% that is applicable to JPMorgan Chase Bank, N.A. JPMorgan Chase Bank, N.A. is not subject to the GSIB surcharge.
- (d) Represents requirements for bank holding companies pursuant to regulations issued by the Federal Reserve.
- (e) Represents requirements for JPMorgan Chase Bank, N.A. pursuant to regulations issued under the FDIC Improvement Act.

The following table presents the leverage-based regulatory capital ratio requirements and well-capitalized ratios to which the Firm and JPMorgan Chase Bank, N.A. were subject as of December 31, 2024 and 2023.

	Capital ratio requirements ^(a)		Well-capitalized ratios	
	BHC	IDI	BHC ^(b)	IDI
Leverage-based capital ratios				
Tier 1 leverage	4.0 %	4.0 %	NA	5.0 %
SLR	5.0	6.0	NA	6.0

Note: The table above is as defined by the regulations issued by the Federal Reserve, OCC and FDIC and to which the Firm and JPMorgan Chase Bank, N.A. are subject.

- (a) Represents minimum SLR requirement of 3.0%, as well as supplementary leverage buffer requirements of 2.0% and 3.0% for BHC and JPMorgan Chase Bank, N.A., respectively.
- (b) The Federal Reserve's regulations do not establish well-capitalized thresholds for these measures for BHCs.

CECL Regulatory Capital Transition

Beginning January 1, 2022, the \$2.9 billion CECL capital benefit, provided by the Federal Reserve in response to the COVID-19 pandemic, is being phased out at 25% per year over a three-year period. As of December 31, 2024 and 2023, the Firm's CET1 capital reflected the remaining benefit of \$720 million and \$1.4 billion, respectively, associated with the CECL capital transition provisions.

Similarly, as of January 1, 2024, the Firm has phased out 75% of the other CECL capital transition provisions which impacted Tier 2 capital, adjusted average assets, total leverage exposure and RWA, as applicable.

The following tables present risk-based capital metrics under both the Basel III Standardized and Basel III Advanced approaches and leverage-based capital metrics for JPMorgan Chase & Co. and JPMorgan Chase Bank, N.A. As of December 31, 2024 and 2023, JPMorgan Chase & Co. and JPMorgan Chase Bank, N.A. were well-capitalized and met all capital requirements to which each was subject.

December 31, 2024 (in millions, except ratios)	Basel III Standardized		Basel III Advanced	
	JPMorgan Chase & Co.	JPMorgan Chase Bank, N.A.	JPMorgan Chase & Co.	JPMorgan Chase Bank, N.A.
Risk-based capital metrics: ^(a)				
CET1 capital	\$ 275,513	\$ 275,732	\$ 275,513	\$ 275,732
Tier 1 capital	294,881	275,737	294,881	275,737
Total capital	325,589	296,041	311,898	282,328
Risk-weighted assets	1,757,460	1,718,777	1,740,429	1,594,072
CET1 capital ratio	15.7 %	16.0 %	15.8 %	17.3 %
Tier 1 capital ratio	16.8	16.0	16.9	17.3
Total capital ratio	18.5	17.2	17.9	17.7

December 31, 2023 (in millions, except ratios)	Basel III Standardized		Basel III Advanced	
	JPMorgan Chase & Co.	JPMorgan Chase Bank, N.A.	JPMorgan Chase & Co.	JPMorgan Chase Bank, N.A.
Risk-based capital metrics: ^(a)				
CET1 capital	\$ 250,585	\$ 262,030	\$ 250,585	\$ 262,030
Tier 1 capital	277,306	262,032	277,306	262,032
Total capital	308,497	281,308	295,417	268,392
Risk-weighted assets	1,671,995	1,621,789	1,669,156	1,526,952
CET1 capital ratio	15.0 %	16.2 %	15.0 %	17.2 %
Tier 1 capital ratio	16.6	16.2	16.6	17.2
Total capital ratio	18.5	17.3	17.7	17.6

(a) The capital metrics reflect the CECL capital transition provisions.

(b) Includes the impacts of certain assets associated with First Republic to which the Standardized approach has been applied as permitted by the transition provisions in the U.S. capital rules.

Three months ended (in millions, except ratios)	December 31, 2024		December 31, 2023	
	JPMorgan Chase & Co.	JPMorgan Chase Bank, N.A.	JPMorgan Chase & Co.	JPMorgan Chase Bank, N.A.
Leverage-based capital metrics: ^(a)				
Adjusted average assets ^(b)	\$ 4,070,499	\$ 3,491,283	\$ 3,831,200	\$ 3,337,842
Tier 1 leverage ratio	7.2 %	7.9 %	7.2 %	7.9 %
Total leverage exposure	\$ 4,837,568	\$ 4,246,516	\$ 4,540,465	\$ 4,038,739
SLR	6.1 %	6.5 %	6.1 %	6.5 %

(a) The capital metrics reflect the CECL capital transition provisions.

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

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Note 28 – Off-balance sheet lending-related financial instruments, guarantees, and other commitments

JPMorganChase provides lending-related financial instruments (e.g., commitments and guarantees) to address the financing needs of its customers and clients. The contractual amount of these financial instruments represents the maximum possible credit risk to the Firm should the customer or client draw upon the commitment or the Firm be required to fulfill its obligation under the guarantee, and should the customer or client subsequently fail to perform according to the terms of the contract. Most of these commitments and guarantees have historically been refinanced, extended, cancelled, or expired without being drawn or a default occurring. As a result, the total contractual amount of these instruments is not, in the Firm's view, representative of its expected future credit exposure or funding requirements.

To provide for expected credit losses in wholesale and certain consumer lending-related commitments, an allowance for credit losses on lending-related commitments is maintained. Refer to Note 13 for further information regarding the allowance for credit losses on lending-related commitments.

The following table summarizes the contractual amounts and carrying values of off-balance sheet lending-related financial instruments, guarantees and other commitments at December 31, 2024 and 2023. The amounts in the table below for credit card, home equity and certain scored business banking lending-related commitments represent the total available credit for these products. The Firm has not experienced, and does not anticipate, that all available lines of credit for these commitments will be utilized at the same time. The Firm can reduce or cancel these commitments, in accordance with the contract, or to the extent otherwise permitted by law, including when there has been a demonstrable decline in the creditworthiness of the borrower or significant decrease in the value of underlying property.

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

By remaining maturity as of December 31, (in millions)	Contractual amount						Carrying value ^{(h)(i)}	
	2024					2023	2024	2023
	Expires in 1 year or less	Expires after 1 year through 3 years	Expires after 3 years through 5 years	Expires after 5 years	Total	Total		
Lending-related								
Consumer, excluding credit card:								
Residential Real Estate ^(a)	\$ 10,838	\$ 7,240	\$ 4,601	\$ 7,670	\$ 30,349	\$ 30,125	\$ 534 ⁽ⁱ⁾	\$ 678 ⁽ⁱ⁾
Auto and other	10,833	14	5	3,643	14,495	15,278	37 ⁽ⁱ⁾	148 ⁽ⁱ⁾
Total consumer, excluding credit card	21,671	7,254	4,606	11,313	44,844	45,403	571	826
Credit card ^(b)	1,001,311	—	—	—	1,001,311	915,658	—	—
Total consumer^(c)	1,022,982	7,254	4,606	11,313	1,046,155	961,061	571	826
Wholesale:								
Other unfunded commitments to extend credit ^(d)	101,500	199,878	172,066	24,993	498,437	503,526	2,608 ⁽ⁱ⁾	2,797 ⁽ⁱ⁾
Standby letters of credit and other financial guarantees ^(d)	15,825	8,506	3,780	565	28,676	28,872	473	479
Other letters of credit ^(d)	3,958	278	21	97	4,354	4,388	37	37
Total wholesale^(c)	121,283	208,662	175,867	25,655	531,467	536,786	3,118	3,313
Total lending-related	\$1,144,265	\$ 215,916	\$ 180,473	\$ 36,968	\$1,577,622	\$1,497,847	\$ 3,689	\$ 4,139
Other guarantees and commitments								
Securities lending indemnification agreements and guarantees ^(e)	\$ 310,046	\$ —	\$ —	\$ —	\$ 310,046	\$ 283,664	\$ —	\$ —
Derivatives qualifying as guarantees	902	343	9,890	38,493	49,628	54,562	113	89
Unsettled resale and securities borrowed agreements	115,939	—	—	—	115,939	95,106	2	—
Unsettled repurchase and securities loaned agreements	66,986	—	—	—	66,986	60,724	(2)	—
Loan sale and securitization-related indemnifications:								
Mortgage repurchase liability	NA	NA	NA	NA	NA	NA	45	76
Loans sold with recourse	NA	NA	NA	NA	1,189	803	23	24
Exchange & clearing house guarantees and commitments ^(f)	401,486	—	—	—	401,486	265,887	—	—
Other guarantees and commitments ^(g)	10,652	425	435	884	12,396	15,074	28	38

(a) Includes certain commitments to purchase loans from correspondents.

(b) Also includes commercial card lending-related commitments primarily in CIB.

(c) Predominantly all consumer and wholesale lending-related commitments are in the U.S.

(d) As of December 31, 2024 and 2023, reflected the contractual amount net of risk participations totaling \$85 million and \$88 million, respectively, for other unfunded commitments to extend credit; \$9.5 billion and \$8.2 billion, respectively, for standby letters of credit and other financial guarantees; and \$556 million and \$589 million, respectively, for other letters of credit. In regulatory filings with the Federal Reserve these commitments are shown gross of risk participations.

(e) As of December 31, 2024 and 2023, collateral held by the Firm in support of securities lending indemnification agreements was \$328.7 billion and \$300.3 billion, respectively. Securities lending collateral primarily consists of cash, G7 government securities, and securities issued by U.S. GSEs and government agencies.

(f) As of December 31, 2024 and 2023, includes guarantees to the Fixed Income Clearing Corporation under the sponsored member repo program and commitments and guarantees associated with the Firm's membership in certain clearing houses.

(g) As of December 31, 2024 and 2023, primarily includes unfunded commitments to purchase secondary market loans, other equity investment commitments, and unfunded commitments related to certain tax-oriented equity investments, and reflects the impact of adopting updates to the Accounting for Investments in Tax Credit Structures guidance effective January 1, 2024.

(h) For lending-related products, the carrying value includes the allowance for lending-related commitments and the guarantee liability; for derivative-related products, and lending-related commitments for which the fair value option was elected, the carrying value represents the fair value.

(i) For lending-related commitments, the carrying value also includes fees and any purchase discounts or premiums that are deferred and recognized in accounts payable and other liabilities on the Consolidated balance sheets. Deferred amounts for revolving commitments and commitments not expected to fund, are amortized to lending- and deposit-related fees on a straight line basis over the commitment period. For all other commitments the deferred amounts remain deferred until the commitment funds or is sold.

(j) As of December 31, 2024 and 2023, includes fair value adjustments associated with First Republic for residential real estate lending-related commitments totaling \$459 million and \$630 million, respectively; for auto and other lending-related commitments totaling \$37 million and \$148 million, respectively; and for other unfunded commitments to extend credit totaling \$699 million and \$1.1 billion, respectively. Refer to Note 34 for additional information.

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Other unfunded commitments to extend credit

Other unfunded commitments to extend credit generally consist of commitments for working capital and general corporate purposes, extensions of credit to support commercial paper facilities and bond financings in the event that those obligations cannot be remarketed to new investors, as well as committed liquidity facilities to clearing organizations. The Firm also issues commitments under multipurpose facilities which could be drawn upon in several forms, including the issuance of a standby letter of credit.

Guarantees

U.S. GAAP requires that a guarantor recognize, at the inception of a guarantee, a liability in an amount equal to the fair value of the obligation undertaken in issuing the guarantee. U.S. GAAP defines a guarantee as a contract that contingently requires the guarantor to pay the guaranteed party based upon: (a) changes in an underlying asset, liability or equity security of the guaranteed party; or (b) a third party's failure to perform under a specified agreement. The Firm considers the following off-balance sheet arrangements to be guarantees under U.S. GAAP: standby letters of credit and other financial guarantees, securities lending indemnifications, certain indemnification agreements included within third-party contractual arrangements, certain derivative contracts and the guarantees under the sponsored member repo program.

As required by U.S. GAAP, the Firm initially records guarantees at the inception date fair value of the non-contingent obligation assumed (e.g., the amount of consideration received or the net present value of the premium receivable). For these obligations, the Firm records this fair value amount in other liabilities with an offsetting entry recorded in cash (for premiums received), or other assets (for premiums receivable). Any premium receivable recorded in other assets is

The following table summarizes the contractual amount and carrying value of standby letters of credit and other financial guarantees and other letters of credit arrangements as of December 31, 2024 and 2023.

Standby letters of credit, other financial guarantees and other letters of credit

December 31, (in millions)	2024		2023	
	Standby letters of credit and other financial guarantees	Other letters of credit	Standby letters of credit and other financial guarantees	Other letters of credit
Investment-grade ^(a)	\$ 20,443	\$ 3,380	\$ 19,694	\$ 3,552
Noninvestment-grade ^(a)	8,233	974	9,178	836
Total contractual amount	\$ 28,676	\$ 4,354	\$ 28,872	\$ 4,388
Allowance for lending-related commitments	\$ 94	\$ 37	\$ 110	\$ 37
Guarantee liability	379	—	369	—
Total carrying value	\$ 473	\$ 37	\$ 479	\$ 37
Commitments with collateral	\$ 16,805	\$ 357	\$ 16,861	\$ 539

(a) The ratings scale is based on the Firm's internal risk ratings. Refer to Note 12 for further information on internal risk ratings.

reduced as cash is received under the contract, and the fair value of the liability recorded at inception is amortized into income as lending and deposit-related fees over the life of the guarantee contract. The lending-related contingent obligation is recognized based on expected credit losses in addition to, and separate from, any non-contingent obligation.

Non-lending-related contingent obligations are recognized when the liability becomes probable and reasonably estimable. These obligations are not recognized if the estimated amount is less than the carrying amount of any non-contingent liability recognized at inception (adjusted for any amortization). Examples of non-lending-related contingent obligations include indemnifications provided in sales agreements, where a portion of the sale proceeds is allocated to the guarantee, which adjusts the gain or loss that would otherwise result from the transaction. For these indemnifications, the initial liability is amortized to income as the Firm's risk is reduced (i.e., over time or when the indemnification expires).

The contractual amount and carrying value of guarantees and indemnifications are included in the table on page 303.

For additional information on the guarantees, see below.

Standby letters of credit and other financial guarantees

Standby letters of credit and other financial guarantees are conditional lending commitments issued by the Firm to guarantee the performance of a client or customer to a third party under certain arrangements, such as commercial paper facilities, bond financings, acquisition financings, trade financings and similar transactions.

Securities lending indemnifications

Through the Firm's securities lending program, counterparties' securities, via custodial and non-custodial arrangements, may be lent to third parties. As part of this program, the Firm provides an indemnification in the lending agreements which protects the lender against the failure of the borrower to return the lent securities. To minimize its liability under these indemnification agreements, the Firm obtains cash or other highly liquid collateral with a market value exceeding 100% of the value of the securities on loan from the borrower. Collateral is marked to market daily to help assure that collateralization is adequate. Additional collateral is called from the borrower if a shortfall exists, or collateral may be released to the borrower in the event of overcollateralization. If a borrower defaults, the Firm would use the collateral held to purchase replacement securities in the market or to credit the lending client or counterparty with the cash equivalent thereof.

The cash collateral held by the Firm may be invested on behalf of the client in indemnified resale agreements, whereby the Firm indemnifies the client against the loss of principal invested. To minimize its liability under these agreements, the Firm obtains collateral with a market value exceeding 100% of the principal invested.

Derivatives qualifying as guarantees

The Firm transacts in certain derivative contracts that have the characteristics of a guarantee under U.S. GAAP. These contracts include written put options that require the Firm to purchase assets upon exercise by the option holder at a specified price by a specified date in the future. The Firm may enter into written put option contracts in order to meet client needs, or for other trading purposes. The terms of written put options are typically five years or less.

Derivatives deemed to be guarantees also includes stable value contracts, commonly referred to as "stable value products", that require the Firm to make a payment of the difference between the market value and the book value of a counterparty's reference portfolio of assets in the event that market value is less than book value and certain other conditions have been met. Stable value products are transacted in order to allow investors to realize investment returns with less volatility than an unprotected portfolio. These contracts are typically longer-term or may have no stated maturity, but allow the Firm to elect to terminate the contract under certain conditions.

The notional value of derivative guarantees generally represents the Firm's maximum exposure. However, exposure to certain stable value products is contractually limited to a substantially lower percentage of the notional amount.

The fair value of derivative guarantees reflects the probability, in the Firm's view, of whether the Firm will be required to perform under the contract. The Firm reduces exposures to these contracts by entering into offsetting transactions, or by entering into contracts that hedge the market risk related to the derivative guarantees.

The following table summarizes the derivatives qualifying as guarantees as of December 31, 2024 and 2023.

(in millions)	December 31, 2024	December 31, 2023
Notional amounts		
Derivative guarantees	\$ 49,628	\$ 54,562
Stable value contracts with contractually limited exposure	32,939	32,488
Maximum exposure of stable value contracts with contractually limited exposure	1,740	1,652
Fair value		
Derivative payables	113	89

In addition to derivative contracts that meet the characteristics of a guarantee, the Firm is both a purchaser and seller of credit protection in the credit derivatives market. Refer to Note 5 for a further discussion of credit derivatives.

Unsettled securities financing agreements

In the normal course of business, the Firm enters into resale and securities borrowed agreements. At settlement, these commitments result in the Firm advancing cash to and receiving securities collateral from the counterparty. The Firm also enters into repurchase and securities loaned agreements. At settlement, these commitments result in the Firm receiving cash from and providing securities collateral to the counterparty. Such agreements settle at a future date. These agreements generally do not meet the definition of a derivative, and therefore, are not recorded on the Consolidated balance sheets until settlement date. These agreements predominantly have regular-way settlement terms. Refer to Note 11 for a further discussion of securities financing agreements.

Loan sales- and securitization-related indemnifications

Mortgage repurchase liability

In connection with the Firm's mortgage loan sale and securitization activities with U.S. GSEs the Firm has made representations and warranties that the loans sold meet certain requirements, and that may require the Firm to repurchase mortgage loans and/or indemnify the loan purchaser if such representations and warranties are breached by the Firm.

Notes to consolidated financial statements

Private label securitizations

The liability related to repurchase demands associated with private label securitizations is separately evaluated by the Firm in establishing its litigation reserves.

Refer to Note 30 for additional information regarding litigation.

Loans sold with recourse

The Firm provides servicing for mortgages and certain commercial lending products on both a recourse and nonrecourse basis. In nonrecourse servicing, the principal credit risk to the Firm is the cost of temporary servicing advances of funds (i.e., normal servicing advances). In recourse servicing, the servicer agrees to share credit risk with the owner of the mortgage loans, such as Fannie Mae or Freddie Mac or a private investor, insurer or guarantor. Losses on recourse servicing predominantly occur when foreclosure sales proceeds of the property underlying a defaulted loan are less than the sum of the outstanding principal balance, plus accrued interest on the loan and the cost of holding and disposing of the underlying property. The Firm's securitizations are predominantly nonrecourse, thereby effectively transferring the risk of future credit losses to the purchaser of the mortgage-backed securities issued by the trust. The unpaid principal balance of loans sold with recourse as well as the carrying value of the related liability that the Firm has recorded in accounts payable and other liabilities on the Consolidated balance sheets, which is representative of the Firm's view of the likelihood it will have to perform under its recourse obligations, are disclosed in the table on page 303.

Other off-balance sheet arrangements

Indemnification agreements – general

In connection with issuing securities to investors outside the U.S., the Firm may agree to pay additional amounts to the holders of the securities in the event that, due to a change in tax law, certain types of withholding taxes are imposed on payments on the securities. The terms of the securities may also give the Firm the right to redeem the securities if such additional amounts are payable. The Firm may also enter into indemnification clauses such as in connection with the licensing of software to clients ("software licensees") or when it sells a business or assets to a third party ("third-party purchasers"), pursuant to which it indemnifies software licensees for claims of liability or damages that may occur subsequent to the licensing of the software, or third-party purchasers for losses they may incur due to actions taken by the Firm prior to the sale of the business or assets. It is difficult to estimate the Firm's maximum exposure under these indemnification arrangements, since this would require an assessment of future changes in tax law and future claims that may

be made against the Firm that have not yet occurred. However, based on historical experience, management expects the risk of loss to be remote.

Merchant charge-backs

Under the rules of payment networks, in its role as a merchant acquirer, the Firm's Merchant Services business in CIB Payments, retains a contingent liability for disputed processed credit and debit card transactions that result in a charge-back to the merchant. If a dispute is resolved in the cardholder's favor, the Firm will (through the cardholder's issuing bank) credit or refund the amount to the cardholder and will charge back the transaction to the merchant. If the Firm is unable to collect the amount from the merchant, the Firm will bear the loss for the amount credited or refunded to the cardholder. The Firm mitigates this risk by withholding future settlements, retaining cash reserve accounts or obtaining other collateral. In addition, the Firm recognizes a valuation allowance that covers the payment or performance risk related to charge-backs.

Clearing Services – Client Credit Risk

The Firm provides clearing services for clients by entering into securities purchases and sales and derivative contracts with CCPs, including ETDs such as futures and options, as well as OTC-cleared derivative contracts. As a clearing member, the Firm stands behind the performance of its clients, collects cash and securities collateral (margin) as well as any settlement amounts due from or to clients, and remits them to the relevant CCP or client in whole or part. There are two types of margin: variation margin is posted on a daily basis based on the value of clients' derivative contracts and initial margin is posted at inception of a derivative contract, generally on the basis of the potential changes in the variation margin requirement for the contract.

As a clearing member, the Firm is exposed to the risk of nonperformance by its clients, but is not liable to clients for the performance of the CCPs. Where possible, the Firm seeks to mitigate its risk to the client through the collection of appropriate amounts of margin at inception and throughout the life of the transactions. The Firm can also cease providing clearing services if clients do not adhere to their obligations under the clearing agreement. In the event of nonperformance by a client, the Firm would close out the client's positions and access available margin. The CCP would utilize any margin it holds to make itself whole, with any remaining shortfalls required to be paid by the Firm as a clearing member.

The Firm reflects its exposure to nonperformance risk of the client through the recognition of margin receivables from clients and margin payables to CCPs; the clients' underlying securities or derivative contracts are not reflected in the Firm's Consolidated Financial Statements.

It is difficult to estimate the Firm's maximum possible exposure through its role as a clearing member, as this would require an assessment of transactions that clients may execute in the future. However, based upon historical experience, and the credit risk mitigants available to the Firm, management believes it is unlikely that the Firm will have to make any material payments under these arrangements and the risk of loss is expected to be remote.

Refer to Note 5 for information on the derivatives that the Firm executes for its own account and records in its Consolidated Financial Statements.

Exchange & Clearing House Memberships

The Firm is a member of several securities and derivative exchanges and clearing houses, both in the U.S. and other countries, and it provides clearing services to its clients. Membership in some of these organizations requires the Firm to pay a pro rata share of the losses incurred by the organization as a result of the default of another member. Such obligations vary with different organizations. These obligations may be limited to the amount (or a multiple of the amount) of the Firm's contribution to the guarantee fund maintained by a clearing house or exchange as part of the resources available to cover any losses in the event of a member default. Alternatively, these obligations may also include a pro rata share of the residual losses after applying the guarantee fund. Additionally, certain clearing houses require the Firm as a member to pay a pro rata share of losses that may result from the clearing house's investment of guarantee fund contributions and initial margin, unrelated to and independent of the default of another member. Generally a payment would only be required should such losses exceed the resources of the clearing house or exchange that are contractually required to absorb the losses in the first instance. In certain cases, it is difficult to estimate the Firm's maximum possible exposure under these membership agreements, since this would require an assessment of future claims that may be made against the Firm that have not yet occurred. However, based on historical experience, management expects the risk of loss to the Firm to be remote. Where the Firm's maximum possible exposure can be estimated, the amount is disclosed in the table on page 303, in the Exchange & clearing house guarantees and commitments line.

Sponsored member repo program

The Firm acts as a sponsoring member to clear eligible overnight and term resale and repurchase agreements through the Government Securities Division of the Fixed Income Clearing Corporation ("FICC") on behalf of clients that become sponsored members under the FICC's rules. The Firm also guarantees to the FICC the prompt and full payment and performance of its sponsored member clients' respective obligations under the FICC's rules. The Firm minimizes its liability under these guarantees by obtaining a security interest in the cash or high-quality securities collateral that the clients place with the clearing house; therefore, the Firm expects the risk of loss to be remote. The Firm's maximum possible exposure, without taking into consideration the associated collateral, is included in the Exchange & clearing house guarantees and commitments line on page 303. Refer to Note 11 for additional information on credit risk mitigation practices on resale agreements and the types of collateral pledged under repurchase agreements.

Guarantees of subsidiaries

In the normal course of business, the Parent Company may provide counterparties with guarantees of certain of the trading and other obligations of its subsidiaries on a contract-by-contract basis, as negotiated with the Firm's counterparties. The obligations of the subsidiaries are included on the Firm's Consolidated balance sheets or are reflected as off-balance sheet commitments; therefore, the Parent Company has not recognized a separate liability for these guarantees. The Firm believes that the occurrence of any event that would trigger payments by the Parent Company under these guarantees is remote.

The Parent Company has guaranteed certain long-term debt and structured notes of its subsidiaries, including JPMorgan Chase Financial Company LLC ("JPMFC"), a 100%-owned finance subsidiary. All securities issued by JPMFC are fully and unconditionally guaranteed by the Parent Company and no other subsidiary of the Parent Company guarantees these securities. These guarantees, which rank pari passu with the Firm's unsecured and unsubordinated indebtedness, are not included in the table on page 303 of this Note. Refer to Note 20 for additional information.

Notes to consolidated financial statements

Note 29 – Pledged assets and collateral

Pledged assets

The Firm pledges financial assets that it owns to maintain potential borrowing capacity at discount windows with Federal Reserve banks, various other central banks and FHLBs. Additionally, the Firm pledges assets for other purposes, including to collateralize repurchase and other securities financing agreements, to cover short sales and to collateralize derivative contracts and deposits. Certain of these pledged assets may be sold or repledged or otherwise used by the secured parties and are parenthetically identified on the Consolidated balance sheets as assets pledged.

The following table presents the carrying value of the Firm's pledged assets.

December 31, (in billions)	2024	2023
Assets that may be sold or repledged or otherwise used by secured parties	\$ 152.5	\$ 145.0
Assets that may not be sold or repledged or otherwise used by secured parties	297.9	244.2
Assets pledged at Federal Reserve banks and FHLBs	724.0	675.6
Total pledged assets	\$ 1,174.4	\$ 1,064.8

Total pledged assets do not include assets of consolidated VIEs; these assets are used to settle the liabilities of those entities. Refer to Note 14 for additional information on assets and liabilities of consolidated VIEs. Refer to Note 11 for additional information on the Firm's securities financing activities. Refer to Note 20 for additional information on the Firm's long-term debt. The significant components of the Firm's pledged assets were as follows.

December 31, (in billions)	2024	2023
Investment securities	\$ 89.6	\$ 108.6
Loans	740.9	681.7
Trading assets and other	343.9	274.5
Total pledged assets	\$ 1,174.4	\$ 1,064.8

Collateral

The Firm accepts financial assets as collateral that it is permitted to sell or repledge, deliver or otherwise use. This collateral is generally obtained under resale and other securities financing agreements, prime brokerage-related held-for-investment customer receivables and derivative contracts. Collateral is generally used under repurchase and other securities financing agreements, to cover short sales, and to collateralize derivative contracts and deposits.

The following table presents the fair value of collateral accepted.

December 31, (in billions)	2024	2023
Collateral permitted to be sold or repledged, delivered, or otherwise used	\$ 1,544.0	\$ 1,303.9
Collateral sold, repledged, delivered or otherwise used	1,210.7	982.8

Note 30 – Litigation

Contingencies

As of December 31, 2024, the Firm and its subsidiaries and affiliates are defendants or respondents in numerous evolving legal proceedings, including private proceedings, public proceedings, government investigations, regulatory enforcement matters, and the matters described below. The litigations range from individual actions involving a single plaintiff to class action lawsuits with potentially millions of class members. Investigations and regulatory enforcement matters involve both formal and informal proceedings, by both governmental agencies and self-regulatory organizations. These legal proceedings are at varying stages of adjudication, arbitration or investigation, and involve each of the Firm's lines of business and several geographies and a wide variety of claims (including common law tort and contract claims and statutory antitrust, securities and consumer protection claims), some of which present novel legal theories.

The Firm believes the estimate of the aggregate range of reasonably possible losses, in excess of reserves established, for its legal proceedings is from \$0 to approximately \$1.4 billion at December 31, 2024. This estimated aggregate range of reasonably possible losses was based upon information available as of that date for those proceedings in which the Firm believes that an estimate of reasonably possible loss can be made. For certain matters, the Firm does not believe that such an estimate can be made, as of that date. The Firm's estimate of the aggregate range of reasonably possible losses involves significant judgment, given:

- the number, variety and varying stages of the proceedings, including the fact that many are in preliminary stages,
- the existence in many such proceedings of multiple defendants, including the Firm, whose share of liability (if any) has yet to be determined,
- the numerous yet-unresolved issues in many of the proceedings, including issues regarding class certification and the scope of many of the claims, and
- the uncertainty of the various potential outcomes of such proceedings, including where the Firm has made assumptions concerning future rulings by the court or other adjudicator, or about the behavior or incentives of adverse parties or regulatory authorities, and those assumptions prove to be incorrect.

In addition, the outcome of a particular proceeding may be a result which the Firm did not take into account in its estimate because the Firm had deemed the likelihood of that outcome to be remote. Accordingly, the Firm's estimate of the aggregate range of reasonably possible losses will change from time to time, and actual losses may vary significantly.

Set forth below are descriptions of the Firm's material legal proceedings.

1MDB Litigation. J.P. Morgan (Suisse) SA was named as a defendant in a civil litigation filed in May 2021 in Malaysia by 1Malaysia Development Berhad ("1MDB"), a Malaysian state-owned and controlled investment fund. The claim alleges "dishonest assistance" against J.P. Morgan (Suisse) SA in relation to payments of \$300 million and \$500 million, from 2009 and 2010, respectively, received from 1MDB and paid into an account at J.P. Morgan (Suisse) SA held by 1MDB PetroSaudi Limited, a joint venture company between 1MDB and PetroSaudi Holdings (Cayman) Limited. In March 2024, the Court upheld the Firm's challenge to the validity of service and the Malaysian Court's jurisdiction to hear the claim. That decision has been appealed by 1MDB. In August 2023, the Court denied an application by 1MDB to discontinue its claim with permission to re-file a new claim in the future. That decision was appealed by both 1MDB and the Firm, and an appeals court is scheduled to hear both appeals in November 2025. In its appeal, the Firm seeks to prevent any claim from continuing.

In addition, in November 2023, the Federal Office of the Attorney General (OAG) in Switzerland notified J.P. Morgan (Suisse) SA that it is conducting an investigation into possible criminal liability in connection with transactions arising from J.P. Morgan (Suisse) SA's relationship with the 1MDB PetroSaudi joint venture and its related persons for the period September 2009 through August 2015. The OAG investigation is ongoing.

Amrapali. India's Enforcement Directorate ("ED") is investigating J.P. Morgan India Private Limited in connection with investments made in 2010 and 2012 by two offshore funds formerly managed by JPMorganChase entities into residential housing projects developed by the Amrapali Group ("Amrapali") relating to delays in delivering or failure to deliver residential units. In August 2021, the ED issued an order fining J.P. Morgan India Private Limited approximately \$31.5 million, and the Firm is appealing that order. Relatedly, in July 2019, the Supreme Court of India issued an order making preliminary findings that Amrapali and other parties, including unspecified JPMorganChase entities and the offshore funds that had invested in the projects, violated certain criminal currency control and money laundering provisions, and ordered the ED to conduct a further inquiry. The Firm is responding to and cooperating with the inquiry.

Foreign Exchange Investigations and Litigation. The Firm previously reported settlements with certain government authorities relating to its foreign exchange ("FX") sales and trading activities and controls related to those activities. Among those resolutions, in May 2015, the Firm pleaded guilty to a single violation of federal antitrust law. The Department of Labor ("DOL") granted the Firm exemptions that permit the Firm and its

Notes to consolidated financial statements

affiliates to continue to rely on the Qualified Professional Asset Manager exemption under the Employee Retirement Income Security Act (“ERISA”) through the ten-year disqualification period following the antitrust plea. The only remaining FX-related governmental inquiry is a South Africa Competition Commission matter which is currently pending before the South Africa Competition Tribunal.

With respect to civil litigation matters, some FX-related individual and putative class actions filed outside the U.S., including in the U.K., Israel, the Netherlands, Brazil and Australia, remain. In July 2023, the U.K. Court of Appeal overturned the Competition Appeal Tribunal's earlier denial of a request for class certification on an opt-out basis. The defendants have appealed this decision to the U.K. Supreme Court. In Israel, a settlement in principle has been reached on the putative class action, which remains subject to court approval.

Interchange Litigation. Groups of merchants and retail associations filed a series of class action complaints alleging that Visa and Mastercard, as well as certain banks, conspired to set the price of credit and debit card interchange fees and enacted related rules in violation of antitrust laws.

In September 2018, the parties settled the class action seeking monetary relief, with the defendants collectively contributing approximately \$6.2 billion. The settlement has been approved by the United States District Court for the Eastern District of New York and affirmed on appeal. Based on the percentage of merchants that opted out of the settlement, \$700 million has been returned to the defendants from the settlement escrow. A separate class action seeking injunctive relief continues, and in September 2021, the District Court granted plaintiffs' motion for class certification in part, and denied the motion in part. In June 2024, the District Court denied preliminary approval of a settlement of the injunctive class action in which Visa and Mastercard agreed to certain changes to their respective network rules and system-wide reductions in interchange rates for U.S.-based merchants. The parties are considering next steps.

Of the merchants who opted out of the damages class settlement, certain merchants filed individual actions raising similar allegations against Visa and Mastercard, as well as against the Firm and other banks. While some of those actions remain pending, the defendants have reached settlements with the merchants who opted out representing over 70% of the combined Mastercard-branded and Visa-branded payment card sales volume.

LIBOR and Other Benchmark Rate Investigations and Litigation. JPMorganChase has responded to inquiries from various governmental agencies and entities around the world relating primarily to the British Bankers Association's (“BBA”) London Interbank Offered Rate (“LIBOR”) for various currencies and the European Banking Federation's Euro Interbank Offered

Rate (“EURIBOR”). The Swiss Competition Commission's investigation relating to EURIBOR, to which the Firm and one other bank remain subject, continues. The Firm appealed a December 2016 decision by the European Commission against the Firm and other banks finding an infringement of European antitrust rules relating to EURIBOR. In December 2023, the European General Court annulled the fine imposed by the European Commission, but exercised its discretion to re-impose a fine in an identical amount. In March 2024, the Firm filed an appeal of this decision with the Court of Justice of the European Union.

In addition, the Firm has been named as a defendant along with other banks in various individual and putative class actions related to benchmark rates, including U.S. dollar LIBOR. In actions related to U.S. dollar LIBOR during the period that it was administered by the BBA, the United States District Court for the Southern District of New York granted class certification of antitrust claims related to bonds and interest rate swaps sold directly by the defendants, including the Firm. The Firm has obtained dismissal of certain actions and resolved certain other actions, and as to all remaining actions has moved for summary judgment. In addition, a lawsuit filed by a group of individual plaintiffs asserting antitrust claims, alleging that the Firm and other defendants were engaged in an unlawful agreement to set U.S. dollar LIBOR and conspired to monopolize the market for LIBOR-based consumer loans and credit cards was dismissed in October 2023 and affirmed on appeal by the United States Court of Appeals for the Ninth Circuit in December 2024. The Firm has resolved all non-U.S. dollar LIBOR actions.

Russian Litigation. The Firm is obligated to comply with international sanctions laws, which mandate the blocking of certain assets. These laws apply when assets associated with individuals, companies, products or services are within the scope of the sanctions. The Firm has faced actual and threatened litigation in Russia seeking payments that the Firm cannot make under, and is contractually excused from paying as a result of, relevant sanctions laws. In claims involving the Firm and claims filed against other financial institutions, Russian courts have disregarded the parties' contractual agreements concerning forum selection and did not recognize foreign sanctions laws as a basis for not making payment. Russian courts have entered judgment against the Firm in a number of claims, including one for \$439 million, and a judgment has been executed against assets held onshore by the Firm in Russia. The total amount of the judgments exceeds the total amount of available assets that the Firm holds in Russia. The Firm continues to appeal the Russian courts' decisions, and judgments may not be executed while on appeal. Russian courts have also ordered interim freezes of Firm assets in Russia (including, among other things, funds in bank accounts, securities, shares in authorized capital, and certain trademarks, of the named defendants) pending a determination of

certain underlying claims against the Firm. The Firm has challenged claims being pursued in the Russian courts and related freeze orders in other jurisdictions provided for by the parties' contractual forum selections. If further claims are enforced despite the actions taken by the Firm to challenge the claims and orders and to seek the proper application of law, the Firm's assets in Russia could be seized in full, and certain client assets could also be seized, or the Firm could be prevented from complying with its obligations.

SEC Inquiries. In October 2024, the Firm entered into settlements with the SEC to resolve inquiries related to, among other things, conflict disclosures concerning the selection of portfolio managers and the timing of the Firm's liquidation of shares distributed in-kind to certain investment vehicles that invest in third-party managed private funds and certain other matters. The resolutions required the Firm to pay a combined \$151 million in civil penalties and voluntary payments to customers. The Firm continues to cooperate in connection with SEC inquiries concerning the aggregation of accounts for fee billing and various other matters.

Shareholder Litigation. Several shareholder putative class actions, as well as shareholder derivative actions purporting to act on behalf of the Firm, have been filed against the Firm, its Board of Directors and certain of its current and former officers.

Certain of these shareholder suits relate to historical trading practices by former employees in the precious metals and U.S. treasuries markets and related conduct which were the subject of the Firm's resolutions with the DOJ, CFTC and SEC in September 2020, and fiduciary activities that were separately the subject of a resolution between JPMorgan Chase Bank, N.A. and the OCC in November 2020. One of these shareholder derivative suits was filed in the Supreme Court of the State of New York in May 2022, asserting breach of fiduciary duty and unjust enrichment claims relating to the historical trading practices and related conduct and fiduciary activities which were the subject of the resolutions described above. In December 2022, the court granted defendants' motion to dismiss this action in full, and in July 2023, the plaintiff filed an appeal, which remains pending.

A second shareholder derivative action relating to the historical trading practices and related conduct was filed in the United States District Court for the Eastern District of New York in December 2022. Defendants have moved to dismiss the complaint.

Zelle Network Litigation. In December 2024, the Consumer Financial Protection Bureau ("CFPB") filed a complaint against Early Warning Services, LLC ("EWS"), Bank of America, N.A., Wells Fargo Bank, N.A. and JPMorgan Chase Bank, N.A. in the United States District Court for the District of Arizona. The CFPB alleges that EWS and the defendant banks have failed to take sufficient efforts to prevent fraud on the Zelle network. The defendants will file a response to the complaint.

In addition to the various legal proceedings discussed above, JPMorganChase and its subsidiaries are named as defendants or are otherwise involved in a substantial number of other legal proceedings. The Firm believes it has meritorious defenses to the claims asserted against it in its currently outstanding legal proceedings and it intends to defend itself vigorously. Additional legal proceedings may be initiated from time to time in the future.

The Firm has established reserves for several hundred of its currently outstanding legal proceedings. In accordance with the provisions of U.S. GAAP for contingencies, the Firm accrues for a litigation-related liability when it is probable that such a liability has been incurred and the amount of the loss can be reasonably estimated. The Firm evaluates its outstanding legal proceedings each quarter to assess its litigation reserves, and makes adjustments in such reserves, upward or downward, as appropriate, based on management's best judgment after consultation with counsel. The Firm's legal expense was \$740 million, \$1.4 billion and \$266 million for the years ended December 31, 2024, 2023 and 2022, respectively. There is no assurance that the Firm's litigation reserves will not need to be adjusted in the future.

In view of the inherent difficulty of predicting the outcome of legal proceedings, particularly where the claimants seek very large or indeterminate damages, or where the matters present novel legal theories, involve a large number of parties or are in early stages of discovery, the Firm cannot state with confidence what will be the eventual outcomes of the currently pending matters, the timing of their ultimate resolution or the eventual losses, fines, penalties or consequences related to those matters. JPMorganChase believes, based upon its current knowledge and after consultation with counsel, consideration of the material legal proceedings described above and after taking into account its current litigation reserves and its estimated aggregate range of possible losses, that the other legal proceedings currently pending against it should not have a material adverse effect on the Firm's consolidated financial condition. The Firm notes, however, that in light of the uncertainties involved in such proceedings, there is no assurance that the ultimate resolution of these matters will not significantly exceed the reserves it has currently accrued or that a matter will not have material reputational consequences. As a result, the outcome of a particular matter may be material to JPMorganChase's operating results for a particular period, depending on, among other factors, the size of the loss or liability imposed and the level of JPMorganChase's income for that period.

Notes to consolidated financial statements

Note 31 – International operations

The following table presents income statement and balance sheet-related information for JPMorganChase by major international geographic area. The Firm defines international activities for purposes of this footnote presentation as business transactions that involve clients residing outside of the U.S., and the information presented below is based predominantly on the domicile of the client, the location from which the client relationship is managed, booking location or the location of the trading desk. However, many of the Firm's U.S. operations serve international businesses.

As the Firm's operations are highly integrated, estimates and subjective assumptions have been made to apportion revenue and expense between U.S. and international operations. These estimates and assumptions are consistent with the allocations used for the Firm's segment reporting as set forth in Note 32.

The Firm's long-lived assets for the periods presented are not considered by management to be significant in relation to total assets. The majority of the Firm's long-lived assets are located in the U.S.

As of or for the year ended December 31, (in millions)	Revenue ^(b)	Expense ^(c)	Income before income tax expense	Net income	Total assets
2024					
Europe/Middle East/Africa	\$ 22,353	\$ 12,843	\$ 9,510	\$ 6,713	\$ 552,407 ^(d)
Asia-Pacific	11,995	6,922	5,073	3,615	296,430
Latin America/Caribbean	3,885	1,895	1,990	1,512	73,631
Total international	38,233	21,660	16,573	11,840	922,468
North America ^(a)	139,323	80,815	58,508	46,631	3,080,346
Total	\$ 177,556	\$ 102,475	\$ 75,081	\$ 58,471	\$ 4,002,814
2023					
Europe/Middle East/Africa	\$ 20,974	\$ 11,947	\$ 9,027	\$ 6,402	\$ 529,335 ^(d)
Asia-Pacific	10,605	6,550	4,055	2,709	251,588
Latin America/Caribbean	3,294	1,971	1,323	994	83,003
Total international	34,873	20,468	14,405	10,105	863,926
North America ^(a)	123,231	76,024	47,207	39,447	3,011,467
Total	\$ 158,104	\$ 96,492	\$ 61,612	\$ 49,552	\$ 3,875,393
2022					
Europe/Middle East/Africa	\$ 18,765	\$ 11,754	\$ 7,011	\$ 5,158	\$ 558,430 ^(d)
Asia-Pacific	10,025	6,763	3,262	2,119	281,479
Latin America/Caribbean	3,178	1,697	1,481	1,156	78,673
Total international	31,968	20,214	11,754	8,433	918,582
North America ^(a)	96,727	62,315	34,412	29,243	2,747,161
Total	\$ 128,695	\$ 82,529	\$ 46,166	\$ 37,676	\$ 3,665,743

(a) Substantially reflects the U.S.

(b) Revenue is composed of net interest income and noninterest revenue.

(c) Expense is composed of noninterest expense and the provision for credit losses.

(d) Total assets for the U.K. were approximately \$369 billion, \$352 billion and \$357 billion at December 31, 2024, 2023 and 2022, respectively.

Note 32 – Business segments & Corporate

Business segment reorganization: Effective in the second quarter of 2024, the Firm reorganized its reportable business segments by combining the former Corporate & Investment Bank and Commercial Banking business segments to form one reportable segment, the Commercial & Investment Bank. As a result of the reorganization, the Firm has three reportable business segments – Consumer & Community Banking, Commercial & Investment Bank, and Asset & Wealth Management – with the remaining activities in Corporate.

Adoption of accounting standard — Segment Reporting — Improvements to Reportable Segment Disclosures:

This guidance was adopted retrospectively for the Firm's annual Consolidated Financial Statements for the year ended December 31, 2024. The adoption of this guidance requires additional reportable segment disclosures, primarily relating to significant segment expenses and the chief operating decision maker ("CODM"). Adoption of this guidance did not result in changes to the identification of the Firm's reportable business segments, or of its CODM.

The Firm is managed on an LOB basis. The business segments are determined based on the products and services provided, or the type of customer served, and they reflect the manner in which financial information is evaluated by the Firm's Operating Committee, whose members act collectively as the Firm's CODM. Segment results are presented on a managed basis. Refer to Segment & Corporate results in this footnote for a further discussion of JPMorganChase's reportable business segments and Corporate.

The following is a description of each of the Firm's reportable business segments, and the products and services that they provide to their respective client bases, as well as a description of Corporate activities.

Consumer & Community Banking

Consumer & Community Banking offers products and services to consumers and small businesses through bank branches, ATMs, digital (including mobile and online) and telephone banking. CCB is organized into Banking & Wealth Management (including Consumer Banking, Business Banking and J.P. Morgan Wealth Management), Home Lending (including Home Lending Production, Home Lending Servicing and Real Estate Portfolios) and Card Services & Auto. Banking & Wealth Management offers deposit, investment and lending products, cash management, payments and services. Home Lending includes mortgage origination and servicing activities, as well as portfolios consisting of residential mortgages and home equity loans. Card Services issues credit cards and offers travel services. Auto originates and services auto loans and leases.

Commercial & Investment Bank

The Commercial & Investment Bank is comprised of the Banking & Payments and Markets & Securities Services businesses. These businesses offer investment banking, lending, payments, market-making, financing, custody and securities products and services to a global base of corporate and institutional clients. Banking & Payments offers products and services in all major capital markets, including advising on corporate strategy and structure, capital-raising in equity and debt markets, and loan origination and syndication. Banking & Payments also provides services that enable clients to manage payments globally across liquidity and account solutions, commerce solutions, clearing, trade, and working capital. Markets & Securities Services includes Markets, which is a global market-maker across products, including cash and derivative instruments, and also offers sophisticated risk management solutions, lending, prime brokerage, clearing and research. Markets & Securities Services also includes Securities Services, a leading global custodian that provides custody, fund services, liquidity and trading services, and data solutions products.

Asset & Wealth Management

Asset & Wealth Management, with client assets of \$5.9 trillion, is a global leader in investment and wealth management.

Asset Management

Offers multi-asset investment management solutions across equities, fixed income, alternatives and money market funds to institutional and retail investors providing for a broad range of clients' investment needs.

Global Private Bank

Provides retirement products and services, brokerage, custody, estate planning, lending, deposits and investment management to high net worth clients.

The majority of AWM's client assets are in actively managed portfolios.

Corporate

Corporate consists of Treasury and Chief Investment Office ("CIO") and Other Corporate. Treasury and CIO is predominantly responsible for measuring, monitoring, reporting and managing the Firm's liquidity, funding, capital, structural interest rate and foreign exchange risks.

Other Corporate includes staff functions and expense that is centrally managed as well as certain Firm initiatives and activities not solely aligned to a specific LOB. The major Other Corporate functions include Real Estate, Technology, Legal, Corporate Finance, Human Resources, Internal Audit, Risk Management, Compliance, Control Management, Corporate Responsibility and various Other Corporate groups.

Description of business segment reporting methodology

Results of the reportable business segments are intended to present each segment as if it were a stand-alone business. The management reporting process that derives business segment results includes the allocation of certain income and expense items. The Firm periodically assesses the assumptions, methodologies and reporting classifications used for segment reporting, and therefore further refinements may be implemented in future periods. The Firm also assesses the level of capital required for each LOB on at least an annual basis. The Firm's LOBs also provide various business metrics which are utilized by the Firm and its investors and analysts in assessing performance.

Revenue sharing

When business segments or businesses within each segment join efforts to sell products and services to the Firm's clients and customers, the participating businesses may agree to share revenue from those transactions. Revenue is generally recognized in the segment responsible for the related product or service, with allocations to the other segments or businesses involved in the transaction. The segment and business results reflect these revenue-sharing agreements.

Expense allocation

Where business segments use services provided by Corporate support units, or another business segment, the costs of those services are allocated to the respective business segments. The expense is generally allocated based on the actual cost and use of services provided. In contrast, certain costs and investments related to Corporate that are not currently utilized by any LOB are not allocated to the business segments and are retained in Corporate. Expense retained in Corporate generally includes costs that would not be incurred if the segments were stand-alone businesses, and other items not solely aligned with a particular reportable business segment.

Funds transfer pricing

Funds transfer pricing ("FTP") is the process by which the Firm allocates interest income and expense to the LOBs and Other Corporate and transfers the primary interest rate risk and liquidity risk to Treasury and CIO.

The funds transfer pricing process considers the interest rate and liquidity risk characteristics of assets and liabilities and off-balance sheet products.

Periodically, the methodology and assumptions utilized in the FTP process are adjusted to reflect economic conditions and other factors, which may impact the allocation of net interest income to the segments. Effective in the fourth quarter of 2024, the Firm updated its FTP with respect to consumer deposits, which resulted in an increase in the funding benefit reflected within CCB's net interest income that is fully offset in Corporate, with no effect on the Firm's net interest income.

Foreign exchange risk

Foreign exchange risk is transferred from the LOBs and Other Corporate to Treasury and CIO for certain revenues and expenses. Treasury and CIO manages these risks centrally and reports the impact of foreign exchange rate movements related to the transferred risk in its results.

Debt expense and preferred stock dividend allocation

As part of the FTP process, almost all of the cost of the credit spread component of outstanding unsecured long-term debt and preferred stock dividends is allocated to the reportable business segments, while the balance of the cost is retained in Corporate. The methodology to allocate the cost of unsecured long-term debt and preferred stock dividends to the business segments is aligned with the relevant regulatory capital requirements and funding needs of the LOBs, as applicable. The allocated cost of unsecured long-term debt is included in a business segment's net interest income, and net income is reduced by preferred stock dividends, to arrive at a business segment's net income applicable to common equity.

Capital allocation

Each LOB and Corporate is allocated capital by taking into consideration a variety of factors including capital levels of similarly rated peers and applicable regulatory capital requirements. ROE is measured and internal targets for expected returns are established as key measures of an LOB's performance.

The Firm's current equity allocation methodology incorporates Basel III Standardized RWA and the GSIB surcharge, both under rules currently in effect, as well as a simulation of capital depletion in a severe stress environment. At least annually, the assumptions, judgments and methodologies used to allocate capital are reassessed and, as a result, the capital allocated to the LOBs and Corporate may change.

Segment & Corporate results

The following table provides a summary of results for the Firm's reportable business segments and Corporate activities as of or for the years ended December 31, 2024, 2023 and 2022, on a managed basis. The Firm's definition of managed basis starts with the reported U.S. GAAP results and includes certain reclassifications to present total net revenue for the Firm as a whole (and for each of the reportable business segments and Corporate) on an FTE basis. Accordingly, revenue from investments that receive tax credits and tax-exempt securities is presented in the managed results on a basis comparable to taxable investments and securities. This allows management to assess the comparability of revenue from year-to-year arising from both taxable and tax-exempt

sources. The corresponding income tax impact related to tax-exempt items is recorded within income tax expense/(benefit). These adjustments have no impact on net income as reported by the Firm as a whole or by the each of the LOBs and Corporate.

The Operating Committee reviews segment results including net interest income, noninterest revenue, noninterest expense, provision for credit losses and net income on a managed basis. The Operating Committee uses these measures to evaluate segment performance and to make key operating decisions, including resource and capital allocations.

Segment & Corporate results and reconciliation^(a)

(Table continued on next page)

As of or for the year ended December 31, (in millions, except ratios)	Consumer & Community Banking			Commercial & Investment Bank			Asset & Wealth Management		
	2024	2023	2022	2024	2023	2022	2024	2023	2022
Noninterest revenue	\$ 16,649	\$ 15,118	\$ 14,886 ^(e)	\$ 48,253	\$ 43,809	\$ 39,538 ^(b)	\$ 15,023	\$ 13,560	\$ 12,507
Net interest income	54,858	55,030	39,928	21,861	20,544	20,097	6,555	6,267	5,241
Total net revenue	71,507	70,148	54,814	70,114	64,353	59,635	21,578	19,827	17,748
Provision for credit losses	9,974	6,899	3,813	762	2,091	2,426	(68)	159	128
Compensation expense ^(b)	17,045	15,171	13,092	18,191	17,105	16,214	7,984	7,115	6,336
Noncompensation expense ^{(c)(d)}	20,991	19,648	18,116	17,162	16,867	15,855	6,430	5,665	5,493
Total noninterest expense	38,036	34,819	31,208^(e)	35,353	33,972	32,069^(b)	14,414	12,780	11,829
Income/(loss) before income tax expense/(benefit)	23,497	28,430	19,793	33,999	28,290	25,140	7,232	6,888	5,791
Income tax expense/(benefit)	5,894	7,198	4,877 ^(e)	9,153	8,018	6,002 ^(b)	1,811	1,661	1,426
Net income/(loss)	\$ 17,603	\$ 21,232	\$ 14,916	\$ 24,846	\$ 20,272	\$ 19,138	\$ 5,421	\$ 5,227	\$ 4,365
Average equity	\$ 54,500	\$ 54,349	\$ 50,000	\$ 132,000	\$ 137,507	\$ 128,000	\$ 15,500	\$ 16,671	\$ 17,000
Total assets	650,268	642,951	514,085	1,773,194	1,638,493	1,591,402	255,385	245,512	232,037
Return on equity	32 %	38 %	29 %	18 %	14 %	14 %	34 %	31 %	25 %
Overhead ratio	53	50	57	50	53	54	67	64	67

Notes to consolidated financial statements

(Table continued from previous page)

As of or for the year ended December 31, (in millions, except ratios)	Corporate			Reconciling Items ^(a)			Total		
	2024	2023	2022	2024	2023	2022	2024	2023	2022
Noninterest revenue	\$ 7,608 ^(f)	\$ 132	\$ (1,798)	\$ (2,560)	\$ (3,782)	\$ (3,148)	\$ 84,973 ^(f)	\$ 68,837	\$ 61,985
Net interest income	9,786	7,906	1,878	(477)	(480)	(434)	92,583	89,267	66,710
Total net revenue	17,394	8,038	80	(3,037)	(4,262)	(3,582)	177,556	158,104	128,695
Provision for credit losses	10	171	22	—	—	—	10,678	9,320	6,389
Total noninterest expense ^(d)	3,994 ^(g)	5,601	1,034	—	—	—	91,797 ^(g)	87,172	76,140
Income/(loss) before income tax expense/(benefit)	13,390	2,266	(976)	(3,037)	(4,262)	(3,582)	75,081	61,612	46,166
Income tax expense/(benefit)	2,789	(555)	(233)	(3,037)	(4,262)	(3,582)	16,610	12,060	8,490
Net income/(loss)	\$ 10,601	\$ 2,821	\$ (743)	\$ —	\$ —	\$ —	\$ 58,471	\$ 49,552	\$ 37,676
Average equity	\$ 110,370	\$ 73,529	\$ 58,068	\$ —	\$ —	\$ —	\$ 312,370	\$ 282,056	\$ 253,068
Total assets	1,323,967	1,348,437	1,328,219	NA	NA	NA	4,002,814	3,875,393	3,665,743
Return on equity	NM	NM	NM	NM	NM	NM	18 %	17 %	14 %
Overhead ratio	NM	NM	NM	NM	NM	NM	52	55	59

- (a) Segment results on a managed basis reflect revenue on a FTE basis with the corresponding income tax impact recorded within income tax expense/(benefit). These adjustments are eliminated in reconciling items to arrive at the Firm's reported U.S. GAAP results. In addition, effective January 1, 2024, the Firm adopted updates to the Accounting for Investments in Tax Credit Structures guidance, under the modified retrospective method. Refer to Notes 1, 6, 14 and 25 for additional information.
- (b) Excludes expense related to services provided by Corporate support units, which is allocated from Corporate to each respective reportable business segment, as applicable, through noncompensation expense.
- (c) Reflects occupancy; technology, communications and equipment; professional and outside services; marketing; and other expense. Refer to Note 6 for additional information on other expense.
- (d) Certain services are provided by Corporate and used by each of the reportable business segments. The costs of these services, including compensation-related costs, are allocated from Corporate to the respective reportable business segments, with the allocations recorded in noncompensation expense.
- (e) In the first quarter of 2023, the allocations of revenue and expense to CCB associated with a Merchant Services revenue sharing agreement were discontinued and are now retained in Payments in CIB. Prior-period amounts have been revised to conform with the current presentation.
- (f) Included a \$7.9 billion net gain related to Visa shares recorded in the second quarter of 2024. Refer to Notes 2 and 6 for additional information.
- (g) Included a \$1.0 billion contribution of Visa shares to the JPMorgan Chase Foundation recorded in the second quarter of 2024. Refer to Notes 2 and 6 for additional information.

Note 33 – Parent Company

The following tables present Parent Company-only financial statements.

Statements of income and comprehensive income

Year ended December 31, (in millions)	2024	2023	2022
Income			
Dividends from subsidiaries and affiliates:			
Bank and bank holding company	\$ 37,000	\$ 61,000	\$ 40,500
Non-bank	—	—	—
Interest income from subsidiaries	1,228	1,166	498
Other income/(expense) from subsidiaries:			
Bank and bank holding company	555	1,801	(3,497)
Non-bank	172	250	335
Other income/(expense)	1,252	(654)	5,271
Total income	40,207	63,563	43,107
Expense			
Interest expense/(income) to subsidiaries and affiliates ^(a)	7,433	2,258	22,731
Other interest expense/(income) ^(a)	8,068	11,714	(14,658)
Noninterest expense	3,280	3,431	2,817
Total expense	18,781	17,403	10,890
Income before income tax benefit and undistributed net income of subsidiaries	21,426	46,160	32,217
Income tax benefit	1,264	1,525	1,260
Equity in undistributed net income of subsidiaries	35,781	1,867	4,199
Net income	\$ 58,471	\$ 49,552	\$ 37,676
Other comprehensive income/(loss), net	(2,013)	6,898	(17,257)
Comprehensive income	\$ 56,458	\$ 56,450	\$ 20,419

Balance sheets

December 31, (in millions)	2024	2023
Assets		
Cash and due from banks	\$ 38	\$ 42
Deposits with banking subsidiaries	9,762	9,804
Trading assets	43,214	3,198
Advances to, and receivables from, subsidiaries:		
Bank and bank holding company	142	152
Non-bank	79	21
Investments (at equity) in subsidiaries and affiliates:		
Bank and bank holding company	603,044	568,472
Non-bank	1,238	1,045
Other assets	12,097	8,962
Total assets	\$669,614	\$ 591,696
Liabilities and stockholders' equity		
Borrowings from, and payables to, subsidiaries and affiliates	\$ 72,881	\$ 22,777
Short-term borrowings	—	999
Other liabilities	12,349	11,500
Long-term debt ^{(b)(c)}	239,626	228,542
Total liabilities^(c)	324,856	263,818
Total stockholders' equity	344,758	327,878
Total liabilities and stockholders' equity	\$669,614	\$ 591,696

Notes to consolidated financial statements

Statements of cash flows

Year ended December 31, (in millions)	2024	2023	2022
Operating activities			
Net income	\$ 58,471	\$ 49,552	\$ 37,676
Less: Net income of subsidiaries and affiliates	72,781	62,868	44,699
Parent company net loss	(14,310)	(13,316)	(7,023)
Cash dividends from subsidiaries and affiliates	37,000	61,000	40,500
Other operating adjustments	(44,671)	9,412	(23,747)
Net cash provided by/(used in) operating activities	(21,981)	57,096	9,730
Investing activities			
Net change in:			
Advances to and investments in subsidiaries and affiliates, net	—	(25,000)	—
All other investing activities, net	21	25	31
Net cash provided by/(used in) investing activities	21	(24,975)	31
Financing activities			
Net change in:			
Borrowings from subsidiaries and affiliates	49,902	(2,249)	(4,491)
Short-term borrowings	(999)	—	—
Proceeds from long-term borrowings	44,997	19,398	41,389
Payments of long-term borrowings	(29,753)	(25,105)	(18,294)
Proceeds from issuance of preferred stock	2,500	—	—
Redemption of preferred stock	(9,850)	—	(7,434)
Treasury stock repurchased	(18,830)	(9,824)	(3,162)
Dividends paid	(14,783)	(13,463)	(13,562)
All other financing activities, net	(1,270)	(879)	(1,205)
Net cash provided by/(used in) financing activities	21,914	(32,122)	(6,759)
Net increase/(decrease) in cash and due from banks and deposits with banking subsidiaries	(46)	(1)	3,002
Cash and due from banks and deposits with banking subsidiaries at the beginning of the year	9,846	9,847	6,845
Cash and due from banks and deposits with banking subsidiaries at the end of the year	\$ 9,800	\$ 9,846	\$ 9,847
Cash interest paid	\$ 14,851	\$ 13,742	\$ 7,462
Cash income taxes paid, net ^(d)	6,252	10,291	6,941

(a) Includes interest expense for intercompany derivative hedges on the Firm's LTD and related fair value adjustments, which is offset by related amounts in Other interest expense/(income).

- (b) At December 31, 2024, long-term debt that contractually matures in 2025 through 2029 totaled \$7.7 billion, \$29.3 billion, \$20.2 billion, \$35.0 billion, and \$18.5 billion, respectively.
- (c) Refer to Notes 20 and 28 for information regarding the Parent Company's guarantees of its subsidiaries' obligations.
- (d) Represents payments, net of refunds, made by the Parent Company to various taxing authorities and includes taxes paid on behalf of certain of its subsidiaries that are subsequently reimbursed. The reimbursements were \$5.0 billion, \$13.2 billion, and \$11.3 billion for the years ended December 31, 2024, 2023 and 2022, respectively.

Note 34 – Business combinations

On May 1, 2023, JPMorganChase acquired certain assets and assumed certain liabilities of First Republic Bank (the "First Republic acquisition") from the Federal Deposit Insurance Corporation ("FDIC"), as receiver. The acquisition resulted in a bargain purchase gain, which represents the excess of the estimated fair value of the net assets acquired above the purchase price.

The Firm has determined that this acquisition constitutes a business combination under U.S. GAAP. Accordingly, the initial recognition of the assets acquired and liabilities assumed were generally measured at their estimated fair values as of May 1, 2023. The determination of those fair values required management to make certain market-based assumptions about expected future cash flows, discount rates and other valuation inputs at the time of the acquisition. The Firm believes that the fair value estimates of the assets acquired and liabilities assumed provide a reasonable basis for determining the estimated bargain purchase gain.

The First Republic acquisition resulted in a preliminary estimated bargain purchase gain of \$2.7 billion. The final bargain purchase gain of \$2.9 billion reflects adjustments of \$103 million and \$63 million for the years ended December 31, 2024 and 2023, respectively, made during the one-year measurement period, as permitted by U.S. GAAP, to finalize management's fair value estimates for the assets acquired and liabilities assumed. As of December 31, 2024, certain matters related to the final settlement remained outstanding between the Firm and the FDIC.

On January 17, 2025, the Firm reached an agreement with the FDIC with respect to certain outstanding items. As a result of the agreement, the Firm made a payment of \$609 million to the FDIC on January 31, 2025 and reduced its additional payable to the FDIC, which will result in a gain of approximately \$600 million to be recorded in other income in the first quarter of 2025.

In connection with the First Republic acquisition, the Firm and the FDIC entered into two shared-loss agreements with respect to certain loans and lending-related commitments (the "shared-loss assets"): the Commercial Shared-Loss Agreement ("CSLA") and the Single-Family Shared-Loss Agreement ("SFSLA"). The CSLA covers 80% of credit losses, on a pari passu basis, over 5 years with a subsequent 3-year recovery period for certain acquired commercial loans and other real estate exposure. The SFSLA covers 80% of credit losses, on a pari passu basis, for 7 years for certain acquired loans secured by mortgages on real property or shares in cooperative property constituting a primary residence. The indemnification assets, which represent the fair value of the CSLA and SFSLA on the acquisition date, are reflected in the total assets acquired.

As part of the consideration paid, JPMorganChase issued a five-year, \$50 billion secured note to the FDIC (the "Purchase Money Note"). The Purchase Money Note bears interest at a fixed rate of 3.4% and is secured by certain of the acquired loans. The Purchase Money Note is prepayable upon notice to the holder.

The Firm had placed a \$5 billion deposit with First Republic Bank on March 16, 2023, as part of \$30 billion of deposits provided by a consortium of large U.S. banks. The Firm's \$5 billion deposit was effectively settled as part of the acquisition and the associated allowance for credit losses was released upon closing. The Firm subsequently repaid the remaining \$25 billion of deposits to the consortium of banks, including accrued interest through the payment date on May 9, 2023.

Notes to consolidated financial statements

The computation of the purchase price, the fair values of the assets acquired and liabilities assumed as part of the First Republic acquisition and the related bargain purchase gain are presented below, which reflects adjustments made during the measurement period to the acquisition-date fair value of the net assets acquired. The measurement period ended on April 30, 2024.

(in millions)	Fair value purchase price allocation as of May 1, 2023	
Purchase price consideration		
Amounts paid/due to the FDIC, net of cash acquired ^(a)	\$	13,555
Purchase Money Note (at fair value) ^(b)		48,848
Settlement of First Republic deposit and other related party transactions ^(c)		5,447
Contingent consideration - Shared-loss agreements		15
Purchase price consideration	\$	67,865
Assets		
Securities	\$	30,285
Loans		153,242
Core deposit and customer relationship intangibles		1,455
Indemnification assets - Shared-loss agreements		675
Accounts receivable and other assets ^(d)		6,740
Total assets acquired	\$	192,397
Liabilities		
Deposits	\$	87,572
FHLB advances		27,919
Lending-related commitments		2,614
Accounts payable and other liabilities ^(d)		2,792
Deferred tax liabilities		757
Total liabilities assumed	\$	121,654
Fair value of net assets acquired	\$	70,743
Gain on acquisition, after income taxes	\$	2,878

(a) Net of cash acquired of \$680 million, and including disputed amounts with the FDIC as of April 30, 2024.

(b) As part of the consideration paid, JPMorganChase issued a five-year, \$50 billion secured note to the FDIC (the "Purchase Money Note").

(c) Includes \$447 million of securities financing transactions with First Republic Bank that were effectively settled on the acquisition date.

(d) Other assets include \$1.2 billion in tax-oriented investments and \$683 million of lease right-of-use assets. Other liabilities include the related tax-oriented investment liabilities of \$669 million and lease liabilities of \$748 million.

The following describes the accounting policies and fair value methodologies generally used by the Firm for the following assets acquired and liabilities assumed: core deposit and customer relationship intangibles, shared-loss agreements and the related indemnification assets, Purchase Money Note, and FHLB advances.

For further discussion of the Firm's accounting policies and valuation methodologies, refer to Notes 2 and 3 for fair value measurement, Note 10 for investment securities, Note 12 for loans, Note 17 for deposits, and Note 28 for lending-related commitments.

Core deposit and customer relationship intangibles

Core deposit and certain wealth management customer relationship intangibles were acquired as part of the First Republic acquisition. The core deposit intangible of \$1.3 billion was valued by discounting estimated after-tax cost savings over the remaining useful life of the deposits using the favorable source of funds method. The after-tax cost savings were estimated based on the difference between the cost of maintaining the core deposit base relative to the cost of next best alternative funding sources available to market participants. The customer relationship intangibles of \$180 million were valued by discounting estimated after-tax earnings over their remaining useful lives using the multi-period excess earnings

method. Both intangible asset valuations utilized assumptions that the Firm believes a market participant would use to estimate fair values, such as growth and attrition rates, projected fee income as well as related costs to service the relationships, and discount rates. The core deposit and customer relationship intangibles are amortized over a projected period of future cash flows of approximately 7 years. Refer to Note 15 for further discussion on other intangible assets.

Indemnification assets - Shared-loss agreements

The indemnification assets represent forecasted recoveries from the FDIC associated with the shared-loss assets over the respective shared-loss recovery periods. The indemnification assets were recorded at fair value in other assets on the Consolidated balance sheets on the acquisition date. The fair values of the indemnification assets were estimated based on the timing of the forecasted losses underlying the related allowance for credit losses. The subsequent quarterly remeasurement of the indemnification assets is based on changes in the amount and timing of forecasted losses in the allowance for credit losses associated with the shared-loss assets and is recorded in other income. Under certain circumstances, the Firm may be required to make a payment to the FDIC upon termination of the shared-loss agreements based on the level of actual losses and recoveries on the shared-loss assets. The estimated potential future payment is reflected as contingent consideration as part of the purchase price consideration.

Loans

The following table presents the unpaid principal balance ("UPB") and fair values of the loans acquired as of May 1, 2023, and reflects adjustments made during the measurement period to the acquisition-date fair value of the loans acquired.

(in millions)	May 1, 2023	
	UPB	Fair value
Residential real estate	\$ 106,240	\$ 92,053
Auto and other	3,093	2,030
Total consumer	109,333	94,083
Secured by real estate	37,117	33,602
Commercial & industrial	4,332	3,932
Other	23,499	21,625
Total wholesale	64,948	59,159
Total loans	\$ 174,281	\$ 153,242

Unaudited pro forma condensed combined financial information

The following table presents certain unaudited pro forma financial information for the year ended December 31, 2023 and 2022 as if the First Republic acquisition had occurred on January 1, 2022, including recognition of the estimated bargain purchase gain of \$2.8 billion and the provision for credit losses of \$1.2 billion. Additional adjustments include the interest on the Purchase Money Note and the impact of amortizing and accreting certain estimated fair value adjustments related to intangible assets, loans and lending-related commitments.

The Firm expects to achieve operating cost savings and other business synergies resulting from the acquisition that are not reflected in the pro forma amounts. The pro forma information is not necessarily indicative of the historical results of operations had the acquisition occurred on January 1, 2022, nor is it indicative of the results of operations in future periods.

(in millions)	Year ended December 31,	
	2023	2022
Noninterest revenue	\$ 65,816	\$ 66,510
Net interest income	90,856	71,005
Net income	48,665	41,089

Supplementary Information: Distribution of assets, liabilities and stockholders' equity; interest rates and interest differentials

Consolidated average balance sheets, interest and rates

Provided below is a summary of JPMorganChase's consolidated average balances, interest and rates on a taxable-equivalent basis for the years 2022 through 2024. Income computed on a taxable-equivalent basis is the income reported in the Consolidated statements

of income, adjusted to present interest income and rates earned on assets exempt from income taxes (i.e., federal taxes) on a basis comparable with other taxable investments. The incremental tax rate used for calculating the taxable-equivalent adjustment was approximately 24% in 2024, 2023 and 2022.

(Table continued on next page)

(Unaudited)	2024		
Year ended December 31, (Taxable-equivalent interest and rates; in millions, except rates)	Average balance ^(f)	Interest ^(f)	Rate
Assets			
Deposits with banks	\$ 490,205	\$ 22,297	4.55 %
Federal funds sold and securities purchased under resale agreements	359,197	18,299	5.09
Securities borrowed	209,744	9,208	4.39
Trading assets – debt instruments	456,029	20,373	4.47
Taxable securities	583,329	21,947	3.76
Non-taxable securities ^(a)	27,912	1,393	4.99
Total investment securities	611,241	23,340	3.82 ⁽ⁱ⁾
Loans	1,322,425	92,588 ^(h)	7.00
All other interest-earning assets ^{(b)(c)}	88,726	8,305	9.36
Total interest-earning assets	3,537,567	194,410	5.50
Allowance for loan losses	(22,877)		
Cash and due from banks	22,591		
Trading assets – equity and other instruments	208,534		
Trading assets – derivative receivables	57,005		
Goodwill, MSRs and other intangible assets	64,393		
All other noninterest-earning assets	218,709		
Total assets	\$ 4,085,922		
Liabilities			
Interest-bearing deposits	\$ 1,748,050	\$ 49,559	2.84 %
Federal funds purchased and securities loaned or sold under repurchase agreements	363,820	19,149	5.26
Short-term borrowings	39,593	2,101	5.31
Trading liabilities – debt and all other interest-bearing liabilities ^{(d)(e)}	314,054	10,238	3.26
Beneficial interests issued by consolidated VIEs	26,515	1,383	5.22
Long-term debt	344,346	18,920	5.49
Total interest-bearing liabilities	2,836,378	101,350	3.57
Noninterest-bearing deposits	638,592		
Trading liabilities – equity and other instruments ^(e)	32,025		
Trading liabilities – derivative payables	39,497		
All other liabilities, including the allowance for lending-related commitments	203,006		
Total liabilities	3,749,498		
Stockholders' equity			
Preferred stock	24,054		
Common stockholders' equity	312,370		
Total stockholders' equity	336,424 ^(g)		
Total liabilities and stockholders' equity	\$ 4,085,922		
Interest rate spread			1.93 %
Net interest income and net yield on interest-earning assets		\$ 93,060	2.63

(a) Represents securities that are tax-exempt for U.S. federal income tax purposes.

(b) Includes brokerage-related held-for-investment customer receivables, which are classified in accrued interest and accounts receivable, and all other interest-earning assets, which are classified in other assets on the Consolidated Balance Sheets.

(c) The rates reflect the impact of interest earned on cash collateral where the cash collateral has been netted against certain derivative payables.

(d) All other interest-bearing liabilities include brokerage-related customer payables.

(e) The combined balance of trading liabilities – debt and equity instruments was \$185.4 billion, \$153.3 billion and \$138.1 billion for the years ended December 31, 2024, 2023 and 2022, respectively.

(f) Includes the effect of derivatives that qualify for hedge accounting where applicable. Taxable-equivalent amounts are used, also where applicable. Refer to Note 5 for additional information on hedge accounting.

(Table continued from previous page)

2023			2022		
Average balance ^(f)	Interest ^(f)	Rate	Average balance ^(f)	Interest ^(f)	Rate
\$ 499,396	\$ 21,797	4.36 %	\$ 670,773	\$ 9,039	1.35 %
317,159	15,079	4.75	307,150	4,632	1.51
193,228	7,983	4.13	205,516	2,237	1.09
376,928	16,001	4.25	283,108	9,097	3.21
573,914	17,390	3.03	626,122	10,372	1.66
30,886	1,560	5.05	27,863	1,224	4.39
604,800	18,950	3.13 ⁽ⁱ⁾	653,985	11,596	1.77 ⁽ⁱ⁾
1,248,076	83,589 ^(h)	6.70	1,100,318	52,877 ^(h)	4.81
86,121	7,669	8.90	128,229	3,763	2.93
3,325,708	171,068	5.14	3,349,079	93,241	2.78
(20,762)			(17,399)		
24,853			27,601		
160,087			140,778		
64,227			78,606		
63,212			59,467		
204,899			215,408		
\$ 3,822,224			\$ 3,853,540		
\$ 1,698,529	\$ 40,016	2.36 %	\$ 1,748,666	\$ 10,082	0.58 %
256,086	13,259	5.18	242,762	3,721	1.53
37,468	1,894	5.05	46,063	747	1.62
286,605	9,396	3.28	268,019	3,246	1.21
18,648	953	5.11	11,208	226	2.02
296,433	15,803	5.33	250,080	8,075	3.23
2,593,769	81,321	3.14	2,566,798	26,097	1.02
660,538			719,249		
30,501			39,155		
46,355			57,388		
181,601			185,989		
3,512,764			3,568,579		
27,404			31,893		
282,056			253,068		
309,460 ^(g)			284,961 ^(g)		
\$ 3,822,224			\$ 3,853,540		
		2.00 %			1.76 %
\$ 89,747		2.70	\$ 67,144		2.00

(g) The ratio of average stockholders' equity to average assets was 8.2%, 8.1% and 7.4% for the years ended December 31, 2024, 2023 and 2022, respectively. The return on average stockholders' equity, based on net income, was 17.4%, 16.0% and 13.2% for the years ended December 31, 2024, 2023 and 2022, respectively.

(h) Included fees and commissions on loans of \$3.6 billion, \$2.2 billion and \$1.8 billion for the years ended December 31, 2024, 2023 and 2022, respectively.

(i) The annualized rate for securities based on amortized cost was 3.79%, 3.09% and 1.75% for the years ended December 31, 2024, 2023 and 2022, respectively, and does not give effect to changes in fair value that are reflected in AOCI.

Within the Consolidated average balance sheets, interest and rates summary, the principal amounts of nonaccrual loans have been included in the average loan balances used to determine the average interest rate earned on loans. Refer to Note 12 for additional information on nonaccrual loans, including interest accrued.

Interest rates and interest differential analysis of net interest income – U.S. and non-U.S.

Presented below is a summary of interest and rates segregated between U.S. and non-U.S. operations for the years 2022 through 2024. The segregation of U.S. and non-U.S. components is based on the location of the office recording the transaction.

(Table continued on next page)

(Unaudited) Year ended December 31, (Taxable-equivalent interest and rates; in millions, except rates)	2024		
	Average balance	Interest	Rate
Interest-earning assets			
Deposits with banks:			
U.S.	\$ 284,913	\$ 15,157	5.32 %
Non-U.S.	205,292	7,140	3.48
Federal funds sold and securities purchased under resale agreements:			
U.S.	193,210	10,686	5.53
Non-U.S.	165,987	7,613	4.59
Securities borrowed:			
U.S.	150,251	7,330	4.88
Non-U.S.	59,493	1,878	3.16
Trading assets – debt instruments:			
U.S.	309,568	13,579	4.39
Non-U.S.	146,461	6,794	4.64
Investment securities:			
U.S.	567,784	21,458	3.78
Non-U.S.	43,457	1,882	4.33
Loans:			
U.S.	1,211,978	85,621	7.06
Non-U.S.	110,447	6,967	6.31
All other interest-earning assets, predominantly U.S. ^(a)	88,726	8,305	9.36
Total interest-earning assets	3,537,567	194,410	5.50
Interest-bearing liabilities			
Interest-bearing deposits:			
U.S.	1,307,000	33,173	2.54
Non-U.S.	441,050	16,386	3.72
Federal funds purchased and securities loaned or sold under repurchase agreements:			
U.S.	294,476	15,949	5.42
Non-U.S.	69,344	3,200	4.61
Trading liabilities – debt, short-term and all other interest-bearing liabilities:			
U.S.	222,710	8,289	3.72
Non-U.S.	130,937	4,050	3.09
Beneficial interests issued by consolidated VIEs, predominantly U.S.	26,515	1,383	5.22
Long-term debt:			
U.S.	338,166	18,760	5.55
Non-U.S.	6,180	160	2.59
Total interest-bearing liabilities	2,836,378	101,350	3.57
Noninterest-bearing liabilities ^(b)	701,189		
Total investable funds	\$ 3,537,567	\$ 101,350	2.86 %
Net interest income and net yield:		\$ 93,060	2.63 %
U.S.		80,913	2.92
Non-U.S.		12,147	1.58
Percentage of total assets and liabilities attributable to non-U.S. operations:			
Assets			24.3
Liabilities			20.5

(a) The rates reflect the impact of interest earned on cash collateral where that cash collateral has been netted against certain derivative payables.

(b) Represents the amount of noninterest-bearing liabilities funding interest-earning assets.

Refer to the “Net interest income” discussion in Consolidated Results of Operations on pages 59–62 for further information.

(Table continued from previous page)

2023			2022		
Average balance	Interest	Rate	Average balance	Interest	Rate
\$ 296,784	\$ 15,348	5.17 %	\$ 456,366	\$ 7,418	1.63 %
202,612	6,449	3.18	214,407	1,621	0.76
155,304	8,330	5.36	130,213	2,191	1.68
161,855	6,749	4.17	176,937	2,441	1.38
133,805	6,239	4.66	142,736	1,811	1.27
59,423	1,744	2.93	62,780	426	0.68
248,541	10,721	4.31	170,975	5,414	3.17
128,387	5,280	4.11	112,133	3,683	3.28
568,505	17,469	3.07	623,285	10,994	1.76
36,295	1,481	4.08	30,700	602	1.96
1,137,162	76,884	6.76	985,187	48,953	4.97
110,914	6,705	6.05	115,131	3,924	3.41
86,121	7,669	8.90	128,229	3,763	2.93
3,325,708	171,068	5.14	3,349,079	93,241	2.78
1,290,110	26,253	2.03	1,358,322	7,026	0.52
408,419	13,763	3.37	390,344	3,056	0.78
197,049	10,639	5.40	173,016	3,083	1.78
59,037	2,620	4.44	69,746	638	0.91
205,388	7,774	3.79	194,570	2,384	1.23
118,685	3,516	2.96	119,512	1,609	1.35
18,648	953	5.11	11,208	226	2.02
293,218	15,749	5.37	246,670	8,026	3.25
3,215	54	1.68	3,410	49	1.44
2,593,769	81,321	3.14	2,566,798	26,097	1.02
731,939			782,281		
\$ 3,325,708	\$ 81,321	2.45 %	\$ 3,349,079	\$ 26,097	0.78 %
	\$ 89,747	2.70 %		\$ 67,144	2.00 %
	77,923	3.01		58,950	2.27
	11,824	1.61		8,194	1.09
		24.7			24.9
		20.2			20.6

Changes in net interest income, volume and rate analysis

The table below presents an attribution of net interest income between volume and rate. The attribution between volume and rate is calculated using annual average balances for each category of assets and liabilities shown in the table and the corresponding annual rates (refer to pages 322-325 for more information on average balances and rates). In this analysis, when the change cannot be isolated to either volume or rate, it has been allocated to volume. The annual rates include the impact of changes in market rates, as well as the impact of any change in composition of the various products within each category of asset or liability. This analysis is calculated separately for each category without consideration of the relationship between categories (for example, the net spread between the rates earned on assets and the rates paid on liabilities that fund those assets). As a result, changes in the granularity or groupings considered in this analysis would produce a different attribution result, and due to the complexities involved, precise allocation of changes in interest rates between volume and rates is inherently complex and judgmental.

(Unaudited)	2024 versus 2023			2023 versus 2022		
	Increase/(decrease) due to change in:			Increase/(decrease) due to change in:		
	Volume	Rate	Net change	Volume	Rate	Net change
Year ended December 31, (On a taxable-equivalent basis; in millions)						
Interest-earning assets						
Deposits with banks:						
U.S.	\$ (636)	\$ 445	\$ (191)	\$ (8,225)	\$ 16,155	\$ 7,930
Non-U.S.	83	608	691	(361)	5,189	4,828
Federal funds sold and securities purchased under resale agreements:						
U.S.	2,092	264	2,356	1,347	4,792	6,139
Non-U.S.	184	680	864	(629)	4,937	4,308
Securities borrowed:						
U.S.	797	294	1,091	(411)	4,839	4,428
Non-U.S.	(3)	137	134	(95)	1,413	1,318
Trading assets – debt instruments:						
U.S.	2,659	199	2,858	3,358	1,949	5,307
Non-U.S.	834	680	1,514	666	931	1,597
Investment securities:						
U.S.	(47)	4,036	3,989	(1,690)	8,165	6,475
Non-U.S.	310	91	401	228	651	879
Loans:						
U.S.	5,326	3,411	8,737	10,296	17,635	27,931
Non-U.S.	(26)	288	262	(258)	3,039	2,781
All other interest-earning assets, predominantly U.S.	240	396	636	(3,749)	7,655	3,906
Change in interest income	11,813	11,529	23,342	477	77,350	77,827
Interest-bearing liabilities						
Interest-bearing deposits:						
U.S.	340	6,580	6,920	(1,284)	20,511	19,227
Non-U.S.	1,194	1,429	2,623	597	10,110	10,707
Federal funds purchased and securities loaned or sold under repurchase agreements:						
U.S.	5,271	39	5,310	1,293	6,263	7,556
Non-U.S.	480	100	580	(480)	2,462	1,982
Trading liabilities – debt, short-term and all other interest- bearing liabilities:						
U.S.	659	(144)	515	409	4,981	5,390
Non-U.S.	380	154	534	(17)	1,924	1,907
Beneficial interests issued by consolidated VIEs, predominantly U.S.	409	21	430	381	346	727
Long-term debt:						
U.S.	2,483	528	3,011	2,494	5,229	7,723
Non-U.S.	77	29	106	(3)	8	5
Change in interest expense	11,293	8,736	20,029	3,390	51,834	55,224
Change in net interest income	\$ 520	\$ 2,793	\$ 3,313	\$ (2,913)	\$ 25,516	\$ 22,603

Glossary of Terms and Acronyms

2023 Form 10-K: Annual report on Form 10-K for the year ended December 31, 2023, filed with the U.S. Securities and Exchange Commission.

ABS: Asset-backed securities

Active foreclosures: Loans referred to foreclosure where formal foreclosure proceedings are ongoing. Includes both judicial and non-judicial states.

AFS: Available-for-sale

ALCO: Asset Liability Committee

Alternative assets “Alternatives”: The following types of assets constitute alternative investments - hedge funds, currency, real estate, private equity and other investment funds designed to focus on nontraditional strategies

Amortized cost: Amount at which a financing receivable or investment is originated or acquired, adjusted for accretion or amortization of premium, discount, and net deferred fees or costs, collection of cash, charge-offs, foreign exchange, and fair value hedge accounting adjustments. For AFS securities, amortized cost is also reduced by any impairment losses recognized in earnings. Amortized cost is not reduced by the allowance for credit losses, except where explicitly presented net.

AOCI: Accumulated other comprehensive income/ (loss)

ARM: Adjustable rate mortgage(s)

AUC: “Assets under custody”: Represents assets held directly or indirectly on behalf of clients under safekeeping, custody and servicing arrangements.

AUM: “Assets under management”: Represent assets managed by AWM on behalf of its Private Banking, Institutional and Retail clients. Includes “Committed capital not Called.”

Auto loan and lease origination volume: Dollar amount of auto loans and leases originated.

AWM: Asset & Wealth Management

Beneficial interests issued by consolidated VIEs: Represents the interest of third-party holders of debt, equity securities, or other obligations, issued by VIEs that JPMorganChase consolidates.

Benefit obligation: Refers to the projected benefit obligation for pension plans and the accumulated postretirement benefit obligation for OPEB plans.

BHC: Bank holding company

BWM: Banking & Wealth Management

Bridge Financing Portfolio: A portfolio of held-for-sale unfunded loan commitments and funded loans. The unfunded commitments include both short-term bridge loan commitments that will ultimately be replaced by longer term financing as well as term loan commitments. The funded loans include term loans and funded revolver facilities.

CB: Commercial Banking

CCAR: Comprehensive Capital Analysis and Review

CCB: Consumer & Community Banking

CCB Consumer customer: A unique individual that has financial ownership or decision-making power with respect to accounts; excludes customers under the age of 18. Where a customer uses the same identifier as both a Consumer and a Small business, the customer is included in both metrics.

CCB Small business customer: A unique business or legal entity that has financial ownership or decision-making power with respect to accounts. Where a customer uses the same identifier as both a Consumer and a Small business, the customer is included in both metrics.

CCO: Chief Compliance Officer

CCP: “Central counterparty” is a clearing house that interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer and thereby ensuring the future performance of open contracts. A CCP becomes a counterparty to trades with market participants through novation, an open offer system, or another legally binding arrangement.

CDS: Credit default swaps

CECL: Current Expected Credit Losses

CEO: Chief Executive Officer

CET1 Capital: Common equity Tier 1 capital

CFO: Chief Financial Officer

CFP: Contingency funding plan

CFTC: Commodity Futures Trading Commission

CIB: Commercial & Investment Bank

CIO: Chief Investment Office

Client assets: Represent assets under management as well as custody, brokerage, administration and deposit accounts.

Client deposits and other third-party liabilities: Deposits, as well as deposits that are swept to on-balance sheet liabilities (e.g., commercial paper, federal funds purchased and securities loaned or sold under repurchase agreements) as part of client cash management programs.

Client investment assets: Represent assets under management as well as custody, brokerage and annuity accounts, and deposits held in investment accounts.

CLO: Collateralized loan obligations

CLTV: Combined loan-to-value

CMT: Constant Maturity Treasury

Collateral-dependent: A loan is considered to be collateral-dependent when repayment of the loan is expected to be provided substantially through the operation or sale of the collateral when the borrower is

Glossary of Terms and Acronyms

experiencing financial difficulty, including when foreclosure is deemed probable based on borrower delinquency.

Commercial Card: provides a wide range of payment services to corporate and public sector clients worldwide through the commercial card products. Services include procurement, corporate travel and entertainment, expense management services, and business-to-business payment solutions.

Credit derivatives: Financial instruments whose value is derived from the credit risk associated with the debt of a third-party issuer (the reference entity) which allow one party (the protection purchaser) to transfer that risk to another party (the protection seller). Upon the occurrence of a credit event by the reference entity, which may include, among other events, the bankruptcy or failure to pay its obligations, or certain restructurings of the debt of the reference entity, neither party has recourse to the reference entity. The protection purchaser has recourse to the protection seller for the difference between the face value of the CDS contract and the fair value at the time of settling the credit derivative contract. The determination as to whether a credit event has occurred is generally made by the relevant International Swaps and Derivatives Association ("ISDA") Determinations Committee.

Criticized: Criticized loans, lending-related commitments and derivative receivables that are classified as special mention, substandard and doubtful categories for regulatory purposes and are generally consistent with a rating of CCC+/Caa1 and below, as defined by S&P and Moody's.

CRO: Chief Risk Officer

CRR: Capital Requirements Regulation

CTC: CIO, Treasury and Corporate

Custom lending: Loans to AWM's Global Private Bank clients, including loans to private investment funds and loans that are collateralized by nontraditional asset types, such as art work, aircraft, etc.

CVA: Credit valuation adjustment

Debit and credit card sales volume: Dollar amount of card member purchases, net of returns.

Deposit margin: Represents net interest income expressed as a percentage of average deposits.

Distributed denial-of-service attack: The use of a large number of remote computer systems to electronically send a high volume of traffic to a target website to create a service outage at the target. This is a form of cyberattack.

Dodd-Frank Act: Wall Street Reform and Consumer Protection Act

DVA: Debit valuation adjustment

EC: European Commission

Eligible HQLA: Eligible high-quality liquid assets, for purposes of calculating the LCR, is the amount of unencumbered HQLA that satisfy certain operational considerations as defined in the LCR rule.

Eligible LTD: Long-term debt satisfying certain eligibility criteria

Embedded derivatives: are implicit or explicit terms or features of a financial instrument that affect some or all of the cash flows or the value of the instrument in a manner similar to a derivative. An instrument containing such terms or features is referred to as a "hybrid." The component of the hybrid that is the non-derivative instrument is referred to as the "host." For example, callable debt is a hybrid instrument that contains a plain vanilla debt instrument (i.e., the host) and an embedded option that allows the issuer to redeem the debt issue at a specified date for a specified amount (i.e., the embedded derivative). However, a floating rate instrument is not a hybrid composed of a fixed-rate instrument and an interest rate swap.

EPS: Earnings per share

ERISA: Employee Retirement Income Security Act of 1974

ETD: "Exchange-traded derivatives": Derivative contracts that are executed on an exchange and settled via a central clearing house.

EU: European Union

Expense categories:

- Volume- and/or revenue-related expenses generally correlate with changes in the related business/ transaction volume or revenue. Examples include commissions and incentive compensation within the LOBs, depreciation expense related to operating lease assets, and brokerage expense related to trading transaction volume.
- Investments in the business include expenses associated with supporting medium- to longer-term strategic plans of the Firm. Examples include front office growth, market expansion, initiatives in technology (including related compensation), marketing, and acquisitions.
- Structural expenses are those associated with the day-to-day cost of running the Firm and are expenses not included in the above two categories. Examples include employee salaries and benefits, certain other incentive compensation, and costs related to real estate.

Fannie Mae: Federal National Mortgage Association

FASB: Financial Accounting Standards Board

FCA: Financial Conduct Authority

FCC: Firmwide Control Committee

FDIC: Federal Deposit Insurance Corporation

FDM: "Financial difficulty modification" applies to loan modifications effective January 1, 2023, and is deemed

Glossary of Terms and Acronyms

to occur when the Firm modifies specific terms of the original loan agreement. The following types of modifications are considered FDMs: principal forgiveness, interest rate reduction, other-than-insignificant payment delay, term extension or a combination of these modifications.

Federal Reserve: The Board of the Governors of the Federal Reserve System

FFIEC: Federal Financial Institutions Examination Council

FHA: Federal Housing Administration

FHLB: Federal Home Loan Bank

FICC: The Fixed Income Clearing Corporation

FICO score: A measure of consumer credit risk provided by credit bureaus, typically produced from statistical models by Fair Isaac Corporation utilizing data collected by the credit bureaus.

FINRA: Financial Industry Regulatory Authority

Firm: JPMorgan Chase & Co.

Forward points: Represents the interest rate differential between two currencies, which is either added to or subtracted from the current exchange rate (i.e., “spot rate”) to determine the forward exchange rate.

FRC: Firmwide Risk Committee

Freddie Mac: Federal Home Loan Mortgage Corporation

Free standing derivatives: a derivative contract entered into either separate and apart from any of the Firm’s other financial instruments or equity transactions. Or, in conjunction with some other transaction and is legally detachable and separately exercisable.

FSB: Financial Stability Board

FTE: Fully taxable equivalent

FVA: Funding valuation adjustment

FX: Foreign exchange

G7: Group of Seven nations: Countries in the G7 are Canada, France, Germany, Italy, Japan, the U.K. and the U.S.

G7 government securities: Securities issued by the government of one of the G7 nations.

Ginnie Mae: Government National Mortgage Association

GSIB: Global systemically important banks

HELOC: Home equity line of credit

Home equity – senior lien: Represents loans and commitments where JPMorganChase holds the first security interest on the property.

Home equity – junior lien: Represents loans and commitments where JPMorganChase holds a security

interest that is subordinate in rank to other liens.

HQLA: “High-quality liquid assets” consist of cash and certain high-quality liquid securities as defined in the LCR rule.

HTM: Held-to-maturity

IBOR: Interbank Offered Rate

ICAAP: Internal capital adequacy assessment process

IDI: Insured depository institutions

IHC: JPMorgan Chase Holdings LLC, an intermediate holding company

Indirect tax expense: Refers to taxes that are imposed on goods and services rather than on income. Examples of indirect taxes include value-added tax (“VAT”) and sales tax, among others.

Investment-grade: An indication of credit quality based on JPMorganChase’s internal risk assessment. The Firm considers ratings of BBB-/Baa3 or higher as investment-grade.

IPO: Initial public offering

ISDA: International Swaps and Derivatives Association

JPMorganChase: JPMorgan Chase & Co.

JPMorgan Chase Bank, N.A.: JPMorgan Chase Bank, National Association

JPMorgan Chase Foundation or the Firm’s Foundation: A not-for-profit organization that makes contributions for charitable and educational purposes.

J.P. Morgan Securities: J.P. Morgan Securities LLC

JPMSE: J.P. Morgan SE

LCR: Liquidity coverage ratio

LDA: Loss Distribution Approach

LGD: Loss given default

LIBOR: London Interbank Offered Rate

LLC: Limited Liability Company

LOB: Line of business

LOB CROs: Line of Business and CTC Chief Risk Officers

LTIP: Long-term incentive plan

LTV: “Loan-to-value”: For residential real estate loans, the relationship, expressed as a percentage, between the principal amount of a loan and the appraised value of the collateral (i.e., residential real estate) securing the loan.

Origination date LTV ratio

The LTV ratio at the origination date of the loan. Origination date LTV ratios are calculated based on the actual appraised values of collateral (i.e., loan-level data) at the origination date.

Current estimated LTV ratio

An estimate of the LTV as of a certain date. The current estimated LTV ratios are calculated using estimated collateral values derived from a nationally recognized

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home price index measured at the metropolitan statistical area (“MSA”) level. These MSA-level home price indices consist of actual data to the extent available and forecasted data where actual data is not available. As a result, the estimated collateral values used to calculate these ratios do not represent actual appraised loan-level collateral values; as such, the resulting LTV ratios are necessarily imprecise and should therefore be viewed as estimates.

Combined LTV ratio

The LTV ratio considering all available lien positions, as well as unused lines, related to the property. Combined LTV ratios are used for junior lien home equity products.

Macro businesses: the macro businesses include Rates, Currencies and Emerging Markets, Fixed Income Financing and Commodities in CIB's Fixed Income Markets.

Managed basis: A non-GAAP presentation of Firmwide financial results that includes reclassifications to present revenue on a fully taxable-equivalent basis. Management also uses this financial measure at the segment level, because it believes this provides information to enable investors to understand the underlying operational performance and trends of the particular business segment and facilitates a comparison of the business segment with the performance of competitors.

Markets: consists of CIB's Fixed Income Markets and Equity Markets businesses.

Master netting agreement: A single agreement with a counterparty that permits multiple transactions governed by that agreement to be terminated or accelerated and settled through a single payment in a single currency in the event of a default (e.g., bankruptcy, failure to make a required payment or securities transfer or deliver collateral or margin when due).

MBS: Mortgage-backed securities

MD&A: Management's discussion and analysis

Measurement alternative: Measures equity securities without readily determinable fair values at cost less impairment (if any), plus or minus observable price changes from an identical or similar investment of the same issuer.

Merchant Services: offers merchants payment processing capabilities, fraud and risk management, data and analytics, and other payments services. Through Merchant Services, merchants of all sizes can accept payments via credit and debit cards and payments in multiple currencies.

MEV: Macroeconomic variable

Moody's: Moody's Investor Services

Mortgage origination channels:

Retail – Borrowers who buy or refinance a home through direct contact with a mortgage banker employed by the Firm using a branch office, the Internet or by phone. Borrowers are frequently referred to a mortgage banker by a banker in a Chase branch, real estate brokers, home builders or other third parties.

Correspondent – Banks, thrifts, other mortgage banks and other financial institutions that sell closed loans to the Firm.

Mortgage product types:

Alt-A

Alt-A loans are generally higher in credit quality than subprime loans but have characteristics that would disqualify the borrower from a traditional prime loan. Alt-A lending characteristics may include one or more of the following: (i) limited documentation; (ii) a high CLTV ratio; (iii) loans secured by non-owner occupied properties; or (iv) a debt-to-income ratio above normal limits. A substantial proportion of the Firm's Alt-A loans are those where a borrower does not provide complete documentation of his or her assets or the amount or source of his or her income.

Option ARMs

The option ARM real estate loan product is an adjustable-rate mortgage loan that provides the borrower with the option each month to make a fully amortizing, interest-only or minimum payment. The minimum payment on an option ARM loan is based on the interest rate charged during the introductory period. This introductory rate is usually significantly below the fully indexed rate. The fully indexed rate is calculated using an index rate plus a margin. Once the introductory period ends, the contractual interest rate charged on the loan increases to the fully indexed rate and adjusts monthly to reflect movements in the index. The minimum payment is typically insufficient to cover interest accrued in the prior month, and any unpaid interest is deferred and added to the principal balance of the loan. Option ARM loans are subject to payment recast, which converts the loan to a variable-rate fully amortizing loan upon meeting specified loan balance and anniversary date triggers.

Prime

Prime mortgage loans are made to borrowers with good credit records who meet specific underwriting requirements, including prescriptive requirements related to income and overall debt levels. New prime mortgage borrowers provide full documentation and generally have reliable payment histories.

Subprime

Subprime loans are loans that, prior to mid-2008, were offered to certain customers with one or more high risk characteristics, including but not limited to: (i) unreliable or poor payment histories; (ii) a high LTV ratio of greater than 80% (without borrower-paid mortgage insurance); (iii) a high debt-to-income ratio; (iv) an occupancy type for the loan is other than the borrower's

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primary residence; or (v) a history of delinquencies or late payments on the loan.

MREL: Minimum requirements for own funds and eligible liabilities

MSR: Mortgage servicing rights

Multi-asset: Any fund or account that allocates assets under management to more than one asset class.

NA: Data is not applicable or available for the period presented.

NAV: Net Asset Value

Net Capital Rule: Rule 15c3-1 under the Securities Exchange Act of 1934.

Net charge-off/(recovery) rate: Represents net charge-offs/(recoveries) (annualized) divided by average retained loans for the reporting period.

Net interchange income includes the following components:

- **Interchange income:** Fees earned by credit and debit card issuers on sales transactions.
- **Rewards costs:** The cost to the Firm for points earned by cardholders enrolled in credit card rewards programs generally tied to sales transactions.
- **Partner payments:** Payments to co-brand credit card partners based on the cost of loyalty program rewards earned by cardholders on credit card transactions.

Net mortgage servicing revenue: Includes operating revenue earned from servicing third-party mortgage loans, which is recognized over the period in which the service is provided; changes in the fair value of MSRs; the impact of risk management activities associated with MSRs; and gains and losses on securitization of excess mortgage servicing. Net mortgage servicing revenue also includes gains and losses on sales and lower of cost or fair value adjustments of certain repurchased loans insured by U.S. government agencies.

Net revenue rate: Represents Card Services net revenue (annualized) expressed as a percentage of average loans for the period.

Net yield on interest-earning assets: The average rate for interest-earning assets less the average rate paid for all sources of funds.

NFA: National Futures Association

NM: Not meaningful

NOL: Net operating loss

Nonaccrual loans: Loans for which interest income is not recognized on an accrual basis. Loans (other than credit card loans and certain consumer loans insured by U.S. government agencies) are placed on nonaccrual status when full payment of principal and interest is not expected, regardless of delinquency status, or when principal and interest have been in default for a period

of 90 days or more unless the loan is both well-secured and in the process of collection. Collateral-dependent loans are typically maintained on nonaccrual status.

Nonperforming assets: Nonperforming assets include nonaccrual loans, nonperforming derivatives and certain assets acquired in loan satisfactions, predominantly real estate owned and other commercial and personal property.

NSFR: Net Stable Funding Ratio

OAS: Option-adjusted spread

OCC: Office of the Comptroller of the Currency

OCI: Other comprehensive income/(loss)

OPEB: Other postretirement employee benefit

Operating losses: Primarily refer to fraud losses associated with customer deposit accounts, credit and debit cards; exclude legal expense.

Over-the-counter (“OTC”) derivatives: Derivative contracts that are negotiated, executed and settled bilaterally between two derivative counterparties, where one or both counterparties is a derivatives dealer.

Over-the-counter cleared (“OTC-cleared”) derivatives: Derivative contracts that are negotiated and executed bilaterally, but subsequently settled via a central clearing house, such that each derivative counterparty is only exposed to the default of that clearing house.

Overhead ratio: Noninterest expense as a percentage of total net revenue.

Parent Company: JPMorgan Chase & Co.

Participating securities: Represents unvested share-based compensation awards containing nonforfeitable rights to dividends or dividend equivalents (collectively, “dividends”), which are included in the earnings per share calculation using the two-class method. JPMorganChase grants RSUs to certain employees under its share-based compensation programs, which entitle the recipients to receive nonforfeitable dividends during the vesting period on a basis equivalent to the dividends paid to holders of common stock. These unvested awards meet the definition of participating securities. Under the two-class method, all earnings (distributed and undistributed) are allocated to each class of common stock and participating securities, based on their respective rights to receive dividends.

PCAOB: Public Company Accounting Oversight Board

PCD: “Purchased credit deteriorated” assets represent acquired financial assets that as of the date of acquisition have experienced a more-than-insignificant deterioration in credit quality since origination, as determined by the Firm.

PD: Probability of default

Pillar 1: The Basel framework consists of a three “Pillar” approach. Pillar 1 establishes minimum capital

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requirements, defines eligible capital instruments, and prescribes rules for calculating RWA.

Pillar 3: The Basel framework consists of a three “Pillar” approach. Pillar 3 encourages market discipline through disclosure requirements which allow market participants to assess the risk and capital profiles of banks.

PRA: Prudential Regulation Authority

Preferred stock dividends: reflects dividends declared and deemed dividends upon redemption of preferred stock

Pre-provision profit/(loss): Represents total net revenue less noninterest expense. The Firm believes that this financial measure is useful in assessing the ability of a lending institution to generate income in excess of its provision for credit losses.

Pre-tax margin: Represents income before income tax expense divided by total net revenue, which is, in management’s view, a comprehensive measure of pretax performance derived by measuring earnings after all costs are taken into consideration. It is one basis upon which management evaluates the performance of AWM against the performance of their respective competitors.

Principal transactions revenue: Principal transactions revenue is driven by many factors, including:

- the bid-offer spread, which is the difference between the price at which a market participant is willing and able to sell an instrument to the Firm and the price at which another market participant is willing and able to buy it from the Firm, and vice versa; and
- realized and unrealized gains and losses on financial instruments and commodities transactions, including those accounted for under the fair value option, primarily used in client-driven market-making activities.
 - Realized gains and losses result from the sale of instruments, closing out or termination of transactions, or interim cash payments.
 - Unrealized gains and losses result from changes in valuation.

In connection with its client-driven market-making activities, the Firm transacts in debt and equity instruments, derivatives and commodities, including physical commodities inventories and financial instruments that reference commodities.

Principal transactions revenue also includes realized and unrealized gains and losses related to:

- derivatives designated in qualifying hedge accounting relationships, primarily fair value hedges of commodity and foreign exchange risk;
- derivatives used for specific risk management purposes, primarily to mitigate credit, foreign exchange and interest rate risks.

Production revenue: Includes fees and income recognized as earned on mortgage loans originated with the intent to sell, and the impact of risk management activities associated with the mortgage pipeline and warehouse loans. Production revenue also includes gains and losses on sales and lower of cost or fair value adjustments on mortgage loans held-for-sale (excluding certain repurchased loans insured by U.S. government agencies), and changes in the fair value of financial instruments measured under the fair value option.

PSU(s): Performance share units

Regulatory VaR: Daily aggregated VaR calculated in accordance with regulatory rules.

REO: Real estate owned

Reported basis: Financial statements prepared under U.S. GAAP, which excludes the impact of taxable-equivalent adjustments.

Retained loans: Loans that are held-for-investment (i.e., excludes loans held-for-sale and loans at fair value).

Revenue wallet: Proportion of fee revenue based on estimates of investment banking fees generated across the industry (i.e., the revenue wallet) from investment banking transactions in M&A, equity and debt underwriting, and loan syndications. Source: Dealogic, a third-party provider of investment banking competitive analysis and volume-based league tables for the above noted industry products.

RHS: Rural Housing Service of the U.S. Department of Agriculture

ROA: Return on assets

ROE: Return on equity

ROTCE: Return on tangible common equity

ROU assets: Right-of-use assets

RSU(s): Restricted stock units

RWA “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.

S&P: Standard and Poor’s

SAR as it pertains to Hong Kong: Special Administrative Region

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SAR(s) as it pertains to employee stock awards: Stock appreciation rights

SCB: Stress capital buffer

Scored portfolios: Consumer loan portfolios that predominantly include residential real estate loans, credit card loans, auto loans to individuals and certain small business loans.

SEC: U.S. Securities and Exchange Commission

Securities financing agreements: Include resale, repurchase, securities borrowed and securities loaned agreements

Securitized Products Group: Comprised of Securitized Products and tax-oriented investments.

Seed capital: Initial JPMorgan capital invested in products, such as mutual funds, with the intention of ensuring the fund is of sufficient size to represent a viable offering to clients, enabling pricing of its shares, and allowing the manager to develop a track record. After these goals are achieved, the intent is to remove the Firm's capital from the investment.

Shelf securities: Securities registered with the SEC under a shelf registration statement that have not been issued, offered or sold. These securities are not included in league tables until they have actually been issued.

Single-name: Single reference-entities

SLR: Supplementary leverage ratio

SMBS: Stripped mortgage-backed securities

SOFR: Secured Overnight Financing Rate

SPEs: Special purpose entities

Structural interest rate risk: Represents interest rate risk of the non-trading assets and liabilities of the Firm.

Structured notes: Structured notes are financial instruments whose cash flows are linked to the movement in one or more indexes, interest rates, foreign exchange rates, commodities prices, prepayment rates, underlying reference pool of loans or other market variables. The notes typically contain embedded (but not separable or detachable) derivatives. Contractual cash flows for principal, interest, or both can vary in amount and timing throughout the life of the note based on non-traditional indexes or non-traditional uses of traditional interest rates or indexes.

Suspended foreclosures: Loans referred to foreclosure where formal foreclosure proceedings have started but are currently on hold, which could be due to bankruptcy or loss mitigation. Includes both judicial and non-judicial states.

Taxable-equivalent basis: In presenting results on a managed basis, the total net revenue for each of the reportable business segments and Corporate, and the Firm as a whole, is presented on a tax-equivalent basis. Accordingly, revenue from investments that receive tax

credits and tax-exempt securities is presented in managed basis results on a level comparable to taxable investments and securities; the corresponding income tax impact related to tax-exempt items is recorded within income tax expense.

TBVPS: Tangible book value per share

TCE: Tangible common equity

TDR: "Troubled debt restructuring" applies to loan modifications granted prior to January 1, 2023 and is deemed to occur when the Firm modifies the original terms of a loan agreement by granting a concession to a borrower that is experiencing financial difficulty. Loans with short-term and other insignificant modifications that are not considered concessions are not TDRs.

TLAC: Total Loss Absorbing Capacity

U.K.: United Kingdom

Unaudited: Financial statements and/or information that have not been subject to auditing procedures by an independent registered public accounting firm.

U.S.: United States of America

U.S. GAAP: Accounting principles generally accepted in the U.S.

U.S. government agencies: U.S. government agencies include, but are not limited to, agencies such as Ginnie Mae and FHA, and do not include Fannie Mae and Freddie Mac which are U.S. government-sponsored enterprises ("U.S. GSEs"). In general, obligations of U.S. government agencies are fully and explicitly guaranteed as to the timely payment of principal and interest by the full faith and credit of the U.S. government in the event of a default.

U.S. GSE(s): "U.S. government-sponsored enterprises" are quasi-governmental, privately-held entities established or chartered by the U.S. government to serve public purposes as specified by the U.S. Congress to improve the flow of credit to specific sectors of the economy and provide certain essential services to the public. U.S. GSEs include Fannie Mae and Freddie Mac, but do not include Ginnie Mae or FHA. U.S. GSE obligations are not explicitly guaranteed as to the timely payment of principal and interest by the full faith and credit of the U.S. government.

U.S. Treasury: U.S. Department of the Treasury

VA: U.S. Department of Veterans Affairs

VaR: "Value-at-risk" is a measure of the dollar amount of potential loss from adverse market moves in an ordinary market environment.

VCG: Valuation Control Group

VGf: Valuation Governance Forum

VIes: Variable interest entities

Warehouse loans: Consist of prime mortgages originated with the intent to sell that are accounted for at fair value and classified as loans.