Item 8. Financial Statements and Supplementary Data

Management's Report on Internal Control over Financial Reporting

Management of The Goldman Sachs Group, Inc., together with its consolidated subsidiaries (the firm), is responsible for establishing and maintaining adequate internal control over financial reporting. The firm's internal control over financial reporting is a process designed under the supervision of the firm's principal executive and principal financial officers to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the firm's financial statements for external reporting purposes in accordance with U.S. generally accepted accounting principles.

As of December 31, 2023, management conducted an assessment of the firm's internal control over financial reporting based on the framework established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, management has determined that the firm's internal control over financial reporting as of December 31, 2023 was effective.

Our internal control over financial reporting includes policies and procedures that pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of assets; provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. generally accepted accounting principles, and that receipts and expenditures are being made only in accordance with authorizations of management and the directors of the firm; and 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 our financial statements.

The firm's internal control over financial reporting as of December 31, 2023 has been audited by PricewaterhouseCoopers LLP (PCAOB ID 238), an independent registered public accounting firm, as stated in its report appearing below, which expresses an unqualified opinion on the effectiveness of the firm's internal control over financial reporting as of December 31, 2023.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of The Goldman Sachs Group, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of The Goldman Sachs Group, Inc. and its subsidiaries (the Company) as of December 31, 2023 and 2022, and the related consolidated statements of earnings, of comprehensive income, of changes in shareholders' equity and of cash flows for each of the three years in the period ended December 31, 2023, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2023, 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 Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2023, based on criteria established in Internal Control – Integrated Framework (2013) issued by the COSO.

Basis for Opinions

The Company'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 Company's consolidated financial statements and on the Company'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 Company 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.

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.

Valuation of Certain Level 3 Financial Instruments

As described in Notes 4 and 5 to the consolidated financial statements, as of December 31, 2023, the Company carries financial instruments at fair value, which includes $25.1 billion of financial assets and $28.7 billion of financial liabilities classified in level 3 of the fair value hierarchy, as one or more inputs to the financial instrument's valuation technique are significant and unobservable. Significant unobservable inputs used by management to value certain of the level 3 financial instruments included: market multiples, discount rates, and capitalization rates for equity securities; credit spreads for credit derivatives; and correlation for hybrid financial instruments.

The principal considerations for our determination that performing procedures relating to the valuation of certain level 3 financial instruments is a critical audit matter are (i) the significant judgment by management when developing the fair value estimate of certain level 3 financial instruments, (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating audit evidence related to the aforementioned significant unobservable inputs used in the valuation of certain level 3 financial instruments, 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 valuation of financial instruments, including controls over the methods and significant unobservable inputs used in the valuation of certain level 3 financial instruments. These procedures also included, among others, testing the completeness and accuracy of data used by management, as well as (i) testing management's process for developing the fair value estimate of certain level 3 financial instruments, (ii) evaluating the appropriateness of the techniques used by management, (iii) evaluating the reasonableness of the aforementioned significant unobservable inputs, and either (iv) the use of professionals with specialized skill and knowledge to assist in evaluating (a) the appropriateness of the techniques used by management and (b) the aforementioned significant unobservable inputs, or (v) the use of professionals with specialized skill and knowledge to assist in evaluating the reasonableness of management's estimate by (a) evaluating the appropriateness of the techniques used by management and (b) developing an independent estimate of fair value for a sample of certain level 3 securities using independently determined assumptions, and comparing the independent range of prices to management's estimate.

Allowance for Loan Losses - Wholesale Loan Portfolio

As described in Note 9 to the consolidated financial statements, the Company's allowance for loan losses for the wholesale loan portfolio reflects management's estimate of loan losses over the remaining expected life of the loans and also considers forecasts of future economic conditions. As of December 31, 2023, $2.6 billion of the allowance for loan losses and $157.2 billion of the loans accounted for at amortized cost related to the wholesale loan portfolio. The allowance for loan losses for the wholesale loan portfolio is measured on a collective basis for loans that exhibit similar risk characteristics using a modeled approach and on an asset-specific basis for loans that do not share similar risk characteristics. In addition, it includes qualitative components to reflect the uncertain nature of economic forecasting, capture uncertainty regarding model inputs, and account for model imprecision and concentration risk. The wholesale models determine the probability of default and loss given default based on various risk factors, including internal credit ratings.

The principal considerations for our determination that performing procedures relating to the allowance for loan losses for the wholesale loan portfolio is a critical audit matter are (i) the significant judgment by management when developing the allowance for loan losses for the wholesale loan portfolio using the modeled approach, (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating management's determination of internal credit ratings used in the modeled approach, 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 Company's allowance for loan losses for the wholesale loan portfolio, including controls over the determination of internal credit ratings. These procedures also included, among others, (i) testing management's process for developing the allowance for loan losses for the wholesale loan portfolio using a modeled approach, (ii) evaluating the appropriateness of the modeled approach, (iii) testing the completeness and accuracy of data used in the modeled approach, and (iv) evaluating the reasonableness of the internal credit ratings used by management. Professionals with specialized skill and knowledge were used to assist in evaluating (i) the appropriateness of the modeled approach and (ii) the reasonableness of the internal credit ratings.

/s/ PricewaterhouseCoopers LLP

New York, New York
February 22, 2024

We have served as the Company's auditor since 1922.

Consolidated Statements of Earnings

	Year Ended December		
in millions, except per share amounts	**2023**	2022	2021
Revenues			
Investment banking	**$ 6,218**	$ 7,360	$ 14,136
Investment management	**9,532**	9,005	8,171
Commissions and fees	**3,789**	4,034	3,590
Market making	**18,238**	18,634	15,357
Other principal transactions	**2,126**	654	11,615
Total non-interest revenues	**39,903**	39,687	52,869
Interest income	**68,515**	29,024	12,120
Interest expense	**62,164**	21,346	5,650
Net interest income	**6,351**	7,678	6,470
Total net revenues	**46,254**	47,365	59,339
Provision for credit losses	**1,028**	2,715	357
Operating expenses			
Compensation and benefits	**15,499**	15,148	17,719
Transaction based	**5,698**	5,312	4,710
Market development	**629**	812	553
Communications and technology	**1,919**	1,808	1,573
Depreciation and amortization	**4,856**	2,455	2,015
Occupancy	**1,053**	1,026	981
Professional fees	**1,623**	1,887	1,648
Other expenses	**3,210**	2,716	2,739
Total operating expenses	**34,487**	31,164	31,938
Pre-tax earnings	**10,739**	13,486	27,044
Provision for taxes	**2,223**	2,225	5,409
Net earnings	**8,516**	11,261	21,635
Preferred stock dividends	**609**	497	484
Net earnings applicable to common shareholders	**$ 7,907**	$ 10,764	$ 21,151
Earnings per common share			
Basic	**$ 23.05**	$ 30.42	$ 60.25
Diluted	**$ 22.87**	$ 30.06	$ 59.45
Average common shares			
Basic	**340.8**	352.1	350.5
Diluted	**345.8**	358.1	355.8

Consolidated Statements of Comprehensive Income

	Year Ended December		
$ in millions	**2023**	2022	2021
Net earnings	**$ 8,516**	$ 11,261	$ 21,635
Other comprehensive income/(loss) adjustments, net of tax:			
Currency translation	**(62)**	(47)	(42)
Debt valuation adjustment	**(1,015)**	1,403	322
Pension and postretirement liabilities	**(76)**	(172)	41
Available-for-sale securities	**1,245**	(2,126)	(955)
Other comprehensive income/(loss)	**92**	(942)	(634)
Comprehensive income	**$ 8,608**	$ 10,319	$ 21,001

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Balance Sheets

	As of December	
$ in millions	**2023**	2022
Assets		
Cash and cash equivalents	**$ 241,577**	$ 241,825
Collateralized agreements:		
Securities purchased under agreements to resell (includes **$223,543** and $225,117 at fair value)	**223,805**	225,117
Securities borrowed (includes **$44,930** and $38,578 at fair value)	**199,420**	189,041
Customer and other receivables (includes **$23** and $25 at fair value)	**132,495**	135,448
Trading assets (at fair value and includes **$110,567** and $40,143 pledged as collateral)	**477,510**	301,245
Investments (includes **$75,767** and $78,201 at fair value)	**146,839**	130,629
Loans (net of allowance of **$5,050** and $5,543, and includes **$6,506** and $7,655 at fair value)	**183,358**	179,286
Other assets (includes **$366** and $145 at fair value)	**36,590**	39,208
Total assets	**$ 1,641,594**	$ 1,441,799
Liabilities and shareholders' equity		
Deposits (includes **$29,460** and $15,746 at fair value)	**$ 428,417**	$ 386,665
Collateralized financings:		
Securities sold under agreements to repurchase (at fair value)	**249,887**	110,349
Securities loaned (includes **$8,934** and $4,372 at fair value)	**60,483**	30,727
Other secured financings (includes **$12,554** and $12,756 at fair value)	**13,194**	13,946
Customer and other payables	**230,728**	262,045
Trading liabilities (at fair value)	**200,355**	191,324
Unsecured short-term borrowings (includes **$46,127** and $39,731 at fair value)	**75,945**	60,961
Unsecured long-term borrowings (includes **$86,410** and $73,147 at fair value)	**241,877**	247,138
Other liabilities (includes **$266** and $159 at fair value)	**23,803**	21,455
Total liabilities	**1,524,689**	1,324,610
Commitments, contingencies and guarantees		
Shareholders' equity		
Preferred stock; aggregate liquidation preference of **$11,203** and $10,703	**11,203**	10,703
Common stock; **922,895,030** and 917,815,030 shares issued, and **323,376,354** and 334,918,639 shares outstanding	**9**	9
Share-based awards	**5,121**	5,696
Nonvoting common stock; no shares issued and outstanding	**–**	–
Additional paid-in capital	**60,247**	59,050
Retained earnings	**143,688**	139,372
Accumulated other comprehensive loss	**(2,918)**	(3,010)
Stock held in treasury, at cost; **599,518,678** and 582,896,393 shares	**(100,445)**	(94,631)
Total shareholders' equity	**116,905**	117,189
Total liabilities and shareholders' equity	**$ 1,641,594**	$ 1,441,799

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Changes in Shareholders' Equity

	Year Ended December		
$ in millions	**2023**	2022	2021
Preferred stock			
Beginning balance	**$ 10,703**	$ 10,703	$ 11,203
Issued	**1,500**	–	2,175
Redeemed	**(1,000)**	–	(2,675)
Ending balance	**11,203**	10,703	10,703
Common stock			
Beginning balance	**9**	9	9
Issued	**–**	–	–
Ending balance	**9**	9	9
Share-based awards			
Beginning balance	**5,696**	4,211	3,468
Issuance and amortization of share-based awards	**2,098**	4,110	2,527
Delivery of common stock underlying share-based awards	**(2,504)**	(2,468)	(1,626)
Forfeiture of share-based awards	**(169)**	(157)	(158)
Ending balance	**5,121**	5,696	4,211
Additional paid-in capital			
Beginning balance	**59,050**	56,396	55,679
Delivery of common stock underlying share-based awards	**2,549**	2,516	1,678
Cancellation of share-based awards in satisfaction of withholding tax requirements	**(1,345)**	(1,591)	(984)
Preferred stock issuance costs	**5**	–	24
Issuance of common stock in connection with acquisition	**–**	1,730	–
Other	**(12)**	(1)	(1)
Ending balance	**60,247**	59,050	56,396
Retained earnings			
Beginning balance	**139,372**	131,811	112,947
Net earnings	**8,516**	11,261	21,635
Dividends and dividend equivalents declared on common stock and share-based awards	**(3,591)**	(3,203)	(2,287)
Dividends declared on preferred stock	**(599)**	(497)	(443)
Preferred stock redemption premium	**(10)**	–	(41)
Ending balance	**143,688**	139,372	131,811
Accumulated other comprehensive income/(loss)			
Beginning balance	**(3,010)**	(2,068)	(1,434)
Other comprehensive income/(loss)	**92**	(942)	(634)
Ending balance	**(2,918)**	(3,010)	(2,068)
Stock held in treasury, at cost			
Beginning balance	**(94,631)**	(91,136)	(85,940)
Repurchased	**(5,796)**	(3,500)	(5,200)
Reissued	**29**	20	11
Other	**(47)**	(15)	(7)
Ending balance	**(100,445)**	(94,631)	(91,136)
Total shareholders' equity	**$ 116,905**	$ 117,189	$ 109,926

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Cash Flows

	Year Ended December		
$ in millions	**2023**	2022	2021
Cash flows from operating activities			
Net earnings	**$ 8,516**	$ 11,261	$ 21,635
Adjustments to reconcile net earnings to net cash provided by/(used for) operating activities			
Depreciation and amortization	**4,856**	2,455	2,015
Deferred income taxes	**(1,360)**	(2,412)	5
Share-based compensation	**2,085**	4,083	2,348
Provision for credit losses	**1,028**	2,715	357
Changes in operating assets and liabilities:			
Customer and other receivables and payables, net	**(28,219)**	35,014	21,971
Collateralized transactions (excluding other secured financings), net	**160,227**	(100,996)	(70,058)
Trading assets	**(163,807)**	45,278	15,232
Trading liabilities	**5,751**	8,062	26,616
Loans held for sale, net	**1,635**	3,161	(5,556)
Other, net	**(3,299)**	87	(8,267)
Net cash provided by/(used for) operating activities	**(12,587)**	8,708	6,298
Cash flows from investing activities			
Purchase of property, leasehold improvements and equipment	**(2,316)**	(3,748)	(4,667)
Proceeds from sales of property, leasehold improvements and equipment	**3,278**	2,706	3,933
Net cash received from/(used for) business dispositions or acquisitions	**487**	(2,115)	–
Purchase of investments	**(40,256)**	(60,536)	(39,912)
Proceeds from sales and paydowns of investments	**26,848**	12,961	45,701
Loans (excluding loans held for sale), net	**(5,353)**	(25,228)	(35,520)
Net cash used for investing activities	**(17,312)**	(75,960)	(30,465)
Cash flows from financing activities			
Unsecured short-term borrowings, net	**2,050**	321	2,137
Other secured financings (short-term), net	**673**	(2,283)	(1,320)
Proceeds from issuance of other secured financings (long-term)	**3,047**	1,800	4,795
Repayment of other secured financings (long-term), including the current portion	**(3,570)**	(3,407)	(6,590)
Proceeds from issuance of unsecured long-term borrowings	**47,153**	84,522	92,717
Repayment of unsecured long-term borrowings, including the current portion	**(54,066)**	(42,806)	(52,608)
Derivative contracts with a financing element, net	**3,280**	1,797	1,121
Deposits, net	**39,723**	28,074	103,538
Preferred stock redemption	**(1,000)**	–	(2,675)
Common stock repurchased	**(5,796)**	(3,500)	(5,200)
Settlement of share-based awards in satisfaction of withholding tax requirements	**(1,345)**	(1,595)	(985)
Dividends and dividend equivalents paid on common stock, preferred stock and share-based awards	**(4,189)**	(3,682)	(2,725)
Proceeds from issuance of preferred stock, net of issuance costs	**1,496**	–	2,172
Other financing, net	**344**	361	361
Net cash provided by financing activities	**27,800**	59,602	134,738
Effect of exchange rate changes on cash and cash equivalents	**1,851**	(11,561)	(5,377)
Net increase/(decrease) in cash and cash equivalents	**(248)**	(19,211)	105,194
Cash and cash equivalents, beginning balance	**241,825**	261,036	155,842
Cash and cash equivalents, ending balance	**$ 241,577**	$ 241,825	$ 261,036
Supplemental disclosures:			
Cash payments for interest, net of capitalized interest	**$ 60,026**	$ 19,022	$ 5,521
Cash payments for income taxes, net	**$ 2,389**	$ 4,555	$ 6,195

See Notes 9, 12 and 16 for information about non-cash activities.

The accompanying notes are an integral part of these consolidated financial statements.

Note 1.

Description of Business

The Goldman Sachs Group, Inc. (Group Inc. or parent company), a Delaware corporation, together with its consolidated subsidiaries (collectively, the firm), is a leading global financial institution that delivers a broad range of financial services to a large and diversified client base that includes corporations, financial institutions, governments and individuals. Founded in 1869, the firm is headquartered in New York and maintains offices in all major financial centers around the world.

The firm manages and reports its activities in the following three business segments:

Global Banking & Markets
The firm provides a broad range of services to a diverse group of corporations, financial institutions, investment funds and governments. Services include strategic advisory assignments with respect to mergers and acquisitions, divestitures, corporate defense activities, restructurings and spin-offs, and equity and debt underwriting of public offerings and private placements. The firm facilitates client transactions and makes markets in fixed income, equity, currency and commodity products. In addition, the firm makes markets in and clears institutional client transactions on major stock, options and futures exchanges worldwide and provides prime financing (including securities lending, margin lending and swaps), portfolio financing and other types of equity financing (including securities-based loans to individuals). The firm also provides lending to corporate clients, including through relationship lending and acquisition financing, and secured lending, through structured credit and asset-backed lending. In addition, the firm provides commodity financing to clients through structured transactions and also provides financing through securities purchased under agreements to resell (resale agreements). The firm also makes equity and debt investments related to Global Banking & Markets activities.

Asset & Wealth Management
The firm manages assets and offers investment products across all major asset classes to a diverse set of clients, both institutional and individuals, including through a network of third-party distributors around the world. The firm also provides investing and wealth advisory solutions, including financial planning and counseling, and executing brokerage transactions for wealth management clients. During 2023, the firm sold its Personal Financial Management (PFM) business. The firm issues loans to wealth management clients, accepts deposits through its consumer banking digital platform, *Marcus by Goldman Sachs* (Marcus), and through its private bank, and provides investing services through *Marcus Invest* to U.S. customers. The firm has also issued unsecured loans to consumers through Marcus. During 2023, the firm completed the sale of substantially all of this portfolio. The firm makes equity investments, which include investing activities related to public and private equity investments in corporate, real estate and infrastructure assets, as well as investments through consolidated investment entities (CIEs), substantially all of which are engaged in real estate investment activities. The firm also invests in debt instruments and engages in lending activities to middle-market clients, and provides financing for real estate and other assets.

Platform Solutions
The firm issues credit cards through partnership arrangements and provides point-of-sale financing through GreenSky Holdings, LLC (GreenSky) to consumers. The firm also accepts deposits from Apple Card customers. In addition, the firm provides transaction banking and other services, including cash management services, such as deposit-taking and payment solutions for corporate and institutional clients. In the fourth quarter of 2023, the firm entered into an agreement to sell GreenSky, which is expected to close in the first quarter of 2024, and also completed the sale of a majority of the GreenSky installment loan portfolio. In the fourth quarter of 2023, the firm also entered into an agreement with General Motors (GM) regarding a process to transition their credit card program to another issuer to be selected by GM.

Note 2.

Basis of Presentation

These consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States (U.S. GAAP) and include the accounts of Group Inc. and all other entities in which the firm has a controlling financial interest. Intercompany transactions and balances have been eliminated.

All references to 2023, 2022 and 2021 refer to the firm's years ended, or the dates, as the context requires, December 31, 2023, December 31, 2022 and December 31, 2021, respectively. Any reference to a future year refers to a year ending on December 31 of that year. Certain reclassifications have been made to previously reported amounts to conform to the current presentation.

Note 3.

Significant Accounting Policies

The firm's significant accounting policies include when and how to measure the fair value of assets and liabilities, measuring the allowance for credit losses on loans and lending commitments accounted for at amortized cost, and when to consolidate an entity. See Note 4 for policies on fair value measurements, Note 9 for policies on the allowance for credit losses, and below and Note 17 for policies on consolidation accounting. All other significant accounting policies are either described below or included in the following footnotes:

Fair Value Measurements	Note 4
Fair Value Hierarchy	Note 5
Trading Assets and Liabilities	Note 6
Derivatives and Hedging Activities	Note 7
Investments	Note 8
Loans	Note 9
Fair Value Option	Note 10
Collateralized Agreements and Financings	Note 11
Other Assets	Note 12
Deposits	Note 13
Unsecured Borrowings	Note 14
Other Liabilities	Note 15
Securitization Activities	Note 16
Variable Interest Entities	Note 17
Commitments, Contingencies and Guarantees	Note 18
Shareholders' Equity	Note 19
Regulation and Capital Adequacy	Note 20
Earnings Per Common Share	Note 21
Transactions with Affiliated Funds	Note 22
Interest Income and Interest Expense	Note 23
Income Taxes	Note 24
Business Segments	Note 25
Credit Concentrations	Note 26
Legal Proceedings	Note 27
Employee Benefit Plans	Note 28
Employee Incentive Plans	Note 29
Parent Company	Note 30

Consolidation

The firm consolidates entities in which the firm has a controlling financial interest. 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 (VIE).

Voting Interest Entities. Voting interest entities are entities in which (i) the total equity investment at risk is sufficient to enable the entity to finance its activities independently and (ii) the equity holders have the power to direct the activities of the entity that most significantly impact its economic performance, the obligation to absorb the losses of the entity and the right to receive the residual returns of the entity. The usual condition for a controlling financial interest in a voting interest entity is ownership of a majority voting interest. If the firm has a controlling majority voting interest in a voting interest entity, the entity is consolidated.

Variable Interest Entities. A VIE is an entity that lacks one or more of the characteristics of a voting interest entity. The firm has a controlling financial interest in a VIE when the firm has a variable interest or interests that provide it with (i) the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and (ii) 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. See Note 17 for further information about VIEs.

Equity-Method Investments. When the firm does not have a controlling financial interest in an entity but can exert significant influence over the entity's operating and financial policies, the investment is generally accounted for at fair value by electing the fair value option available under U.S. GAAP. Significant influence generally exists when the firm owns 20% to 50% of the entity's common stock or in-substance common stock.

In certain cases, the firm applies the equity method of accounting to new investments that are strategic in nature or closely related to the firm's principal business activities, when the firm has a significant degree of involvement in the cash flows or operations of the investee or when cost-benefit considerations are less significant. See Note 8 for further information about equity-method investments.

Investment Funds. The firm has formed investment funds with third-party investors. These funds are typically organized as limited partnerships or limited liability companies for which the firm acts as general partner or manager. Generally, the firm does not hold a majority of the economic interests in these funds. These funds are usually voting interest entities and generally are not consolidated because third-party investors typically have rights to terminate the funds or to remove the firm as general partner or manager. Investments in these funds are generally measured at net asset value (NAV) and are included in investments. See Notes 8, 18 and 22 for further information about investments in funds.

Use of Estimates

Preparation of these consolidated financial statements requires management to make certain estimates and assumptions, the most important of which relate to fair value measurements, the allowance for credit losses on loans and lending commitments accounted for at amortized cost, accounting for goodwill and identifiable intangible assets, provisions for losses that may arise from litigation and regulatory proceedings (including governmental investigations), and accounting for income taxes. These estimates and assumptions are based on the best available information, but actual results could be materially different.

Revenue Recognition

Financial Assets and Liabilities at Fair Value. Trading assets and liabilities and certain investments are carried at fair value either under the fair value option or in accordance with other U.S. GAAP. In addition, the firm has elected to account for certain of its loans and other financial assets and liabilities at fair value by electing the fair value option. The fair value of a financial instrument is the amount 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. Financial assets are marked to bid prices and financial liabilities are marked to offer prices. Fair value measurements do not include transaction costs. Fair value gains or losses are generally included in market making or other principal transactions. See Note 4 for further information about fair value measurements.

Revenue from Contracts with Clients. The firm recognizes revenue earned from contracts with clients for services, such as investment banking, investment management, and execution and clearing (contracts with clients), when the performance obligations related to the underlying transaction are completed.

Revenues from contracts with clients represent approximately 45% of total non-interest revenues for 2023 (including approximately 85% of investment banking revenues, approximately 95% of investment management revenues and all commissions and fees), approximately 50% of total non-interest revenues for 2022 (including approximately 85% of investment banking revenues, approximately 95% of investment management revenues and all commissions and fees), and approximately 45% of total non-interest revenues for 2021 (including approximately 90% of both investment banking revenues and investment management revenues, and all commissions and fees). See Note 25 for information about net revenues by business segment.

Investment Banking

Advisory. Fees from financial advisory assignments are recognized in revenues when the services related to the underlying transaction are completed under the terms of the assignment. Non-refundable deposits and milestone payments in connection with financial advisory assignments are recognized in revenues upon completion of the underlying transaction or when the assignment is otherwise concluded.

Expenses associated with financial advisory assignments are recognized when incurred and are included in transaction based expenses. Client reimbursements for such expenses are included in investment banking revenues.

Underwriting. Fees from underwriting assignments are recognized in revenues upon completion of the underlying transaction based on the terms of the assignment.

Expenses associated with underwriting assignments are generally deferred until the related revenue is recognized or the assignment is otherwise concluded. Such expenses are included in transaction based expenses for completed assignments.

Investment Management

The firm earns management fees and incentive fees for investment management services, which are included in investment management revenues. The firm makes payments to brokers and advisors related to the placement of the firm's investment funds (distribution fees), which are included in transaction based expenses.

Management Fees. Management fees for mutual funds are calculated as a percentage of daily net asset value and are received monthly. Management fees for hedge funds and separately managed accounts are calculated as a percentage of month-end net asset value and are generally received quarterly. Management fees for private equity funds are calculated as a percentage of monthly invested capital or committed capital and are received quarterly, semi-annually or annually, depending on the fund. Management fees are recognized over time in the period the services are provided.

Distribution fees paid by the firm are calculated based on either a percentage of the management fee, the investment fund's net asset value or the committed capital. Such fees are included in transaction based expenses.

Incentive Fees. Incentive fees are calculated as a percentage of a fund's or separately managed account's return, or excess return above a specified benchmark or other performance target. Incentive fees are generally based on investment performance over a twelve-month period or over the life of a fund. Fees that are based on performance over a twelve-month period are subject to adjustment prior to the end of the measurement period. For fees that are based on investment performance over the life of the fund, future investment underperformance may require fees previously distributed to the firm to be returned to the fund.

Incentive fees earned from a fund or separately managed account are recognized when it is probable that a significant reversal of such fees will not occur, which is generally when such fees are no longer subject to fluctuations in the market value of investments held by the fund or separately managed account. Therefore, incentive fees recognized during the period may relate to performance obligations satisfied in previous periods.

Commissions and Fees

The firm earns substantially all commissions and fees from executing and clearing client transactions on stock, options and futures markets, as well as over-the-counter (OTC) transactions. Commissions and fees are recognized on the day the trade is executed. The firm also provides third-party research services to clients in connection with certain soft-dollar arrangements. Third-party research costs incurred by the firm in connection with such arrangements are presented net within commissions and fees.

Remaining Performance Obligations

Remaining performance obligations are services that the firm has committed to perform in the future in connection with its contracts with clients. The firm's remaining performance obligations are generally related to its financial advisory assignments and certain investment management activities. Revenues associated with remaining performance obligations relating to financial advisory assignments cannot be determined until the outcome of the transaction. For the firm's investment management activities, where fees are calculated based on the net asset value of the fund or separately managed account, future revenues associated with such remaining performance obligations cannot be determined as such fees are subject to fluctuations in the market value of investments held by the fund or separately managed account.

The firm is able to determine the future revenues associated with management fees calculated based on committed capital. As of December 2023, substantially all future net revenues associated with such remaining performance obligations will be recognized through 2032. Annual revenues associated with such performance obligations average less than $300 million through 2032.

Transfers of Financial Assets

Transfers of financial assets are accounted for as sales when the firm has relinquished control over the assets transferred. For transfers of financial assets accounted for as sales, any gains or losses are recognized in net revenues. Assets or liabilities that arise from the firm's continuing involvement with transferred financial assets are initially recognized at fair value. For transfers of financial assets that are not accounted for as sales, the assets are generally included in trading assets and the transfer is accounted for as a collateralized financing, with the related interest expense recognized over the life of the transaction. See Note 11 for further information about transfers of financial assets accounted for as collateralized financings and Note 16 for further information about transfers of financial assets accounted for as sales.

Cash and Cash Equivalents

The firm defines cash equivalents as highly liquid overnight deposits held in the ordinary course of business. Cash and cash equivalents included cash and due from banks of $7.93 billion as of December 2023 and $7.87 billion as of December 2022. Cash and cash equivalents also included interest-bearing deposits with banks of $233.65 billion as of December 2023 and $233.96 billion as of December 2022.

The firm segregates cash for regulatory and other purposes related to client activity. Cash and cash equivalents segregated for regulatory and other purposes were $17.08 billion as of December 2023 and $16.94 billion as of December 2022. In addition, the firm segregates securities for regulatory and other purposes related to client activity. See Note 11 for further information about segregated securities.

Customer and Other Receivables

Customer and other receivables included receivables from customers and counterparties of $90.16 billion as of December 2023 and $67.88 billion as of December 2022, and receivables from brokers, dealers and clearing organizations of $42.33 billion as of December 2023 and $67.57 billion as of December 2022. Such receivables primarily consist of customer margin loans, collateral posted in connection with certain derivative transactions, and receivables resulting from unsettled transactions.

Substantially all of these receivables are accounted for at amortized cost net of any allowance for credit losses, which generally approximates fair value. As these receivables are not accounted for at fair value, they are not included in the firm's fair value hierarchy in Notes 4 and 5. Had these receivables been included in the firm's fair value hierarchy, substantially all would have been classified in level 2 as of both December 2023 and December 2022. See Note 10 for further information about customer and other receivables accounted for at fair value under the fair value option. Interest on customer and other receivables is recognized over the life of the transaction and included in interest income.

Customer and other receivables includes receivables from contracts with clients and contract assets. Contract assets represent the firm's right to receive consideration for services provided in connection with its contracts with clients for which collection is conditional and not merely subject to the passage of time. The firm's receivables from contracts with clients were $3.59 billion as of December 2023 and $3.01 billion as of December 2022. As of both December 2023 and December 2022, contract assets were not material.

Customer and Other Payables
Customer and other payables included payables to customers and counterparties of $220.71 billion as of December 2023 and $238.12 billion as of December 2022, and payables to brokers, dealers and clearing organizations of $10.02 billion as of December 2023 and $23.93 billion as of December 2022. Such payables primarily consist of customer credit balances related to the firm’s prime brokerage activities. Customer and other payables are accounted for at cost plus accrued interest, which generally approximates fair value. As these payables are not accounted for at fair value, they are not included in the firm’s fair value hierarchy in Notes 4 and 5. Had these payables been included in the firm’s fair value hierarchy, substantially all would have been classified in level 2 as of both December 2023 and December 2022. Interest on customer and other payables is recognized over the life of the transaction and included in interest expense.

Offsetting Assets and Liabilities
To reduce credit exposures on derivatives and securities financing transactions, the firm may enter into master netting agreements or similar arrangements (collectively, netting agreements) with counterparties that permit it to offset receivables and payables with such counterparties. A netting agreement is a contract with a counterparty that permits net settlement of multiple transactions with that counterparty, including upon the exercise of termination rights by a non-defaulting party. Upon exercise of such termination rights, all transactions governed by the netting agreement are terminated and a net settlement amount is calculated. In addition, the firm receives and posts cash and securities collateral with respect to its derivatives and securities financing transactions, subject to the terms of the related credit support agreements or similar arrangements (collectively, credit support agreements). An enforceable credit support agreement grants the non-defaulting party exercising termination rights the right to liquidate the collateral and apply the proceeds to any amounts owed. In order to assess enforceability of the firm’s right of setoff under netting and credit support agreements, the firm evaluates various factors, including applicable bankruptcy laws, local statutes and regulatory provisions in the jurisdiction of the parties to the agreement.

Derivatives are reported on a net-by-counterparty basis (i.e., the net payable or receivable for derivative assets and liabilities for a given counterparty) in the consolidated balance sheets when a legal right of setoff exists under an enforceable netting agreement. Resale agreements and securities sold under agreements to repurchase (repurchase agreements) and securities borrowed and loaned transactions with the same settlement date are presented on a net-by-counterparty basis in the consolidated balance sheets when such transactions meet certain settlement criteria and are subject to netting agreements.

In the consolidated balance sheets, derivatives are reported net of cash collateral received and posted under enforceable credit support agreements, when transacted under an enforceable netting agreement. In the consolidated balance sheets, resale and repurchase agreements, and securities borrowed and loaned, are not reported net of the related cash and securities received or posted as collateral. See Note 11 for further information about collateral received and pledged, including rights to deliver or repledge collateral. See Notes 7 and 11 for further information about offsetting assets and liabilities.

Foreign Currency Translation
Assets and liabilities denominated in non-U.S. currencies are translated at rates of exchange prevailing on the date of the consolidated balance sheets and revenues and expenses are translated at average rates of exchange for the period. Foreign currency remeasurement gains or losses on transactions in nonfunctional currencies are recognized in earnings. Gains or losses on translation of the financial statements of a non-U.S. operation, when the functional currency is other than the U.S. dollar, are included, net of hedges and taxes, in the consolidated statements of comprehensive income.

Recent Accounting Developments

Facilitation of the Effects of Reference Rate Reform on Financial Reporting (ASC 848). In March 2020, the FASB issued ASU No. 2020-04, "Reference Rate Reform — Facilitation of the Effects of Reference Rate Reform on Financial Reporting." This ASU, as amended in 2022, provides optional relief from applying generally accepted accounting principles to contracts, hedging relationships and other transactions affected by reference rate reform. In addition, in January 2021 the FASB issued ASU No. 2021-01, "Reference Rate Reform — Scope," which clarified the scope of ASC 848 relating to contract modifications. The firm adopted these ASUs upon issuance and elected to apply the relief available to certain modified derivatives. The adoption of these ASUs did not have a material impact on the firm's consolidated financial statements.

Troubled Debt Restructurings and Vintage Disclosures (ASC 326). In March 2022, the FASB issued ASU No. 2022-02, "Financial Instruments — Credit Losses (Topic 326) — Troubled Debt Restructurings and Vintage Disclosures." This ASU eliminates the recognition and measurement guidance for troubled debt restructurings (TDRs) and requires enhanced disclosures about loan modifications for borrowers experiencing financial difficulty. This ASU also requires enhanced disclosure for loans that have been charged off. This ASU became effective in January 2023 under a prospective approach. Adoption of this ASU did not have a material impact on the firm's consolidated financial statements.

Accounting for Obligations to Safeguard Crypto-Assets an Entity Holds for Platform Users (SAB 121). In March 2022, the SEC staff issued SAB 121 (SAB 121) — "Accounting for obligations to safeguard crypto-assets an entity holds for platform users." SAB 121 adds interpretive guidance requiring an entity to recognize a liability on its balance sheet to reflect the obligation to safeguard the crypto-assets held for its platform users, along with a corresponding asset. The firm adopted SAB 121 in June 2022 under a modified retrospective approach and adoption did not have a material impact on the firm's consolidated financial statements.

Fair Value Measurement of Equity Securities Subject to Contractual Sale Restrictions (ASC 820). In June 2022, the FASB issued ASU No. 2022-03, "Fair Value Measurement of Equity Securities Subject to Contractual Sale Restrictions." This ASU clarifies that a contractual restriction on the sale of an equity security should not be considered in measuring its fair value. In addition, the ASU requires specific disclosures related to equity securities that are subject to contractual sale restrictions. This ASU became effective in January 2024 under a prospective approach. Adoption of this ASU did not have a material impact on the firm's consolidated financial statements.

Accounting for Investments in Tax Credit Structures Using the Proportional Amortization Method (ASC 323). In March 2023, the FASB issued ASU No. 2023-02, "Investments — Equity Method and Joint Ventures (Topic 323) — Accounting for Investments in Tax Credit Structures Using the Proportional Amortization Method." This ASU expands the proportional amortization method election currently associated with low-income housing tax credits to other qualifying tax credits and requires incremental disclosures for programs in which the proportional amortization method is elected. This ASU became effective in January 2024 under a modified retrospective approach. Adoption of this ASU did not have a material impact on the firm's consolidated financial statements.

Improvements to Reportable Segment Disclosures (ASC 280). In November 2023, the FASB issued ASU No. 2023-07, "Improvements to Reportable Segment Disclosures." This ASU requires enhanced disclosures primarily about significant segment expenses that are regularly provided to the chief operating decision maker. This ASU is effective for annual periods beginning after December 15, 2023, and interim periods beginning after December 15, 2024 under a retrospective approach. Early adoption is permitted. Since this ASU only requires additional disclosures, adoption of this ASU will not have an impact on the firm's financial condition, results of operations or cash flows.

Improvements to Income Tax Disclosures (ASC 740). In December 2023, the FASB issued ASU No. 2023-09, "Improvements to Income Tax Disclosures." This ASU requires incremental disclosures primarily related to the reconciliation of the statutory income tax rate to the effective income tax rate, as well as income taxes paid. This ASU is effective for annual periods beginning after December 15, 2024 under a prospective approach with the option to apply it retrospectively. Early adoption is permitted. Since this ASU only requires additional disclosures, adoption of this ASU will not have an impact on the firm's financial condition, results of operations or cash flows.

Note 4.

Fair Value Measurements

The fair value of a financial instrument is the amount 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. Financial assets are marked to bid prices and financial liabilities are marked to offer prices. Fair value measurements do not include transaction costs. The firm measures certain financial assets and liabilities as a portfolio (i.e., based on its net exposure to market and/or credit risks).

The best evidence of fair value is a quoted price in an active market. If quoted prices in active markets are not available, fair value is determined by reference to prices for similar instruments, quoted prices or recent transactions in less active markets, or internally developed models that primarily use market-based or independently sourced inputs, including, but not limited to, interest rates, volatilities, equity or debt prices, foreign exchange rates, commodity prices, credit spreads and funding spreads (i.e., the spread or difference between the interest rate at which a borrower could finance a given financial instrument relative to a benchmark interest rate).

U.S. GAAP has a three-level hierarchy for disclosure of fair value measurements. This hierarchy prioritizes inputs to the valuation techniques used to measure fair value, giving the highest priority to level 1 inputs and the lowest priority to level 3 inputs. A financial instrument's level in this hierarchy is based on the lowest level of input that is significant to its fair value measurement. In evaluating the significance of a valuation input, the firm considers, among other factors, a portfolio's net risk exposure to that input. The fair value hierarchy is as follows:

Level 1. Inputs are unadjusted quoted prices in active markets to which the firm had access at the measurement date for identical, unrestricted assets or liabilities.

Level 2. Inputs to valuation techniques are observable, either directly or indirectly.

Level 3. One or more inputs to valuation techniques are significant and unobservable.

The fair values for substantially all of the firm's financial assets and liabilities are based on observable prices and inputs and are classified in levels 1 and 2 of the fair value hierarchy. Certain level 2 and level 3 financial assets and liabilities may require valuation adjustments that a market participant would require to arrive at fair value for factors, such as counterparty and the firm's credit quality, funding risk, transfer restrictions, liquidity and bid/offer spreads. Valuation adjustments are generally based on market evidence.

The table below presents financial assets and liabilities carried at fair value.

	As of December	
$ in millions	**2023**	2022
Total level 1 financial assets	**$ 332,549**	$ 194,698
Total level 2 financial assets	**519,130**	485,134
Total level 3 financial assets	**25,100**	26,048
Investments in funds at NAV	**3,000**	2,941
Counterparty and cash collateral netting	**(51,134)**	(57,855)
Total financial assets at fair value	**$ 828,645**	$ 650,966
Total assets	**$ 1,641,594**	$ 1,441,799
Total level 3 financial assets divided by:		
Total assets	**1.5 %**	1.8 %
Total financial assets at fair value	**3.0 %**	4.0 %
Total level 1 financial liabilities	**$ 125,715**	$ 119,578
Total level 2 financial liabilities	**523,709**	353,060
Total level 3 financial liabilities	**28,704**	22,830
Counterparty and cash collateral netting	**(44,135)**	(47,884)
Total financial liabilities at fair value	**$ 633,993**	$ 447,584
Total liabilities	**$ 1,524,689**	$ 1,324,610
Total level 3 financial liabilities divided by:		
Total liabilities	**1.9 %**	1.7%
Total financial liabilities at fair value	**4.5 %**	5.1%

In the table above:

- Counterparty netting among positions classified in the same level is included in that level.
- Counterparty and cash collateral netting represents the impact on derivatives of netting across levels.

The table below presents a summary of level 3 financial assets.

	As of December	
$ in millions	**2023**	2022
Trading assets:		
Trading cash instruments	**$ 1,791**	$ 1,734
Derivatives	**5,161**	5,461
Investments	**17,138**	16,942
Loans	**823**	1,837
Other assets	**187**	74
Total	**$ 25,100**	$ 26,048

Level 3 financial assets as of December 2023 decreased compared with December 2022, primarily reflecting a decrease in level 3 loans and derivatives, partially offset by an increase in level 3 investments. See Note 5 for further information about level 3 financial assets (including information about unrealized gains and losses related to level 3 financial assets and transfers into and out of level 3).

The valuation techniques and nature of significant inputs used to determine the fair value of the firm's financial instruments are described below. See Note 5 for further information about significant unobservable inputs used to value level 3 financial instruments.

Valuation Techniques and Significant Inputs for Trading Cash Instruments, Investments and Loans

Level 1. Level 1 instruments include U.S. government obligations, most non-U.S. government obligations, certain agency obligations, certain corporate debt instruments, certain money market instruments and actively traded listed equities. These instruments are valued using quoted prices for identical unrestricted instruments in active markets. The firm defines active markets for equity instruments based on the average daily trading volume both in absolute terms and relative to the market capitalization for the instrument. The firm defines active markets for debt instruments based on both the average daily trading volume and the number of days with trading activity.

Level 2. Level 2 instruments include certain non-U.S. government obligations, most agency obligations, most mortgage-backed loans and securities, most corporate debt instruments, most state and municipal obligations, most money market instruments, most other debt obligations, restricted or less liquid listed equities, certain private equities, commodities and certain lending commitments.

Valuations of level 2 instruments can be verified to quoted prices, recent trading activity for identical or similar instruments, broker or dealer quotations or alternative pricing sources with reasonable levels of price transparency. Consideration is given to the nature of the quotations (e.g., indicative or executable) and the relationship of recent market activity to the prices provided from alternative pricing sources.

Valuation adjustments are typically made to level 2 instruments (i) if the instrument is subject to transfer restrictions and/or (ii) for other premiums and liquidity discounts that a market participant would require to arrive at fair value. Valuation adjustments are generally based on market evidence.

Level 3. Level 3 instruments have one or more significant valuation inputs that are not observable. Absent evidence to the contrary, level 3 instruments are initially valued at transaction price, which is considered to be the best initial estimate of fair value. Subsequently, the firm uses other methodologies to determine fair value, which vary based on the type of instrument. Valuation inputs and assumptions are changed when corroborated by substantive observable evidence, including values realized on sales.

Valuation techniques of level 3 instruments vary by instrument, but are generally based on discounted cash flow techniques. The valuation techniques and the nature of significant inputs used to determine the fair values of each type of level 3 instrument are described below:

Loans and Securities Backed by Commercial Real Estate

Loans and securities backed by commercial real estate are directly or indirectly collateralized by a single property or a portfolio of properties, and may include tranches of varying levels of subordination. Significant inputs are generally determined based on relative value analyses and include:

- Market yields implied by transactions of similar or related assets and/or current levels and changes in market indices, such as the CMBX (an index that tracks the performance of commercial mortgage bonds);
- Transaction prices in both the underlying collateral and instruments with the same or similar underlying collateral;
- A measure of expected future cash flows in a default scenario (recovery rates) implied by the value of the underlying collateral, which is mainly driven by current performance of the underlying collateral and capitalization rates. Recovery rates are expressed as a percentage of notional or face value of the instrument and reflect the benefit of credit enhancements on certain instruments; and
- Timing of expected future cash flows (duration) which, in certain cases, may incorporate the impact of any loan forbearances and other unobservable inputs (e.g., prepayment speeds).

Loans and Securities Backed by Residential Real Estate

Loans and securities backed by residential real estate are directly or indirectly collateralized by portfolios of residential real estate and may include tranches of varying levels of subordination. Significant inputs are generally determined based on relative value analyses, which incorporate comparisons to instruments with similar collateral and risk profiles. Significant inputs include:

- Market yields implied by transactions of similar or related assets;
- Transaction prices in both the underlying collateral and instruments with the same or similar underlying collateral;
- Cumulative loss expectations, driven by default rates, home price projections, residential property liquidation timelines, related costs and subsequent recoveries; and
- Duration, driven by underlying loan prepayment speeds and residential property liquidation timelines.

Corporate Debt Instruments

Corporate debt instruments includes corporate loans, debt securities and convertible debentures. Significant inputs for corporate debt instruments are generally determined based on relative value analyses, which incorporate comparisons both to prices of credit default swaps that reference the same or similar underlying instrument or entity and to other debt instruments for the same or similar issuer for which observable prices or broker quotations are available. Significant inputs include:

- Market yields implied by transactions of similar or related assets and/or current levels and trends of market indices, such as the CDX (an index that tracks the performance of corporate credit);
- Current performance and recovery assumptions and, where the firm uses credit default swaps to value the related instrument, the cost of borrowing the underlying reference obligation;
- Duration; and
- Market and transaction multiples for corporate debt instruments with convertibility or participation options.

Equity Securities

Equity securities consists of private equities. Recent third-party completed or pending transactions (e.g., merger proposals, debt restructurings, tender offers) are considered the best evidence for any change in fair value. When these are not available, the following valuation methodologies are used, as appropriate:

- Industry multiples (primarily EBITDA and revenue multiples) and public comparables;
- Transactions in similar instruments;
- Discounted cash flow techniques; and
- Third-party appraisals.

The firm also considers changes in the outlook for the relevant industry and financial performance of the issuer as compared to projected performance. Significant inputs include:

- Market and transaction multiples;
- Discount rates and capitalization rates; and
- For equity securities with debt-like features, market yields implied by transactions of similar or related assets, current performance and recovery assumptions, and duration.

Other Trading Cash Instruments, Investments and Loans

The significant inputs to the valuation of other instruments, such as non-U.S. government and agency obligations, state and municipal obligations, and other loans and debt obligations are generally determined based on relative value analyses, which incorporate comparisons both to prices of credit default swaps that reference the same or similar underlying instrument or entity and to other debt instruments for the same issuer for which observable prices or broker quotations are available. Significant inputs include:

- Market yields implied by transactions of similar or related assets and/or current levels and trends of market indices;
- Current performance and recovery assumptions and, where the firm uses credit default swaps to value the related instrument, the cost of borrowing the underlying reference obligation; and
- Duration.

Valuation Techniques and Significant Inputs for Derivatives

The firm’s level 2 and level 3 derivatives are valued using derivative pricing models (e.g., discounted cash flow models, correlation models and models that incorporate option pricing methodologies, such as Monte Carlo simulations). Price transparency of derivatives can generally be characterized by product type, as described below.

- **Interest Rate.** In general, the key inputs used to value interest rate derivatives are transparent, even for most long-dated contracts. Interest rate swaps and options denominated in the currencies of leading industrialized nations are characterized by high trading volumes and tight bid/offer spreads. Interest rate derivatives that reference indices, such as an inflation index, or the shape of the yield curve (e.g., 10-year swap rate vs. 2-year swap rate) are more complex, but the key inputs are generally observable.
- **Credit.** Price transparency for credit default swaps, including both single names and baskets of credits, varies by market and underlying reference entity or obligation. Credit default swaps that reference indices, large corporates and major sovereigns generally exhibit the most price transparency. For credit default swaps with other underliers, price transparency varies based on credit rating, the cost of borrowing the underlying reference obligations, and the availability of the underlying reference obligations for delivery upon the default of the issuer. Credit default swaps that reference loans, asset-backed securities and emerging market debt instruments tend to have less price transparency than those that reference corporate bonds. In addition, more complex credit derivatives, such as those sensitive to the correlation between two or more underlying reference obligations, generally have less price transparency.

- **Currency.** Prices for currency derivatives based on the exchange rates of leading industrialized nations, including those with longer tenors, are generally transparent. The primary difference between the price transparency of developed and emerging market currency derivatives is that emerging markets tend to be only observable for contracts with shorter tenors.
- **Commodity.** Commodity derivatives include transactions referenced to energy (e.g., oil, natural gas and electricity), metals (e.g., precious and base) and soft commodities (e.g., agricultural). Price transparency varies based on the underlying commodity, delivery location, tenor and product quality (e.g., diesel fuel compared to unleaded gasoline). In general, price transparency for commodity derivatives is greater for contracts with shorter tenors and contracts that are more closely aligned with major and/or benchmark commodity indices.
- **Equity.** Price transparency for equity derivatives varies by market and underlier. Options on indices and the common stock of corporates included in major equity indices exhibit the most price transparency. Equity derivatives generally have observable market prices, except for contracts with long tenors or reference prices that differ significantly from current market prices. More complex equity derivatives, such as those sensitive to the correlation between two or more individual stocks, generally have less price transparency.

Liquidity is essential to the observability of all product types. If transaction volumes decline, previously transparent prices and other inputs may become unobservable. Conversely, even highly structured products may at times have trading volumes large enough to provide observability of prices and other inputs.

Level 1. Level 1 derivatives include short-term contracts for future delivery of securities when the underlying security is a level 1 instrument, and exchange-traded derivatives if they are actively traded and are valued at their quoted market price.

Level 2. Level 2 derivatives include OTC derivatives for which all significant valuation inputs are corroborated by market evidence and exchange-traded derivatives that are not actively traded and/or that are valued using models that calibrate to market-clearing levels of OTC derivatives.

The selection of a particular model to value a derivative depends on the contractual terms of and specific risks inherent in the instrument, as well as the availability of pricing information in the market. For derivatives that trade in liquid markets, model selection does not involve significant management judgment because outputs of models can be calibrated to market-clearing levels.

Valuation models require a variety of inputs, such as contractual terms, market prices, yield curves, discount rates (including those derived from interest rates on collateral received and posted as specified in credit support agreements for collateralized derivatives), credit curves, measures of volatility, prepayment rates, loss severity rates and correlations of such inputs. Significant inputs to the valuations of level 2 derivatives can be verified to market transactions, broker or dealer quotations or other alternative pricing sources with reasonable levels of price transparency. Consideration is given to the nature of the quotations (e.g., indicative or executable) and the relationship of recent market activity to the prices provided from alternative pricing sources.

Level 3. Level 3 derivatives are valued using models which utilize observable level 1 and/or level 2 inputs, as well as unobservable level 3 inputs. The significant unobservable inputs used to value the firm’s level 3 derivatives are described below.

- For level 3 interest rate and currency derivatives, significant unobservable inputs include correlations of certain currencies and interest rates (e.g., the correlation between Euro inflation and Euro interest rates) and specific interest rate and currency volatilities.
- For level 3 credit derivatives, significant unobservable inputs include illiquid credit spreads and upfront credit points, which are unique to specific reference obligations and reference entities, and recovery rates.
- For level 3 commodity derivatives, significant unobservable inputs include volatilities for options with strike prices that differ significantly from current market prices and prices or spreads for certain products for which the product quality or physical location of the commodity is not aligned with benchmark indices.
- For level 3 equity derivatives, significant unobservable inputs generally include equity volatility inputs for options that are long-dated and/or have strike prices that differ significantly from current market prices. In addition, the valuation of certain structured trades requires the use of level 3 correlation inputs, such as the correlation of the price performance of two or more individual stocks or the correlation of the price performance for a basket of stocks to another asset class, such as commodities.

Subsequent to the initial valuation of a level 3 derivative, the firm updates the level 1 and level 2 inputs to reflect observable market changes and any resulting gains and losses are classified in level 3. Level 3 inputs are changed when corroborated by evidence, such as similar market transactions, third-party pricing services and/or broker or dealer quotations or other empirical market data. In circumstances where the firm cannot verify the model value by reference to market transactions, it is possible that a different valuation model could produce a materially different estimate of fair value. See Note 5 for further information about significant unobservable inputs used in the valuation of level 3 derivatives.

Valuation Adjustments. Valuation adjustments are integral to determining the fair value of derivative portfolios and are used to adjust the mid-market valuations produced by derivative pricing models to the exit price valuation. These adjustments incorporate bid/offer spreads, the cost of liquidity, and credit and funding valuation adjustments, which account for the credit and funding risk inherent in the uncollateralized portion of derivative portfolios. The firm also makes funding valuation adjustments to collateralized derivatives where the terms of the agreement do not permit the firm to deliver or repledge collateral received. Market-based inputs are generally used when calibrating valuation adjustments to market-clearing levels.

In addition, for derivatives that include significant unobservable inputs, the firm makes model or exit price adjustments to account for the valuation uncertainty present in the transaction.

Valuation Techniques and Significant Inputs for Other Financial Assets and Liabilities at Fair Value

In addition to trading cash instruments, derivatives, and certain investments and loans, the firm accounts for certain of its other financial assets and liabilities at fair value under the fair value option. Such instruments include repurchase agreements and substantially all resale agreements; certain securities borrowed and loaned transactions; certain customer and other receivables, including certain margin loans; certain time deposits, including structured certificates of deposit, which are hybrid financial instruments; substantially all other secured financings, including transfers of assets accounted for as financings; certain unsecured short- and long-term borrowings, substantially all of which are hybrid financial instruments; and certain other assets and liabilities. These instruments are generally valued based on discounted cash flow techniques, which incorporate inputs with reasonable levels of price transparency, and are generally classified in level 2 because the inputs are observable. Valuation adjustments may be made for liquidity and for counterparty and the firm's credit quality. The significant inputs used to value the firm's other financial assets and liabilities are described below.

Resale and Repurchase Agreements and Securities Borrowed and Loaned. The significant inputs to the valuation of resale and repurchase agreements and securities borrowed and loaned are funding spreads, the amount and timing of expected future cash flows and interest rates.

Customer and Other Receivables. The significant inputs to the valuation of receivables are interest rates, the amount and timing of expected future cash flows and funding spreads.

Deposits. The significant inputs to the valuation of time deposits are interest rates and the amount and timing of future cash flows. The inputs used to value the embedded derivative component of hybrid financial instruments are consistent with the inputs used to value the firm's other derivative instruments described above. See Note 7 for further information about derivatives and Note 13 for further information about deposits.

Other Secured Financings. The significant inputs to the valuation of other secured financings are the amount and timing of expected future cash flows, interest rates, funding spreads and the fair value of the collateral delivered by the firm (determined using the amount and timing of expected future cash flows, market prices, market yields and recovery assumptions). See Note 11 for further information about other secured financings.

Unsecured Short- and Long-Term Borrowings. The significant inputs to the valuation of unsecured short- and long-term borrowings are the amount and timing of expected future cash flows, interest rates, the credit spreads of the firm and commodity prices for prepaid commodity transactions. The inputs used to value the embedded derivative component of hybrid financial instruments are consistent with the inputs used to value the firm's other derivative instruments described above. See Note 7 for further information about derivatives and Note 14 for further information about borrowings.

Other Assets and Liabilities. The significant inputs to the valuation of other assets and liabilities are the amount and timing of expected future cash flows, interest rates, market yields, volatility and correlation inputs. The inputs used to value the embedded derivative component of hybrid financial instruments are consistent with the inputs used to value the firm's other derivative instruments described above. See Note 7 for further information about derivatives.

Note 5.

Fair Value Hierarchy

Financial assets and liabilities at fair value includes trading cash instruments, derivatives, and certain investments, loans and other financial assets and liabilities at fair value.

Trading Cash Instruments

Fair Value by Level. The table below presents trading cash instruments by level within the fair value hierarchy.

$ in millions	Level 1	Level 2	Level 3	Total
As of December 2023				
Assets				
Government and agency obligations:				
U.S.	**$ 85,190**	**$ 58,862**	**$ –**	**$ 144,052**
Non-U.S.	**61,981**	**25,702**	**91**	**87,774**
Loans and securities backed by:				
Commercial real estate	**–**	**916**	**45**	**961**
Residential real estate	**–**	**8,940**	**99**	**9,039**
Corporate debt instruments	**177**	**37,883**	**1,415**	**39,475**
State and municipal obligations	**–**	**371**	**–**	**371**
Other debt obligations	**80**	**2,086**	**37**	**2,203**
Equity securities	**135,032**	**1,739**	**103**	**136,874**
Commodities	**–**	**5,640**	**1**	**5,641**
Total	**$ 282,460**	**$ 142,139**	**$ 1,791**	**$ 426,390**
Liabilities				
Government and agency obligations:				
U.S.	**$ (26,400)**	**$ (32)**	**$ –**	**$ (26,432)**
Non-U.S.	**(50,825)**	**(2,343)**	**–**	**(53,168)**
Loans and securities backed by:				
Commercial real estate	**–**	**(27)**	**–**	**(27)**
Residential real estate	**–**	**(5)**	**–**	**(5)**
Corporate debt instruments	**(124)**	**(15,317)**	**(70)**	**(15,511)**
Equity securities	**(48,347)**	**(37)**	**(8)**	**(48,392)**
Commodities	**–**	**(66)**	**–**	**(66)**
Total	**$ (125,696)**	**$ (17,827)**	**$ (78)**	**$ (143,601)**
As of December 2022				
Assets				
Government and agency obligations:				
U.S.	$ 75,598	$ 31,783	$ –	$ 107,381
Non-U.S.	22,794	15,238	67	38,099
Loans and securities backed by:				
Commercial real estate	–	1,135	66	1,201
Residential real estate	–	9,706	88	9,794
Corporate debt instruments	249	27,555	1,238	29,042
State and municipal obligations	–	707	20	727
Other debt obligations	27	2,349	153	2,529
Equity securities	44,909	2,141	100	47,150
Commodities	–	5,907	2	5,909
Total	$ 143,577	$ 96,521	$ 1,734	$ 241,832
Liabilities				
Government and agency obligations:				
U.S.	$ (23,339)	$ (36)	$ –	$ (23,375)
Non-U.S.	(28,537)	(2,172)	–	(30,709)
Loans and securities backed by:				
Commercial real estate	–	(30)	–	(30)
Residential real estate	–	(16)	–	(16)
Corporate debt instruments	(64)	(14,217)	(61)	(14,342)
Other debt obligations	–	(35)	(2)	(37)
Equity securities	(67,591)	(488)	(1)	(68,080)
Total	$ (119,531)	$ (16,994)	$ (64)	$ (136,589)

Trading cash instruments consists of instruments held in connection with the firm's market-making or risk management activities. These instruments are carried at fair value and the related fair value gains and losses are recognized in the consolidated statements of earnings.

In the table above:

- Assets are shown as positive amounts and liabilities are shown as negative amounts.
- Corporate debt instruments includes corporate loans, debt securities, convertible debentures, prepaid commodity transactions and transfers of assets accounted for as secured loans rather than purchases.
- Other debt obligations includes other asset-backed securities and money market instruments.
- Equity securities includes public equities and exchange-traded funds.

See Note 4 for an overview of the firm's fair value measurement policies, valuation techniques and significant inputs used to determine the fair value of trading cash instruments.

Significant Unobservable Inputs. The table below presents the amount of level 3 assets, and ranges and weighted averages of significant unobservable inputs used to value level 3 trading cash instrument assets.

	As of December 2023		As of December 2022	
$ in millions	**Amount or Range**	**Weighted Average**	Amount or Range	Weighted Average
Loans and securities backed by real estate				
Level 3 assets	**$ 144**		$ 154	
Yield	**3.8% to 26.1%**	**12.8 %**	3.0% to 36.0%	14.2 %
Recovery rate	**35.5% to 76.0%**	**44.6 %**	35.8% to 76.1%	54.7 %
Cumulative loss rate	**N/A**	**N/A**	3.7% to 29.9%	10.4 %
Duration (years)	**0.3 to 15.3**	**5.2**	0.9 to 12.3	4.6
Corporate debt instruments				
Level 3 assets	**$ 1,415**		$ 1,238	
Yield	**2.8% to 40.0%**	**9.3 %**	1.1% to 34.3%	6.9 %
Recovery rate	**7.3% to 65.0%**	**39.4 %**	11.5% to 77.0%	48.0 %
Duration (years)	**0.9 to 11.3**	**3.4**	0.3 to 20.3	4.5
Other				
Level 3 assets	**$ 232**		$ 342	
Yield	**3.6% to 31.3%**	**14.6 %**	2.8% to 47.8%	10.0 %
Multiples	**0.7x to 4.5x**	**3.9x**	3.3x to 4.5x	4.3x
Duration (years)	**2.3 to 6.4**	**4.1**	1.2 to 14.4	6.1

In the table above:

- Other includes government and agency obligations, state and municipal obligations, other debt obligations, equity securities and commodities.
- Ranges represent the significant unobservable inputs that were used in the valuation of each type of trading cash instrument.
- Weighted averages are calculated by weighting each input by the relative fair value of the trading cash instruments.
- The ranges and weighted averages of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one trading cash instrument. For example, the highest recovery rate for corporate debt instruments is appropriate for valuing a specific corporate debt instrument, but may not be appropriate for valuing any other corporate debt instrument. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of level 3 trading cash instruments.
- Increases in yield, duration or cumulative loss rate used in the valuation of level 3 trading cash instruments would have resulted in a lower fair value measurement, while increases in recovery rate or multiples would have resulted in a higher fair value measurement as of both December 2023 and December 2022. Due to the distinctive nature of each level 3 trading cash instrument, the interrelationship of inputs is not necessarily uniform within each product type.
- Trading cash instruments are valued using discounted cash flows.
- Cumulative loss rate was not significant to the valuation of level 3 loans and securities backed by real estate as of December 2023.

Level 3 Rollforward. The table below presents a summary of the changes in fair value for level 3 trading cash instruments.

	Year Ended December	
$ in millions	**2023**	2022
Assets		
Beginning balance	**$ 1,734**	$ 1,889
Net realized gains/(losses)	**154**	167
Net unrealized gains/(losses)	**(32)**	(1,889)
Purchases	**825**	1,271
Sales	**(515)**	(704)
Settlements	**(286)**	(345)
Transfers into level 3	**167**	1,680
Transfers out of level 3	**(256)**	(335)
Ending balance	**$ 1,791**	$ 1,734
Liabilities		
Beginning balance	**$ (64)**	$ (104)
Net realized gains/(losses)	**3**	18
Net unrealized gains/(losses)	**(66)**	65
Purchases	**90**	137
Sales	**(77)**	(106)
Settlements	**1**	5
Transfers into level 3	**(3)**	(89)
Transfers out of level 3	**38**	10
Ending balance	**$ (78)**	$ (64)

In the table above:

- Changes in fair value are presented for all trading cash instruments that are classified in level 3 as of the end of the period.
- Net unrealized gains/(losses) relates to trading cash instruments that were still held at period-end.
- Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur. If a trading cash instrument was transferred to level 3 during a reporting period, its entire gain or loss for the period is classified in level 3.
- For level 3 trading cash instrument assets, increases are shown as positive amounts, while decreases are shown as negative amounts. For level 3 trading cash instrument liabilities, increases are shown as negative amounts, while decreases are shown as positive amounts.
- Level 3 trading cash instruments are frequently economically hedged with level 1 and level 2 trading cash instruments and/or level 1, level 2 or level 3 derivatives. Accordingly, gains or losses that are classified in level 3 can be partially offset by gains or losses attributable to level 1 or level 2 trading cash instruments and/or level 1, level 2 or level 3 derivatives. As a result, gains or losses included in the level 3 rollforward below do not necessarily represent the overall impact on the firm's results of operations, liquidity or capital resources.

The table below presents information, by product type, for assets included in the summary table above.

	Year Ended December	
$ in millions	**2023**	2022
Loans and securities backed by real estate		
Beginning balance	**$ 154**	$ 289
Net realized gains/(losses)	**10**	11
Net unrealized gains/(losses)	**5**	(11)
Purchases	**28**	51
Sales	**(57)**	(127)
Settlements	**(16)**	(26)
Transfers into level 3	**31**	19
Transfers out of level 3	**(11)**	(52)
Ending balance	**$ 144**	$ 154
Corporate debt instruments		
Beginning balance	**$ 1,238**	$ 1,318
Net realized gains/(losses)	**56**	29
Net unrealized gains/(losses)	**(26)**	(111)
Purchases	**656**	607
Sales	**(277)**	(372)
Settlements	**(201)**	(247)
Transfers into level 3	**98**	278
Transfers out of level 3	**(129)**	(264)
Ending balance	**$ 1,415**	$ 1,238
Other		
Beginning balance	**$ 342**	$ 282
Net realized gains/(losses)	**88**	127
Net unrealized gains/(losses)	**(11)**	(1,767)
Purchases	**141**	613
Sales	**(181)**	(205)
Settlements	**(69)**	(72)
Transfers into level 3	**38**	1,383
Transfers out of level 3	**(116)**	(19)
Ending balance	**$ 232**	$ 342

In the table above, other includes government and agency obligations, state and municipal obligations, other debt obligations, equity securities and commodities.

Level 3 Rollforward Commentary for the Year Ended December 2023. The net realized and unrealized gains on level 3 trading cash instrument assets of $122 million (reflecting $154 million of net realized gains and $32 million of net unrealized losses) for 2023 included gains of $60 million reported in market making and $62 million reported in interest income.

The drivers of net unrealized losses on level 3 trading cash instrument assets for 2023 were not material.

The drivers of transfers into level 3 trading cash instrument assets during 2023 were not material.

Transfers out of level 3 trading cash instrument assets during 2023 primarily reflected transfers of certain corporate debt instruments and other debt obligations (included in other cash instruments) to level 2 (in each case, principally due to increased price transparency as a result of market evidence, including market transactions in these instruments).

Level 3 Rollforward Commentary for the Year Ended December 2022. The net realized and unrealized losses on level 3 trading cash instrument assets of $1.72 billion (reflecting $167 million of net realized gains and $1.89 billion of net unrealized losses) for 2022 included gains/(losses) of $(1.77) billion reported in market making and $54 million reported in interest income.

The net unrealized losses on level 3 trading cash instrument assets for 2022 primarily reflected losses on certain equity securities (included in other cash instruments), principally driven by broad macroeconomic and geopolitical concerns.

Transfers into level 3 trading cash instrument assets during 2022 primarily reflected transfers of certain equity securities (included in other cash instruments) and corporate debt instruments from both level 1 and level 2 (in each case, principally due to reduced price transparency as a result of a lack of market evidence, including fewer market transactions in these instruments).

Transfers out of level 3 trading cash instrument assets during 2022 primarily reflected transfers of certain corporate debt instruments to level 2 (principally due to increased price transparency as a result of market evidence, including market transactions in these instruments).

Derivatives

Fair Value by Level. The table below presents derivatives on a gross basis by level and product type, as well as the impact of netting.

$ in millions	Level 1	Level 2	Level 3	Total
As of December 2023				
Assets				
Interest rates	**$ 15**	**$ 241,850**	**$ 758**	**$ 242,623**
Credit	**–**	**9,964**	**2,861**	**12,825**
Currencies	**–**	**89,694**	**210**	**89,904**
Commodities	**–**	**15,393**	**1,449**	**16,842**
Equities	**2**	**59,220**	**816**	**60,038**
Gross fair value	**17**	**416,121**	**6,094**	**422,232**
Counterparty netting in levels	**–**	**(319,045)**	**(933)**	**(319,978)**
Subtotal	**$ 17**	**$ 97,076**	**$ 5,161**	**$ 102,254**
Cross-level counterparty netting				**(1,411)**
Cash collateral netting				**(49,723)**
Net fair value				**$ 51,120**
Liabilities				
Interest rates	**$ (14)**	**$ (213,861)**	**$ (1,197)**	**$ (215,072)**
Credit	**–**	**(8,923)**	**(1,211)**	**(10,134)**
Currencies	**–**	**(97,436)**	**(168)**	**(97,604)**
Commodities	**–**	**(17,122)**	**(821)**	**(17,943)**
Equities	**(5)**	**(78,222)**	**(1,887)**	**(80,114)**
Gross fair value	**(19)**	**(415,564)**	**(5,284)**	**(420,867)**
Counterparty netting in levels	**–**	**319,045**	**933**	**319,978**
Subtotal	**$ (19)**	**$ (96,519)**	**$ (4,351)**	**$ (100,889)**
Cross-level counterparty netting				**1,411**
Cash collateral netting				**42,724**
Net fair value				**$ (56,754)**
As of December 2022				
Assets				
Interest rates	$ 69	$ 269,590	$ 700	$ 270,359
Credit	–	9,690	2,577	12,267
Currencies	–	103,450	494	103,944
Commodities	–	38,331	1,609	39,940
Equities	113	49,481	967	50,561
Gross fair value	182	470,542	6,347	477,071
Counterparty netting in levels	–	(358,917)	(886)	(359,803)
Subtotal	$ 182	$ 111,625	$ 5,461	$ 117,268
Cross-level counterparty netting				(1,079)
Cash collateral netting				(56,776)
Net fair value				$ 59,413
Liabilities				
Interest rates	$ (32)	$ (247,871)	$ (1,159)	$ (249,062)
Credit	–	(10,163)	(1,117)	(11,280)
Currencies	–	(111,840)	(332)	(112,172)
Commodities	–	(32,435)	(690)	(33,125)
Equities	(15)	(55,240)	(1,528)	(56,783)
Gross fair value	(47)	(457,549)	(4,826)	(462,422)
Counterparty netting in levels	–	358,917	886	359,803
Subtotal	$ (47)	$ (98,632)	$ (3,940)	$ (102,619)
Cross-level counterparty netting				1,079
Cash collateral netting				46,805
Net fair value				$ (54,735)

In the table above:

- Gross fair values exclude the effects of both counterparty netting and collateral netting, and therefore are not representative of the firm's exposure.
- Counterparty netting is reflected in each level to the extent that receivable and payable balances are netted within the same level and is included in counterparty netting in levels. Where the counterparty netting is across levels, the netting is included in cross-level counterparty netting.
- Assets are shown as positive amounts and liabilities are shown as negative amounts.

See Note 4 for an overview of the firm's fair value measurement policies, valuation techniques and significant inputs used to determine the fair value of derivatives.

Significant Unobservable Inputs. The table below presents the amount of level 3 derivative assets (liabilities), and ranges, averages and medians of significant unobservable inputs used to value level 3 derivatives.

	As of December 2023		As of December 2022	
$ in millions, except inputs	**Amount or Range**	**Average/ Median**	Amount or Range	Average/ Median
Interest rates, net	**$ (439)**		$ (459)	
Correlation	**(10)% to 75%**	**60%/66%**	(10)% to 81%	61%/60%
Volatility (bps)	**31 to 101**	**56/49**	31 to 101	60/57
Credit, net	**$ 1,650**		$ 1,460	
Credit spreads (bps)	**3 to 1,750**	**130/85**	5 to 935	149/116
Upfront credit points	**0 to 100**	**26/15**	(1) to 100	29/18
Recovery rates	**20% to 70%**	**43%/40%**	20% to 50%	40%/40%
Currencies, net	**$ 42**		$ 162	
Correlation	**20% to 90%**	**41%/43%**	20% to 71%	40%/23%
Volatility	**15% to 16%**	**16%/16%**	20% to 21%	20%/20%
Commodities, net	**$ 628**		$ 919	
Volatility	**23% to 98%**	**42%/39%**	20% to 118%	50%/46%
Natural gas spread	**$(1.39) to $3.06**	**$(0.32)/$(0.35)**	$(3.21) to $5.85	$(0.20)/ $(0.27)
Oil spread	**$(5.39) to $31.69**	**$15.39/$19.35**	$12.68 to $48.92	$20.42/ $20.36
Electricity price	**$2.72 to $1,088.00**	**$48.15/$35.16**	$3.00 to $329.28	$47.19/ $39.69
Equities, net	**$ (1,071)**		$ (561)	
Correlation	**(70)% to 100%**	**65%/71%**	(75)% to 100%	66%/75%
Volatility	**1% to 106%**	**14%/13%**	2% to 74%	13%/7%

In the table above:

- Assets are shown as positive amounts and liabilities are shown as negative amounts.
- Ranges represent the significant unobservable inputs that were used in the valuation of each type of derivative.

- Averages represent the arithmetic average of the inputs and are not weighted by the relative fair value or notional amount of the respective financial instruments. An average greater than the median indicates that the majority of inputs are below the average. For example, the difference between the average and the median for credit spreads indicates that the majority of the inputs fall in the lower end of the range.
- The ranges, averages and medians of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one derivative. For example, the highest correlation for interest rate derivatives is appropriate for valuing a specific interest rate derivative but may not be appropriate for valuing any other interest rate derivative. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of level 3 derivatives.
- Interest rates, currencies and equities derivatives are valued using option pricing models, credit derivatives are valued using option pricing, correlation and discounted cash flow models, and commodities derivatives are valued using option pricing and discounted cash flow models.
- The fair value of any one instrument may be determined using multiple valuation techniques. For example, option pricing models and discounted cash flow models are typically used together to determine fair value. Therefore, the level 3 balance encompasses both of these techniques.
- Correlation within currencies and equities includes cross-product type correlation.
- Natural gas spread represents the spread per million British thermal units of natural gas.
- Oil spread represents the spread per barrel of oil and refined products.
- Electricity price represents the price per megawatt hour of electricity.

Range of Significant Unobservable Inputs. The following provides information about the ranges of significant unobservable inputs used to value the firm's level 3 derivative instruments:

- **Correlation.** Ranges for correlation cover a variety of underliers both within one product type (e.g., equity index and equity single stock names) and across product types (e.g., correlation of an interest rate and a currency), as well as across regions. Generally, cross-product type correlation inputs are used to value more complex instruments and are lower than correlation inputs on assets within the same derivative product type.
- **Volatility.** Ranges for volatility cover numerous underliers across a variety of markets, maturities and strike prices. For example, volatility of equity indices is generally lower than volatility of single stocks.
- **Credit spreads, upfront credit points and recovery rates.** The ranges for credit spreads, upfront credit points and recovery rates cover a variety of underliers (index and single names), regions, sectors, maturities and credit qualities (high-yield and investment-grade). The broad range of this population gives rise to the width of the ranges of significant unobservable inputs.
- **Commodity prices and spreads.** The ranges for commodity prices and spreads cover variability in products, maturities and delivery locations.

Sensitivity of Fair Value Measurement to Changes in Significant Unobservable Inputs. The following is a description of the directional sensitivity of the firm's level 3 fair value measurements to changes in significant unobservable inputs, in isolation, as of each period-end:

- **Correlation.** In general, for contracts where the holder benefits from the convergence of the underlying asset or index prices (e.g., interest rates, credit spreads, foreign exchange rates, inflation rates and equity prices), an increase in correlation results in a higher fair value measurement.
- **Volatility.** In general, for purchased options, an increase in volatility results in a higher fair value measurement.
- **Credit spreads, upfront credit points and recovery rates.** In general, the fair value of purchased credit protection increases as credit spreads or upfront credit points increase or recovery rates decrease. Credit spreads, upfront credit points and recovery rates are strongly related to distinctive risk factors of the underlying reference obligations, which include reference entity-specific factors, such as leverage, volatility and industry, market-based risk factors, such as borrowing costs or liquidity of the underlying reference obligation, and macroeconomic conditions.
- **Commodity prices and spreads.** In general, for contracts where the holder is receiving a commodity, an increase in the spread (price difference from a benchmark index due to differences in quality or delivery location) or price results in a higher fair value measurement.

Due to the distinctive nature of each of the firm's level 3 derivatives, the interrelationship of inputs is not necessarily uniform within each product type.

Level 3 Rollforward. The table below presents a summary of the changes in fair value for level 3 derivatives.

	Year Ended December	
$ in millions	**2023**	2022
Total level 3 derivatives, net		
Beginning balance	**$ 1,521**	$ 440
Net realized gains/(losses)	**65**	839
Net unrealized gains/(losses)	**(327)**	1,817
Purchases	**366**	510
Sales	**(1,420)**	(1,592)
Settlements	**466**	100
Transfers into level 3	**(90)**	(482)
Transfers out of level 3	**229**	(111)
Ending balance	**$ 810**	$ 1,521

In the table above:

- Changes in fair value are presented for all derivative assets and liabilities that are classified in level 3 as of the end of the period.
- Net unrealized gains/(losses) relates to instruments that were still held at period-end.
- Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur. If a derivative was transferred into level 3 during a reporting period, its entire gain or loss for the period is classified in level 3.
- Positive amounts for transfers into level 3 and negative amounts for transfers out of level 3 represent net transfers of derivative assets. Negative amounts for transfers into level 3 and positive amounts for transfers out of level 3 represent net transfers of derivative liabilities.
- A derivative with level 1 and/or level 2 inputs is classified in level 3 in its entirety if it has at least one significant level 3 input.
- If there is one significant level 3 input, the entire gain or loss from adjusting only observable inputs (i.e., level 1 and level 2 inputs) is classified in level 3.
- Gains or losses that have been classified in level 3 resulting from changes in level 1 or level 2 inputs are frequently offset by gains or losses attributable to level 1 or level 2 derivatives and/or level 1, level 2 and level 3 trading cash instruments. As a result, gains/(losses) included in the level 3 rollforward below do not necessarily represent the overall impact on the firm's results of operations, liquidity or capital resources.

The table below presents information, by product type, for derivatives included in the summary table above.

	Year Ended December	
$ in millions	**2023**	2022
Interest rates, net		
Beginning balance	**$ (459)**	$ 183
Net realized gains/(losses)	**9**	88
Net unrealized gains/(losses)	**(78)**	137
Purchases	**85**	50
Sales	**(408)**	(585)
Settlements	**423**	(20)
Transfers into level 3	**(81)**	(13)
Transfers out of level 3	**70**	(299)
Ending balance	**$ (439)**	$ (459)
Credit, net		
Beginning balance	**$ 1,460**	$ 1,854
Net realized gains/(losses)	**(58)**	217
Net unrealized gains/(losses)	**274**	(343)
Purchases	**89**	107
Sales	**(50)**	(90)
Settlements	**(138)**	(27)
Transfers into level 3	**(20)**	(21)
Transfers out of level 3	**93**	(237)
Ending balance	**$ 1,650**	$ 1,460
Currencies, net		
Beginning balance	**$ 162**	$ (147)
Net realized gains/(losses)	**80**	95
Net unrealized gains/(losses)	**(182)**	270
Purchases	**2**	41
Sales	**(1)**	(36)
Settlements	**(56)**	19
Transfers into level 3	**4**	(83)
Transfers out of level 3	**33**	3
Ending balance	**$ 42**	$ 162
Commodities, net		
Beginning balance	**$ 919**	$ 438
Net realized gains/(losses)	**(113)**	(59)
Net unrealized gains/(losses)	**(373)**	741
Purchases	**4**	31
Sales	**(17)**	(30)
Settlements	**68**	(245)
Transfers into level 3	**122**	182
Transfers out of level 3	**18**	(139)
Ending balance	**$ 628**	$ 919
Equities, net		
Beginning balance	**$ (561)**	$ (1,888)
Net realized gains/(losses)	**147**	498
Net unrealized gains/(losses)	**32**	1,012
Purchases	**186**	281
Sales	**(944)**	(851)
Settlements	**169**	373
Transfers into level 3	**(115)**	(547)
Transfers out of level 3	**15**	561
Ending balance	**$ (1,071)**	$ (561)

Level 3 Rollforward Commentary for the Year Ended December 2023. The net realized and unrealized losses on level 3 derivatives of $262 million (reflecting $65 million of net realized gains and $327 million of net unrealized losses) for 2023 included losses of $251 million reported in market making and $11 million reported in other principal transactions.

The net unrealized losses on level 3 derivatives for 2023 primarily reflected losses on certain commodity derivatives (principally due to the impact of changes in commodity prices), losses on certain currency derivatives (principally due to the impact of a decrease in interest rates), partially offset by gains on certain credit derivatives (principally due to the impact of changes in foreign exchange rates and a decrease in interest rates).

Transfers into level 3 derivatives during 2023 primarily reflected transfers of certain equity derivative liabilities (principally due to reduced transparency of certain unobservable volatility inputs used to value these derivatives) and transfers of certain interest rate derivative liabilities from level 2 (principally due to certain unobservable volatility inputs becoming significant to the valuation of these derivatives), partially offset by transfers of certain commodity derivative assets from level 2 (principally due to certain unobservable volatility inputs becoming significant to the valuation of these derivatives).

The drivers of transfers out of level 3 derivatives during 2023 were not material.

Level 3 Rollforward Commentary for the Year Ended December 2022. The net realized and unrealized gains on level 3 derivatives of $2.66 billion (reflecting $839 million of net realized gains and $1.82 billion of net unrealized gains) for 2022 included gains of $2.65 billion reported in market making and $3 million reported in other principal transactions.

The net unrealized gains on level 3 derivatives for 2022 reflected gains on certain equity derivatives (principally due to the impact of a decrease in equity prices), gains on certain commodity derivatives (principally due to the impact of an increase in commodity prices), gains on certain currency derivatives (principally due to the impact of changes in foreign exchange rates and an increase in interest rates), and gains on certain interest rate derivatives (principally due to the impact of an increase in interest rates), partially offset by losses on certain credit derivatives (principally due to the impact of an increase in interest rates).

Transfers into level 3 derivatives during 2022 primarily reflected transfers of certain equity derivative liabilities from level 2 (principally due to reduced transparency of certain unobservable volatility inputs used to value these derivatives), partially offset by transfers of certain commodity derivative assets from level 2 (principally due to certain unobservable electricity price inputs becoming significant to the valuation of these derivatives).

Transfers out of level 3 derivatives during 2022 primarily reflected transfers of certain interest rate derivative assets to level 2 (principally due to certain unobservable volatility inputs no longer being significant to the valuation of these derivatives), certain credit derivative assets to level 2 (principally due to certain unobservable credit spread inputs no longer being significant to the net risk of certain portfolios), and certain commodity derivative assets to level 2 (principally due to certain unobservable natural gas spread and electricity price inputs no longer being significant to the valuation of these derivatives), partially offset by transfers of certain equity derivative liabilities to level 2 (principally due to certain unobservable volatility inputs no longer being significant to the valuation of these derivatives).

Investments

Fair Value by Level. The table below presents investments accounted for at fair value by level within the fair value hierarchy.

$ in millions	Level 1	Level 2	Level 3	Total
As of December 2023				
Government and agency obligations:				
U.S.	**$ 46,731**	**$ –**	**$ –**	**$ 46,731**
Non-U.S.	**2,399**	**144**	**–**	**2,543**
Corporate debt securities	**160**	**2,299**	**6,533**	**8,992**
Securities backed by real estate	**–**	**2**	**687**	**689**
Money market instruments	**52**	**999**	**–**	**1,051**
Other debt obligations	**9**	**14**	**244**	**267**
Equity securities	**721**	**2,099**	**9,674**	**12,494**
Subtotal	**$ 50,072**	**$ 5,557**	**$ 17,138**	**$ 72,767**
Investments in funds at NAV				**3,000**
Total investments				**$ 75,767**
As of December 2022				
Government and agency obligations:				
U.S.	$ 47,055	$ –	$ –	$ 47,055
Non-U.S.	2,169	66	–	2,235
Corporate debt securities	145	2,950	7,003	10,098
Securities backed by real estate	–	176	827	1,003
Money market instruments	48	957	–	1,005
Other debt obligations	–	3	256	259
Equity securities	1,522	3,227	8,856	13,605
Subtotal	$ 50,939	$ 7,379	$ 16,942	$ 75,260
Investments in funds at NAV				2,941
Total investments				$ 78,201

See Note 4 for an overview of the firm's fair value measurement policies, valuation techniques and significant inputs used to determine the fair value of investments.

Significant Unobservable Inputs. The table below presents the amount of level 3 investments, and ranges and weighted averages of significant unobservable inputs used to value such investments.

	As of December 2023		As of December 2022	
$ in millions	**Amount or Range**	**Weighted Average**	Amount or Range	Weighted Average
Corporate debt securities				
Level 3 assets	**$ 6,533**		$ 7,003	
Yield	**6.0% to 31.0%**	**12.1 %**	5.0% to 21.8%	11.6 %
Recovery rate	**7.3% to 41.2%**	**27.6 %**	10.0% to 70.0%	55.5 %
Duration (years)	**0.4 to 5.3**	**3.0**	1.3 to 5.7	3.3
Multiples	**0.9x to 53.3x**	**7.7x**	1.8x to 83.4x	8.3x
Securities backed by real estate				
Level 3 assets	**$ 687**		$ 827	
Yield	**7.4% to 18.8%**	**14.1 %**	8.0% to 20.3%	14.6 %
Duration (years)	**0.4 to 4.1**	**3.9**	0.6 to 4.2	4.1
Other debt obligations				
Level 3 assets	**$ 244**		$ 256	
Yield	**7.6% to 8.8%**	**8.2 %**	5.2% to 8.4%	7.4 %
Equity securities				
Level 3 assets	**$ 9,674**		$ 8,856	
Multiples	**0.5x to 25.2x**	**8.3x**	0.5x to 34.3x	8.3x
Discount rate/yield	**6.0% to 38.5%**	**12.3 %**	5.4% to 38.5%	14.6 %
Capitalization rate	**4.5% to 8.0%**	**5.3 %**	4.0% to 10.8%	5.4 %

In the table above:

- Ranges represent the significant unobservable inputs that were used in the valuation of each type of investment.
- Weighted averages are calculated by weighting each input by the relative fair value of the investment.
- The ranges and weighted averages of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one investment. For example, the highest multiple for private equity securities is appropriate for valuing a specific private equity security but may not be appropriate for valuing any other private equity security. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of level 3 investments.
- Increases in yield, discount rate, capitalization rate or duration used in the valuation of level 3 investments would have resulted in a lower fair value measurement, while increases in recovery rate or multiples would have resulted in a higher fair value measurement as of both December 2023 and December 2022. Due to the distinctive nature of each level 3 investment, the interrelationship of inputs is not necessarily uniform within each product type.
- Corporate debt securities, securities backed by real estate and other debt obligations are valued using discounted cash flows, and equity securities are valued using market comparables and discounted cash flows.
- The fair value of any one instrument may be determined using multiple valuation techniques. For example, market comparables and discounted cash flows may be used together to determine fair value. Therefore, the level 3 balance encompasses both of these techniques.

Level 3 Rollforward. The table below presents a summary of the changes in fair value for level 3 investments.

	Year Ended December	
$ in millions	**2023**	2022
Beginning balance	**$ 16,942**	$ 13,902
Net realized gains/(losses)	**463**	563
Net unrealized gains/(losses)	**(722)**	(1,649)
Purchases	**1,651**	2,362
Sales	**(1,186)**	(1,514)
Settlements	**(1,762)**	(1,995)
Transfers into level 3	**2,918**	6,345
Transfers out of level 3	**(1,166)**	(1,072)
Ending balance	**$ 17,138**	$ 16,942

In the table above:

- Changes in fair value are presented for all investments that are classified in level 3 as of the end of the period.
- Net unrealized gains/(losses) relates to investments that were still held at period-end.
- Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur. If an investment was transferred to level 3 during a reporting period, its entire gain or loss for the period is classified in level 3.
- For level 3 investments, increases are shown as positive amounts, while decreases are shown as negative amounts.

The table below presents information, by product type, for investments included in the summary table above.

	Year Ended December	
$ in millions	**2023**	2022
Corporate debt securities		
Beginning balance	**$ 7,003**	$ 4,527
Net realized gains/(losses)	**360**	352
Net unrealized gains/(losses)	**1**	(173)
Purchases	**590**	1,007
Sales	**(458)**	(125)
Settlements	**(1,110)**	(1,117)
Transfers into level 3	**755**	2,790
Transfers out of level 3	**(608)**	(258)
Ending balance	**$ 6,533**	$ 7,003
Securities backed by real estate		
Beginning balance	**$ 827**	$ 1,078
Net realized gains/(losses)	**12**	42
Net unrealized gains/(losses)	**(166)**	(338)
Purchases	**58**	199
Sales	**(148)**	(169)
Settlements	**(62)**	(320)
Transfers into level 3	**171**	344
Transfers out of level 3	**(5)**	(9)
Ending balance	**$ 687**	$ 827
Other debt obligations		
Beginning balance	**$ 256**	$ 382
Net realized gains/(losses)	**4**	12
Net unrealized gains/(losses)	**–**	(5)
Purchases	**2**	25
Sales	**–**	(6)
Settlements	**(18)**	(147)
Transfers out of level 3	**–**	(5)
Ending balance	**$ 244**	$ 256
Equity securities		
Beginning balance	**$ 8,856**	$ 7,915
Net realized gains/(losses)	**87**	157
Net unrealized gains/(losses)	**(557)**	(1,133)
Purchases	**1,001**	1,131
Sales	**(580)**	(1,214)
Settlements	**(572)**	(411)
Transfers into level 3	**1,992**	3,211
Transfers out of level 3	**(553)**	(800)
Ending balance	**$ 9,674**	$ 8,856

Level 3 Rollforward Commentary for the Year Ended December 2023. The net realized and unrealized losses on level 3 investments of $259 million (reflecting $463 million of net realized gains and $722 million of net unrealized losses) for 2023 included gains/(losses) of $(820) million reported in other principal transactions and $561 million reported in interest income.

The net unrealized losses on level 3 investments for 2023 primarily reflected losses on certain equity securities and securities backed by real estate (in each case, principally driven by ongoing weakness in the commercial real estate market).

Transfers into level 3 investments during 2023 primarily reflected transfers of certain equity securities and corporate debt securities from level 2 (in each case, principally due to reduced price transparency as a result of a lack of market evidence, including fewer market transactions in these instruments, and certain unobservable yield inputs becoming significant to the valuation of these instruments).

Transfers out of level 3 investments during 2023 primarily reflected transfers of certain corporate debt securities to level 2 (principally due to increased price transparency as a result of market evidence, including market transactions in these instruments, and certain unobservable yield inputs becoming less significant to the valuation of these instruments), and transfers of certain equity securities to level 2 (principally due to increased price transparency as a result of market evidence, including market transactions in these instruments).

Level 3 Rollforward Commentary for the Year Ended December 2022. The net realized and unrealized losses on level 3 investments of $1.09 billion (reflecting $563 million of net realized gains and $1.65 billion of net unrealized losses) for 2022 included gains/(losses) of $(1.52) billion reported in other principal transactions and $433 million reported in interest income.

The net unrealized losses on level 3 investments for 2022 primarily reflected losses on certain equity securities and corporate debt securities (in each case, principally driven by broad macroeconomic and geopolitical concerns) and securities backed by real estate (principally driven by an increase in interest rates).

Transfers into level 3 investments during 2022 primarily reflected transfers of certain equity securities and corporate debt securities from level 2 (in each case, principally due to reduced price transparency as a result of a lack of market evidence, including fewer market transactions in these instruments), and transfers of certain corporate debt securities from level 2 (due to certain unobservable yield and duration inputs becoming significant to the valuation of these instruments).

Transfers out of level 3 investments during 2022 primarily reflected transfers of certain equity securities and corporate debt securities to level 2 (in each case, principally due to increased price transparency as a result of market evidence, including market transactions in these instruments and certain unobservable yield and duration inputs no longer being significant to the valuation of these instruments).

Loans

Fair Value by Level. The table below presents loans held for investment accounted for at fair value under the fair value option by level within the fair value hierarchy.

$ in millions	Level 1	Level 2	Level 3	Total
As of December 2023				
Loan Type				
Corporate	**$ –**	**$ 415**	**$ 344**	**$ 759**
Real estate:				
Commercial	**–**	**360**	**203**	**563**
Residential	**–**	**4,087**	**58**	**4,145**
Other collateralized	**–**	**775**	**136**	**911**
Other	**–**	**46**	**82**	**128**
Total	**$ –**	**$ 5,683**	**$ 823**	**$ 6,506**
As of December 2022				
Loan Type				
Corporate	$ –	$ 359	$ 637	$ 996
Real estate:				
Commercial	–	435	711	1,146
Residential	–	4,437	74	4,511
Other collateralized	–	576	140	716
Other	–	11	275	286
Total	$ –	$ 5,818	$ 1,837	$ 7,655

The gains/(losses) as a result of changes in the fair value of loans held for investment for which the fair value option was elected were $(53) million for 2023 and $(367) million for 2022. These gains/(losses) were included in other principal transactions.

Significant Unobservable Inputs. The table below presents the amount of level 3 loans, and ranges and weighted averages of significant unobservable inputs used to value such loans.

	As of December 2023		As of December 2022	
$ in millions	**Amount or Range**	**Weighted Average**	Amount or Range	Weighted Average
Corporate				
Level 3 assets	**$ 344**		$ 637	
Yield	**8.0% to 17.1%**	**10.5 %**	4.1% to 26.9%	9.6 %
Recovery rate	**2.0% to 95.0%**	**74.0 %**	23.1% to 95.0%	66.0 %
Duration (years)	**0.7 to 2.3**	**1.7**	1.6 to 3.3	2.6
Real estate				
Level 3 assets	**$ 261**		$ 785	
Yield	**5.0% to 21.4%**	**18.1 %**	3.0% to 27.0%	16.1 %
Recovery rate	**5.3% to 99.2%**	**66.0 %**	3.6% to 66.2%	54.4 %
Duration (years)	**0.5 to 6.2**	**1.6**	0.6 to 6.7	2.5
Other collateralized				
Level 3 assets	**$ 136**		$ 140	
Yield	**5.6% to 8.7%**	**6.1 %**	5.8% to 12.7%	7.7 %
Duration (years)	**N/A**	**N/A**	2.5 to 2.9	2.7
Other				
Level 3 assets	**$ 82**		$ 275	
Yield	**7.3% to 13.5%**	**9.6 %**	9.4% to 10.0%	9.9 %
Duration (years)	**3.6 to 5.2**	**4.2**	N/A	N/A

In the table above:

- Ranges represent the significant unobservable inputs that were used in the valuation of each type of loan.
- Weighted averages are calculated by weighting each input by the relative fair value of the loan.
- The ranges and weighted averages of these inputs are not representative of the appropriate inputs to use when calculating the fair value of any one loan. For example, the highest yield for real estate loans is appropriate for valuing a specific real estate loan but may not be appropriate for valuing any other real estate loan. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of level 3 loans.
- Increases in yield or duration used in the valuation of level 3 loans would have resulted in a lower fair value measurement, while increases in recovery rate would have resulted in a higher fair value measurement as of both December 2023 and December 2022. Due to the distinctive nature of each level 3 loan, the interrelationship of inputs is not necessarily uniform within each product type.
- Loans are valued using discounted cash flows.
- The significant unobservable inputs for duration related to other collateralized loans as of December 2023 did not have a range (and there was no weighted average) as it related to a single position. Therefore, such unobservable inputs are not included in the table above.
- The significant unobservable inputs for duration related to other loans as of December 2022 did not have a range (and there was no weighted average) as it related to a purchased portfolio of revolving loans with a single duration. Therefore, such unobservable inputs are not included in the table above.

Level 3 Rollforward. The table below presents a summary of the changes in fair value for level 3 loans.

	Year Ended December	
$ in millions	**2023**	2022
Beginning balance	**$ 1,837**	$ 2,354
Net realized gains/(losses)	**26**	82
Net unrealized gains/(losses)	**(169)**	(129)
Purchases	**53**	113
Sales	**(540)**	(82)
Settlements	**(318)**	(403)
Transfers into level 3	**2**	236
Transfers out of level 3	**(68)**	(334)
Ending balance	**$ 823**	$ 1,837

In the table above:

- Changes in fair value are presented for loans that are classified in level 3 as of the end of the period.
- Net unrealized gains/(losses) relates to loans that were still held at period-end.
- Purchases includes originations and secondary purchases.
- Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur. If a loan was transferred to level 3 during a reporting period, its entire gain or loss for the period is classified in level 3.

The table below presents information, by loan type, for loans included in the summary table above.

	Year Ended December	
$ in millions	**2023**	2022
Corporate		
Beginning balance	**$ 637**	$ 672
Net realized gains/(losses)	**10**	29
Net unrealized gains/(losses)	**(124)**	(40)
Purchases	**10**	27
Sales	**(47)**	(74)
Settlements	**(113)**	(95)
Transfers into level 3	**2**	121
Transfers out of level 3	**(31)**	(3)
Ending balance	**$ 344**	$ 637
Real estate		
Beginning balance	**$ 785**	$ 1,188
Net realized gains/(losses)	**11**	45
Net unrealized gains/(losses)	**(42)**	(108)
Purchases	**7**	65
Sales	**(272)**	(8)
Settlements	**(192)**	(233)
Transfers into level 3	**–**	102
Transfers out of level 3	**(36)**	(266)
Ending balance	**$ 261**	$ 785
Other collateralized		
Beginning balance	**$ 140**	$ 229
Net realized gains/(losses)	**1**	3
Net unrealized gains/(losses)	**(6)**	(2)
Purchases	**5**	3
Sales	**(2)**	–
Settlements	**(2)**	(55)
Transfers into level 3	**–**	13
Transfers out of level 3	**–**	(51)
Ending balance	**$ 136**	$ 140
Other		
Beginning balance	**$ 275**	$ 265
Net realized gains/(losses)	**4**	5
Net unrealized gains/(losses)	**3**	21
Purchases	**31**	18
Sales	**(219)**	–
Settlements	**(11)**	(20)
Transfers out of level 3	**(1)**	(14)
Ending balance	**$ 82**	$ 275

Level 3 Rollforward Commentary for the Year Ended December 2023. The net realized and unrealized losses on level 3 loans of $143 million (reflecting $26 million of net realized gains and $169 million of net unrealized losses) for 2023 included gains/(losses) of $(152) million reported in other principal transactions and $9 million reported in interest income.

The net unrealized losses on level 3 loans for 2023 primarily reflected losses on corporate loans (principally driven by company-specific events).

The drivers of both transfers into and transfers out of level 3 loans during 2023 were not material.

Level 3 Rollforward Commentary for the Year Ended December 2022. The net realized and unrealized losses on level 3 loans of $47 million (reflecting $82 million of net realized gains and $129 million of net unrealized losses) for 2022 included gains/(losses) of $(78) million reported in other principal transactions and $31 million reported in interest income.

The net unrealized losses on level 3 loans for 2022 primarily reflected losses on certain loans backed by real estate (principally due to the impact of an increase in interest rates).

Transfers into level 3 loans during 2022 primarily reflected transfers of certain corporate loans and loans backed by real estate from level 2 (in each case, principally due to reduced price transparency as a result of a lack of market evidence, including fewer market transactions in these instruments).

Transfers out of level 3 loans during 2022 primarily reflected transfers of certain loans backed by real estate to level 2 (principally due to increased price transparency as a result of market evidence, including market transactions in these instruments).

Other Financial Assets and Liabilities

Fair Value by Level. The table below presents, by level within the fair value hierarchy, other financial assets and liabilities at fair value, substantially all of which are accounted for at fair value under the fair value option.

$ in millions	Level 1	Level 2	Level 3	Total
As of December 2023				
Assets				
Resale agreements	**$ –**	**$ 223,543**	**$ –**	**$ 223,543**
Securities borrowed	**–**	**44,930**	**–**	**44,930**
Customer and other receivables	**–**	**23**	**–**	**23**
Other assets	**–**	**179**	**187**	**366**
Total	**$ –**	**$ 268,675**	**$ 187**	**$ 268,862**
Liabilities				
Deposits	**$ –**	**$ (26,723)**	**$ (2,737)**	**$ (29,460)**
Repurchase agreements	**–**	**(249,887)**	**–**	**(249,887)**
Securities loaned	**–**	**(8,934)**	**–**	**(8,934)**
Other secured financings	**–**	**(10,532)**	**(2,022)**	**(12,554)**
Unsecured borrowings:				
Short-term	**–**	**(40,538)**	**(5,589)**	**(46,127)**
Long-term	**–**	**(72,562)**	**(13,848)**	**(86,410)**
Other liabilities	**–**	**(187)**	**(79)**	**(266)**
Total	**$ –**	**$ (409,363)**	**$ (24,275)**	**$ (433,638)**
As of December 2022				
Assets				
Resale agreements	$ –	$ 225,117	$ –	$ 225,117
Securities borrowed	–	38,578	–	38,578
Customer and other receivables	–	25	–	25
Other assets	–	71	74	145
Total	$ –	$ 263,791	$ 74	$ 263,865
Liabilities				
Deposits	$ –	$ (13,003)	$ (2,743)	$ (15,746)
Repurchase agreements	–	(110,349)	–	(110,349)
Securities loaned	–	(4,372)	–	(4,372)
Other secured financings	–	(10,914)	(1,842)	(12,756)
Unsecured borrowings:				
Short-term	–	(35,641)	(4,090)	(39,731)
Long-term	–	(63,081)	(10,066)	(73,147)
Other liabilities	–	(74)	(85)	(159)
Total	$ –	$ (237,434)	$ (18,826)	$ (256,260)

In the table above, assets are shown as positive amounts and liabilities are shown as negative amounts.

See Note 4 for an overview of the firm's fair value measurement policies, valuation techniques and significant inputs used to determine the fair value of other financial assets and liabilities.

Significant Unobservable Inputs. See below for information about the significant unobservable inputs used to value level 3 other financial assets and liabilities at fair value as of both December 2023 and December 2022.

Other Secured Financings. The ranges and weighted averages of significant unobservable inputs used to value level 3 other secured financings are presented below. These ranges and weighted averages exclude unobservable inputs that are only relevant to a single instrument, and therefore are not meaningful.

As of December 2023:

- Yield: 6.7% to 11.3% (weighted average: 8.5%)
- Duration: 0.1 to 4.5 years (weighted average: 0.9 years)

As of December 2022:

- Yield: 4.5% to 9.4% (weighted average: 5.9%)
- Duration: 0.6 to 5.1 years (weighted average: 2.2 years)

Generally, increases in yield or duration, in isolation, would have resulted in a lower fair value measurement as of period-end. Due to the distinctive nature of each of level 3 other secured financings, the interrelationship of inputs is not necessarily uniform across such financings. See Note 11 for further information about other secured financings.

Deposits, Unsecured Borrowings and Other Assets and Liabilities. Substantially all of the firm's deposits, unsecured short- and long-term borrowings, and other assets and liabilities that are classified in level 3 are hybrid financial instruments. As the significant unobservable inputs used to value hybrid financial instruments primarily relate to the embedded derivative component of these deposits, unsecured borrowings and other assets and liabilities, these unobservable inputs are incorporated in the firm's derivative disclosures. See Note 12 for further information about other assets, Note 13 for further information about deposits, Note 14 for further information about unsecured borrowings and Note 15 for further information about other liabilities.

Level 3 Rollforward. The table below presents a summary of the changes in fair value for level 3 other financial assets and liabilities accounted for at fair value.

	Year Ended December	
$ in millions	**2023**	2022
Assets		
Beginning balance	**$ 74**	$ –
Net realized gains/(losses)	**(2)**	–
Net unrealized gains/(losses)	**95**	65
Purchases	**20**	9
Ending balance	**$ 187**	$ 74
Liabilities		
Beginning balance	**$ (18,826)**	$ (23,567)
Net realized gains/(losses)	**(212)**	(311)
Net unrealized gains/(losses)	**(1,667)**	4,459
Issuances	**(8,153)**	(10,090)
Settlements	**8,298**	10,255
Transfers into level 3	**(4,542)**	(1,851)
Transfers out of level 3	**827**	2,279
Ending balance	**$ (24,275)**	$ (18,826)

In the table above:

- Changes in fair value are presented for all other financial assets and liabilities that are classified in level 3 as of the end of the period.
- Net unrealized gains/(losses) relates to other financial assets and liabilities that were still held at period-end.
- Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur. If a financial instrument was transferred to level 3 during a reporting period, its entire gain or loss for the period is classified in level 3.
- For level 3 other financial assets, increases are shown as positive amounts, while decreases are shown as negative amounts. For level 3 other financial liabilities, increases are shown as negative amounts, while decreases are shown as positive amounts.
- Level 3 other financial assets and liabilities are frequently economically hedged with trading assets and liabilities. Accordingly, gains or losses that are classified in level 3 can be partially offset by gains or losses attributable to level 1, 2 or 3 trading assets and liabilities. As a result, gains or losses included in the level 3 rollforward below do not necessarily represent the overall impact on the firm's results of operations, liquidity or capital resources.

The table below presents information, by the consolidated balance sheet line items, for liabilities included in the summary table above.

	Year Ended December	
$ in millions	**2023**	2022
Deposits		
Beginning balance	**$ (2,743)**	$ (3,613)
Net realized gains/(losses)	**(2)**	(5)
Net unrealized gains/(losses)	**(140)**	391
Issuances	**(506)**	(937)
Settlements	**773**	1,264
Transfers into level 3	**(153)**	(13)
Transfers out of level 3	**34**	170
Ending balance	**$ (2,737)**	$ (2,743)
Other secured financings		
Beginning balance	**$ (1,842)**	$ (2,566)
Net realized gains/(losses)	**(19)**	(12)
Net unrealized gains/(losses)	**(50)**	31
Issuances	**(657)**	(621)
Settlements	**1,479**	850
Transfers into level 3	**(941)**	(110)
Transfers out of level 3	**8**	586
Ending balance	**$ (2,022)**	$ (1,842)
Unsecured short-term borrowings		
Beginning balance	**$ (4,090)**	$ (7,829)
Net realized gains/(losses)	**(36)**	(112)
Net unrealized gains/(losses)	**(563)**	730
Issuances	**(4,315)**	(3,497)
Settlements	**3,418**	6,201
Transfers into level 3	**(281)**	(265)
Transfers out of level 3	**278**	682
Ending balance	**$ (5,589)**	$ (4,090)
Unsecured long-term borrowings		
Beginning balance	**$ (10,066)**	$ (9,413)
Net realized gains/(losses)	**(155)**	(182)
Net unrealized gains/(losses)	**(914)**	3,246
Issuances	**(2,675)**	(5,035)
Settlements	**2,622**	1,940
Transfers into level 3	**(3,167)**	(1,463)
Transfers out of level 3	**507**	841
Ending balance	**$ (13,848)**	$ (10,066)
Other liabilities		
Beginning balance	**$ (85)**	$ (146)
Net unrealized gains/(losses)	**–**	61
Settlements	**6**	–
Ending balance	**$ (79)**	$ (85)

Level 3 Rollforward Commentary for the Year Ended December 2023. The net realized and unrealized losses on level 3 other financial liabilities of $1.88 billion (reflecting $212 million of net realized losses and $1.67 billion of net unrealized losses) for 2023 included losses of $1.41 billion reported in market making, $23 million reported in other principal transactions and $22 million reported in interest expense in the consolidated statements of earnings, and $427 million reported in debt valuation adjustment in the consolidated statements of comprehensive income.

The net unrealized losses on level 3 other financial liabilities for 2023 primarily reflected losses on certain hybrid financial instruments included in unsecured long- and short-term borrowings (principally due to an increase in global equity prices).

Transfers into level 3 other financial liabilities during 2023 primarily reflected transfers of certain hybrid financial instruments included in unsecured long-term borrowings from level 2 (principally due to reduced price transparency of certain credit spread and volatility inputs used to value these instruments) and transfers of certain other secured financings from level 2 (principally due to reduced price transparency of certain yield and duration inputs used to value these instruments).

Transfers out of level 3 other financial liabilities during 2023 primarily reflected transfers of certain hybrid financial instruments included in unsecured long- and short-term borrowings to level 2 (principally due to increased price transparency of certain volatility inputs used to value these instruments).

Level 3 Rollforward Commentary for the Year Ended December 2022. The net realized and unrealized gains on level 3 other financial liabilities of $4.15 billion (reflecting $311 million of net realized losses and $4.46 billion of net unrealized gains) for 2022 included gains/(losses) of $3.60 billion reported in market making, $64 million reported in other principal transactions and $(21) million reported in interest expense in the consolidated statements of earnings, and $503 million reported in debt valuation adjustment in the consolidated statements of comprehensive income.

The net unrealized gains on level 3 other financial liabilities for 2022 primarily reflected gains on certain hybrid financial instruments included in unsecured long- and short-term borrowings (principally due to a decrease in global equity prices and an increase in interest rates).

Transfers into level 3 other financial liabilities during 2022 primarily reflected transfers of certain hybrid financial instruments included in unsecured long- and short-term borrowings from level 2 (principally due to reduced transparency of certain volatility and correlation inputs used to value these instruments).

Transfers out of level 3 other financial liabilities during 2022 primarily reflected transfers of certain hybrid financial instruments included in unsecured long- and short-term borrowings to level 2 (principally due to increased price transparency of certain volatility and correlation inputs used to value these instruments) and transfers of certain other secured financings to level 2 (principally due to certain unobservable yield and duration inputs no longer being significant to the valuation of these instruments).

Note 6.

Trading Assets and Liabilities

Trading assets and liabilities include trading cash instruments and derivatives held in connection with the firm's market-making or risk management activities. These assets and liabilities are carried at fair value either under the fair value option or in accordance with other U.S. GAAP, and the related fair value gains and losses are generally recognized in the consolidated statements of earnings.

The table below presents a summary of trading assets and liabilities.

$ in millions	Trading Assets	Trading Liabilities
As of December 2023		
Trading cash instruments	**$ 426,390**	**$ 143,601**
Derivatives	**51,120**	**56,754**
Total	**$ 477,510**	**$ 200,355**
As of December 2022		
Trading cash instruments	$ 241,832	$ 136,589
Derivatives	59,413	54,735
Total	$ 301,245	$ 191,324

See Note 5 for further information about trading cash instruments and Note 7 for further information about derivatives.

Gains and Losses from Market Making

The table below presents market making revenues by major product type.

	Year Ended December		
$ in millions	**2023**	2022	2021
Interest rates	**$ 4,437**	$ (4,890)	$ (2,664)
Credit	**1,141**	1,095	1,739
Currencies	**2,827**	11,662	5,627
Equities	**7,938**	7,734	8,459
Commodities	**1,895**	3,033	2,196
Total	**$ 18,238**	$ 18,634	$ 15,357

In the table above:

- Gains/(losses) include both realized and unrealized gains and losses. Gains/(losses) exclude related interest income and interest expense. See Note 23 for further information about interest income and interest expense.
- Gains/(losses) included in market making are primarily related to the firm's trading assets and liabilities, including both derivative and non-derivative financial instruments.
- Gains/(losses) are not representative of the manner in which the firm manages its business activities because many of the firm's market-making and client facilitation strategies utilize financial instruments across various product types. Accordingly, gains or losses in one product type frequently offset gains or losses in other product types. For example, most of the firm's longer-term derivatives across product types are sensitive to changes in interest rates and may be economically hedged with interest rate swaps. Similarly, a significant portion of the firm's trading cash instruments and derivatives across product types has exposure to foreign currencies and may be economically hedged with foreign currency contracts.

Note 7.

Derivatives and Hedging Activities

Derivative Activities

Derivatives are instruments that derive their value from underlying asset prices, indices, reference rates and other inputs, or a combination of these factors. Derivatives may be traded on an exchange (exchange-traded) or they may be privately negotiated contracts, which are usually referred to as OTC derivatives. Certain of the firm's OTC derivatives are cleared and settled through central clearing counterparties (OTC-cleared), while others are bilateral contracts between two counterparties (bilateral OTC).

Market Making. As a market maker, the firm enters into derivative transactions to provide liquidity to clients and to facilitate the transfer and hedging of their risks. In this role, the firm typically acts as principal and is required to commit capital to provide execution, and maintains market-making positions in response to, or in anticipation of, client demand.

Risk Management. The firm also enters into derivatives to actively manage risk exposures that arise from its market-making and investing and financing activities. The firm's holdings and exposures are hedged, in many cases, on either a portfolio or risk-specific basis, as opposed to an instrument-by-instrument basis. The offsetting impact of this economic hedging is reflected in the same business segment as the related revenues. In addition, the firm may enter into derivatives designated as hedges under U.S. GAAP. These derivatives are used to manage interest rate exposure of certain fixed-rate unsecured borrowings and deposits and certain U.S. and non-U.S. government securities classified as available-for-sale, foreign exchange risk of certain available-for-sale securities and the net investment in certain non-U.S. operations.

The firm enters into various types of derivatives, including:

- **Futures and Forwards.** Contracts that commit counterparties to purchase or sell financial instruments, commodities or currencies in the future.
- **Swaps.** Contracts that require counterparties to exchange cash flows, such as currency or interest payment streams. The amounts exchanged are based on the specific terms of the contract with reference to specified rates, financial instruments, commodities, currencies or indices.
- **Options.** Contracts in which the option purchaser has the right, but not the obligation, to purchase from or sell to the option writer financial instruments, commodities or currencies within a defined time period for a specified price.

Derivatives are reported on a net-by-counterparty basis (i.e., the net payable or receivable for derivative assets and liabilities for a given counterparty) when a legal right of setoff exists under an enforceable netting agreement (counterparty netting). Derivatives are accounted for at fair value, net of cash collateral received or posted under enforceable credit support agreements (cash collateral netting). Derivative assets are included in trading assets and derivative liabilities are included in trading liabilities. Realized and unrealized gains and losses on derivatives not designated as hedges are included in market making (for derivatives included in Fixed Income, Currency and Commodities (FICC) and Equities within Global Banking & Markets), and other principal transactions (for derivatives included in Investment banking fees and Other within Global Banking & Markets, as well as derivatives in Asset & Wealth Management) in the consolidated statements of earnings. For both 2023 and 2022, substantially all of the firm's derivatives were included in Global Banking & Markets.

The tables below present the gross fair value and the notional amounts of derivative contracts by major product type, the amounts of counterparty and cash collateral netting in the consolidated balance sheets, as well as cash and securities collateral posted and received under enforceable credit support agreements that do not meet the criteria for netting under U.S. GAAP.

	As of December 2023		As of December 2022	
$ in millions	**Derivative Assets**	**Derivative Liabilities**	Derivative Assets	Derivative Liabilities
Not accounted for as hedges				
Exchange-traded	**$ 3,401**	**$ 1,129**	$ 675	$ 1,385
OTC-cleared	**67,815**	**64,490**	74,297	72,979
Bilateral OTC	**171,109**	**149,444**	195,052	174,687
Total interest rates	**242,325**	**215,063**	270,024	249,051
OTC-cleared	**1,271**	**1,533**	1,516	1,802
Bilateral OTC	**11,554**	**8,601**	10,751	9,478
Total credit	**12,825**	**10,134**	12,267	11,280
Exchange-traded	**708**	**15**	1,041	22
OTC-cleared	**1,033**	**1,632**	520	589
Bilateral OTC	**88,158**	**95,742**	102,301	111,276
Total currencies	**89,899**	**97,389**	103,862	111,887
Exchange-traded	**5,468**	**5,998**	9,225	9,542
OTC-cleared	**635**	**711**	698	838
Bilateral OTC	**10,739**	**11,234**	30,017	22,745
Total commodities	**16,842**	**17,943**	39,940	33,125
Exchange-traded	**31,315**	**39,247**	26,302	26,607
OTC-cleared	**122**	**171**	685	19
Bilateral OTC	**28,601**	**40,696**	23,574	30,157
Total equities	**60,038**	**80,114**	50,561	56,783
Subtotal	**421,929**	**420,643**	476,654	462,126
Accounted for as hedges				
Bilateral OTC	**298**	**9**	335	11
Total interest rates	**298**	**9**	335	11
OTC-cleared	**–**	**7**	29	29
Bilateral OTC	**5**	**208**	53	256
Total currencies	**5**	**215**	82	285
Subtotal	**303**	**224**	417	296
Total gross fair value	**$ 422,232**	**$ 420,867**	$ 477,071	$ 462,422
Offset in the consolidated balance sheets				
Exchange-traded	**$ (32,722)**	**$ (32,722)**	$ (31,229)	$ (31,229)
OTC-cleared	**(67,272)**	**(67,272)**	(75,349)	(75,349)
Bilateral OTC	**(221,395)**	**(221,395)**	(254,304)	(254,304)
Counterparty netting	**(321,389)**	**(321,389)**	(360,882)	(360,882)
OTC-cleared	**(1,335)**	**(486)**	(1,388)	(406)
Bilateral OTC	**(48,388)**	**(42,238)**	(55,388)	(46,399)
Cash collateral netting	**(49,723)**	**(42,724)**	(56,776)	(46,805)
Total amounts offset	**$ (371,112)**	**$ (364,113)**	$ (417,658)	$ (407,687)
Included in the consolidated balance sheets				
Exchange-traded	**$ 8,170**	**$ 13,667**	$ 6,014	$ 6,327
OTC-cleared	**2,269**	**786**	1,008	501
Bilateral OTC	**40,681**	**42,301**	52,391	47,907
Total	**$ 51,120**	**$ 56,754**	$ 59,413	$ 54,735
Not offset in the consolidated balance sheets				
Cash collateral	**$ (877)**	**$ (2,732)**	$ (298)	$ (1,887)
Securities collateral	**(13,425)**	**(6,516)**	(15,229)	(4,329)
Total	**$ 36,818**	**$ 47,506**	$ 43,886	$ 48,519

	Notional Amounts as of December	
$ in millions	**2023**	2022
Not accounted for as hedges		
Exchange-traded	**$ 3,854,689**	$ 4,241,937
OTC-cleared	**16,007,915**	13,104,682
Bilateral OTC	**12,390,595**	11,137,127
Total interest rates	**32,253,199**	28,483,746
Exchange-traded	**299**	369
OTC-cleared	**498,720**	529,543
Bilateral OTC	**619,975**	577,542
Total credit	**1,118,994**	1,107,454
Exchange-traded	**11,586**	9,012
OTC-cleared	**268,293**	150,561
Bilateral OTC	**6,363,700**	5,304,069
Total currencies	**6,643,579**	5,463,642
Exchange-traded	**306,787**	341,526
OTC-cleared	**3,323**	3,188
Bilateral OTC	**199,270**	255,208
Total commodities	**509,380**	599,922
Exchange-traded	**1,564,341**	1,107,659
OTC-cleared	**1,487**	1,639
Bilateral OTC	**1,204,140**	1,026,736
Total equities	**2,769,968**	2,136,034
Subtotal	**43,295,120**	37,790,798
Accounted for as hedges		
OTC-cleared	**241,160**	257,739
Bilateral OTC	**2,914**	3,156
Total interest rates	**244,074**	260,895
OTC-cleared	**1,227**	2,048
Bilateral OTC	**9,130**	7,701
Total currencies	**10,357**	9,749
Subtotal	**254,431**	270,644
Total notional amounts	**$ 43,549,551**	$ 38,061,442

In the tables above:

- Gross fair values exclude the effects of both counterparty netting and collateral, and therefore are not representative of the firm’s exposure.
- Where the firm has received or posted collateral under credit support agreements, but has not yet determined such agreements are enforceable, the related collateral has not been netted.
- Notional amounts, which represent the sum of gross long and short derivative contracts, provide an indication of the volume of the firm’s derivative activity and do not represent anticipated losses.
- Total gross fair value of derivatives included derivative assets of $8.98 billion as of December 2023 and $10.08 billion as of December 2022, and derivative liabilities of $16.03 billion as of December 2023 and $12.71 billion as of December 2022, which are not subject to an enforceable netting agreement or are subject to a netting agreement that the firm has not yet determined to be enforceable.

OTC Derivatives

The table below presents OTC derivative assets and liabilities by tenor and major product type.

$ in millions	Less than 1 Year	1 - 5 Years	Greater than 5 Years	Total
As of December 2023				
Assets				
Interest rates	**$ 9,511**	**$ 12,178**	**$ 49,045**	**$ 70,734**
Credit	**1,814**	**3,283**	**1,961**	**7,058**
Currencies	**9,117**	**7,579**	**5,479**	**22,175**
Commodities	**2,993**	**2,574**	**1,451**	**7,018**
Equities	**6,625**	**3,155**	**1,655**	**11,435**
Counterparty netting in tenors	**(3,046)**	**(2,765)**	**(3,648)**	**(9,459)**
Subtotal	**$ 27,014**	**$ 26,004**	**$ 55,943**	**$ 108,961**
Cross-tenor counterparty netting				**(16,288)**
Cash collateral netting				**(49,723)**
Total OTC derivative assets				**$ 42,950**
Liabilities				
Interest rates	**$ 11,952**	**$ 15,972**	**$ 17,540**	**$ 45,464**
Credit	**792**	**2,508**	**1,067**	**4,367**
Currencies	**15,335**	**7,934**	**7,299**	**30,568**
Commodities	**2,526**	**3,643**	**1,419**	**7,588**
Equities	**10,183**	**10,048**	**3,340**	**23,571**
Counterparty netting in tenors	**(3,046)**	**(2,765)**	**(3,648)**	**(9,459)**
Subtotal	**$ 37,742**	**$ 37,340**	**$ 27,017**	**$ 102,099**
Cross-tenor counterparty netting				**(16,288)**
Cash collateral netting				**(42,724)**
Total OTC derivative liabilities				**$ 43,087**
As of December 2022				
Assets				
Interest rates	$ 5,509	$ 16,963	$ 53,943	$ 76,415
Credit	921	2,622	2,142	5,685
Currencies	12,284	7,819	7,085	27,188
Commodities	10,525	7,513	2,574	20,612
Equities	5,346	4,007	1,782	11,135
Counterparty netting in tenors	(2,661)	(3,942)	(4,830)	(11,433)
Subtotal	$ 31,924	$ 34,982	$ 62,696	$ 129,602
Cross-tenor counterparty netting				(19,427)
Cash collateral netting				(56,776)
Total OTC derivative assets				$ 53,399
Liabilities				
Interest rates	$ 9,351	$ 23,589	$ 21,467	$ 54,407
Credit	993	2,635	1,071	4,699
Currencies	18,987	8,736	8,712	36,435
Commodities	6,400	6,135	945	13,480
Equities	7,629	7,249	2,174	17,052
Counterparty netting in tenors	(2,661)	(3,942)	(4,830)	(11,433)
Subtotal	$ 40,699	$ 44,402	$ 29,539	$ 114,640
Cross-tenor counterparty netting				(19,427)
Cash collateral netting				(46,805)
Total OTC derivative liabilities				$ 48,408

In the table above:

- Tenor is based on remaining contractual maturity.
- Counterparty netting within the same product type and tenor category is included within such product type and tenor category.
- Counterparty netting across product types within the same tenor category is included in counterparty netting in tenors. Where the counterparty netting is across tenor categories, the netting is included in cross-tenor counterparty netting.

See Note 4 for an overview of the firm's fair value measurement policies, valuation techniques and significant inputs used to determine the fair value of derivatives, and Note 5 for information about derivatives within the fair value hierarchy.

Credit Derivatives

The firm enters into a broad array of credit derivatives to facilitate client transactions and to manage the credit risk associated with market-making and investing and financing activities. Credit derivatives are actively managed based on the firm's net risk position. Credit derivatives are generally individually negotiated contracts and can have various settlement and payment conventions. Credit events include failure to pay, bankruptcy, acceleration of indebtedness, restructuring, repudiation and dissolution of the reference entity.

The firm enters into the following types of credit derivatives:

- **Credit Default Swaps.** Single-name credit default swaps protect the buyer against the loss of principal on one or more bonds, loans or mortgages (reference obligations) in the event the issuer of the reference obligations suffers a credit event. The buyer of protection pays an initial or periodic premium to the seller and receives protection for the period of the contract. If there is no credit event, as defined in the contract, the seller of protection makes no payments to the buyer. If a credit event occurs, the seller of protection is required to make a payment to the buyer, calculated according to the terms of the contract.
- **Credit Options.** In a credit option, the option writer assumes the obligation to purchase or sell a reference obligation at a specified price or credit spread. The option purchaser buys the right, but does not assume the obligation, to sell the reference obligation to, or purchase it from, the option writer. The payments on credit options depend either on a particular credit spread or the price of the reference obligation.

- **Credit Indices, Baskets and Tranches.** Credit derivatives may reference a basket of single-name credit default swaps or a broad-based index. If a credit event occurs in one of the underlying reference obligations, the protection seller pays the protection buyer. The payment is typically a pro-rata portion of the transaction's total notional amount based on the underlying defaulted reference obligation. In certain transactions, the credit risk of a basket or index is separated into various portions (tranches), each having different levels of subordination. The most junior tranches cover initial defaults and once losses exceed the notional amount of these junior tranches, any excess loss is covered by the next most senior tranche.
- **Total Return Swaps.** A total return swap transfers the risks relating to economic performance of a reference obligation from the protection buyer to the protection seller. Typically, the protection buyer receives a floating rate of interest and protection against any reduction in fair value of the reference obligation, and the protection seller receives the cash flows associated with the reference obligation, plus any increase in the fair value of the reference obligation.

The firm economically hedges its exposure to written credit derivatives primarily by entering into offsetting purchased credit derivatives with identical underliers. Substantially all of the firm's purchased credit derivative transactions are with financial institutions and are subject to stringent collateral thresholds. In addition, upon the occurrence of a specified trigger event, the firm may take possession of the reference obligations underlying a particular written credit derivative, and consequently may, upon liquidation of the reference obligations, recover amounts on the underlying reference obligations in the event of default.

The table below presents information about credit derivatives.

	Credit Spread on Underlier (basis points)				
$ in millions	0 - 250	251 - 500	501 - 1,000	Greater than 1,000	Total
As of December 2023					
Maximum Payout/Notional Amount of Written Credit Derivatives by Tenor					
Less than 1 year	**$ 126,667**	**$ 12,594**	**$ 892**	**$ 3,611**	**$ 143,764**
1 - 5 years	**324,577**	**11,371**	**5,613**	**5,802**	**347,363**
Greater than 5 years	**30,406**	**1,316**	**671**	**249**	**32,642**
Total	**$ 481,650**	**$ 25,281**	**$ 7,176**	**$ 9,662**	**$ 523,769**
Maximum Payout/Notional Amount of Purchased Credit Derivatives					
Offsetting	**$ 396,984**	**$ 11,857**	**$ 6,241**	**$ 8,246**	**$ 423,328**
Other	**155,468**	**12,862**	**1,948**	**1,619**	**171,897**
Total	**$ 552,452**	**$ 24,719**	**$ 8,189**	**$ 9,865**	**$ 595,225**
Fair Value of Written Credit Derivatives					
Asset	**$ 11,147**	**$ 654**	**$ 221**	**$ 165**	**$ 12,187**
Liability	**1,723**	**47**	**201**	**1,034**	**3,005**
Net asset/(liability)	**$ 9,424**	**$ 607**	**$ 20**	**$ (869)**	**$ 9,182**
As of December 2022					
Maximum Payout/Notional Amount of Written Credit Derivatives by Tenor					
Less than 1 year	$ 108,703	$ 12,166	$ 1,879	$ 4,135	$ 126,883
1 - 5 years	306,484	28,188	13,724	9,092	357,488
Greater than 5 years	39,302	2,916	1,416	305	43,939
Total	$ 454,489	$ 43,270	$ 17,019	$ 13,532	$ 528,310
Maximum Payout/Notional Amount of Purchased Credit Derivatives					
Offsetting	$ 372,360	$ 33,149	$ 14,817	$ 11,757	$ 432,083
Other	128,828	13,211	2,615	2,407	147,061
Total	$ 501,188	$ 46,360	$ 17,432	$ 14,164	$ 579,144
Fair Value of Written Credit Derivatives					
Asset	$ 5,405	$ 460	$ 132	$ 84	$ 6,081
Liability	681	1,081	1,027	2,673	5,462
Net asset/(liability)	$ 4,724	$ (621)	$ (895)	$ (2,589)	$ 619

In the table above:

- Fair values exclude the effects of both netting of receivable balances with payable balances under enforceable netting agreements, and netting of cash received or posted under enforceable credit support agreements, and therefore are not representative of the firm's credit exposure.
- Tenor is based on remaining contractual maturity.
- The credit spread on the underlier, together with the tenor of the contract, are indicators of payment/performance risk. The firm is less likely to pay or otherwise be required to perform where the credit spread and the tenor are lower.
- Offsetting purchased credit derivatives represent the notional amount of purchased credit derivatives that economically hedge written credit derivatives with identical underliers.
- Other purchased credit derivatives represent the notional amount of all other purchased credit derivatives not included in offsetting.
- Written and purchased credit derivatives primarily consist of credit default swaps.

Impact of Credit and Funding Spreads on Derivatives

The firm realizes gains or losses on its derivative contracts. These gains or losses include credit valuation adjustments (CVAs) relating to uncollateralized derivative assets and liabilities, which represent the gains or losses (including hedges) attributable to the impact of changes in credit exposure, counterparty credit spreads, liability funding spreads (which include the firm's own credit), probability of default and assumed recovery. These gains or losses also include funding valuation adjustments (FVA) relating to uncollateralized derivative assets, which represent the gains or losses (including hedges) attributable to the impact of changes in expected funding exposures and funding spreads.

The table below presents information about CVA and FVA.

	Year Ended December		
$ in millions	**2023**	2022	2021
CVA, net of hedges	**$ (139)**	$ 320	$ 25
FVA, net of hedges	**131**	(193)	60
Total	**$ (8)**	$ 127	$ 85

Bifurcated Embedded Derivatives

The table below presents the fair value and the notional amount of derivatives that have been bifurcated from their related borrowings.

	As of December	
$ in millions	**2023**	2022
Fair value of assets	**$ 450**	$ 288
Fair value of liabilities	**(307)**	(392)
Net asset/(liability)	**$ 143**	$ (104)
Notional amount	**$ 8,082**	$ 8,892

In the table above, derivatives that have been bifurcated from their related borrowings are recorded at fair value and primarily consist of interest rate, equity and commodity products. These derivatives are included in unsecured short- and long-term borrowings, as well as other secured financings, with the related borrowings.

Derivatives with Credit-Related Contingent Features

Certain of the firm's derivatives have been transacted under bilateral agreements with counterparties who may require the firm to post collateral or terminate the transactions based on changes in the firm's credit ratings. The firm assesses the impact of these bilateral agreements by determining the collateral or termination payments that would occur assuming a downgrade by all rating agencies. A downgrade by any one rating agency, depending on the agency's relative ratings of the firm at the time of the downgrade, may have an impact which is comparable to the impact of a downgrade by all rating agencies.

The table below presents information about net derivative liabilities under bilateral agreements (excluding collateral posted), the fair value of collateral posted and additional collateral or termination payments that could have been called by counterparties in the event of a one- or two-notch downgrade in the firm's credit ratings.

	As of December	
$ in millions	**2023**	2022
Net derivative liabilities under bilateral agreements	**$ 30,021**	$ 33,059
Collateral posted	**$ 20,758**	$ 27,657
Additional collateral or termination payments:		
One-notch downgrade	**$ 271**	$ 343
Two-notch downgrade	**$ 1,584**	$ 1,115

Hedge Accounting

The firm applies hedge accounting for (i) interest rate swaps used to manage the interest rate exposure of certain fixed-rate unsecured long- and short-term borrowings, certain fixed-rate certificates of deposit and certain U.S. and non-U.S. government securities classified as available-for-sale, (ii) foreign currency forward contracts used to manage the foreign exchange risk of certain securities classified as available-for-sale and (iii) foreign currency forward contracts and foreign currency-denominated debt used to manage foreign exchange risk on the firm's net investment in certain non-U.S. operations.

To qualify for hedge accounting, the hedging instrument must be highly effective at reducing the risk from the exposure being hedged. Additionally, the firm must formally document the hedging relationship at inception and assess the hedging relationship at least on a quarterly basis to ensure the hedging instrument continues to be highly effective over the life of the hedging relationship.

Fair Value Hedges

The firm designates interest rate swaps as fair value hedges of certain fixed-rate unsecured long- and short-term debt and fixed-rate certificates of deposit and of certain U.S. and non-U.S. government securities classified as available-for-sale. These interest rate swaps hedge changes in fair value attributable to the designated benchmark interest rate (e.g., Secured Overnight Financing Rate (SOFR), Overnight Index Swap Rate or Sterling Overnight Index Average), effectively converting a substantial portion of these fixed-rate financial instruments into floating-rate financial instruments.

The firm applies a statistical method that utilizes regression analysis when assessing the effectiveness of these hedging relationships in achieving offsetting changes in the fair values of the hedging instrument and the risk being hedged (i.e., interest rate risk). An interest rate swap is considered highly effective in offsetting changes in fair value attributable to changes in the hedged risk when the regression analysis results in a coefficient of determination of 80% or greater and a slope between 80% and 125%.

For qualifying interest rate fair value hedges, gains or losses on derivatives are included in interest income/expense. The change in fair value of the hedged items attributable to the risk being hedged is reported as an adjustment to its carrying value (hedging adjustment) and is also included in interest income/expense. When a derivative is no longer designated as a hedge, any remaining difference between the carrying value and par value of the hedged item is amortized in interest income/expense over the remaining life of the hedged item using the effective interest method. See Note 23 for further information about interest income and interest expense.

The table below presents the gains/(losses) from interest rate derivatives accounted for as hedges and the related hedged items.

	Year Ended December		
$ in millions	**2023**	2022	2021
Investments			
Interest rate hedges	**$ (109)**	$ 366	$ –
Hedged investments	**111**	(350)	–
Gains/(losses)	**$ 2**	$ 16	$ –
Borrowings and deposits			
Interest rate hedges	**$ 3,859**	$ (22,183)	$ (6,638)
Hedged borrowings and deposits	**(4,344)**	21,662	6,085
Gains/(losses)	**$ (485)**	$ (521)	$ (553)

The table below presents the carrying value of investments, deposits and unsecured borrowings that are designated in an interest rate hedging relationship and the related cumulative hedging adjustment (increase/(decrease)) from current and prior hedging relationships included in such carrying values.

$ in millions	Carrying Value	Cumulative Hedging Adjustment
As of December 2023		
Assets		
Investments	**$ 16,523**	**$ (104)**
Liabilities		
Deposits	**$ 3,435**	**$ (123)**
Unsecured short-term borrowings	**$ 14,449**	**$ (94)**
Unsecured long-term borrowings	**$ 134,992**	**$ (10,810)**
As of December 2022		
Assets		
Investments	$ 10,804	$ (350)
Liabilities		
Deposits	$ 6,311	$ (280)
Unsecured short-term borrowings	$ 7,295	$ (47)
Unsecured long-term borrowings	$ 151,215	$ (15,134)

In the table above:

- Cumulative hedging adjustment included $(5.63) billion as of December 2023 and $5.09 billion as of December 2022 of hedging adjustments from prior hedging relationships that were de-designated and substantially all were related to unsecured long-term borrowings.
- The amortized cost of investments was $17.33 billion as of December 2023 and $11.49 billion as of December 2022.

In addition, cumulative hedging adjustments for items no longer designated in a hedging relationship were not material as of December 2023 and were $111 million as of December 2022, primarily related to unsecured long-term borrowings.

The firm designates foreign currency forward contracts as fair value hedges of the foreign exchange risk of non-U.S. government securities classified as available-for-sale. See Note 8 for information about the amortized cost and fair value of such securities. The effectiveness of such hedges is assessed based on changes in spot rates. The gains/(losses) on the hedges (relating to both spot and forward points) and the foreign exchange gains/(losses) on the related available-for-sale securities are included in market making. The net losses on hedges and the related hedged available-for-sale securities were $2 million (reflecting a loss of $127 million related to hedges and a gain of $125 million on the related hedged available-for-sale securities) for 2023 and were $30 million (reflecting a gain of $266 million related to hedges and a loss of $296 million on the related hedged available-for-sale securities) for 2022. The gross and net gains/(losses) were not material for 2021.

Net Investment Hedges

The firm seeks to reduce the impact of fluctuations in foreign exchange rates on its net investments in certain non-U.S. operations through the use of foreign currency forward contracts and foreign currency-denominated debt. For foreign currency forward contracts designated as hedges, the effectiveness of the hedge is assessed based on the overall changes in the fair value of the forward contracts (i.e., based on changes in forward rates). For foreign currency-denominated debt designated as a hedge, the effectiveness of the hedge is assessed based on changes in spot rates. For qualifying net investment hedges, all gains or losses on the hedging instruments are included in currency translation.

The table below presents the gains/(losses) from net investment hedging.

	Year Ended December		
$ in millions	**2023**	2022	2021
Hedges:			
Foreign currency forward contract	**$ (276)**	$ 1,713	$ 755
Foreign currency-denominated debt	**$ (550)**	$ (269)	$ 386

Gains or losses on individual net investments in non-U.S. operations are reclassified from accumulated other comprehensive income/(loss) to other principal transactions in the consolidated statements of earnings when such net investments are sold or substantially liquidated. The net losses reclassified to earnings from accumulated other comprehensive income/(loss) were $49 million (reflecting a gain of $90 million related to hedges and a loss of $139 million on the related net investments in non-U.S. operations) for 2023. The gross and net gains/(losses) reclassified to earnings from accumulated other comprehensive income/(loss) were not material for both 2022 and 2021.

The firm had designated $27.52 billion as of December 2023 and $21.46 billion as of December 2022 of foreign currency-denominated debt, included in unsecured long- and short-term borrowings, as hedges of net investments in non-U.S. subsidiaries.

Note 8.

Investments

Investments includes debt instruments and equity securities that are accounted for at fair value and are generally held by the firm in connection with its long-term investing activities. In addition, investments includes debt securities classified as available-for-sale and held-to-maturity that are generally held in connection with the firm's asset-liability management activities. Investments also consists of equity securities that are accounted for under the equity method.

The table below presents information about investments.

	As of December	
$ in millions	**2023**	2022
Equity securities, at fair value	**$ 13,747**	$ 14,892
Debt instruments, at fair value	**12,879**	14,075
Available-for-sale securities, at fair value	**49,141**	49,234
Investments, at fair value	**75,767**	78,201
Held-to-maturity securities	**70,310**	51,662
Equity-method investments	**762**	766
Total investments	**$ 146,839**	$ 130,629

See Note 4 for an overview of the firm's fair value measurement policies, valuation techniques and significant inputs used to determine the fair value of investments, and Note 5 for information about investments within the fair value hierarchy.

Equity Securities and Debt Instruments, at Fair Value

Equity securities and debt instruments, at fair value are accounted for at fair value either under the fair value option or in accordance with other U.S. GAAP, and the related fair value gains and losses are recognized in the consolidated statements of earnings.

Equity Securities, at Fair Value. Equity securities, at fair value consists of the firm's public and private equity investments in corporate and real estate entities.

The table below presents information about equity securities, at fair value.

	As of December	
$ in millions	**2023**	2022
Equity securities, at fair value	**$ 13,747**	$ 14,892
Equity Type		
Public equity	**9 %**	13 %
Private equity	**91 %**	87 %
Total	**100 %**	100 %
Asset Class		
Corporate	**73 %**	71 %
Real estate	**27 %**	29 %
Total	**100 %**	100 %

In the table above:

- Equity securities, at fair value included investments accounted for at fair value under the fair value option where the firm would otherwise apply the equity method of accounting of $5.18 billion as of December 2023 and $5.35 billion as of December 2022. Gains/(losses) recognized as a result of changes in the fair value of equity securities for which the fair value option was elected were $(638) million for 2023 and $(86) million for 2022. These gains/(losses) are included in other principal transactions.
- Equity securities, at fair value included $1.27 billion as of December 2023 and $1.30 billion as of December 2022 of investments in funds that are measured at NAV.

Debt Instruments, at Fair Value. Debt instruments, at fair value primarily includes mezzanine, senior and distressed debt.

The table below presents information about debt instruments, at fair value.

	As of December	
$ in millions	**2023**	2022
Corporate debt securities	**$ 8,992**	$ 10,098
Securities backed by real estate	**689**	1,003
Money market instruments	**1,051**	1,005
Other	**2,147**	1,969
Total	**$ 12,879**	$ 14,075

In the table above:

- Substantially all of the firm's money market instruments consist of time deposits.
- Other included $1.73 billion as of December 2023 and $1.64 billion as of December 2022 of investments in credit funds that are measured at NAV.

Investments in Funds at Net Asset Value Per Share. Equity securities and debt instruments, at fair value include investments in funds that are measured at NAV of the investment fund. The firm uses NAV to measure the fair value of fund investments when (i) the fund investment does not have a readily determinable fair value and (ii) the NAV of the investment fund is calculated in a manner consistent with the measurement principles of investment company accounting, including measurement of the investments at fair value.

Substantially all of the firm's investments in funds at NAV consist of investments in firm-sponsored private equity, credit, real estate and hedge funds where the firm co-invests with third-party investors.

Private equity funds primarily invest in a broad range of industries worldwide, including leveraged buyouts, recapitalizations, growth investments and distressed investments. Credit funds generally invest in loans and other fixed income instruments and are focused on providing private high-yield capital for leveraged and management buyout transactions, recapitalizations, financings, refinancings, acquisitions and restructurings for private equity firms, private family companies and corporate issuers. Real estate funds invest globally, primarily in real estate companies, loan portfolios, debt recapitalizations and property. Substantially all private equity, credit and real estate funds are closed-end funds in which the firm's investments are generally not eligible for redemption. Distributions will be received from these funds as the underlying assets are liquidated or distributed, the timing of which is uncertain.

The firm also invests in hedge funds, primarily multi-disciplinary hedge funds that employ a fundamental bottom-up investment approach across various asset classes and strategies. The firm's investments in hedge funds primarily include interests where the underlying assets are illiquid in nature, and proceeds from redemptions will not be received until the underlying assets are liquidated or distributed, the timing of which is uncertain.

The table below presents the fair value of investments in funds at NAV and the related unfunded commitments.

$ in millions	Fair Value of Investments	Unfunded Commitments
As of December 2023		
Private equity funds	**$ 875**	**$ 484**
Credit funds	**1,733**	**248**
Hedge funds	**46**	**–**
Real estate funds	**346**	**65**
Total	**$ 3,000**	**$ 797**
As of December 2022		
Private equity funds	$ 815	$ 647
Credit funds	1,645	303
Hedge funds	68	–
Real estate funds	413	138
Total	$ 2,941	$ 1,088

Available-for-Sale Securities

Available-for-sale securities are accounted for at fair value, and the related unrealized fair value gains and losses are included in accumulated other comprehensive income/(loss) unless designated in a fair value hedging relationship. See Note 7 for information about available-for-sale securities that are designated in a hedging relationship.

The table below presents information about available-for-sale securities by tenor.

$ in millions	Amortized Cost	Fair Value	Weighted Average Yield
As of December 2023			
Less than 1 year	**$ 20,027**	**$ 19,687**	**0.45 %**
1 year to 5 years	**27,592**	**26,500**	**1.83 %**
5 years to 10 years	**586**	**544**	**2.05 %**
Total U.S. government obligations	**48,205**	**46,731**	**1.25 %**
Less than 1 year	**11**	**11**	**0.01 %**
1 year to 5 years	**1,635**	**1,420**	**0.10 %**
5 years to 10 years	**1,150**	**979**	**0.84 %**
Total non-U.S. government obligations	**2,796**	**2,410**	**0.40 %**
Total available-for-sale securities	**$ 51,001**	**$ 49,141**	**1.21 %**
As of December 2022			
Less than 1 year	$ 8,103	$ 7,861	0.37 %
1 year to 5 years	41,479	38,706	0.74 %
5 years to 10 years	538	488	1.86 %
Total U.S. government obligations	50,120	47,055	0.69 %
1 year to 5 years	10	10	0.27 %
5 years to 10 years	2,616	2,169	0.40 %
Total non-U.S. government obligations	2,626	2,179	0.40 %
Total available-for-sale securities	$ 52,746	$ 49,234	0.68 %

In the table above:

- The weighted average yield for available-for-sale securities is presented on a pre-tax basis and computed using the effective interest rate of each security at the end of the period, weighted based on the fair value of each security.
- The gross unrealized gains included in accumulated other comprehensive income/(loss) were not material and the gross unrealized losses included in accumulated other comprehensive income/(loss) were $1.89 billion as of December 2023 and primarily related to U.S. government obligations in a continuous unrealized loss position for more than a year. The gross unrealized gains included in accumulated other comprehensive income/(loss) were not material and the gross unrealized losses included in accumulated other comprehensive income/(loss) were $3.52 billion as of December 2022 and primarily related to U.S. government obligations in a continuous unrealized loss position for more than a year. Net unrealized gains/(losses) included in other comprehensive income/(loss) were $1.65 billion ($1.25 billion, net of tax) for 2023 and $(2.85) billion ($(2.13) billion, net of tax) for 2022.
- Substantially all available-for-sale securities were classified in level 1 of the fair value hierarchy as of both December 2023 and December 2022.

- If the fair value of available-for-sale securities is less than amortized cost, such securities are considered impaired. 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, the difference between the amortized cost (net of allowance, if any) and the fair value of the securities is recognized as an impairment loss in earnings. The firm did not record any such impairment losses during either 2023 or 2022. Impaired available-for-sale debt securities that the firm has the intent and ability to hold are reviewed to determine if an allowance for credit losses should be recorded. The firm considers various factors in such determination, including market conditions, changes in issuer credit ratings and severity of the unrealized losses. The firm did not record any provision for credit losses on such securities during either 2023 or 2022.

The table below presents cash inflows/(outflows) and realized gains/(losses) related to available-for-sale securities.

	Year Ended December		
$ in millions	**2023**	2022	2021
Purchases	**$ (9,185)**	$ (3,753)	$ (29,213)
Proceeds from sales	**$ 3,161**	$ 2	$ 24,882
Proceeds from maturities	**$ 8,130**	$ 25	$ 50
Gross realized gains	**$ 8**	$ –	$ 206
Gross realized losses	**–**	–	(19)
Net gains/(losses)	**$ 8**	$ –	$ 187

In the table above, the specific identification method is used to determine realized gains on available-for-sale securities.

Held-to-Maturity Securities

Held-to-maturity securities are accounted for at amortized cost.

The table below presents information about held-to-maturity securities by type and tenor.

$ in millions	Amortized Cost	Fair Value	Weighted Average Yield
As of December 2023			
Less than 1 year	**$ 13,475**	**$ 13,382**	**2.90 %**
1 year to 5 years	**54,789**	**54,352**	**3.58 %**
5 years to 10 years	**1,848**	**1,861**	**3.94 %**
Total government obligations	**70,112**	**69,595**	**3.46 %**
1 year to 5 years	**3**	**2**	**7.92 %**
Greater than 10 years	**195**	**195**	**5.98 %**
Total securities backed by real estate	**198**	**197**	**6.02 %**
Total held-to-maturity securities	**$ 70,310**	**$ 69,792**	**3.47 %**
As of December 2022			
Less than 1 year	$ 5,319	$ 5,282	2.98 %
1 year to 5 years	45,154	43,852	3.00 %
5 years to 10 years	1,026	966	2.89 %
Total government obligations	51,499	50,100	2.99 %
5 years to 10 years	2	2	5.63 %
Greater than 10 years	161	158	3.18 %
Total securities backed by real estate	163	160	3.24 %
Total held-to-maturity securities	$ 51,662	$ 50,260	2.99 %

In the table above:

- Substantially all of the government obligations consist of U.S. government obligations.
- Substantially all of the securities backed by real estate consist of securities backed by residential real estate.
- As these securities are not accounted for at fair value, they are not included in the firm's fair value hierarchy in Notes 4 and 5. Had these securities been included in the firm's fair value hierarchy, government obligations would have been classified in level 1 and securities backed by real estate would have been primarily classified in level 2 of the fair value hierarchy as of both December 2023 and December 2022.
- The weighted average yield for held-to-maturity securities is presented on a pre-tax basis and computed using the effective interest rate of each security at the end of the period, weighted based on the amortized cost of each security.
- The gross unrealized gains were $383 million as of December 2023 and were not material as of December 2022. The gross unrealized losses were $901 million as of December 2023 and $1.44 billion as of December 2022.
- Held-to-maturity securities are reviewed to determine if an allowance for credit losses should be recorded in the consolidated statements of earnings. The firm considers various factors in such determination, including market conditions, changes in issuer credit ratings, historical credit losses and sovereign guarantees. Provision for credit losses on such securities was not material during either 2023 or 2022.

The table below presents cash inflows/(outflows) related to held-to-maturity securities.

	Year Ended December		
$ in millions	**2023**	2022	2021
Purchases	**$ (26,238)**	$ (50,099)	$ (28)
Proceeds from paydowns and maturities	**$ 8,604**	$ 3,671	$ 636

Note 9.

Loans

Loans includes (i) loans held for investment that are accounted for at amortized cost net of allowance for loan losses or at fair value under the fair value option and (ii) loans held for sale that are accounted for at the lower of cost or fair value. Interest on loans is recognized over the life of the loan and is recorded on an accrual basis.

The table below presents information about loans.

$ in millions	Amortized Cost	Fair Value	Held For Sale	Total
As of December 2023				
Loan Type				
Corporate	**$ 33,866**	**$ 759**	**$ 1,249**	**$ 35,874**
Commercial real estate	**25,025**	**563**	**440**	**26,028**
Residential real estate	**21,243**	**4,145**	**–**	**25,388**
Securities-based	**14,621**	**–**	**–**	**14,621**
Other collateralized	**61,105**	**911**	**209**	**62,225**
Consumer:				
Installment	**250**	**–**	**3,048**	**3,298**
Credit cards	**17,432**	**–**	**1,929**	**19,361**
Other	**1,333**	**128**	**152**	**1,613**
Total loans, gross	**174,875**	**6,506**	**7,027**	**188,408**
Allowance for loan losses	**(5,050)**	**–**	**–**	**(5,050)**
Total loans	**$ 169,825**	**$ 6,506**	**$ 7,027**	**$ 183,358**
As of December 2022				
Loan Type				
Corporate	$ 36,822	$ 996	$ 2,317	$ 40,135
Commercial real estate	26,222	1,146	1,511	28,879
Residential real estate	18,523	4,511	1	23,035
Securities-based	16,671	–	–	16,671
Other collateralized	50,473	716	513	51,702
Consumer:				
Installment	6,326	–	–	6,326
Credit cards	15,820	–	–	15,820
Other	1,723	286	252	2,261
Total loans, gross	172,580	7,655	4,594	184,829
Allowance for loan losses	(5,543)	–	–	(5,543)
Total loans	$ 167,037	$ 7,655	$ 4,594	$ 179,286

In the table above:

- Loans held for investment that are accounted for at amortized cost include net deferred fees and costs, and unamortized premiums and discounts, which are amortized over the life of the loan. These amounts were less than 1% of loans accounted for at amortized cost as of both December 2023 and December 2022.
- During 2023, the firm completed the sale of substantially all of the Marcus installment loans portfolio. As a result, the firm recognized net revenues of $(367) million, which was more than offset by a related reduction in reserves of $442 million in provision for credit losses.
- During 2023, in connection with the planned sale of GreenSky, the firm transferred the entire GreenSky installment loan portfolio of approximately $6.0 billion to held for sale. See Note 18 for information about related commitments that were classified as held for sale. As a result, the firm recognized net revenues of $(200) million, which were more than offset by a related reduction in reserves of $637 million in provision for credit losses. During the fourth quarter of 2023, the firm completed the sale of approximately $4.0 billion of this portfolio and the remaining portfolio is expected to be sold in the first quarter of 2024.
- During 2023, the firm transferred approximately $2.0 billion of the GM co-branded credit card portfolio to held for sale. As a result, the firm recognized a reduction in reserves of $160 million in provision for credit losses.
- During 2023, the firm purchased a portfolio of approximately $15.0 billion of private equity capital call credit facilities (including approximately $9.0 billion of funded loans) from the FDIC's auction of Signature Bank's loans. As of December 2023, the outstanding balance of such loans was approximately $6.0 billion and the related remaining lending commitments were approximately $6.0 billion. See Note 18 for further information about lending commitments.
- Substantially all loans had floating interest rates as of both December 2023 and December 2022.

The following is a description of the loan types in the table above:

- **Corporate.** Corporate loans includes term loans, revolving lines of credit, letter of credit facilities and bridge loans, and are principally used for operating and general corporate purposes, or in connection with acquisitions. Corporate loans are secured (typically by a senior lien on the assets of the borrower) or unsecured, depending on the loan purpose, the risk profile of the borrower and other factors.
- **Commercial Real Estate.** Commercial real estate loans includes originated loans that are directly or indirectly secured by hotels, retail stores, multifamily housing complexes and commercial and industrial properties. Commercial real estate loans also includes loans extended to clients who warehouse assets that are directly or indirectly backed by commercial real estate. In addition, commercial real estate includes loans purchased by the firm.
- **Residential Real Estate.** Residential real estate loans primarily includes loans extended to wealth management clients and to clients who warehouse assets that are directly or indirectly secured by residential real estate. In addition, residential real estate includes loans purchased by the firm.
- **Securities-Based.** Securities-based loans includes loans that are secured by stocks, bonds, mutual funds, and exchange-traded funds. These loans are primarily extended to the firm's wealth management clients and used for purposes other than purchasing, carrying or trading margin stocks. Securities-based loans require borrowers to post additional collateral based on changes in the underlying collateral's fair value.
- **Other Collateralized.** Other collateralized loans includes loans that are backed by specific collateral (other than securities and real estate). Such loans are extended to clients who warehouse assets that are directly or indirectly secured by corporate loans, consumer loans and other assets. Other collateralized loans also includes loans to investment funds (managed by third parties) that are collateralized by capital commitments of the funds' investors or assets held by the fund, as well as other secured loans extended to the firm's wealth management clients.
- **Installment.** Installment loans are unsecured loans originated by the firm.
- **Credit Cards.** Credit card loans are loans made pursuant to revolving lines of credit issued to consumers by the firm.
- **Other.** Other loans includes unsecured loans extended to wealth management clients and unsecured consumer and credit card loans purchased by the firm.

See Note 4 for an overview of the firm's fair value measurement policies, valuation techniques and significant inputs used to determine the fair value of loans, and Note 5 for information about loans within the fair value hierarchy.

Credit Quality

Risk Assessment. The firm's risk assessment process includes evaluating the credit quality of its loans by the firm's independent risk oversight and control function. For corporate loans and a majority of securities-based, real estate, other collateralized and other loans, the firm performs credit analyses which incorporate initial and ongoing evaluations of the capacity and willingness of a borrower to meet its financial obligations. These credit evaluations are performed on an annual basis or more frequently if deemed necessary as a result of events or changes in circumstances. The firm determines an internal credit rating for the borrower by considering the results of the credit evaluations and assumptions with respect to the nature of and outlook for the borrower's industry and the economic environment. Beginning in the first quarter of 2023, the firm also takes into consideration collateral received or other credit support arrangements when determining an internal credit rating on collateralized loans, as management believes that this methodology better reflects the credit quality of the underlying loans. In the table below, prior period amounts have been conformed to reflect the current methodology. The impact to December 2022 was an increase in loans classified as investment-grade and a decrease in loans classified as non-investment-grade of $25.0 billion in real estate (warehouse loans) and other collateralized loans. For consumer loans and for loans that are not assigned an internal credit rating, the firm reviews certain key metrics, including, but not limited to, the Fair Isaac Corporation (FICO) credit scores, delinquency status, collateral value and other risk factors. Beginning in the fourth quarter of 2023, the firm began to assess the credit quality of all U.S. residential mortgage loans extended to wealth management clients using FICO credit scores, loan-to-value ratios and delinquency, instead of an internal credit rating, as the firm believes that these metrics better reflect the credit quality of such loans. In the table below, prior period amounts have been conformed to reflect the current methodology. The impact to residential real estate loans as of December 2022 was a decrease in loans classified as investment-grade of $2.5 billion, a decrease in loans classified as non-investment-grade of $2.7 billion and an increase in other metrics of $5.2 billion.

The table below presents gross loans by an internally determined public rating agency equivalent or other credit metrics and the concentration of secured and unsecured loans.

$ in millions		Investment-Grade		Non-Investment-Grade		Other Metrics/Unrated		Total
As of December 2023								
Accounting Method								
Amortized cost	**$**	**91,324**	**$**	**54,200**	**$**	**29,351**	**$**	**174,875**
Fair value		**1,212**		**1,213**		**4,081**		**6,506**
Held for sale		**255**		**1,628**		**5,144**		**7,027**
Total	**$**	**92,791**	**$**	**57,041**	**$**	**38,576**	**$**	**188,408**
Loan Type								
Corporate	**$**	**9,408**	**$**	**26,328**	**$**	**138**	**$**	**35,874**
Real estate:								
Commercial		**12,097**		**13,574**		**357**		**26,028**
Residential		**10,771**		**3,217**		**11,400**		**25,388**
Securities-based		**10,991**		**561**		**3,069**		**14,621**
Other collateralized		**48,536**		**13,207**		**482**		**62,225**
Consumer:								
Installment		**–**		**–**		**3,298**		**3,298**
Credit cards		**–**		**–**		**19,361**		**19,361**
Other		**988**		**154**		**471**		**1,613**
Total	**$**	**92,791**	**$**	**57,041**	**$**	**38,576**	**$**	**188,408**
Secured		**91 %**		**92 %**		**40 %**		**81 %**
Unsecured		**9 %**		**8 %**		**60 %**		**19 %**
Total		**100 %**		**100 %**		**100 %**		**100 %**
As of December 2022								
Accounting Method								
Amortized cost	$	87,019	$	53,560	$	32,001	$	172,580
Fair value		1,112		1,844		4,699		7,655
Held for sale		557		3,991		46		4,594
Total	$	88,688	$	59,395	$	36,746	$	184,829
Loan Type								
Corporate	$	10,200	$	29,935	$	–	$	40,135
Real estate:								
Commercial		11,922		16,822		135		28,879
Residential		9,512		2,984		10,539		23,035
Securities-based		12,901		764		3,006		16,671
Other collateralized		43,093		8,291		318		51,702
Consumer:								
Installment		–		–		6,326		6,326
Credit cards		–		–		15,820		15,820
Other		1,060		599		602		2,261
Total	$	88,688	$	59,395	$	36,746	$	184,829
Secured		89 %		90 %		37 %		79 %
Unsecured		11 %		10 %		63 %		21 %
Total		100 %		100 %		100 %		100 %

In the table above:

- Substantially all residential real estate loans included in the other metrics/unrated category consists of loans extended to wealth management clients. As of both December 2023 and December 2022, substantially all of such loans had a loan-to-value ratio of less than 80% and were performing in accordance with the contractual terms. Additionally, as of both December 2023 and December 2022, the vast majority of such loans had a FICO credit score of greater than 740.
- Substantially all securities-based loans included in the other metrics/unrated category had a loan-to-value ratio of less than 80% and were performing in accordance with the contractual terms as of both December 2023 and December 2022.
- For installment and credit card loans included in the other metrics/unrated category, the evaluation of credit quality incorporates the borrower's FICO credit score. FICO credit scores are periodically refreshed by the firm to assess the updated creditworthiness of the borrower. See "Vintage" below for information about installment and credit card loans by FICO credit scores.

The firm also assigns a regulatory risk rating to its loans based on the definitions provided by the U.S. federal bank regulatory agencies. Total loans included 92% of loans as of December 2023 and 93% of loans as of December 2022 that were rated pass/non-criticized.

Vintage. The tables below present gross loans accounted for at amortized cost (excluding installment and credit card loans) by an internally determined public rating agency equivalent or other credit metrics and origination year for term loans.

	As of December 2023			
$ in millions	Investment-Grade	Non-Investment-Grade	Other Metrics/Unrated	Total
2023	$ 2,475	$ 1,912	$ 16	$ 4,403
2022	1,223	3,284	–	4,507
2021	848	4,045	–	4,893
2020	306	2,098	–	2,404
2019	45	1,909	–	1,954
2018 or earlier	371	2,102	–	2,473
Revolving	3,857	9,355	20	13,232
Corporate	9,125	24,705	36	33,866
2023	553	1,547	38	2,138
2022	1,251	2,838	–	4,089
2021	1,134	2,661	–	3,795
2020	271	1,234	–	1,505
2019	430	631	–	1,061
2018 or earlier	832	744	–	1,576
Revolving	7,129	3,192	309	10,630
Revolving converted to term	231	–	–	231
Commercial real estate	11,831	12,847	347	25,025
2023	619	54	1,627	2,300
2022	108	41	2,687	2,836
2021	22	249	2,724	2,995
2020	3	23	81	107
2019	6	–	89	95
2018 or earlier	–	20	254	274
Revolving	9,813	2,823	–	12,636
Residential real estate	10,571	3,210	7,462	21,243
2023	8	–	–	8
2022	5	–	–	5
2018 or earlier	–	303	–	303
Revolving	10,978	258	3,069	14,305
Securities-based	10,991	561	3,069	14,621
2023	5,412	2,767	245	8,424
2022	1,940	293	69	2,302
2021	1,883	845	102	2,830
2020	1,256	469	32	1,757
2019	177	74	9	260
2018 or earlier	436	66	21	523
Revolving	35,605	8,242	1	43,848
Revolving converted to term	1,161	–	–	1,161
Other collateralized	47,870	12,756	479	61,105
2023	60	21	–	81
2022	67	9	–	76
2021	6	8	51	65
2020	–	3	218	221
2019	–	–	4	4
2018 or earlier	–	–	3	3
Revolving	803	80	–	883
Other	936	121	276	1,333
Total	$ 91,324	$ 54,200	$ 11,669	$ 157,193
Percentage of total	58 %	35 %	7 %	100 %

	As of December 2022			
$ in millions	Investment-Grade	Non-Investment-Grade	Other Metrics/Unrated	Total
2022	$ 2,607	$ 4,042	$ 2	$ 6,651
2021	1,669	4,273	–	5,942
2020	684	2,595	–	3,279
2019	209	2,779	–	2,988
2018	759	1,911	–	2,670
2017 or earlier	508	2,329	–	2,837
Revolving	3,709	8,746	–	12,455
Corporate	10,145	26,675	2	36,822
2022	805	3,900	2	4,707
2021	771	3,460	–	4,231
2020	407	1,740	–	2,147
2019	335	1,255	–	1,590
2018	212	469	–	681
2017 or earlier	1,238	797	11	2,046
Revolving	7,660	3,003	–	10,663
Revolving converted to term	145	12	–	157
Commercial real estate	11,573	14,636	13	26,222
2022	774	24	2,835	3,633
2021	517	143	2,848	3,508
2020	8	6	89	103
2019	7	–	99	106
2018	10	50	138	198
2017 or earlier	31	2	150	183
Revolving	8,052	2,727	13	10,792
Residential real estate	9,399	2,952	6,172	18,523
2022	5	–	–	5
2018	1	–	–	1
2017 or earlier	–	291	–	291
Revolving	12,895	473	3,006	16,374
Securities-based	12,901	764	3,006	16,671
2022	4,556	751	113	5,420
2021	3,289	1,078	146	4,513
2020	1,871	701	36	2,608
2019	260	79	12	351
2018	545	67	6	618
2017 or earlier	293	108	–	401
Revolving	30,669	5,323	2	35,994
Revolving converted to term	507	61	–	568
Other collateralized	41,990	8,168	315	50,473
2022	44	105	–	149
2021	17	162	–	179
2020	–	29	262	291
2019	–	10	–	10
2017 or earlier	–	–	5	5
Revolving	950	59	80	1,089
Other	1,011	365	347	1,723
Total	$ 87,019	$ 53,560	$ 9,855	$ 150,434
Percentage of total	58 %	36 %	6 %	100 %

Beginning in the fourth quarter of 2023, revolving loans that were converted to term loans are presented in a separate line in the table above. Prior to the fourth quarter of 2023, such loans were presented within the table by the year of origination and the total amount of revolving loans which converted to term loans was disclosed separately. Prior period amounts have been conformed to the current presentation.

The table below presents gross installment loans accounted for at amortized cost by refreshed FICO credit scores and origination year and gross credit card loans by refreshed FICO credit scores.

$ in millions	Greater than or equal to 660	Less than 660	Total
As of December 2023			
2023	**$ 79**	**$ 10**	**$ 89**
2022	**132**	**18**	**150**
2021 or earlier	**11**	**–**	**11**
Installment	**222**	**28**	**250**
Credit cards	**11,119**	**6,313**	**17,432**
Total	**$ 11,341**	**$ 6,341**	**$ 17,682**
Percentage of total:			
Installment	**89 %**	**11 %**	**100 %**
Credit cards	**64 %**	**36 %**	**100 %**
Total	**64 %**	**36 %**	**100 %**
As of December 2022			
2022	$ 4,349	$ 242	$ 4,591
2021	1,080	109	1,189
2020	251	23	274
2019	160	23	183
2018	70	13	83
2017 or earlier	5	1	6
Installment	5,915	411	6,326
Credit cards	10,762	5,058	15,820
Total	$ 16,677	$ 5,469	$ 22,146
Percentage of total:			
Installment	94 %	6 %	100 %
Credit cards	68 %	32 %	100 %
Total	75 %	25 %	100 %

In the table above, credit card loans consist of revolving lines of credit.

Credit Concentrations. The table below presents the concentration of gross loans by region.

$ in millions	Carrying Value	Americas	EMEA	Asia	Total
As of December 2023					
Corporate	**$ 35,874**	**63 %**	**29 %**	**8 %**	**100 %**
Commercial real estate	**26,028**	**80 %**	**17 %**	**3 %**	**100 %**
Residential real estate	**25,388**	**95 %**	**4 %**	**1 %**	**100 %**
Securities-based	**14,621**	**79 %**	**20 %**	**1 %**	**100 %**
Other collateralized	**62,225**	**89 %**	**10 %**	**1 %**	**100 %**
Consumer:					
Installment	**3,298**	**100 %**	**–**	**–**	**100 %**
Credit cards	**19,361**	**100 %**	**–**	**–**	**100 %**
Other	**1,613**	**97 %**	**3 %**	**–**	**100 %**
Total	**$ 188,408**	**84 %**	**13 %**	**3 %**	**100 %**
As of December 2022					
Corporate	$ 40,135	57 %	34 %	9 %	100 %
Commercial real estate	28,879	79 %	16 %	5 %	100 %
Residential real estate	23,035	96 %	3 %	1 %	100 %
Securities-based	16,671	83 %	15 %	2 %	100 %
Other collateralized	51,702	86 %	12 %	2 %	100 %
Consumer:					
Installment	6,326	100 %	–	–	100 %
Credit cards	15,820	100 %	–	–	100 %
Other	2,261	89 %	11 %	–	100 %
Total	$ 184,829	81 %	15 %	4 %	100 %

In the table above:

- EMEA represents Europe, Middle East and Africa.
- The top five industry concentrations for corporate loans as of December 2023 were 25% for technology, media & telecommunications, 17% for diversified industrials, 13% for real estate, 11% for consumer & retail and 9% for healthcare.
- The top five industry concentrations for corporate loans as of December 2022 were 26% for technology, media & telecommunications, 18% for diversified industrials, 11% for real estate, 10% for healthcare and 10% for consumer & retail.

Nonaccrual, Past Due and Modified Loans. Loans accounted for at amortized cost (other than credit card loans) are placed on nonaccrual status when it is probable that the firm will not collect all principal and interest due under the contractual terms, regardless of the delinquency status or if a loan is past due for 90 days or more, unless the loan is both well collateralized and in the process of collection. At that time, all accrued but uncollected interest is reversed against interest income and interest subsequently collected is recognized on a cash basis to the extent the loan balance is deemed collectible. Otherwise, all cash received is used to reduce the outstanding loan balance. A loan is considered past due when a principal or interest payment has not been made according to its contractual terms. Credit card loans are not placed on nonaccrual status and accrue interest until the loan is paid in full or is charged off.

The table below presents information about past due loans.

$ in millions	30-89 days	90 days or more	Total
As of December 2023			
Corporate	**$ 45**	**$ 73**	**$ 118**
Commercial real estate	**137**	**352**	**489**
Residential real estate	**12**	**4**	**16**
Securities-based	**2**	**–**	**2**
Other collateralized	**9**	**7**	**16**
Consumer:			
Installment	**6**	**7**	**13**
Credit cards	**463**	**486**	**949**
Other	**7**	**11**	**18**
Total	**$ 681**	**$ 940**	**$ 1,621**
Total divided by gross loans at amortized cost			**0.9 %**
As of December 2022			
Corporate	$ –	$ 92	$ 92
Commercial real estate	47	362	409
Residential real estate	4	6	10
Securities-based	1	–	1
Other collateralized	10	5	15
Consumer:			
Installment	46	17	63
Credit cards	291	265	556
Other	17	5	22
Total	$ 416	$ 752	$ 1,168
Total divided by gross loans at amortized cost			0.7 %

The table below presents information about nonaccrual loans.

	As of December	
$ in millions	**2023**	2022
Corporate	**$ 1,779**	$ 1,432
Commercial real estate	**1,466**	1,079
Residential real estate	**19**	93
Other collateralized	**860**	65
Other	**17**	–
Installment	**–**	41
Total	**$ 4,141**	$ 2,710
Total divided by gross loans at amortized cost	**2.4 %**	1.6 %

In the table above:

- Nonaccrual loans included $600 million as of December 2023 and $483 million as of December 2022 of loans that were 30 days or more past due.
- Loans that were 90 days or more past due and still accruing were not material as of both December 2023 and December 2022.
- Allowance for loan losses as a percentage of total nonaccrual loans was 122.0% as of December 2023 and 204.5% as of December 2022.
- Commercial real estate, residential real estate and other collateralized loans are collateral dependent loans and the repayment of such loans is generally expected to be provided by the operation or sale of the underlying collateral. The allowance for credit losses for such nonaccrual loans is determined by considering the fair value of the collateral less estimated cost to sell, if applicable.

In certain circumstances, the firm may modify the original terms of a loan agreement by granting a concession to a borrower experiencing financial difficulty, typically in the form of a modification of loan covenants, but may also include forbearance of interest or principal, payment extensions or interest rate reductions. These modifications, to the extent significant, were considered TDRs as of December 2022. In January 2023, the firm adopted ASU No. 2022-02, which eliminated the recognition and measurement guidance for TDRs and requires enhanced disclosures for certain loan modifications. As of December 2022, loans modified in a TDR were $231 million and commitments related to such loans were not material. Substantially all of such loans modified in a TDR were related to corporate and commercial real estate loans. During 2023, the firm provided loan modifications (in the form of term extensions) to borrowers experiencing financial difficulty. As of December 2023, the carrying value of loans modified during 2023 was $846 million. Lending commitments related to such loans were not material and such loan modifications were primarily related to corporate and commercial real estate loans. The impact of these modifications was not material for 2023. During 2023, the firm charged-off approximately $100 million of loans that had defaulted after being modified. Substantially all of the remaining modified loans were performing in accordance with the modified contractual terms as of December 2023.

Allowance for Credit Losses

The firm's allowance for credit losses consists of the allowance for losses on loans and lending commitments accounted for at amortized cost. Loans and lending commitments accounted for at fair value or accounted for at the lower of cost or fair value are not subject to an allowance for credit losses.

To determine the allowance for credit losses, the firm classifies its loans and lending commitments accounted for at amortized cost into wholesale and consumer portfolios. These portfolios represent the level at which the firm has developed and documented its methodology to determine the allowance for credit losses. The allowance for credit losses is measured on a collective basis for loans that exhibit similar risk characteristics using a modeled approach and on an asset-specific basis for loans that do not share similar risk characteristics.

The allowance for credit losses takes into account the weighted average of a range of forecasts of future economic conditions over the expected life of the loan and lending commitments. The expected life of each loan or lending commitment is determined based on the contractual term adjusted for extension options or demand features, or is modeled in the case of revolving credit card loans. The forecasts include baseline, favorable and adverse economic scenarios over a three-year period. For loans with expected lives beyond three years, the model reverts to historical loss information based on a non-linear modeled approach. The forecasted economic scenarios consider a number of risk factors relevant to the wholesale and consumer portfolios described below. The firm applies judgment in weighing individual scenarios each quarter based on a variety of factors, including the firm's internally derived economic outlook, market consensus, recent macroeconomic conditions and industry trends.

The allowance for credit losses also includes qualitative components which allow management to reflect the uncertain nature of economic forecasting, capture uncertainty regarding model inputs, and account for model imprecision and concentration risk.

Management's estimate of credit losses entails judgment about the expected life of the loan and loan collectability at the reporting dates, and there are uncertainties inherent in those judgments. The allowance for credit losses is subject to a governance process that involves review and approval by senior management within the firm's independent risk oversight and control functions. Personnel within the firm's independent risk oversight and control functions are responsible for forecasting the economic variables that underlie the economic scenarios that are used in the modeling of expected credit losses. While management uses the best information available to determine this estimate, future adjustments to the allowance may be necessary based on, among other things, changes in the economic environment or variances between actual results and the original assumptions used.

The table below presents gross loans and lending commitments accounted for at amortized cost by portfolio.

	As of December			
	2023		2022	
$ in millions	**Loans**	**Lending Commitments**	Loans	Lending Commitments
Wholesale				
Corporate	**$ 33,866**	**$ 141,976**	$ 36,822	$ 137,149
Commercial real estate	**25,025**	**3,379**	26,222	3,692
Residential real estate	**21,243**	**1,431**	18,523	3,089
Securities-based	**14,621**	**691**	16,671	508
Other collateralized	**61,105**	**23,020**	50,473	13,209
Other	**1,333**	**888**	1,723	944
Consumer				
Installment	**250**	**1**	6,326	1,882
Credit cards	**17,432**	**56,479**	15,820	62,216
Total	**$ 174,875**	**$ 227,865**	$ 172,580	$ 222,689

In the table above, wholesale loans included $4.14 billion as of December 2023 and $2.67 billion as of December 2022 of nonaccrual loans for which the allowance for credit losses was measured on an asset-specific basis. The allowance for credit losses on these loans was $778 million as of December 2023 and $535 million as of December 2022. These loans included $625 million as of December 2023 and $384 million as of December 2022 of loans which did not require a reserve as the loan was deemed to be recoverable.

See Note 18 for further information about lending commitments.

The following is a description of the methodology used to calculate the allowance for credit losses:

Wholesale. The allowance for credit losses for wholesale loans and lending commitments that exhibit similar risk characteristics is measured using a modeled approach. These models determine the probability of default and loss given default based on various risk factors, including internal credit ratings, industry default and loss data, expected life, macroeconomic indicators, the borrower's capacity to meet its financial obligations, the borrower's country of risk and industry, loan seniority and collateral type. For lending commitments, the methodology also considers the probability of drawdowns or funding. In addition, for loans backed by real estate, risk factors include the loan-to-value ratio, debt service ratio and home price index. The most significant inputs to the forecast model for wholesale loans and lending commitments include unemployment rates, GDP, credit spreads, commercial and industrial delinquency rates, short- and long-term interest rates, and oil prices.

The allowance for loan losses for wholesale loans that do not share similar risk characteristics, such as nonaccrual loans, is calculated using the present value of expected future cash flows discounted at the loan's effective rate, the observable market price of the loan, or, in the case of collateral dependent loans, the fair value of the collateral less estimated costs to sell, if applicable. Wholesale loans are charged off against the allowance for loan losses when deemed to be uncollectible.

Consumer. The allowance for credit losses for consumer loans that exhibit similar risk characteristics is calculated using a modeled approach which classifies consumer loans into pools based on borrower-related and exposure-related characteristics that differentiate a pool's risk characteristics from other pools. The factors considered in determining a pool are generally consistent with the risk characteristics used for internal credit risk measurement and management and include key metrics, such as FICO credit scores, delinquency status, loan vintage and macroeconomic indicators. The most significant inputs to the forecast model for consumer loans include unemployment rates and delinquency rates. The expected life of revolving credit card loans is determined by modeling expected future draws and the timing and amount of repayments allocated to the funded balance. The firm also recognizes an allowance for credit losses on commitments to acquire loans. However, no allowance for credit losses is recognized on credit card lending commitments as they are cancellable by the firm.

Installment loans are charged off when they are 120 days past due. Credit card loans are charged off when they are 180 days past due.

Allowance for Credit Losses Rollforward

The table below presents information about the allowance for credit losses.

$ in millions	Wholesale	Consumer	Total
Year Ended December 2023			
Allowance for loan losses			
Beginning balance	**$ 2,562**	**$ 2,981**	**$ 5,543**
Charge-offs	**(455)**	**(1,246)**	**(1,701)**
Recoveries	**55**	**98**	**153**
Net (charge-offs)/recoveries	**(400)**	**(1,148)**	**(1,548)**
Provision	**540**	**641**	**1,181**
Other	**(126)**	**–**	**(126)**
Ending balance	**$ 2,576**	**$ 2,474**	**$ 5,050**
Allowance ratio	**1.6 %**	**14.0 %**	**2.9 %**
Net charge-off ratio	**0.3 %**	**5.5 %**	**0.9 %**
Allowance for losses on lending commitments			
Beginning balance	**$ 711**	**$ 63**	**$ 774**
Provision	**(90)**	**(63)**	**(153)**
Other	**(1)**	**–**	**(1)**
Ending balance	**$ 620**	**$ –**	**$ 620**
Year Ended December 2022			
Allowance for loan losses			
Beginning balance	$ 2,135	$ 1,438	$ 3,573
Charge-offs	(318)	(555)	(873)
Recoveries	65	82	147
Net (charge-offs)/recoveries	(253)	(473)	(726)
Provision	699	2,016	2,715
Other	(19)	–	(19)
Ending balance	$ 2,562	$ 2,981	$ 5,543
Allowance ratio	1.7 %	13.5 %	3.2 %
Net charge-off ratio	0.2 %	2.8 %	0.5 %
Allowance for losses on lending commitments			
Beginning balance	$ 589	$ 187	$ 776
Provision	124	(124)	–
Other	(2)	–	(2)
Ending balance	$ 711	$ 63	$ 774

In the table above:

- The allowance ratio is calculated by dividing the allowance for loan losses by gross loans accounted for at amortized cost.
- The net charge-off ratio is calculated by dividing net (charge-offs)/recoveries by average gross loans accounted for at amortized cost.

Forecast Model Inputs as of December 2023

When modeling expected credit losses, the firm employs a weighted, multi-scenario forecast, which includes baseline, adverse and favorable economic scenarios. As of December 2023, this multi-scenario forecast was weighted towards the baseline and adverse economic scenarios.

The table below presents the forecasted U.S. unemployment and U.S. GDP growth rates used in the baseline economic scenario of the forecast model.

	As of December 2023
U.S. unemployment rate	
Forecast for the quarter ended:	
June 2024	**4.2 %**
December 2024	**4.3 %**
June 2025	**4.2 %**
Growth in U.S. GDP	
Forecast for the year:	
2024	**1.7 %**
2025	**1.7 %**
2026	**1.7 %**

The adverse economic scenario of the forecast model reflects a global recession in the first quarter of 2024 through the first quarter of 2025, resulting in an economic contraction and rising unemployment rates. In this scenario, the U.S. unemployment rate peaks at approximately 7.1% during the first quarter of 2025 and the maximum decline in the quarterly U.S. GDP relative to the fourth quarter of 2023 is approximately 2.7%, which occurs during the fourth quarter of 2024.

In the table above:

- U.S. unemployment rate represents the rate forecasted as of the respective quarter-end.
- Growth in U.S. GDP represents the year-over-year growth rate forecasted for the respective years.
- While the U.S. unemployment and U.S. GDP growth rates are significant inputs to the forecast model, the model contemplates a variety of other inputs across a range of scenarios to provide a forecast of future economic conditions. Given the complex nature of the forecasting process, no single economic variable can be viewed in isolation and independently of other inputs.

Allowance for Credit Losses Commentary

Year Ended December 2023. The allowance for credit losses decreased by $647 million during 2023, reflecting a net release related to the GreenSky installment loan portfolio (including a reserve reduction of $637 million related to the partial sale and transfer of the portfolio to held for sale), a reserve reduction of $442 million associated with the sale of Marcus loans, a reserve reduction of $160 million related to the transfer of the GM co-branded credit card portfolio to held for sale, a reserve release in the consumer portfolio based on actual repayment experience and lower balances in corporate loans due to sales and paydowns, partially offset by asset-specific provisions and ratings downgrades in the wholesale portfolio and seasoning of the credit card portfolio.

Charge-offs for 2023 for wholesale loans (principally related to term loans originated in 2021 and revolving loans) were primarily related to corporate loans and charge-offs for consumer loans were primarily related to credit cards.

Year Ended December 2022. The allowance for credit losses increased by $1.97 billion during 2022, reflecting growth in the firm's consumer lending portfolio (principally in credit cards) and higher modeled expected losses due to broad macroeconomic and geopolitical concerns. In addition, the allowance for credit losses for wholesale loans was impacted by asset-specific provisions and ratings downgrades primarily related to borrowers in the technology, media & telecommunications, real estate, and consumer & retail industries.

Charge-offs for 2022 for wholesale loans were primarily related to corporate loans and charge-offs for consumer loans were primarily related to credit cards.

Estimated Fair Value

The table below presents the estimated fair value of loans that are not accounted for at fair value and in what level of the fair value hierarchy they would have been classified if they had been included in the firm's fair value hierarchy.

$ in millions	Carrying Value	Estimated Fair Value Level 2	Level 3	Total
As of December 2023				
Amortized cost	**$ 169,825**	**$ 88,485**	**$ 83,288**	**$ 171,773**
Held for sale	**$ 7,027**	**$ 3,992**	**$ 3,038**	**$ 7,030**
As of December 2022				
Amortized cost	$ 167,037	$ 85,921	$ 83,121	$ 169,042
Held for sale	$ 4,594	$ 2,592	$ 2,014	$ 4,606

See Note 4 for an overview of the firm's fair value measurement policies, valuation techniques and significant inputs used to determine the fair value of loans, and Note 5 for information about loans within the fair value hierarchy.

Note 10.

Fair Value Option

Other Financial Assets and Liabilities at Fair Value
In addition to trading assets and liabilities, and certain investments and loans, the firm accounts for certain of its other financial assets and liabilities at fair value, substantially all under the fair value option. The primary reasons for electing the fair value option are to:

- Reflect economic events in earnings on a timely basis;
- Mitigate volatility in earnings from using different measurement attributes (e.g., transfers of financial assets accounted for as financings are recorded at fair value, whereas the related secured financing would be recorded on an accrual basis absent electing the fair value option); and
- Address simplification and cost-benefit considerations (e.g., accounting for hybrid financial instruments at fair value in their entirety versus bifurcation of embedded derivatives and hedge accounting for debt hosts).

Hybrid financial instruments are instruments that contain bifurcatable embedded derivatives and do not require settlement by physical delivery of nonfinancial assets (e.g., physical commodities). If the firm elects to bifurcate the embedded derivative from the associated debt, the derivative is accounted for at fair value and the host contract is accounted for at amortized cost, adjusted for the effective portion of any fair value hedges. If the firm does not elect to bifurcate, the entire hybrid financial instrument is accounted for at fair value under the fair value option.

Other financial assets and liabilities accounted for at fair value under the fair value option include:

- Repurchase agreements and substantially all resale agreements;
- Certain securities borrowed and loaned transactions;
- Certain customer and other receivables and certain other assets and liabilities;
- Certain time deposits (deposits with no stated maturity are not eligible for a fair value option election), including structured certificates of deposit, which are hybrid financial instruments;
- Substantially all other secured financings, including transfers of assets accounted for as financings; and
- Certain unsecured short- and long-term borrowings, substantially all of which are hybrid financial instruments.

See Note 4 for an overview of the firm's fair value measurement policies, valuation techniques and significant inputs used to determine the fair value of other financial assets and liabilities, and Note 5 for information about other financial assets and liabilities within the fair value hierarchy.

Gains and Losses on Other Financial Assets and Liabilities Accounted for at Fair Value Under the Fair Value Option
The table below presents the gains and losses recognized in earnings as a result of the election to apply the fair value option to certain financial assets and liabilities.

	Year Ended December		
$ in millions	**2023**	2022	2021
Unsecured short-term borrowings	**$ (4,341)**	$ 4,055	$ (1,016)
Unsecured long-term borrowings	**(4,937)**	6,506	(2,393)
Other	**(513)**	1,072	(135)
Total	**$ (9,791)**	$ 11,633	$ (3,544)

In the table above:

- Gains/(losses) were substantially all included in market making.
- Gains/(losses) exclude contractual interest, which is included in interest income and interest expense, for all instruments other than hybrid financial instruments. See Note 23 for further information about interest income and interest expense.
- Gains/(losses) included in unsecured short- and long-term borrowings were substantially all related to the embedded derivative component of hybrid financial instruments. These gains and losses would have been recognized under other U.S. GAAP even if the firm had not elected to account for the entire hybrid financial instrument at fair value.
- Gains/(losses) included in other were primarily related to resale and repurchase agreements, deposits and other secured financings.
- Other financial assets and liabilities at fair value are frequently economically hedged with trading assets and liabilities. Accordingly, gains or losses on such other financial assets and liabilities can be partially offset by gains or losses on trading assets and liabilities. As a result, gains or losses on other financial assets and liabilities do not necessarily represent the overall impact on the firm's results of operations, liquidity or capital resources.

Gains/(losses) on trading assets and liabilities accounted for at fair value under the fair value option are included in market making. See Note 6 for further information about gains/(losses) from market making. See Note 8 for information about gains/(losses) on equity securities and Note 9 for information about gains/(losses) on loans which are accounted for at fair value under the fair value option.

Long-Term Debt Instruments

The aggregate contractual principal amount of long-term other secured financings, for which the fair value option was elected, exceeded the related fair value by $147 million as of December 2023. The related amount was not material as of December 2022.

The aggregate contractual principal amount of unsecured long-term borrowings, for which the fair value option was elected, exceeded the related fair value by $3.37 billion as of December 2023 and $5.03 billion as of December 2022.

These debt instruments include both principal-protected and non-principal-protected long-term borrowings.

Debt Valuation Adjustment

The firm calculates the fair value of financial liabilities for which the fair value option is elected by discounting future cash flows at a rate which incorporates the firm's credit spreads.

The table below presents information about the net debt valuation adjustment (DVA) gains/(losses) on financial liabilities for which the fair value option was elected.

	Year Ended December		
$ in millions	**2023**	2022	2021
Pre-tax DVA	**$ (1,355)**	$ 1,882	$ 433
After-tax DVA	**$ (1,015)**	$ 1,403	$ 322

In the table above:

- After-tax DVA is included in debt valuation adjustment in the consolidated statements of comprehensive income.
- The gains/(losses) reclassified to market making in the consolidated statements of earnings from accumulated other comprehensive income/(loss) upon extinguishment of such financial liabilities were not material for 2023, 2022 or 2021.

Loans and Lending Commitments

The table below presents the difference between the aggregate fair value and the aggregate contractual principal amount for loans (included in trading assets and loans in the consolidated balance sheets) for which the fair value option was elected.

	As of December	
$ in millions	**2023**	2022
Performing loans		
Aggregate contractual principal in excess of fair value	**$ 1,893**	$ 2,645
Loans on nonaccrual status and/or more than 90 days past due		
Aggregate contractual principal in excess of fair value	**$ 2,305**	$ 3,331
Aggregate fair value	**$ 1,508**	$ 2,633

In the table above, the aggregate contractual principal amount of loans on nonaccrual status and/or more than 90 days past due (which excludes loans carried at zero fair value and considered uncollectible) exceeds the related fair value primarily because the firm regularly purchases loans, such as distressed loans, at values significantly below the contractual principal amounts.

The fair value of unfunded lending commitments for which the fair value option was elected was a liability of $3 million as of December 2023 and $22 million as of December 2022, and the related total contractual amount of these lending commitments was $878 million as of December 2023 and $307 million as of December 2022. See Note 18 for further information about lending commitments.

Impact of Credit Spreads on Loans and Lending Commitments

The estimated net gain/(loss) attributable to changes in instrument-specific credit spreads on loans and lending commitments for which the fair value option was elected was $(125) million for 2023, $(281) million for 2022 and $277 million for 2021. The firm generally calculates the fair value of loans and lending commitments for which the fair value option is elected by discounting future cash flows at a rate which incorporates the instrument-specific credit spreads. For floating-rate loans and lending commitments, substantially all changes in fair value are attributable to changes in instrument-specific credit spreads, whereas for fixed-rate loans and lending commitments, changes in fair value are also attributable to changes in interest rates.

Note 11.

Collateralized Agreements and Financings

Collateralized agreements are resale agreements and securities borrowed. Collateralized financings are repurchase agreements, securities loaned and other secured financings. The firm enters into these transactions in order to, among other things, facilitate client activities, invest excess cash, acquire securities to cover short positions and finance certain firm activities.

Collateralized agreements and financings with the same settlement date are presented on a net-by-counterparty basis when such transactions meet certain settlement criteria and are subject to netting agreements. Interest on collateralized agreements, which is included in interest income, and collateralized financings, which is included in interest expense, is recognized over the life of the transaction. See Note 23 for further information about interest income and interest expense.

Resale and Repurchase Agreements

A resale agreement is a transaction in which the firm purchases financial instruments from a seller, typically in exchange for cash, and simultaneously enters into an agreement to resell the same or substantially the same financial instruments to the seller at a stated price plus accrued interest at a future date.

A repurchase agreement is a transaction in which the firm sells financial instruments to a buyer, typically in exchange for cash, and simultaneously enters into an agreement to repurchase the same or substantially the same financial instruments from the buyer at a stated price plus accrued interest at a future date.

Even though repurchase and resale agreements (including "repos- and reverses-to-maturity") involve the legal transfer of ownership of financial instruments, they are accounted for as financing arrangements because they require the financial instruments to be repurchased or resold before or at the maturity of the agreement. The financial instruments purchased or sold in resale and repurchase agreements typically include U.S. government and agency obligations, and investment-grade sovereign obligations.

The firm receives financial instruments purchased under resale agreements and makes delivery of financial instruments sold under repurchase agreements. To mitigate credit exposure, the firm monitors the market value of these financial instruments on a daily basis, and delivers or obtains additional collateral due to changes in the market value of the financial instruments, as appropriate. For resale agreements, the firm typically requires collateral with a fair value approximately equal to the carrying value of the relevant assets in the consolidated balance sheets.

Repurchase agreements and substantially all resale agreements are recorded at fair value under the fair value option. See Note 5 for further information about repurchase and resale agreements.

Securities Borrowed and Loaned Transactions

In a securities borrowed transaction, the firm borrows securities from a counterparty in exchange for cash or securities. When the firm returns the securities, the counterparty returns the cash or securities. Interest is generally paid periodically over the life of the transaction.

In a securities loaned transaction, the firm lends securities to a counterparty in exchange for cash or securities. When the counterparty returns the securities, the firm returns the cash or securities posted as collateral. Interest is generally paid periodically over the life of the transaction.

In a transaction where the firm lends securities and receives securities that can be delivered or pledged as collateral, the firm recognizes the securities received within securities borrowed and the obligation to return those securities within securities loaned in the consolidated balance sheets.

The firm receives securities borrowed and makes delivery of securities loaned. To mitigate credit exposure, the firm monitors the market value of these securities on a daily basis, and delivers or obtains additional collateral due to changes in the market value of the securities, as appropriate. For securities borrowed transactions, the firm typically requires collateral with a fair value approximately equal to the carrying value of the securities borrowed transaction.

Securities borrowed and loaned within FICC financing are recorded at fair value under the fair value option. See Note 5 for further information about securities borrowed and loaned accounted for at fair value.

Substantially all of the securities borrowed and loaned within Equities financing are recorded based on the amount of cash collateral advanced or received plus accrued interest. The firm also reviews such securities borrowed to determine if an allowance for credit losses should be recorded by taking into consideration the fair value of collateral received. As these agreements generally can be terminated on demand, they exhibit little, if any, sensitivity to changes in interest rates. Therefore, the carrying value of such agreements approximates fair value. As these agreements are not accounted for at fair value, they are not included in the firm's fair value hierarchy in Notes 4 and 5. Had these agreements been included in the firm's fair value hierarchy, they would have been classified in level 2 as of both December 2023 and December 2022.

Offsetting Arrangements

The table below presents resale and repurchase agreements and securities borrowed and loaned transactions included in the consolidated balance sheets, as well as the amounts not offset in the consolidated balance sheets.

$ in millions	Assets: Resale agreements	Assets: Securities borrowed	Liabilities: Repurchase agreements	Liabilities: Securities loaned
As of December 2023				
Included in the consolidated balance sheets				
Gross carrying value	**$ 315,112**	**$ 199,753**	**$ 341,194**	**$ 60,816**
Counterparty netting	**(91,307)**	**(333)**	**(91,307)**	**(333)**
Total	**223,805**	**199,420**	**249,887**	**60,483**
Amounts not offset				
Counterparty netting	**(29,136)**	**(9,373)**	**(29,136)**	**(9,373)**
Collateral	**(189,358)**	**(182,918)**	**(217,498)**	**(50,807)**
Total	**$ 5,311**	**$ 7,129**	**$ 3,253**	**$ 303**
As of December 2022				
Included in the consolidated balance sheets				
Gross carrying value	$ 334,042	$ 199,623	$ 219,274	$ 41,309
Counterparty netting	(108,925)	(10,582)	(108,925)	(10,582)
Total	225,117	189,041	110,349	30,727
Amounts not offset				
Counterparty netting	(15,350)	(4,576)	(15,350)	(4,576)
Collateral	(204,843)	(171,997)	(92,997)	(25,578)
Total	$ 4,924	$ 12,468	$ 2,002	$ 573

In the table above:

- Substantially all of the gross carrying values of these arrangements are subject to enforceable netting agreements.
- Where the firm has received or posted collateral under credit support agreements, but has not yet determined such agreements are enforceable, the related collateral has not been netted.
- Amounts not offset includes counterparty netting that does not meet the criteria for netting under U.S. GAAP and the fair value of collateral received or posted subject to enforceable credit support agreements.
- Resale agreements included in the consolidated balance sheets of $223.54 billion as of December 2023 and $225.12 billion as of December 2022 and all repurchase agreements included in the consolidated balance sheets are carried at fair value under the fair value option. See Note 4 for further information about the valuation techniques and significant inputs used to determine fair value.
- Securities borrowed included in the consolidated balance sheets of $44.93 billion as of December 2023 and $38.58 billion as of December 2022, and securities loaned included in the consolidated balance sheets of $8.93 billion as of December 2023 and $4.37 billion as of December 2022 were at fair value under the fair value option. See Note 5 for further information about securities borrowed and securities loaned accounted for at fair value.

Gross Carrying Value of Repurchase Agreements and Securities Loaned

The table below presents the gross carrying value of repurchase agreements and securities loaned by class of collateral pledged.

$ in millions	Repurchase agreements	Securities loaned
As of December 2023		
Money market instruments	**$ 3**	**$ –**
U.S. government and agency obligations	**228,718**	**216**
Non-U.S. government and agency obligations	**85,230**	**376**
Securities backed by commercial real estate	**135**	**–**
Securities backed by residential real estate	**641**	**–**
Corporate debt securities	**10,585**	**230**
State and municipal obligations	**57**	**–**
Other debt obligations	**144**	**–**
Equity securities	**15,681**	**59,994**
Total	**$ 341,194**	**$ 60,816**
As of December 2022		
Money market instruments	$ 10	$ –
U.S. government and agency obligations	112,825	55
Non-U.S. government and agency obligations	87,828	594
Securities backed by commercial real estate	172	–
Securities backed by residential real estate	466	–
Corporate debt securities	11,398	295
State and municipal obligations	143	–
Other debt obligations	108	–
Equity securities	6,324	40,365
Total	$ 219,274	$ 41,309

The table below presents the gross carrying value of repurchase agreements and securities loaned by maturity.

$ in millions	**As of December 2023** Repurchase agreements	Securities loaned
No stated maturity and overnight	**$ 147,945**	**$ 37,750**
2 - 30 days	**101,637**	**754**
31 - 90 days	**33,323**	**454**
91 days - 1 year	**46,597**	**11,703**
Greater than 1 year	**11,692**	**10,155**
Total	**$ 341,194**	**$ 60,816**

In the table above:

- Repurchase agreements and securities loaned that are repayable prior to maturity at the option of the firm are reflected at their contractual maturity dates.
- Repurchase agreements and securities loaned that are redeemable prior to maturity at the option of the holder are reflected at the earliest dates such options become exercisable.

Other Secured Financings

In addition to repurchase agreements and securities loaned transactions, the firm funds certain assets through the use of other secured financings and pledges financial instruments and other assets as collateral in these transactions. These other secured financings include:

- Liabilities of CIEs and consolidated VIEs;
- Transfers of assets accounted for as financings rather than sales (e.g., pledged commodities, bank loans and mortgage whole loans); and
- Other structured financing arrangements.

Other secured financings included nonrecourse arrangements. Nonrecourse other secured financings were $5.57 billion as of December 2023 and $7.94 billion as of December 2022.

The firm has elected to apply the fair value option to substantially all other secured financings because the use of fair value eliminates non-economic volatility in earnings that would arise from using different measurement attributes. See Note 10 for further information about other secured financings that are accounted for at fair value.

Other secured financings that are not recorded at fair value are recorded based on the amount of cash received plus accrued interest, which generally approximates fair value. As these financings are not accounted for at fair value, they are not included in the firm's fair value hierarchy in Notes 4 and 5. Had these financings been included in the firm's fair value hierarchy, substantially all would have been classified in level 3 as of both December 2023 and December 2022.

The table below presents information about other secured financings.

$ in millions	U.S. Dollar	Non-U.S. Dollar	Total
As of December 2023			
Other secured financings (short-term):			
At fair value	**$ 3,385**	**$ 3,451**	**$ 6,836**
At amortized cost	**–**	**368**	**368**
Other secured financings (long-term):			
At fair value	**1,872**	**3,846**	**5,718**
At amortized cost	**272**	**–**	**272**
Total other secured financings	**$ 5,529**	**$ 7,665**	**$ 13,194**
Other secured financings collateralized by:			
Financial instruments	**$ 3,122**	**$ 6,755**	**$ 9,877**
Other assets	**$ 2,407**	**$ 910**	**$ 3,317**
As of December 2022			
Other secured financings (short-term):			
At fair value	$ 3,478	$ 2,963	$ 6,441
At amortized cost	398	–	398
Other secured financings (long-term):			
At fair value	3,793	2,522	6,315
At amortized cost	395	397	792
Total other secured financings	$ 8,064	$ 5,882	$ 13,946
Other secured financings collateralized by:			
Financial instruments	$ 3,817	$ 4,895	$ 8,712
Other assets	$ 4,247	$ 987	$ 5,234

In the table above:

- Short-term other secured financings includes financings maturing within one year of the financial statement date and financings that are redeemable within one year of the financial statement date at the option of the holder.
- U.S. dollar-denominated short-term other secured financings at amortized cost had a weighted average interest rate of 5.56% as of December 2022. This rate includes the effect of hedging activities.
- Non-U.S. dollar-denominated short-term other secured financings at amortized cost had a weighted average interest rate of 0.47% as of December 2023. This rate includes the effect of hedging activities.
- U.S. dollar-denominated long-term other secured financings at amortized cost had a weighted average interest rate of 3.44% as of December 2023 and 3.54% as of December 2022. These rates include the effect of hedging activities.
- Non-U.S. dollar-denominated long-term other secured financings at amortized cost had a weighted average interest rate of 0.45% as of December 2022. This rate includes the effect of hedging activities.

- Total other secured financings included $2.34 billion as of December 2023 and $1.69 billion as of December 2022 related to transfers of financial assets accounted for as financings rather than sales. Such financings were collateralized by financial assets, primarily included in trading assets, of $2.36 billion as of December 2023 and $1.64 billion as of December 2022.
- Other secured financings collateralized by financial instruments included $8.38 billion as of December 2023 and $7.49 billion as of December 2022 of other secured financings collateralized by trading assets, investments and loans, and included $1.49 billion as of December 2023 and $1.22 billion as of December 2022 of other secured financings collateralized by financial instruments received as collateral and repledged.

The table below presents other secured financings by maturity.

$ in millions	As of December 2023
Other secured financings (short-term)	$ 7,204
Other secured financings (long-term):	
2025	1,930
2026	763
2027	124
2028	1,504
2029 - thereafter	1,669
Total other secured financings (long-term)	5,990
Total other secured financings	$ 13,194

In the table above:

- Long-term other secured financings that are repayable prior to maturity at the option of the firm are reflected at their contractual maturity dates.
- Long-term other secured financings that are redeemable prior to maturity at the option of the holder are reflected at the earliest dates such options become exercisable.

Collateral Received and Pledged

The firm receives cash and securities (e.g., U.S. government and agency obligations, other sovereign and corporate obligations, as well as equity securities) as collateral, primarily in connection with resale agreements, securities borrowed, derivative transactions and customer margin loans. The firm obtains cash and securities as collateral on an upfront or contingent basis for derivative instruments and collateralized agreements to reduce its credit exposure to individual counterparties.

In many cases, the firm is permitted to deliver or repledge financial instruments received as collateral when entering into repurchase agreements and securities loaned transactions, primarily in connection with secured client financing activities. The firm is also permitted to deliver or repledge these financial instruments in connection with other secured financings, collateralized derivative transactions and firm or customer settlement requirements.

The firm also pledges certain trading assets in connection with repurchase agreements, securities loaned transactions and other secured financings, and other assets (substantially all real estate and cash) in connection with other secured financings to counterparties who may or may not have the right to deliver or repledge them.

The table below presents financial instruments at fair value received as collateral that were available to be delivered or repledged and were delivered or repledged.

	As of December	
$ in millions	2023	2022
Collateral available to be delivered or repledged	$ 1,002,891	$ 971,699
Collateral that was delivered or repledged	$ 862,988	$ 797,919

The table below presents information about assets pledged.

	As of December	
$ in millions	2023	2022
Pledged to counterparties that had the right to deliver or repledge		
Trading assets	$ 110,567	$ 40,143
Pledged to counterparties that did not have the right to deliver or repledge		
Trading assets	$ 138,404	$ 70,912
Investments	$ 22,165	$ 2,932
Loans	$ 8,865	$ 6,600
Other assets	$ 3,924	$ 7,525

In the table above, the firm revised the amount previously reported as investments pledged to counterparties (that had the right to deliver or repledge) as of December 2022 from $9.82 billion to $0. As a result, that line was removed from the table and from the parenthetical disclosure on the consolidated balance sheets. In addition, in the table above, the firm revised the amount previously reported as investments pledged to counterparties (that did not have the right to deliver or repledge) as of December 2022 from $1.73 billion to $2.93 billion. These revisions were not material to the firm's consolidated financial statements, only impacted the lines noted above and had no impact on the firm's results of operations or cash flows.

The firm also segregates securities for regulatory and other purposes related to client activity. Such securities are segregated from trading assets and investments, as well as from securities received as collateral under resale agreements and securities borrowed transactions. Securities segregated by the firm were $49.26 billion as of December 2023 and $49.60 billion as of December 2022.

Note 12.

Other Assets

The table below presents other assets by type.

	As of December	
$ in millions	**2023**	2022
Property, leasehold improvements and equipment	**$ 11,244**	$ 17,074
Goodwill	**5,916**	6,374
Identifiable intangible assets	**1,177**	2,009
Operating lease right-of-use assets	**2,171**	2,172
Income tax-related assets	**8,157**	7,012
Miscellaneous receivables and other	**7,925**	4,567
Total	**$ 36,590**	$ 39,208

Property, Leasehold Improvements and Equipment

Property, leasehold improvements and equipment is net of accumulated depreciation and amortization of $13.64 billion as of December 2023 and $12.19 billion as of December 2022. Property, leasehold improvements and equipment included $6.65 billion as of December 2023 and $7.17 billion as of December 2022 that the firm uses in connection with its operations, and $124 million as of December 2023 and $89 million as of December 2022 of foreclosed real estate. The remainder is held by investment entities, including VIEs, consolidated by the firm. Substantially all property and equipment is depreciated on a straight-line basis over the useful life of the asset. Leasehold improvements are amortized on a straight-line basis over the shorter of the useful life of the improvement or the term of the lease. Capitalized costs of software developed or obtained for internal use are amortized on a straight-line basis over three years.

The firm tests property, leasehold improvements and equipment for impairment when events or changes in circumstances suggest that an asset's or asset group's carrying value may not be fully recoverable. To the extent the carrying value of an asset or asset group exceeds the projected undiscounted cash flows expected to result from the use and eventual disposal of the asset or asset group, the firm determines the asset or asset group is impaired and records an impairment equal to the difference between the estimated fair value and the carrying value of the asset or asset group. In addition, the firm will recognize an impairment prior to the sale of an asset or asset group if the carrying value of the asset or asset group exceeds its estimated fair value. Any impairments recognized are included in depreciation and amortization.

The firm had impairments of $1.46 billion during 2023, related to commercial real estate included in CIEs within Asset & Wealth Management. In addition, the firm had impairments of $118 million during 2023, related to capitalized software substantially all within Platform Solutions and Asset & Wealth Management. The firm had impairments of $314 million during 2022 and $143 million during 2021 primarily related to CIEs within Asset & Wealth Management.

Goodwill

Goodwill is the cost of acquired companies in excess of the fair value of net assets, including identifiable intangible assets, at the acquisition date.

The table below presents the carrying value of goodwill by reporting unit.

	As of December	
$ in millions	**2023**	2022
Global Banking & Markets:		
Investment banking	**$ 267**	$ 267
FICC	**269**	269
Equities	**2,647**	2,647
Asset & Wealth Management:		
Asset management	**1,410**	1,385
Wealth management	**1,309**	1,310
Platform Solutions:		
Consumer platforms	**–**	482
Transaction banking and other	**14**	14
Total	**$ 5,916**	$ 6,374

In the table above, the decrease in goodwill from December 2022 to December 2023 was primarily attributable to the impairment of goodwill associated with Consumer platforms described below.

Goodwill is assessed for impairment annually in the fourth quarter or more frequently if events occur or circumstances change that indicate an impairment may exist. When assessing goodwill for impairment, first, a qualitative assessment can be made to determine whether it is more likely than not that the estimated fair value of a reporting unit is less than its carrying value. If the results of the qualitative assessment are not conclusive, a quantitative goodwill test is performed. Alternatively, a quantitative goodwill test can be performed without performing a qualitative assessment.

The quantitative goodwill test compares the estimated fair value of each reporting unit with its carrying value (including goodwill and identifiable intangible assets). If the reporting unit's estimated fair value exceeds its carrying value, goodwill is not impaired. An impairment is recognized if the estimated fair value of a reporting unit is less than its carrying value and any such impairment is included in depreciation and amortization.

When performing a quantitative goodwill test, the estimated fair value of each reporting unit is based on valuation techniques the firm believes market participants would use to value these reporting units. Estimated fair values are generally derived from utilizing a relative value technique, which applies observable price-to-earnings multiples or price-to-book multiples of comparable competitors to the reporting units' net earnings or net book value, or a discounted cash flow valuation approach, for reporting units with businesses in early stages of development. The carrying value of each reporting unit reflects an allocation of total shareholders' equity and represents the estimated amount of total shareholders' equity required to support the activities of the reporting unit under currently applicable regulatory capital requirements.

During the first quarter of 2023, goodwill for Consumer platforms increased by $22 million as a result of an updated purchase price allocation related to the GreenSky acquisition. During the second quarter of 2023, in connection with the exploration of a potential sale of GreenSky, the firm performed a quantitative goodwill test and determined that the goodwill associated with Consumer platforms was impaired, and accordingly, recorded a $504 million impairment.

In the fourth quarter of 2023, the firm performed its annual assessment of goodwill for impairment, for each of its reporting units with goodwill, by performing a qualitative assessment. Multiple factors were assessed with respect to each of these reporting units to determine whether it was more likely than not that the estimated fair value of each of those reporting units was less than its carrying value. The qualitative assessment also considered changes since a quantitative test across all of the firm's reporting units was last performed in 2022.

During the fourth quarter of 2023, the firm considered the following factors in the qualitative annual assessment:

- **Performance Indicators.** For 2023, the firm generated higher net revenues net of provision for credit losses and increased book value per share, although overall performance declined compared with 2022. This decline reflected the firm's continued execution on the narrowing of its strategic focus, which had a negative impact on net earnings. Within the reporting units with goodwill, there continued to be solid fundamentals underlying our businesses, where the firm continued to maintain industry leadership positions and execute on strategic goals.

- **Macroeconomic Indicators.** Despite broad macroeconomic and geopolitical concerns, the global economy continued to grow in 2023.

- **Firm and Industry Events.** There were no events, entity-specific or otherwise, that would have had a significant negative impact on the valuation of the firm's reporting units with goodwill.

- **Fair Value Indicators.** Since the 2022 quantitative test, changes in the fair value indicators in the market did not have a significant negative impact on the valuation of the firm's reporting units with goodwill.

As a result of the qualitative assessment, the firm determined that it was more likely than not that the estimated fair value of each reporting unit with goodwill exceeded its respective carrying value. Therefore, the firm determined that goodwill for each reporting unit was not impaired and that a quantitative goodwill test was not required.

Identifiable Intangible Assets

The table below presents identifiable intangible assets by type.

	As of December	
$ in millions	**2023**	2022
Customer lists		
Gross carrying value	**$ 2,339**	$ 2,520
Accumulated amortization	**(1,292)**	(1,227)
Net carrying value	**1,047**	1,293
Other		
Gross carrying value	**866**	1,191
Accumulated amortization	**(736)**	(475)
Net carrying value	**130**	716
Total gross carrying value	**3,205**	3,711
Total accumulated amortization	**(2,028)**	(1,702)
Total net carrying value	**$ 1,177**	$ 2,009

In the table above:

- Other includes acquired leases and merchant relationships related to GreenSky. Previously, merchant relationships were included in customer lists and merchant relationships but were reclassified to other in conjunction with the planned sale of GreenSky. Prior period amounts have been conformed to the current presentation.
- The decrease in the net carrying value of identifiable intangible assets from December 2022 to December 2023 was primarily attributable to the $506 million write-down related to GreenSky. These identifiable intangible assets, which are included within Platform Solutions, were classified as held for sale in connection with the planned sale of GreenSky and had a net carrying value of $110 million as of December 2023.
- During 2023, the amount of identifiable intangible assets acquired by the firm was not material. The firm acquired approximately $1.79 billion of identifiable intangible assets (with a weighted average amortization period of 13 years) during 2022, substantially all in connection with the acquisitions of GreenSky and NN Investment Partners. Substantially all of these identifiable intangible assets consisted of customer lists and merchant relationships.
- Substantially all of the firm's identifiable intangible assets have finite useful lives and are amortized over their estimated useful lives generally using the straight-line method.

The tables below present information about the amortization of identifiable intangible assets.

	Year Ended December		
$ in millions	**2023**	2022	2021
Amortization	**$ 681**	$ 174	$ 120

In the table above, amortization for 2023 included the $506 million write-down related to GreenSky, which is included in depreciation and amortization.

$ in millions	**As of December 2023**
Estimated future amortization	
2024	**$ 101**
2025	**$ 93**
2026	**$ 86**
2027	**$ 86**
2028	**$ 86**

The firm tests identifiable intangible assets for impairment when events or changes in circumstances suggest that an asset's or asset group's carrying value may not be fully recoverable. To the extent the carrying value of an asset or asset group exceeds the projected undiscounted cash flows expected to result from the use and eventual disposal of the asset or asset group, the firm determines the asset or asset group is impaired and records an impairment equal to the difference between the estimated fair value and the carrying value of the asset or asset group. In addition, the firm will recognize an impairment prior to the sale of an asset or asset group if the carrying value of the asset or asset group exceeds its estimated fair value. Other than as noted above, there were no material impairments or write-downs during 2023, 2022 or 2021.

Operating Lease Right-of-Use Assets

The firm enters into operating leases for real estate, office equipment and other assets, substantially all of which are used in connection with its operations. For leases longer than one year, the firm recognizes a right-of-use asset representing the right to use the underlying asset for the lease term, and a lease liability representing the liability to make payments. The lease term is generally determined based on the contractual maturity of the lease. For leases where the firm has the option to terminate or extend the lease, an assessment of the likelihood of exercising the option is incorporated into the determination of the lease term. Such assessment is initially performed at the inception of the lease and is updated if events occur that impact the original assessment.

An operating lease right-of-use asset is initially determined based on the operating lease liability, adjusted for initial direct costs, lease incentives and amounts paid at or prior to lease commencement. This amount is then amortized over the lease term. Right-of-use assets and operating lease liabilities recognized (in non-cash transactions for leases entered into or assumed) by the firm were $333 million for 2023, $256 million for 2022 and $305 million for 2021. See Note 15 for information about operating lease liabilities.

For leases where the firm will derive no economic benefit from leased space that it has vacated or where the firm has shortened the term of a lease when space is no longer needed, the firm will record an impairment or accelerated amortization of right-of-use assets. There were no material impairments or accelerated amortizations during either 2023 or 2022.

Miscellaneous Receivables and Other

Miscellaneous receivables and other included:

- Funded investments in qualified affordable housing projects of $1.13 billion as of December 2023 and $793 million as of December 2022. These projects are generally organized as limited partnerships or similar entities and a third-party is typically the general partner or the managing member. The firm invests in the entity as a limited partner and receives tax credits for such investments. The firm accounts for these investments using the proportional amortization method such that the investment is amortized in proportion to the income tax credits received on such investments. The amortization of investments and the related income tax credit are recorded as a component of the provision for taxes. During 2023, the firm recognized amortization of $301 million and income tax credits and related tax benefits of $370 million, during 2022, the firm recognized amortization of $127 million and income tax credits and related tax benefits of $151 million and during 2021, the firm recognized amortization of $130 million and income tax credits and related tax benefits of $176 million. Miscellaneous receivables and other also included accrued unfunded commitments related to investments in qualified affordable housing projects of $2.26 billion as of December 2023. See Note 18 for further information about the firm's commitments to invest in qualified affordable housing projects.
- Assets classified as held for sale were $518 million as of December 2023 and $285 million as of December 2022. See below for further information.

Assets Held for Sale. During the third quarter of 2023, in connection with the planned sale of GreenSky, the firm classified GreenSky (within Platform Solutions) as held for sale. After a reserve release of $637 million in provision for credit losses and a markdown of $123 million to reflect the loan portfolio at the lower of its carrying value or fair value less cost to sell, the firm wrote down $506 million of net assets related to GreenSky (included in depreciation and amortization). As of December 2023, the assets related to GreenSky were approximately $3.4 billion and consisted of loans of approximately $3.0 billion (included in loans), segregated cash of approximately $110 million (included in cash and cash equivalents), identifiable intangible assets of approximately $110 million (included in identifiable intangible assets within other assets) and other assets of approximately $190 million (included in miscellaneous receivables and other within other assets). See Note 9 for further information about loans classified as held for sale, above for further information about identifiable intangible assets, and Note 15 for information about liabilities classified as held for sale.

Assets held for sale also included $327 million as of December 2023 and $285 million as of December 2022 of assets related to certain of the firm's consolidated investments within Asset & Wealth Management. Substantially all of these assets consisted of property and equipment and were included in miscellaneous receivables and other within other assets.

Note 13.

Deposits

The table below presents the types and sources of deposits.

$ in millions	Savings and Demand	Time	Total
As of December 2023			
Consumer	**$ 120,211**	**$ 36,903**	**$ 157,114**
Private bank	**86,457**	**6,855**	**93,312**
Brokered certificates of deposit	**–**	**46,860**	**46,860**
Deposit sweep programs	**31,916**	**–**	**31,916**
Transaction banking	**68,177**	**3,643**	**71,820**
Other	**1,568**	**25,827**	**27,395**
Total	**$ 308,329**	**$ 120,088**	**$ 428,417**
As of December 2022			
Consumer	$ 98,580	$ 21,330	$ 119,910
Private bank	94,133	11,716	105,849
Brokered certificates of deposit	–	32,624	32,624
Deposit sweep programs	44,819	–	44,819
Transaction banking	65,155	5,069	70,224
Other	808	12,431	13,239
Total	$ 303,495	$ 83,170	$ 386,665

In the table above:

- Substantially all deposits are interest-bearing.
- Savings and demand accounts consist of money market deposit accounts, negotiable order of withdrawal accounts and demand deposit accounts that have no stated maturity or expiration date.
- Time deposits included $29.46 billion as of December 2023 and $15.75 billion as of December 2022 of deposits accounted for at fair value under the fair value option. See Note 10 for further information about deposits accounted for at fair value.
- Time deposits had a weighted average maturity of approximately 0.6 years as of December 2023 and 0.9 years as of December 2022.
- Consumer deposits consist of deposits from both Marcus and Apple Card customers.
- Deposit sweep programs include contractual agreements with U.S. broker-dealers who sweep client cash to FDIC-insured deposits.
- Transaction banking deposits consist of deposits that the firm raised through its cash management services business for corporate and other institutional clients.
- Other deposits are substantially all from institutional clients.
- Deposits insured by the FDIC were $221.52 billion as of December 2023 and $184.88 billion as of December 2022.
- Deposits insured by non-U.S. insurance programs were $26.00 billion as of December 2023 and $31.74 billion as of December 2022. The decline in insured deposits from December 2022 reflected a change in an insurance program that became effective in January 2023, which reduced the population of deposit accounts eligible for insurance coverage and lowered the applicable insurance limits.

The table below presents the location of deposits.

	As of December	
$ in millions	**2023**	2022
U.S. offices	**$ 333,116**	$ 313,598
Non-U.S. offices	**95,301**	73,067
Total	**$ 428,417**	$ 386,665

In the table above, U.S. deposits were held at Goldman Sachs Bank USA (GS Bank USA) and substantially all non-U.S. deposits were held at Goldman Sachs International Bank (GSIB) and Goldman Sachs Bank Europe SE (GSBE).

The table below presents maturities of time deposits held in U.S. and non-U.S. offices.

	As of December 2023		
$ in millions	**U.S.**	**Non-U.S.**	**Total**
2024	**$ 76,602**	**$ 30,318**	**$ 106,920**
2025	**5,534**	**796**	**6,330**
2026	**2,808**	**294**	**3,102**
2027	**1,262**	**204**	**1,466**
2028	**768**	**198**	**966**
2029 - thereafter	**1,069**	**235**	**1,304**
Total	**$ 88,043**	**$ 32,045**	**$ 120,088**

As of December 2023, deposits in U.S. offices included $14.47 billion and deposits in non-U.S. offices included $31.12 billion of time deposits in denominations that met or exceeded the applicable insurance limits, or were otherwise not covered by insurance.

The firm's savings and demand deposits are recorded based on the amount of cash received plus accrued interest, which approximates fair value. In addition, the firm designates certain derivatives as fair value hedges to convert a portion of its time deposits not accounted for at fair value from fixed-rate obligations into floating-rate obligations. The carrying value of time deposits not accounted for at fair value approximated fair value as of both December 2023 and December 2022. As these savings and demand deposits and time deposits are not accounted for at fair value, they are not included in the firm's fair value hierarchy in Notes 4 and 5. Had these deposits been included in the firm's fair value hierarchy, they would have been classified in level 2 as of both December 2023 and December 2022.

Note 14.

Unsecured Borrowings

The table below presents information about unsecured borrowings.

	As of December	
$ in millions	**2023**	2022
Unsecured short-term borrowings	**$ 75,945**	$ 60,961
Unsecured long-term borrowings	**241,877**	247,138
Total	**$ 317,822**	$ 308,099

Unsecured Short-Term Borrowings

Unsecured short-term borrowings includes the portion of unsecured long-term borrowings maturing within one year of the financial statement date and unsecured long-term borrowings that are redeemable within one year of the financial statement date at the option of the holder.

The firm accounts for certain hybrid financial instruments at fair value under the fair value option. See Note 10 for further information about unsecured short-term borrowings that are accounted for at fair value. In addition, the firm designates certain derivatives as fair value hedges to convert a portion of its unsecured short-term borrowings not accounted for at fair value from fixed-rate obligations into floating-rate obligations. The carrying value of unsecured short-term borrowings that are not recorded at fair value generally approximates fair value due to the short-term nature of the obligations. As these unsecured short-term borrowings are not accounted for at fair value, they are not included in the firm's fair value hierarchy in Notes 4 and 5. Had these borrowings been included in the firm's fair value hierarchy, substantially all would have been classified in level 2 as of both December 2023 and December 2022.

The table below presents information about unsecured short-term borrowings.

	As of December	
$ in millions	**2023**	2022
Current portion of unsecured long-term borrowings	**$ 49,361**	$ 38,635
Hybrid financial instruments	**23,073**	18,383
Commercial paper	**1,213**	1,718
Other unsecured short-term borrowings	**2,298**	2,225
Total unsecured short-term borrowings	**$ 75,945**	$ 60,961
Weighted average interest rate	**3.64 %**	3.71 %

In the table above:

- The current portion of unsecured long-term borrowings included $29.67 billion as of December 2023 and $21.75 billion as of December 2022 issued by Group Inc.
- The weighted average interest rates for these borrowings include the effect of hedging activities and exclude unsecured short-term borrowings accounted for at fair value under the fair value option. See Note 7 for further information about hedging activities.

Unsecured Long-Term Borrowings

The table below presents information about unsecured long-term borrowings.

$ in millions	U.S. Dollar	Non-U.S. Dollar	Total
As of December 2023			
Fixed-rate obligations:			
Group Inc.	**$ 112,821**	**$ 31,023**	**$ 143,844**
Subsidiaries	**1,992**	**3,739**	**5,731**
Floating-rate obligations:			
Group Inc.	**18,936**	**12,555**	**31,491**
Subsidiaries	**38,117**	**22,694**	**60,811**
Total	**$ 171,866**	**$ 70,011**	**$ 241,877**
As of December 2022			
Fixed-rate obligations:			
Group Inc.	$ 117,092	$ 35,541	$ 152,633
Subsidiaries	1,894	2,997	4,891
Floating-rate obligations:			
Group Inc.	19,308	14,032	33,340
Subsidiaries	36,381	19,893	56,274
Total	$ 174,675	$ 72,463	$ 247,138

In the table above:

- Unsecured long-term borrowings consists principally of senior borrowings, which have maturities extending through 2061.
- Floating-rate obligations includes equity-linked, credit-linked and indexed instruments. Floating interest rates are generally based on SOFR and Euro Interbank Offered Rate. In connection with the cessation of USD London Interbank Offered Rate (LIBOR), as of July 1, 2023, the firm replaced the USD LIBOR rate with term SOFR plus the statutorily prescribed tenor spread.
- U.S. dollar-denominated debt had interest rates ranging from 0.86% to 6.75% (with a weighted average rate of 3.73%) as of December 2023 and 0.66% to 6.75% (with a weighted average rate of 3.51%) as of December 2022. These rates exclude unsecured long-term borrowings accounted for at fair value under the fair value option.
- Non-U.S. dollar-denominated debt had interest rates ranging from 0.25% to 7.25% (with a weighted average rate of 2.11%) as of December 2023 and 0.13% to 7.25% (with a weighted average rate of 1.85%) as of December 2022. These rates exclude unsecured long-term borrowings accounted for at fair value under the fair value option.

The table below presents unsecured long-term borrowings by maturity.

	As of December 2023		
$ in millions	**Group Inc.**	**Subsidiaries**	**Total**
2025	**$ 28,946**	**$ 18,886**	**$ 47,832**
2026	**21,970**	**8,177**	**30,147**
2027	**26,938**	**9,154**	**36,092**
2028	**19,390**	**8,638**	**28,028**
2029 - thereafter	**78,091**	**21,687**	**99,778**
Total	**$ 175,335**	**$ 66,542**	**$ 241,877**

In the table above:

- Unsecured long-term borrowings maturing within one year of the financial statement date and unsecured long-term borrowings that are redeemable within one year of the financial statement date at the option of the holder are excluded as they are included in unsecured short-term borrowings.
- Unsecured long-term borrowings that are repayable prior to maturity at the option of the firm are reflected at their contractual maturity dates.
- Unsecured long-term borrowings that are redeemable prior to maturity at the option of the holder are reflected at the earliest dates such options become exercisable.
- Unsecured long-term borrowings included $(10.71) billion of adjustments to the carrying value of certain unsecured long-term borrowings resulting from the application of hedge accounting by year of maturity as follows: $(685) million in 2025, $(500) million in 2026, $(1.15) billion in 2027, $(1.11) billion in 2028 and $(7.26) billion in 2029 and thereafter.

The firm designates certain derivatives as fair value hedges to convert a portion of fixed-rate unsecured long-term borrowings not accounted for at fair value into floating-rate obligations. See Note 7 for further information about hedging activities.

The table below presents unsecured long-term borrowings, after giving effect to such hedging activities.

$ in millions	Group Inc.	Subsidiaries	Total
As of December 2023			
Fixed-rate obligations:			
At fair value	**$ 10,563**	**$ 1,654**	**$ 12,217**
At amortized cost	**4,897**	**3,258**	**8,155**
Floating-rate obligations:			
At fair value	**18,402**	**55,791**	**74,193**
At amortized cost	**141,473**	**5,839**	**147,312**
Total	**$ 175,335**	**$ 66,542**	**$ 241,877**
As of December 2022			
Fixed-rate obligations:			
At fair value	$ 6,094	$ 53	$ 6,147
At amortized cost	2,667	3,398	6,065
Floating-rate obligations:			
At fair value	16,328	50,672	67,000
At amortized cost	160,884	7,042	167,926
Total	$ 185,973	$ 61,165	$ 247,138

In the table above, the aggregate amounts of unsecured long-term borrowings had weighted average interest rates of 6.13% (3.44% related to fixed-rate obligations and 6.27% related to floating-rate obligations) as of December 2023 and 4.97% (4.08% related to fixed-rate obligations and 5.00% related to floating-rate obligations) as of December 2022. These rates exclude unsecured long-term borrowings accounted for at fair value under the fair value option.

The carrying value of unsecured long-term borrowings for which the firm did not elect the fair value option was $155.47 billion as of December 2023 and $173.99 billion as of December 2022. The estimated fair value of such unsecured long-term borrowings was $157.75 billion as of December 2023 and $173.70 billion as of December 2022. As these borrowings are not accounted for at fair value, they are not included in the firm's fair value hierarchy in Notes 4 and 5. Had these borrowings been included in the firm's fair value hierarchy, substantially all would have been classified in level 2 as of both December 2023 and December 2022.

Subordinated Borrowings

Unsecured long-term borrowings includes subordinated debt and junior subordinated debt. Subordinated debt that matures within one year is included in unsecured short-term borrowings. Junior subordinated debt is junior in right of payment to other subordinated borrowings, which are junior to senior borrowings. Long-term subordinated debt had maturities ranging from 2025 to 2045 as of both December 2023 and December 2022.

The table below presents information about subordinated borrowings.

$ in millions	Par Amount	Carrying Value	Rate
As of December 2023			
Subordinated debt	**$ 12,215**	**$ 11,898**	**7.79 %**
Junior subordinated debt	**968**	**1,053**	**6.30 %**
Total	**$ 13,183**	**$ 12,951**	**7.68 %**
As of December 2022			
Subordinated debt	$ 12,261	$ 11,882	6.40 %
Junior subordinated debt	968	1,054	4.86 %
Total	$ 13,229	$ 12,936	6.29 %

In the table above:

- The par amount of subordinated debt issued by Group Inc. was $12.22 billion as of December 2023 and $12.26 billion as of December 2022, and the carrying value of subordinated debt issued by Group Inc. was $11.90 billion as of December 2023 and $11.88 billion as of December 2022.
- The rate is the weighted average interest rate for these borrowings (excluding borrowings accounted for at fair value under the fair value option), including the effect of fair value hedges used to convert fixed-rate obligations into floating-rate obligations. See Note 7 for further information about hedging activities.

Junior Subordinated Debt

In 2004, Group Inc. issued $2.84 billion of junior subordinated debt to Goldman Sachs Capital I, a Delaware statutory trust. Goldman Sachs Capital I issued $2.75 billion of guaranteed preferred beneficial interests (Trust Preferred securities) to third parties and $85 million of common beneficial interests to Group Inc. As of both December 2023 and December 2022, the outstanding par amount of junior subordinated debt held by Goldman Sachs Capital I was $968 million and the outstanding par amount of Trust Preferred securities and common beneficial interests issued by Goldman Sachs Capital I was $939 million and $29 million, respectively. Goldman Sachs Capital I is a wholly-owned finance subsidiary of the firm for regulatory and legal purposes but is not consolidated for accounting purposes.

The firm pays interest semi-annually on the junior subordinated debt at an annual rate of 6.345% and the debt matures on February 15, 2034. The coupon rate and the payment dates applicable to the beneficial interests are the same as the interest rate and payment dates for the junior subordinated debt. The firm has the right, from time to time, to defer payment of interest on the junior subordinated debt, and therefore cause payment on Goldman Sachs Capital I's preferred beneficial interests to be deferred, in each case up to ten consecutive semi-annual periods. During any such deferral period, the firm will not be permitted to, among other things, pay dividends on or make certain repurchases of its common stock. Goldman Sachs Capital I is not permitted to pay any distributions on the common beneficial interests held by Group Inc. unless all dividends payable on the preferred beneficial interests have been paid in full.

Note 15.

Other Liabilities

The table below presents other liabilities by type.

	As of December	
$ in millions	**2023**	2022
Compensation and benefits	**$ 7,804**	$ 7,225
Income tax-related liabilities	**2,947**	2,669
Operating lease liabilities	**2,232**	2,154
Noncontrolling interests	**363**	649
Employee interests in consolidated funds	**19**	25
Accrued expenses and other	**10,438**	8,733
Total	**$ 23,803**	$ 21,455

Operating Lease Liabilities

For leases longer than one year, the firm recognizes a right-of-use asset representing the right to use the underlying asset for the lease term, and a lease liability representing the liability to make payments. See Note 12 for information about operating lease right-of-use assets.

The table below presents information about operating lease liabilities.

$ in millions		Operating lease liabilities
As of December 2023		
2024	**$**	**325**
2025		**325**
2026		**288**
2027		**256**
2028		**231**
2029 - thereafter		**1,462**
Total undiscounted lease payments		**2,887**
Imputed interest		**(655)**
Total operating lease liabilities	**$**	**2,232**
Weighted average remaining lease term		**12 years**
Weighted average discount rate		**4.13 %**
As of December 2022		
2023	$	325
2024		334
2025		283
2026		236
2027		203
2028 - thereafter		1,424
Total undiscounted lease payments		2,805
Imputed interest		(651)
Total operating lease liabilities	$	2,154
Weighted average remaining lease term		13 years
Weighted average discount rate		3.66 %

In the table above, the weighted average discount rate represents the firm's incremental borrowing rate as of January 2019 for operating leases existing on the date of adoption of ASU No. 2016-02, "Leases (Topic 842)," and at the lease inception date for leases entered into subsequent to the adoption of this ASU.

Operating lease costs were $484 million for 2023, $462 million for 2022 and $463 million for 2021. Variable lease costs, which are included in operating lease costs, were not material for 2023, 2022 and 2021. Total occupancy expenses for space held in excess of the firm's current requirements were not material for 2023, 2022 and 2021.

Lease payments relating to operating lease arrangements that were signed but had not yet commenced were $1.18 billion as of December 2023.

Accrued Expenses and Other

Accrued expenses and other included:

- Liabilities classified as held for sale were approximately $257 million as of December 2023, substantially all of which related to GreenSky within Platform Solutions and consisted primarily of customer and other payables. Liabilities classified as held for sale were not material as of December 2022. See Note 12 for further information about assets held for sale.
- Contract liabilities, which represent consideration received by the firm in connection with its contracts with clients prior to providing the service, were $76 million as of December 2023 and $113 million as of December 2022.
- Accrued unfunded commitments related to investments in qualified affordable housing projects were $2.26 billion as of December 2023. See Note 18 for further information about the firm's commitments to invest in qualified affordable housing projects.

Note 16.

Securitization Activities

The firm securitizes residential and commercial mortgages, corporate bonds, loans and other types of financial assets by selling these assets to securitization vehicles (e.g., trusts, corporate entities and limited liability companies) or through a resecuritization. The firm acts as underwriter of the beneficial interests that are sold to investors. The firm's residential mortgage securitizations are primarily in connection with government agency securitizations.

The firm accounts for a securitization as a sale when it has relinquished control over the transferred financial assets. Prior to securitization, the firm generally accounts for assets pending transfer at fair value and therefore does not typically recognize significant gains or losses upon the transfer of assets. Net revenues from underwriting activities are recognized in connection with the sales of the underlying beneficial interests to investors.

The firm generally receives cash in exchange for the transferred assets but may also have continuing involvement with the transferred financial assets, including ownership of beneficial interests in securitized financial assets, primarily in the form of debt instruments. The firm may also purchase senior or subordinated securities issued by securitization vehicles (which are typically VIEs) in connection with secondary market-making activities.

The primary risks included in beneficial interests and other interests from the firm's continuing involvement with securitization vehicles are the performance of the underlying collateral, the position of the firm's investment in the capital structure of the securitization vehicle and the market yield for the security. Interests accounted for at fair value are primarily classified in level 2 of the fair value hierarchy. Interests not accounted for at fair value are carried at amounts that approximate fair value. See Note 4 for further information about fair value measurements.

The table below presents the amount of financial assets securitized and the cash flows received on retained interests in securitization entities in which the firm had continuing involvement as of the end of the period.

	Year Ended December		
$ in millions	**2023**	2022	2021
Residential mortgages	**$ 20,276**	$ 26,717	$ 29,048
Commercial mortgages	**4,446**	13,935	18,396
Other financial assets	**5,951**	3,617	4,377
Total financial assets securitized	**$ 30,673**	$ 44,269	$ 51,821
Retained interests cash flows	**$ 493**	$ 551	$ 513

The firm securitized assets of $369 million during 2023, $792 million during 2022 and $886 million during 2021, in a non-cash exchange for loans and investments.

The table below presents information about nonconsolidated securitization entities to which the firm sold assets and had continuing involvement as of the end of the period.

$ in millions	Outstanding Principal Amount	Retained Interests	Purchased Interests
As of December 2023			
U.S. government agency-issued CMOs	**$ 31,140**	**$ 2,260**	**$ –**
Other residential mortgage-backed	**28,767**	**1,162**	**78**
Other commercial mortgage-backed	**61,648**	**1,192**	**61**
Corporate debt and other asset-backed	**12,501**	**685**	**56**
Total	**$ 134,056**	**$ 5,299**	**$ 195**
As of December 2022			
U.S. government agency-issued CMOs	$ 38,617	$ 1,835	$ –
Other residential mortgage-backed	27,075	1,461	117
Other commercial mortgage-backed	59,688	1,349	82
Corporate debt and other asset-backed	8,750	398	46
Total	$ 134,130	$ 5,043	$ 245

In the table above:

- CMOs represents collateralized mortgage obligations.
- The outstanding principal amount is presented for the purpose of providing information about the size of the securitization entities and is not representative of the firm's risk of loss.
- The firm's risk of loss from retained or purchased interests is limited to the carrying value of these interests.
- Purchased interests represent senior and subordinated interests, purchased in connection with secondary market-making activities, in securitization entities in which the firm also holds retained interests.
- Substantially all of the total outstanding principal amount and total retained interests relate to securitizations during 2019 and thereafter.
- The fair value of retained interests was $5.26 billion as of December 2023 and $5.03 billion as of December 2022.

In addition to the interests in the table above, the firm had other continuing involvement in the form of derivative transactions and commitments with certain nonconsolidated VIEs. The carrying value of these derivatives and commitments was a net asset of $120 million as of December 2023 and $72 million as of December 2022, and the notional amount of these derivatives and commitments was $1.95 billion as of December 2023 and $1.90 billion as of December 2022. The notional amounts of these derivatives and commitments are included in maximum exposure to loss in the nonconsolidated VIE table in Note 17. Additionally, during 2023, the firm provided seller financing of approximately $2.7 billion in connection with the sale of $3.24 billion of Marcus loans and received $1.0 billion in principal and interest repayments from this financing. As of December 2023, the total outstanding principal amount of such seller financing was $1.81 billion.

The table below presents information about the weighted average key economic assumptions used in measuring the fair value of mortgage-backed retained interests.

$ in millions	As of December 2023	2022
Fair value of retained interests	**$ 4,590**	$ 4,644
Weighted average life (years)	**5.7**	6.6
Constant prepayment rate	**12.2%**	7.7%
Impact of 10% adverse change	**$ (50)**	$ (27)
Impact of 20% adverse change	**$ (94)**	$ (48)
Discount rate	**7.6%**	9.5%
Impact of 10% adverse change	**$ (117)**	$ (138)
Impact of 20% adverse change	**$ (226)**	$ (266)

In the table above:

- Amounts do not reflect the benefit of other financial instruments that are held to mitigate risks inherent in these retained interests.
- Changes in fair value based on an adverse variation in assumptions generally cannot be extrapolated because the relationship of the change in assumptions to the change in fair value is not usually linear.
- The impact of a change in a particular assumption is calculated independently of changes in any other assumption. In practice, simultaneous changes in assumptions might magnify or counteract the sensitivities disclosed above.
- The constant prepayment rate is included only for positions for which it is a key assumption in the determination of fair value.
- The discount rate for retained interests that relate to U.S. government agency-issued CMOs does not include any credit loss. Expected credit loss assumptions are reflected in the discount rate for the remainder of retained interests.

The firm has other retained interests not reflected in the table above with a fair value of $674 million and a weighted average life of 5.0 years as of December 2023, and a fair value of $384 million and a weighted average life of 6.4 years as of December 2022. Due to the nature and fair value of certain of these retained interests, the weighted average assumptions for constant prepayment and discount rates and the related sensitivity to adverse changes are not meaningful as of both December 2023 and December 2022. The firm's maximum exposure to adverse changes in the value of these interests is the carrying value of $685 million as of December 2023 and $398 million as of December 2022.

Note 17.

Variable Interest Entities

A variable interest in a VIE is an investment (e.g., debt or equity) or other interest (e.g., derivatives or loans and lending commitments) that will absorb portions of the VIE's expected losses and/or receive portions of the VIE's expected residual returns.

The firm's variable interests in VIEs include senior and subordinated debt; loans and lending commitments; limited and general partnership interests; preferred and common equity; derivatives that may include foreign currency, equity and/or credit risk; guarantees; and certain of the fees the firm receives from investment funds. Certain interest rate, foreign currency and credit derivatives the firm enters into with VIEs are not variable interests because they create, rather than absorb, risk.

VIEs generally finance the purchase of assets by issuing debt and equity securities that are either collateralized by or indexed to the assets held by the VIE. The debt and equity securities issued by a VIE may include tranches of varying levels of subordination. The firm's involvement with VIEs includes securitization of financial assets, as described in Note 16, and investments in and loans to other types of VIEs, as described below. See Note 3 for the firm's consolidation policies, including the definition of a VIE.

VIE Consolidation Analysis

The enterprise with a controlling financial interest in a VIE is known as the primary beneficiary and consolidates the VIE. The firm determines whether it is the primary beneficiary of a VIE by performing an analysis that principally considers:

- Which variable interest holder has the power to direct the activities of the VIE that most significantly impact the VIE's economic performance;
- Which variable interest holder has the obligation to absorb losses or the right to receive benefits from the VIE that could potentially be significant to the VIE;
- The VIE's purpose and design, including the risks the VIE was designed to create and pass through to its variable interest holders;
- The VIE's capital structure;
- The terms between the VIE and its variable interest holders and other parties involved with the VIE; and
- Related-party relationships.

The firm reassesses its evaluation of whether an entity is a VIE when certain reconsideration events occur. The firm reassesses its determination of whether it is the primary beneficiary of a VIE on an ongoing basis based on current facts and circumstances.

VIE Activities
The firm is principally involved with VIEs through the following business activities:

Mortgage-Backed VIEs. The firm sells residential and commercial mortgage loans and securities to mortgage-backed VIEs and may retain beneficial interests in the assets sold to these VIEs. The firm purchases and sells beneficial interests issued by mortgage-backed VIEs in connection with market-making activities. In addition, the firm may enter into derivatives with certain of these VIEs, primarily interest rate swaps, which are typically not variable interests. The firm generally enters into derivatives with other counterparties to mitigate its risk.

Real Estate, Credit- and Power-Related and Other Investing VIEs. The firm purchases equity and debt securities issued by and makes loans to VIEs that hold real estate (including qualified affordable housing projects), performing and nonperforming debt, distressed loans, power-related assets and equity securities. The firm generally does not sell assets to, or enter into derivatives with, these VIEs.

Corporate Debt and Other Asset-Backed VIEs. The firm structures VIEs that issue notes to clients, purchases and sells beneficial interests issued by corporate debt and other asset-backed VIEs in connection with market-making activities, and makes loans to VIEs that warehouse corporate debt. Certain of these VIEs synthetically create the exposure for the beneficial interests they issue by entering into credit derivatives with the firm, rather than purchasing the underlying assets. In addition, the firm may enter into derivatives, such as total return swaps, with certain corporate debt and other asset-backed VIEs, under which the firm pays the VIE a return due to the beneficial interest holders and receives the return on the collateral owned by the VIE. The collateral owned by these VIEs is primarily other asset-backed loans and securities. The firm may be removed as the total return swap counterparty and may enter into derivatives with other counterparties to mitigate its risk related to these swaps. The firm may sell assets to the corporate debt and other asset-backed VIEs it structures.

Principal-Protected Note VIEs. The firm structures VIEs that issue principal-protected notes to clients. These VIEs own portfolios of assets, principally with exposure to hedge funds. Substantially all of the principal protection on the notes issued by these VIEs is provided by the asset portfolio rebalancing that is required under the terms of the notes. The firm enters into total return swaps with these VIEs under which the firm pays the VIE the return due to the principal-protected note holders and receives the return on the assets owned by the VIE. The firm may enter into derivatives with other counterparties to mitigate its risk. The firm also obtains funding through these VIEs.

Investments in Funds. The firm makes equity investments in certain investment fund VIEs it manages and is entitled to receive fees from these VIEs. The firm has generally not sold assets to, or entered into derivatives with, these VIEs.

Nonconsolidated VIEs
The table below presents a summary of the nonconsolidated VIEs in which the firm holds variable interests.

	As of December	
$ in millions	**2023**	2022
Total nonconsolidated VIEs		
Assets in VIEs	**$ 193,934**	$ 181,697
Carrying value of variable interests — assets	**$ 15,478**	$ 12,325
Carrying value of variable interests — liabilities	**$ 2,750**	$ 659
Maximum exposure to loss:		
Retained interests	**$ 5,299**	$ 5,043
Purchased interests	**902**	861
Commitments and guarantees	**4,159**	3,087
Derivatives	**8,636**	8,802
Debt and equity	**6,927**	6,026
Total	**$ 25,923**	$ 23,819

In the table above:

- The nature of the firm's variable interests is described in the rows under maximum exposure to loss.
- The firm's exposure to the obligations of VIEs is generally limited to its interests in these entities. In certain instances, the firm provides guarantees, including derivative guarantees, to VIEs or holders of variable interests in VIEs.
- The maximum exposure to loss excludes the benefit of offsetting financial instruments that are held to mitigate the risks associated with these variable interests.
- The maximum exposure to loss from retained interests, purchased interests, and debt and equity is the carrying value of these interests.
- The maximum exposure to loss from commitments and guarantees, and derivatives is the notional amount, which does not represent anticipated losses and has not been reduced by unrealized losses. As a result, the maximum exposure to loss exceeds liabilities recorded for commitments and guarantees, and derivatives.

The table below presents information, by principal business activity, for nonconsolidated VIEs included in the summary table above.

$ in millions	As of December 2023	2022
Mortgage-backed		
Assets in VIEs	**$ 123,108**	$ 127,290
Carrying value of variable interests — assets	**$ 4,867**	$ 4,977
Maximum exposure to loss:		
Retained interests	**$ 4,614**	$ 4,645
Purchased interests	**253**	332
Commitments and guarantees	**35**	64
Derivatives	**2**	2
Total	**$ 4,904**	$ 5,043
Real estate, credit- and power-related and other investing		
Assets in VIEs	**$ 43,035**	$ 29,193
Carrying value of variable interests — assets	**$ 6,625**	$ 4,415
Carrying value of variable interests — liabilities	**$ 2,220**	$ 2
Maximum exposure to loss:		
Commitments and guarantees	**$ 3,891**	$ 2,679
Debt and equity	**4,733**	4,414
Total	**$ 8,624**	$ 7,093
Corporate debt and other asset-backed		
Assets in VIEs	**$ 23,188**	$ 19,428
Carrying value of variable interests — assets	**$ 3,895**	$ 2,817
Carrying value of variable interests — liabilities	**$ 530**	$ 657
Maximum exposure to loss:		
Retained interests	**$ 685**	$ 398
Purchased interests	**649**	529
Commitments and guarantees	**231**	190
Derivatives	**8,634**	8,800
Debt and equity	**2,103**	1,496
Total	**$ 12,302**	$ 11,413
Investments in funds		
Assets in VIEs	**$ 4,603**	$ 5,786
Carrying value of variable interests — assets	**$ 91**	$ 116
Maximum exposure to loss:		
Commitments and guarantees	**$ 2**	$ 154
Debt and equity	**91**	116
Total	**$ 93**	$ 270

As of both December 2023 and December 2022, the carrying values of the firm's variable interests in nonconsolidated VIEs are included in the consolidated balance sheets as follows:

- Mortgage-backed: Assets primarily included in trading assets and loans.
- Real estate, credit- and power-related and other investing: Assets primarily included in investments and other assets, and liabilities included in trading liabilities and other liabilities. See Note 18 for further information about the firm's commitments to invest in qualified affordable housing projects.
- Corporate debt and other asset-backed: Assets included in loans and trading assets, and liabilities included in trading liabilities.
- Investments in funds: Assets included in investments.

Consolidated VIEs

The table below presents a summary of the carrying value and balance sheet classification of assets and liabilities in consolidated VIEs.

$ in millions	As of December 2023	2022
Total consolidated VIEs		
Assets		
Cash and cash equivalents	**$ 439**	$ 348
Customer and other receivables	**347**	7
Trading assets	**95**	103
Investments	**80**	101
Loans	**267**	1,177
Other assets	**248**	336
Total	**$ 1,476**	$ 2,072
Liabilities		
Other secured financings	**$ 850**	$ 952
Customer and other payables	**2**	51
Trading liabilities	**–**	9
Unsecured short-term borrowings	**14**	58
Unsecured long-term borrowings	**17**	16
Other liabilities	**91**	112
Total	**$ 974**	$ 1,198

In the table above:

- Assets and liabilities are presented net of intercompany eliminations and exclude the benefit of offsetting financial instruments that are held to mitigate the risks associated with the firm's variable interests.
- VIEs in which the firm holds a majority voting interest are excluded if (i) the VIE meets the definition of a business and (ii) the VIE's assets can be used for purposes other than the settlement of its obligations.
- Substantially all assets can only be used to settle obligations of the VIE.

The table below presents information, by principal business activity, for consolidated VIEs included in the summary table above.

	As of December	
$ in millions	**2023**	2022
Real estate, credit-related and other investing		
Assets		
Cash and cash equivalents	**$ 417**	$ 339
Customer and other receivables	**–**	7
Trading assets	**28**	42
Investments	**80**	101
Loans	**267**	1,177
Other assets	**248**	336
Total	**$ 1,040**	$ 2,002
Liabilities		
Other secured financings	**$ 143**	$ 170
Customer and other payables	**2**	51
Trading liabilities	**–**	9
Other liabilities	**91**	112
Total	**$ 236**	$ 342
Corporate debt and other asset-backed		
Assets		
Cash and cash equivalents	**$ 22**	$ 9
Trading assets	**–**	20
Total	**$ 22**	$ 29
Liabilities		
Other secured financings	**$ 374**	$ 482
Total	**$ 374**	$ 482
Principal-protected notes		
Assets		
Customer and other receivables	**$ 347**	$ –
Trading assets	**67**	41
Total	**$ 414**	$ 41
Liabilities		
Other secured financings	**$ 333**	$ 300
Unsecured short-term borrowings	**14**	58
Unsecured long-term borrowings	**17**	16
Total	**$ 364**	$ 374

In the table above, creditors and beneficial interest holders of real estate, credit-related and other investing VIEs do not have recourse to the general credit of the firm.

Note 18.

Commitments, Contingencies and Guarantees

Commitments

The table below presents commitments by type.

	As of December	
$ in millions	**2023**	2022
Commitment Type		
Commercial lending:		
Investment-grade	**$ 111,202**	$ 100,438
Non-investment-grade	**54,298**	53,486
Warehouse financing	**9,184**	9,116
Consumer	**73,074**	64,098
Total lending	**247,758**	227,138
Risk participations	**8,167**	9,173
Collateralized agreement	**100,503**	105,301
Collateralized financing	**84,276**	22,532
Investment	**4,592**	7,705
Other	**8,258**	9,690
Total commitments	**$ 453,554**	$ 381,539

The table below presents commitments by expiration.

	As of December 2023			
$ in millions	**2024**	**2025 - 2026**	**2027 - 2028**	**2029 - Thereafter**
Commitment Type				
Commercial lending:				
Investment-grade	**$ 21,672**	**$ 37,000**	**$ 51,918**	**$ 612**
Non-investment-grade	**5,559**	**21,500**	**22,972**	**4,267**
Warehouse financing	**2,244**	**5,114**	**1,770**	**56**
Consumer	**73,073**	**1**	**–**	**–**
Total lending	**102,548**	**63,615**	**76,660**	**4,935**
Risk participations	**2,028**	**3,520**	**2,592**	**27**
Collateralized agreement	**98,860**	**1,191**	**–**	**452**
Collateralized financing	**84,130**	**–**	**–**	**146**
Investment	**947**	**430**	**352**	**2,863**
Other	**7,801**	**239**	**42**	**176**
Total commitments	**$ 296,314**	**$ 68,995**	**$ 79,646**	**$ 8,599**

In the tables above, in 2023, the firm made certain changes to its methodology for determining internal credit ratings. See Note 9 for further information about these changes. Prior period amounts have been conformed to reflect the current methodology. The impact to December 2022 was an increase in commercial lending commitments classified as investment-grade and a decrease in commercial lending commitments classified as non-investment-grade of $2.78 billion.

Lending Commitments

The firm's commercial and warehouse financing lending commitments are agreements to lend with fixed termination dates and depend on the satisfaction of all contractual conditions to borrowing. These commitments are presented net of amounts syndicated to third parties. The total commitment amount does not necessarily reflect actual future cash flows because the firm may syndicate portions of these commitments. In addition, commitments can expire unused or be reduced or cancelled at the counterparty's request. The firm also provides credit to consumers by issuing credit card lines and through commitments to provide unsecured installment loans.

The table below presents information about lending commitments.

	As of December	
$ in millions	**2023**	2022
Held for investment	**$ 227,865**	$ 222,689
Held for sale	**19,129**	3,355
At fair value	**764**	1,094
Total	**$ 247,758**	$ 227,138

In the table above:

- Held for investment lending commitments are accounted for at amortized cost. The carrying value of lending commitments was a liability of $845 million (including allowance for credit losses of $620 million) as of December 2023 and $1.01 billion (including allowance for credit losses of $774 million) as of December 2022. The estimated fair value of such lending commitments was a liability of $5.29 billion as of December 2023 and $5.95 billion as of December 2022. Had these lending commitments been carried at fair value and included in the fair value hierarchy, $3.10 billion as of December 2023 and $3.11 billion as of December 2022 would have been classified in level 2, and $2.19 billion as of December 2023 and $2.84 billion as of December 2022 would have been classified in level 3.
- Held for sale lending commitments are accounted for at the lower of cost or fair value. The carrying value of lending commitments held for sale was a liability of $70 million as of December 2023 and $88 million as of December 2022. The estimated fair value of such lending commitments approximates the carrying value. Had these lending commitments been included in the fair value hierarchy, they would have been primarily classified in level 3 as of both December 2023 and December 2022.
- Gains or losses related to lending commitments at fair value, if any, are generally recorded net of any fees in other principal transactions.

Commercial Lending. The firm's commercial lending commitments were primarily extended to investment-grade corporate borrowers. Such commitments primarily included $137.11 billion as of December 2023 and $127.60 billion as of December 2022, related to relationship lending activities (principally used for operating and general corporate purposes), and $4.21 billion as of December 2023 and $7.71 billion as of December 2022, related to other investment banking activities (generally extended for contingent acquisition financing and are often intended to be short-term in nature, as borrowers often seek to replace them with other funding sources). The firm also extends lending commitments in connection with other types of corporate lending, commercial real estate financing and other collateralized lending. See Note 9 for further information about funded loans.

To mitigate the credit risk associated with the firm's commercial lending activities, the firm obtains credit protection on certain loans and lending commitments through credit default swaps, both single-name and index-based contracts, and through the issuance of credit-linked notes.

Warehouse Financing. The firm provides financing to clients who warehouse financial assets. These arrangements are collateralized by the warehoused assets, primarily consisting of residential real estate, consumer and corporate loans.

Consumer. The firm's consumer lending commitments includes:

- Credit card lines issued by the firm to consumers were $70.82 billion as of December 2023 and $62.22 billion as of December 2022. As of December 2023, such credit card lines included $14.35 billion of commitments classified as held for sale in connection with the planned sale of the GM co-branded credit card portfolio. These credit card lines are cancellable by the firm.
- Commitments to provide unsecured installment loans to consumers were $2.25 billion as of December 2023. As of December 2023, such commitments were classified as held for sale in connection with the planned sale of GreenSky. As of December 2022, commitments to provide unsecured installment loans to consumers were $1.88 billion.

Risk Participations

The firm also risk participates certain of its commercial lending commitments to other financial institutions. In the event of a risk participant's default, the firm will be responsible to fund the borrower.

Collateralized Agreement Commitments/ Collateralized Financing Commitments

Collateralized agreement commitments includes forward starting resale and securities borrowing agreements, and collateralized financing commitments includes forward starting repurchase and secured lending agreements that settle at a future date, generally within three business days. Collateralized agreement commitments also includes transactions where the firm has entered into commitments to provide contingent financing to its clients and counterparties through resale agreements. The firm's funding of these commitments depends on the satisfaction of all contractual conditions to the resale agreement and these commitments can expire unused.

Investment Commitments

Investment commitments includes commitments to invest in private equity, real estate and other assets directly and through funds that the firm raises and manages. Investment commitments included $963 million as of December 2023 and $1.29 billion as of December 2022, related to commitments to invest in funds managed by the firm. If these commitments are called, they would be funded at market value on the date of investment. Beginning in the fourth quarter of 2023, commitments to invest in qualified affordable housing projects (accounted for using the proportional amortization method) that are contingent upon a future event that is probable to occur, are recognized within other assets and other liabilities in the consolidated balance sheet. Previously, such commitments were included in investment commitments. The impact of recognizing these commitments within other assets and other liabilities as of December 2022, would have been an increase in both other assets and other liabilities and a decrease in investment commitments of $1.13 billion.

Contingencies

Legal Proceedings. See Note 27 for information about legal proceedings.

Guarantees

The table below presents derivatives that meet the definition of a guarantee, securities lending and clearing guarantees and certain other financial guarantees.

$ in millions	Derivatives	Securities lending and clearing	Other financial guarantees
As of December 2023			
Carrying Value of Net Liability	**$ 5,240**	**$ –**	**$ 430**
Maximum Payout/Notional Amount by Period of Expiration			
2024	**$ 177,895**	**$ 28,787**	**$ 2,325**
2025 - 2026	**98,843**	**–**	**3,108**
2027 - 2028	**19,282**	**–**	**2,109**
2029 - thereafter	**29,030**	**–**	**231**
Total	**$ 325,050**	**$ 28,787**	**$ 7,773**
As of December 2022			
Carrying Value of Net Liability	$ 7,485	$ –	$ 395
Maximum Payout/Notional Amount by Period of Expiration			
2023	$ 110,599	$ 20,970	$ 1,634
2024 - 2025	133,090	–	3,308
2026 - 2027	20,252	–	1,837
2028 - thereafter	27,518	–	93
Total	$ 291,459	$ 20,970	$ 6,872

In the table above:

- The maximum payout is based on the notional amount of the contract and does not represent anticipated losses.
- Amounts exclude certain commitments to issue standby letters of credit that are included in lending commitments. See the tables in "Commitments" above for a summary of the firm's commitments.
- The carrying value for derivatives included derivative assets of $359 million as of December 2023 and $578 million as of December 2022, and derivative liabilities of $5.60 billion as of December 2023 and $8.06 billion as of December 2022.

Derivative Guarantees. The firm enters into various derivatives that meet the definition of a guarantee under U.S. GAAP, including written equity and commodity put options, written currency contracts and interest rate caps, floors and swaptions. These derivatives are risk managed together with derivatives that do not meet the definition of a guarantee, and therefore the amounts in the table above do not reflect the firm's overall risk related to derivative activities. Disclosures about derivatives are not required if they may be cash settled and the firm has no basis to conclude it is probable that the counterparties held the underlying instruments at the inception of the contract. The firm has concluded that these conditions have been met for certain large, internationally active commercial and investment bank counterparties, central clearing counterparties, hedge funds and certain other counterparties. Accordingly, the firm has not included such contracts in the table above. See Note 7 for information about credit derivatives that meet the definition of a guarantee, which are not included in the table above.

Derivatives are accounted for at fair value and therefore the carrying value is considered the best indication of payment/performance risk for individual contracts. However, the carrying values in the table above exclude the effect of counterparty and cash collateral netting.

Securities Lending and Clearing Guarantees. Securities lending and clearing guarantees include the indemnifications and guarantees that the firm provides in its capacity as an agency lender and in its capacity as a sponsoring member of the Fixed Income Clearing Corporation.

As an agency lender, the firm indemnifies most of its securities lending customers against losses incurred in the event that borrowers do not return securities and the collateral held is insufficient to cover the market value of the securities borrowed. The maximum payout of such indemnifications was $14.19 billion as of December 2023 and $12.23 billion as of December 2022. Collateral held by the lenders in connection with securities lending indemnifications was $14.63 billion as of December 2023 and $12.62 billion as of December 2022. Because the contractual nature of these arrangements requires the firm to obtain collateral with a market value that exceeds the value of the securities lent to the borrower, there is minimal performance risk associated with these indemnifications.

As a sponsoring member of the Government Securities Division of the Fixed Income Clearing Corporation, the firm guarantees the performance of its sponsored member clients to the Fixed Income Clearing Corporation in connection with certain resale and repurchase agreements. To minimize potential losses on such guarantees, the firm obtains a security interest in the collateral that the sponsored client placed with the Fixed Income Clearing Corporation. Therefore, the risk of loss on such guarantees is minimal. The maximum payout on this guarantee was $14.60 billion as of December 2023 and $8.74 billion as of December 2022. The related collateral held was $14.69 billion as of December 2023 and $8.70 billion as of December 2022.

Other Financial Guarantees. In the ordinary course of business, the firm provides other financial guarantees of the obligations of third parties (e.g., standby letters of credit and other guarantees to enable clients to complete transactions and fund-related guarantees). These guarantees represent obligations to make payments to beneficiaries if the guaranteed party fails to fulfill its obligation under a contractual arrangement with that beneficiary. Other financial guarantees also include a guarantee that the firm has provided to the Government of Malaysia that it will receive, by August 2025, at least $1.4 billion in assets and proceeds from assets seized by governmental authorities around the world related to 1Malaysia Development Berhad, a sovereign wealth fund in Malaysia (1MDB). In connection with this guarantee, the firm agreed to make a one-time interim payment of $250 million towards the $1.4 billion if the Government of Malaysia did not receive at least $500 million in assets and proceeds by August 2022. The firm does not believe that any interim payment is required. Any amounts paid by the firm would, in any event, be subject to reimbursement in the event the assets and proceeds received by the Government of Malaysia through August 18, 2028 exceed $1.4 billion.

On October 11, 2023, the firm filed a demand for arbitration alleging that the Government of Malaysia had, as of August 2022, recovered assets and proceeds well in excess of $500 million; it had recovered substantial additional assets and proceeds that should be credited against the guarantee; and it had not used all reasonable efforts to recover other assets and proceeds that could be credited against the guarantee. On November 8, 2023, the Government of Malaysia filed a response to the firm's demand for arbitration in which it stated that it intends to counterclaim for payment of the interim payment (plus interest) on the basis that it had recovered less than $500 million as of August 2022. The arbitral process is ongoing. See Note 27 for further information about matters related to 1MDB.

Guarantees of Securities Issued by Trusts. The firm has established trusts, including Goldman Sachs Capital I, Goldman Sachs Capital II and Goldman Sachs Capital III (the Trusts), and other entities, for the limited purpose of issuing securities to third parties, lending the proceeds to the firm and entering into contractual arrangements with the firm and third parties related to this purpose. The firm does not consolidate these entities. See Notes 14 and 19 for further information about the transactions involving the Trusts.

The firm effectively provides for the full and unconditional guarantee of the securities issued by these entities. Timely payment by the firm of amounts due to these entities under the guarantee, borrowing, preferred stock and related contractual arrangements will be sufficient to cover payments due on the securities issued by these entities. No subsidiary of Group Inc. guarantees the securities of the Trusts.

Management believes that it is unlikely that any circumstances will occur, such as nonperformance on the part of paying agents or other service providers, that would make it necessary for the firm to make payments related to these entities other than those required under the terms of the guarantee, borrowing, preferred stock and related contractual arrangements and in connection with certain expenses incurred by these entities.

Indemnities and Guarantees of Service Providers. In the ordinary course of business, the firm indemnifies and guarantees certain service providers, such as clearing and custody agents, trustees and administrators, against specified potential losses in connection with their acting as an agent of, or providing services to, the firm or its affiliates.

The firm may also be liable to some clients or other parties for losses arising from its custodial role or caused by acts or omissions of third-party service providers, including sub-custodians and third-party brokers. In certain cases, the firm has the right to seek indemnification from these third-party service providers for certain relevant losses incurred by the firm. In addition, the firm is a member of payment, clearing and settlement networks, as well as securities exchanges around the world that may require the firm to meet the obligations of such networks and exchanges in the event of member defaults and other loss scenarios.

In connection with the firm's prime brokerage and clearing businesses, the firm agrees to clear and settle transactions entered into by clients with other brokerage firms. The firm's obligations in respect of such transactions are secured by the assets in the client's account and proceeds received from the transactions cleared and settled by the firm on behalf of the client. In connection with joint venture investments, the firm may issue loan guarantees under which it may be liable in the event of fraud, misappropriation, environmental liabilities and other matters involving the borrower.

The firm is unable to develop an estimate of the maximum payout under these guarantees and indemnifications. However, management believes that it is unlikely the firm will have to make any material payments under these arrangements, and no material liabilities related to these guarantees and indemnifications have been recognized in the consolidated balance sheets as of both December 2023 and December 2022.

Other Representations, Warranties and Indemnifications. The firm provides representations and warranties to counterparties in connection with a variety of commercial transactions and occasionally indemnifies them against potential losses caused by the breach of those representations and warranties. The firm may also provide indemnifications protecting against changes in or adverse application of certain U.S. tax laws in connection with ordinary-course transactions, such as securities issuances, borrowings or derivatives.

In addition, the firm may provide indemnifications to some counterparties to protect them in the event additional taxes are owed or payments are withheld, due either to a change in or an adverse application of certain non-U.S. tax laws. These indemnifications, as well as indemnifications provided by the firm on other contractual or other obligations, generally are standard contractual terms and are entered into in the ordinary course of business. Generally, there are no stated or notional amounts included in these indemnifications, and the contingencies triggering the obligation to indemnify are not expected to occur. The firm is unable to develop an estimate of the maximum payout under these guarantees and indemnifications. However, management believes that it is unlikely the firm will have to make any material payments under these arrangements, and no material liabilities related to these arrangements have been recognized in the consolidated balance sheets as of both December 2023 and December 2022.

Guarantees of Subsidiaries. Group Inc. is the entity that fully and unconditionally guarantees the securities issued by GS Finance Corp., a wholly-owned finance subsidiary of the firm. Group Inc. has guaranteed the payment obligations of Goldman Sachs & Co. LLC (GS&Co.), GS Bank USA and Goldman Sachs Paris Inc. et Cie, subject to certain exceptions. In addition, Group Inc. has provided guarantees to Goldman Sachs International (GSI) and GSBE related to agreements that each entity has entered into with certain of its counterparties. Group Inc. guarantees many of the obligations of its other consolidated subsidiaries on a transaction-by-transaction basis, as negotiated with counterparties. Group Inc. is unable to develop an estimate of the maximum payout under its subsidiary guarantees. However, because these obligations are also obligations of consolidated subsidiaries, Group Inc.'s liabilities as guarantor are not separately disclosed.

Note 19.

Shareholders' Equity

Common Equity

As of both December 2023 and December 2022, the firm had 4.00 billion authorized shares of common stock and 200 million authorized shares of nonvoting common stock, each with a par value of $0.01 per share.

The firm's share repurchase program is intended to help maintain the appropriate level of common equity. The share repurchase program is effected primarily through regular open-market purchases (which may include repurchase plans designed to comply with Rule 10b5-1 and accelerated share repurchases), the amounts and timing of which are determined primarily by the firm's current and projected capital position, and capital deployment opportunities, but which may also be influenced by general market conditions and the prevailing price and trading volumes of the firm's common stock.

The table below presents information about common stock repurchases.

	Year Ended December		
in millions, except per share amounts	**2023**	2022	2021
Common share repurchases	**16.8**	10.1	15.3
Average cost per share	**$ 345.87**	$ 346.07	$ 339.81
Total cost of common share repurchases	**$ 5,796**	$ 3,500	$ 5,200

Pursuant to the terms of certain share-based compensation plans, employees may remit shares to the firm or the firm may cancel share-based awards to satisfy statutory employee tax withholding requirements. Under these plans, 868 shares in 2023, 11,644 shares in 2022 and 1,830 shares in 2021 were remitted with a total value of $0.3 million in 2023, $4 million in 2022 and $0.5 million in 2021, and the firm cancelled 3.9 million share-based awards in 2023, 4.6 million in 2022 and 3.4 million in 2021, with a total value of $1.35 billion in 2023, $1.59 billion in 2022 and $984 million in 2021.

The table below presents common stock dividends declared.

	Year Ended December		
	2023	2022	2021
Dividends declared per common share	**$ 10.50**	$ 9.00	$ 6.50

On January 12, 2024, the Board of Directors of Group Inc. (Board) declared a dividend of $2.75 per common share to be paid on March 28, 2024 to common shareholders of record on February 29, 2024.

Preferred Equity

The tables below present information about the perpetual preferred stock issued and outstanding as of December 2023.

Series	Shares Authorized	Shares Issued	Shares Outstanding	Depositary Shares Per Share
A	50,000	30,000	29,999	1,000
C	25,000	8,000	8,000	1,000
D	60,000	54,000	53,999	1,000
E	17,500	7,667	7,667	N.A.
F	5,000	1,615	1,615	N.A.
K	32,200	28,000	28,000	1,000
O	26,000	26,000	26,000	25
P	66,000	60,000	60,000	25
Q	20,000	20,000	20,000	25
R	24,000	24,000	24,000	25
S	14,000	14,000	14,000	25
T	27,000	27,000	27,000	25
U	30,000	30,000	30,000	25
V	30,000	30,000	30,000	25
W	60,000	60,000	60,000	25
Total	**486,700**	**420,282**	**420,280**	

Series	Earliest Redemption Date	Liquidation Preference	Redemption Value (*$ in millions*)
A	Currently redeemable	$ 25,000	**$ 750**
C	Currently redeemable	$ 25,000	**200**
D	Currently redeemable	$ 25,000	**1,350**
E	Currently redeemable	$ 100,000	**767**
F	Currently redeemable	$ 100,000	**161**
K	May 10, 2024	$ 25,000	**700**
O	November 10, 2026	$ 25,000	**650**
P	Currently redeemable	$ 25,000	**1,500**
Q	August 10, 2024	$ 25,000	**500**
R	February 10, 2025	$ 25,000	**600**
S	February 10, 2025	$ 25,000	**350**
T	May 10, 2026	$ 25,000	**675**
U	August 10, 2026	$ 25,000	**750**
V	November 10, 2026	$ 25,000	**750**
W	February 10, 2029	$ 25,000	**1,500**
Total			**$ 11,203**

In the tables above:

- All shares have a par value of $0.01 per share and, where applicable, each share is represented by the specified number of depositary shares.
- The earliest redemption date represents the date on which each share of non-cumulative preferred stock is redeemable at the firm's option.
- Prior to redeeming preferred stock, the firm must receive approval from the Board of Governors of the Federal Reserve System (FRB).
- In August 2023, the firm issued 60,000 shares of Series W 7.50% Fixed-Rate Reset Non-Cumulative Preferred Stock (Series W Preferred Stock).

- The redemption price per share for Series A through F and Series Q through W Preferred Stock is the liquidation preference plus declared and unpaid dividends. The redemption price per share for Series K through P Preferred Stock is the liquidation preference plus accrued and unpaid dividends.
- All series of preferred stock are pari passu and have a preference over the firm's common stock on liquidation.
- The firm's ability to declare or pay dividends on, or purchase, redeem or otherwise acquire, its common stock is subject to certain restrictions in the event that the firm fails to pay or set aside full dividends on the preferred stock for the latest completed dividend period.
- Series E and Series F Preferred Stock are held by Goldman Sachs Capital II and Goldman Sachs Capital III, respectively. These trusts are Delaware statutory trusts sponsored by the firm and wholly-owned finance subsidiaries of the firm for regulatory and legal purposes but are not consolidated for accounting purposes.

In 2023, the firm redeemed all outstanding shares of its Series J 5.50% Fixed-to-Floating Rate Non-Cumulative Preferred Stock (Series J Preferred Stock) with a redemption value of $1 billion ($25,000 per share), plus accrued and unpaid dividends. The difference between the redemption value and net carrying value was $10 million, which was recorded as an addition to preferred stock dividends in 2023.

In 2021, the firm redeemed all outstanding shares of its (i) Series N 6.30% Non-Cumulative Preferred Stock with a redemption value of $675 million ($25,000 per share), plus accrued and unpaid dividends and (ii) Series M 5.375% Fixed-to-Floating Rate Non-Cumulative Preferred Stock with a redemption value of $2 billion ($25,000 per share), plus accrued and unpaid dividends. The difference between the redemption value and net carrying value at the time of these redemptions was $41 million, which was recorded as an addition to preferred stock dividends in 2021.

The preferred stock issuance costs in the consolidated statements of shareholders' equity reflects reclassifications of issuance costs to retained earnings on redemptions, net of issuance costs relating to new issuances.

The table below presents the dividend rates of perpetual preferred stock as of December 2023.

Series	Per Annum Dividend Rate
A	3 month term SOFR + 1.01161%, with floor of 3.75%, payable quarterly
C	3 month term SOFR + 1.01161%, with floor of 4.00%, payable quarterly
D	3 month term SOFR + 0.93161%, with floor of 4.00%, payable quarterly
E	3 month term SOFR + 1.02911%, with floor of 4.00%, payable quarterly
F	3 month term SOFR + 1.03161%, with floor of 4.00%, payable quarterly
K	6.375% to, but excluding, May 10, 2024; 3 month term SOFR + 3.81161% thereafter, payable quarterly
O	5.30%, payable semi-annually, from issuance date to, but excluding, November 10, 2026; 3 month term SOFR + 4.09561%, payable quarterly, thereafter
P	3 month term SOFR + 3.13561%, payable quarterly
Q	5.50%, payable semi-annually, from issuance date to, but excluding, August 10, 2024; 5 year treasury rate + 3.623%, payable semi-annually, thereafter
R	4.95%, payable semi-annually, from issuance date to, but excluding, February 10, 2025; 5 year treasury rate + 3.224%, payable semi-annually, thereafter
S	4.40%, payable semi-annually, from issuance date to, but excluding, February 10, 2025; 5 year treasury rate + 2.85%, payable semi-annually thereafter
T	3.80%, payable semi-annually, from issuance date to, but excluding, May 10, 2026; 5 year treasury rate + 2.969%, payable semi-annually, thereafter
U	3.65%, payable semi-annually, from issuance date to, but excluding, August 10, 2026; 5 year treasury rate + 2.915%, payable semi-annually, thereafter
V	4.125%, payable semi-annually, from issuance date to, but excluding, November 10, 2026; 5 year treasury rate + 2.949%, payable semi-annually, thereafter
W	7.50%, payable semi-annually, from issuance date to, but excluding, February 10, 2029; 5 year treasury rate + 3.156%, payable semi-annually, thereafter

In the table above, dividends on each series of preferred stock are payable in arrears for the periods specified.

The table below presents preferred stock dividends declared.

	2023		2022		2021	
Series	per share	$ in millions	per share	$ in millions	per share	$ in millions
Year Ended December						
A	**$ 1,484.27**	**$ 44**	$ 950.51	$ 28	$ 950.51	$ 28
C	**$ 1,484.27**	**12**	$ 1,013.90	8	$ 1,013.90	8
D	**$ 1,463.99**	**79**	$ 1,013.90	55	$ 1,013.90	55
E	**$ 6,074.57**	**46**	$ 4,055.55	31	$ 4,055.55	31
F	**$ 6,077.09**	**10**	$ 4,055.55	6	$ 4,055.55	7
J	**$ 1,261.02**	**51**	$ 1,375.00	55	$ 1,375.00	55
K	**$ 1,593.76**	**44**	$ 1,593.76	45	$ 1,593.76	44
N	**$ –**	**–**	$ –	–	$ 787.50	19
O	**$ 1,325.00**	**34**	$ 1,325.00	34	$ 1,325.00	34
P	**$ 2,022.64**	**121**	$ 1,250.00	75	$ 1,250.00	75
Q	**$ 1,375.00**	**28**	$ 1,375.00	28	$ 1,375.00	28
R	**$ 1,237.50**	**30**	$ 1,237.50	30	$ 1,237.50	30
S	**$ 1,100.00**	**16**	$ 1,100.00	16	$ 1,100.00	15
T	**$ 950.00**	**26**	$ 950.00	26	$ 511.94	14
U	**$ 912.50**	**27**	$ 942.92	28	$ –	–
V	**$ 1,031.25**	**31**	$ 1,062.76	32	$ –	–
Total		**$ 599**		$ 497		$ 443

On January 10, 2024, Group Inc. declared dividends of $416.52 per share of Series A Preferred Stock, $416.52 per share of Series C Preferred Stock, $411.30 per share of Series D Preferred Stock, $398.44 per share of Series K Preferred Stock, $555.17 per share of Series P Preferred Stock, $687.50 per share of Series Q Preferred Stock, $618.75 per share of Series R Preferred Stock, $550.00 per share of Series S Preferred Stock, $456.25 per share of Series U Preferred Stock and $895.83 per share of Series W Preferred Stock that were paid on February 12, 2024 to preferred shareholders of record on January 28, 2024. In addition, the firm declared dividends of $1,619.35 per share of Series E Preferred Stock and $1,619.98 per share of Series F Preferred Stock to be paid on March 1, 2024 to preferred shareholders of record on February 15, 2024.

Accumulated Other Comprehensive Income/(Loss)

The table below presents changes in accumulated other comprehensive income/(loss), net of tax, by type.

$ in millions	Beginning balance	Other comprehensive income/(loss) adjustments, net of tax	Ending balance
Year Ended December 2023			
Currency translation	**$ (785)**	**$ (62)**	**$ (847)**
Debt valuation adjustment	**892**	**(1,015)**	**(123)**
Pension and postretirement liabilities	**(499)**	**(76)**	**(575)**
Available-for-sale securities	**(2,618)**	**1,245**	**(1,373)**
Total	**$ (3,010)**	**$ 92**	**$ (2,918)**
Year Ended December 2022			
Currency translation	$ (738)	$ (47)	$ (785)
Debt valuation adjustment	(511)	1,403	892
Pension and postretirement liabilities	(327)	(172)	(499)
Available-for-sale securities	(492)	(2,126)	(2,618)
Total	$ (2,068)	$ (942)	$ (3,010)
Year Ended December 2021			
Currency translation	$ (696)	$ (42)	$ (738)
Debt valuation adjustment	(833)	322	(511)
Pension and postretirement liabilities	(368)	41	(327)
Available-for-sale securities	463	(955)	(492)
Total	$ (1,434)	$ (634)	$ (2,068)

Note 20.

Regulation and Capital Adequacy

The FRB is the primary regulator of Group Inc., a bank holding company under the U.S. Bank Holding Company Act of 1956 and a financial holding company under amendments to this Act. The firm is subject to consolidated regulatory capital requirements which are calculated in accordance with the regulations of the FRB (Capital Framework).

The capital requirements are expressed as risk-based capital and leverage ratios that compare measures of regulatory capital to risk-weighted assets (RWAs), average assets and off-balance sheet exposures. Failure to comply with these capital requirements would result in restrictions being imposed by the firm's regulators and could limit the firm's ability to repurchase shares, pay dividends and make certain discretionary compensation payments. The firm's capital levels are also subject to qualitative judgments by the regulators about components of capital, risk weightings and other factors. Furthermore, certain of the firm's subsidiaries are subject to separate regulations and capital requirements.

Capital Framework

The regulations under the Capital Framework are largely based on the Basel Committee on Banking Supervision's (Basel Committee) capital framework for strengthening international capital standards (Basel III) and also implement certain provisions of the U.S. Dodd-Frank Wall Street Reform and Consumer Protection Act. Under the Capital Framework, the firm is an "Advanced approaches" banking organization and has been designated as a global systemically important bank (G-SIB).

The Capital Framework includes the minimum risk-based capital and the capital conservation buffer requirements. The buffer must consist entirely of capital that qualifies as Common Equity Tier 1 (CET1) capital.

The firm calculates its CET1 capital, Tier 1 capital and Total capital ratios in accordance with both the Standardized and Advanced Capital Rules. Each of the ratios calculated under the Standardized and Advanced Capital Rules must meet its respective capital requirements.

Under the Capital Framework, the firm is also subject to leverage requirements which consist of a minimum Tier 1 leverage ratio and a minimum supplementary leverage ratio (SLR), as well as the SLR buffer.

Consolidated Regulatory Capital Requirements

Risk-Based Capital Ratios. The table below presents the risk-based capital requirements.

	Standardized	Advanced
As of December 2023		
CET1 capital ratio	**13.0 %**	**10.0 %**
Tier 1 capital ratio	**14.5 %**	**11.5 %**
Total capital ratio	**16.5 %**	**13.5 %**
As of December 2022		
CET1 capital ratio	13.3 %	9.5 %
Tier 1 capital ratio	14.8 %	11.0 %
Total capital ratio	16.8 %	13.0 %

In the table above:

- As of both December 2023 and December 2022, under both the Standardized and Advanced Capital Rules, the CET1 capital ratio requirement includes a minimum of 4.5%, the Tier 1 capital ratio requirement includes a minimum of 6.0% and the Total capital ratio requirement includes a minimum of 8.0%. These requirements also include the capital conservation buffer requirements, consisting of the G-SIB surcharge (Method 2) of 3.0% as of December 2023 and 2.5% as of December 2022 and the countercyclical capital buffer, which the FRB has set to zero percent. In addition, the capital conservation buffer requirements include the stress capital buffer of 5.5% as of December 2023 and 6.3% as of December 2022 under the Standardized Capital Rules and a buffer of 2.5% as of both December 2023 and December 2022 under the Advanced Capital Rules.
- The G-SIB surcharge is updated annually based on financial data from the prior year and is generally applicable for the following year. The G-SIB surcharge is calculated using two methodologies, the higher of which is reflected in the firm's risk-based capital requirements. The first calculation (Method 1) is based on the Basel Committee's methodology which, among other factors, relies upon measures of the size, activity and complexity of each G-SIB. The second calculation (Method 2) uses similar inputs but includes a measure of reliance on short-term wholesale funding.

The table below presents information about risk-based capital ratios.

$ in millions	Standardized	Advanced
As of December 2023		
CET1 capital	**$ 99,442**	**$ 99,442**
Tier 1 capital	**$ 110,288**	**$ 110,288**
Tier 2 capital	**$ 14,874**	**$ 10,684**
Total capital	**$ 125,162**	**$ 120,972**
RWAs	**$ 692,737**	**$ 665,348**
CET1 capital ratio	**14.4 %**	**14.9 %**
Tier 1 capital ratio	**15.9 %**	**16.6 %**
Total capital ratio	**18.1 %**	**18.2 %**
As of December 2022		
CET1 capital	$ 98,050	$ 98,050
Tier 1 capital	$ 108,552	$ 108,552
Tier 2 capital	$ 15,958	$ 12,115
Total capital	$ 124,510	$ 120,667
RWAs	$ 653,419	$ 679,450
CET1 capital ratio	15.0 %	14.4 %
Tier 1 capital ratio	16.6 %	16.0 %
Total capital ratio	19.1 %	17.8 %

Leverage Ratios. The table below presents the leverage requirements.

	Requirements
Tier 1 leverage ratio	**4.0 %**
SLR	**5.0 %**

In the table above, the SLR requirement of 5% includes a minimum of 3% and a 2% buffer applicable to G-SIBs.

The table below presents information about leverage ratios.

	For the Three Months Ended or as of December	
$ in millions	**2023**	2022
Tier 1 capital	**$ 110,288**	$ 108,552
Average total assets	**$ 1,579,237**	$ 1,500,225
Deductions from Tier 1 capital	**(7,167)**	(8,259)
Average adjusted total assets	**1,572,070**	1,491,966
Off-balance sheet and other exposures	**423,686**	375,392
Total leverage exposure	**$ 1,995,756**	$ 1,867,358
Tier 1 leverage ratio	**7.0 %**	7.3%
SLR	**5.5 %**	5.8%

In the table above:

- Average total assets represents the average daily assets for the quarter adjusted for the impact of Current Expected Credit Losses (CECL) transition.
- Off-balance sheet and other exposures primarily includes the monthly average of off-balance sheet exposures, consisting of derivatives, securities financing transactions, commitments and guarantees.
- Tier 1 leverage ratio is calculated as Tier 1 capital divided by average adjusted total assets.
- SLR is calculated as Tier 1 capital divided by total leverage exposure.

Risk-Based Capital. The table below presents information about risk-based capital.

	As of December	
$ in millions	**2023**	2022
Common shareholders' equity	**$ 105,702**	$ 106,486
Impact of CECL transition	**553**	829
Deduction for goodwill	**(5,224)**	(5,674)
Deduction for identifiable intangible assets	**(950)**	(1,770)
Other adjustments	**(639)**	(1,821)
CET1 capital	**99,442**	98,050
Preferred stock	**11,203**	10,703
Deduction for investments in covered funds	**(354)**	(199)
Other adjustments	**(3)**	(2)
Tier 1 capital	**$ 110,288**	$ 108,552
Standardized Tier 2 and Total capital		
Tier 1 capital	**$ 110,288**	$ 108,552
Qualifying subordinated debt	**9,886**	10,637
Allowance for credit losses	**5,012**	5,331
Other adjustments	**(24)**	(10)
Standardized Tier 2 capital	**14,874**	15,958
Standardized Total capital	**$ 125,162**	$ 124,510
Advanced Tier 2 and Total capital		
Tier 1 capital	**$ 110,288**	$ 108,552
Standardized Tier 2 capital	**14,874**	15,958
Allowance for credit losses	**(5,012)**	(5,331)
Other adjustments	**822**	1,488
Advanced Tier 2 capital	**10,684**	12,115
Advanced Total capital	**$ 120,972**	$ 120,667

In the table above:

- Beginning in January 2022, the firm started to phase in the estimated reduction to regulatory capital as a result of adopting the CECL model. The total amount of reduction to be phased in from January 1, 2022 through January 1, 2025 (at 25% per year) was $1.11 billion, of which $553 million had been phased in as of December 2023. The total amount to be phased in includes the impact of adopting CECL as of January 1, 2020, as well as 25% of the increase in the allowance for credit losses from January 1, 2020 through December 31, 2021. The impact of CECL transition reflects the remaining amount of reduction to be phased in as of both December 2023 and December 2022.
- Deduction for goodwill was net of deferred tax liabilities of $692 million as of December 2023 and $700 million as of December 2022.
- Deduction for identifiable intangible assets was net of deferred tax liabilities of $227 million as of December 2023 and $239 million as of December 2022.
- Deduction for investments in covered funds represents the firm's aggregate investments in applicable covered funds as defined in the Volcker Rule.
- Other adjustments within CET1 capital and Tier 1 capital primarily include CVAs on derivative liabilities, the overfunded portion of the firm's defined benefit pension plan obligation net of associated deferred tax liabilities, disallowed deferred tax assets, debt valuation adjustments and other required credit risk-based deductions. Other adjustments within Advanced Tier 2 capital include eligible credit reserves.
- Qualifying subordinated debt is subordinated debt issued by Group Inc. with an original maturity of five years or greater. The outstanding amount of subordinated debt qualifying for Tier 2 capital is reduced upon reaching a remaining maturity of five years. See Note 14 for further information about the firm's subordinated debt.

The table below presents changes in CET1 capital, Tier 1 capital and Tier 2 capital.

$ in millions	Standardized	Advanced
Year Ended December 2023		
CET1 capital		
Beginning balance	**$ 98,050**	**$ 98,050**
Change in:		
Common shareholders' equity	**(784)**	**(784)**
Impact of CECL transition	**(276)**	**(276)**
Deduction for goodwill	**450**	**450**
Deduction for identifiable intangible assets	**820**	**820**
Other adjustments	**1,182**	**1,182**
Ending balance	**$ 99,442**	**$ 99,442**
Tier 1 capital		
Beginning balance	**$ 108,552**	**$ 108,552**
Change in:		
CET1 capital	**1,392**	**1,392**
Preferred stock	**500**	**500**
Deduction for investments in covered funds	**(155)**	**(155)**
Other adjustments	**(1)**	**(1)**
Ending balance	**110,288**	**110,288**
Tier 2 capital		
Beginning balance	**15,958**	**12,115**
Change in:		
Qualifying subordinated debt	**(751)**	**(751)**
Allowance for credit losses	**(319)**	**–**
Other adjustments	**(14)**	**(680)**
Ending balance	**14,874**	**10,684**
Total capital	**$ 125,162**	**$ 120,972**

RWAs. RWAs are calculated in accordance with both the Standardized and Advanced Capital Rules.

Credit Risk

Credit RWAs are calculated based on measures of exposure, which are then risk weighted under the Standardized and Advanced Capital Rules:

- The Standardized Capital Rules apply prescribed risk-weights, which depend largely on the type of counterparty. The exposure measures for derivatives and securities financing transactions are based on specific formulas which take certain factors into consideration.
- Under the Advanced Capital Rules, the firm computes risk-weights for wholesale and retail credit exposures in accordance with the Advanced Internal Ratings-Based approach. The exposure measures for derivatives and securities financing transactions are computed utilizing internal models.
- For both Standardized and Advanced credit RWAs, the risk-weights for securitizations and equities are based on specific required formulaic approaches.

Market Risk

RWAs for market risk in accordance with the Standardized and Advanced Capital Rules are generally consistent. Market RWAs are calculated based on measures of exposure which include the following:

- Value-at-Risk (VaR) is the potential loss in value of trading assets and liabilities, as well as certain investments, loans, and other financial assets and liabilities accounted for at fair value, due to adverse market movements over a defined time horizon with a specified confidence level.

For both risk management purposes and regulatory capital calculations, the firm uses a single VaR model which captures risks, including those related to interest rates, equity prices, currency rates and commodity prices. However, VaR used for risk management purposes differs from VaR used for regulatory capital requirements (regulatory VaR) due to differences in time horizons, confidence levels and the scope of positions on which VaR is calculated. For risk management purposes, a 95% one-day VaR is used, whereas for regulatory capital requirements, a 99% 10-day VaR is used to determine Market RWAs and a 99% one-day VaR is used to determine regulatory VaR exceptions. In addition, the daily net revenues used to determine risk management VaR exceptions (i.e., comparing the daily net revenues to the VaR measure calculated as of the end of the prior business day) include intraday activity, whereas the Capital Framework requires that intraday activity be excluded from daily net revenues when calculating regulatory VaR exceptions. Intraday activity includes bid/offer net revenues, which are more likely than not to be positive by their nature. As a result, there may be differences in the number of VaR exceptions and the amount of daily net revenues calculated for regulatory VaR compared to the amounts calculated for risk management VaR.

The firm's positional losses observed on a single day exceeded its 99% one-day regulatory VaR on one occasion during both 2023 and 2022. There was no change in the firm's VaR multiplier used to calculate Market RWAs;

- Stressed VaR is the potential loss in value of trading assets and liabilities, as well as certain investments, loans, and other financial assets and liabilities accounted for at fair value, during a period of significant market stress;
- Incremental risk is the potential loss in value of non-securitized positions due to the default or credit migration of issuers of financial instruments over a one-year time horizon;
- Comprehensive risk is the potential loss in value, due to price risk and defaults, within the firm's credit correlation positions; and
- Specific risk is the risk of loss on a position that could result from factors other than broad market movements, including event risk, default risk and idiosyncratic risk. The standardized measurement method is used to determine specific risk RWAs, by applying supervisory defined risk-weighting factors after applicable netting is performed.

Operational Risk

Operational RWAs are only required to be included under the Advanced Capital Rules. The firm utilizes an internal risk-based model to quantify Operational RWAs.

The table below presents information about RWAs.

$ in millions	Standardized	Advanced
As of December 2023		
Credit RWAs		
Derivatives	**$ 146,357**	**$ 96,322**
Commitments, guarantees and loans	**243,094**	**194,236**
Securities financing transactions	**103,704**	**23,637**
Equity investments	**34,223**	**36,920**
Other	**76,481**	**96,755**
Total Credit RWAs	**603,859**	**447,870**
Market RWAs		
Regulatory VaR	**16,457**	**16,457**
Stressed VaR	**48,496**	**48,496**
Incremental risk	**5,032**	**5,032**
Comprehensive risk	**2,718**	**2,718**
Specific risk	**16,175**	**16,175**
Total Market RWAs	**88,878**	**88,878**
Total Operational RWAs	**–**	**128,600**
Total RWAs	**$ 692,737**	**$ 665,348**
As of December 2022		
Credit RWAs		
Derivatives	$ 142,696	$ 111,344
Commitments, guarantees and loans	247,026	198,508
Securities financing transactions	73,189	21,659
Equity investments	30,899	33,451
Other	76,335	96,351
Total Credit RWAs	570,145	461,313
Market RWAs		
Regulatory VaR	18,981	18,981
Stressed VaR	37,833	37,833
Incremental risk	6,470	6,470
Comprehensive risk	3,641	3,641
Specific risk	16,349	16,349
Total Market RWAs	83,274	83,274
Total Operational RWAs	–	134,863
Total RWAs	$ 653,419	$ 679,450

In the table above:

- Securities financing transactions represents resale and repurchase agreements and securities borrowed and loaned transactions.
- Other includes receivables, certain debt securities, cash and cash equivalents, and other assets.

The table below presents changes in RWAs.

$ in millions	Standardized	Advanced
Year Ended December 2023		
RWAs		
Beginning balance	**$ 653,419**	**$ 679,450**
Credit RWAs		
Change in:		
Derivatives	**3,661**	**(15,022)**
Commitments, guarantees and loans	**(3,932)**	**(4,272)**
Securities financing transactions	**30,515**	**1,978**
Equity investments	**3,324**	**3,469**
Other	**146**	**404**
Change in Credit RWAs	**33,714**	**(13,443)**
Market RWAs		
Change in:		
Regulatory VaR	**(2,524)**	**(2,524)**
Stressed VaR	**10,663**	**10,663**
Incremental risk	**(1,438)**	**(1,438)**
Comprehensive risk	**(923)**	**(923)**
Specific risk	**(174)**	**(174)**
Change in Market RWAs	**5,604**	**5,604**
Change in Operational RWAs	**–**	**(6,263)**
Ending balance	**$ 692,737**	**$ 665,348**

RWAs Rollforward Commentary

Year Ended December 2023. Standardized Credit RWAs as of December 2023 increased by $33.71 billion compared with December 2022, primarily reflecting an increase in securities financing transactions (principally due to increased funding exposures). Standardized Market RWAs as of December 2023 increased by $5.60 billion compared with December 2022, primarily reflecting an increase in stressed VaR (principally due to increased exposures to interest rates), partially offset by a decrease in regulatory VaR (principally due to lower levels of market volatility).

Advanced Credit RWAs as of December 2023 decreased by $13.44 billion compared with December 2022, primarily reflecting a decrease in derivatives (principally due to reduced counterparty credit risk). Advanced Market RWAs as of December 2023 increased by $5.60 billion compared with December 2022, primarily reflecting an increase in stressed VaR (principally due to increased exposures to interest rates), partially offset by a decrease in regulatory VaR (principally due to lower levels of market volatility). Advanced Operational RWAs as of December 2023 decreased by $6.26 billion compared with December 2022, reflecting decreased frequency of loss events estimated by the firm’s risk-based model.

GS Bank USA

GS Bank USA is the firm's primary U.S. bank subsidiary. GS Bank USA is a New York State-chartered bank and a member of the Federal Reserve System, is supervised and regulated by the FRB, the FDIC, the New York State Department of Financial Services (NYDFS) and the Consumer Financial Protection Bureau (CFPB), and is subject to regulatory capital requirements that are calculated under the Capital Framework. GS Bank USA is an Advanced approaches banking organization under the Capital Framework. The deposits of GS Bank USA are insured by the FDIC to the extent provided by law.

The Capital Framework includes the minimum risk-based capital and the capital conservation buffer requirements (consisting of a 2.5% buffer and the countercyclical capital buffer). The buffer must consist entirely of capital that qualifies as CET1 capital. In addition, the Capital Framework includes the leverage ratio requirement.

GS Bank USA is required to calculate the CET1 capital, Tier 1 capital and Total capital ratios in accordance with both the Standardized and Advanced Capital Rules. The lower of each risk-based capital ratio under the Standardized and Advanced Capital Rules is the ratio against which GS Bank USA's compliance with its risk-based capital requirements is assessed. In addition, under the regulatory framework for prompt corrective action applicable to GS Bank USA, in order to meet the quantitative requirements for a "well-capitalized" depository institution, GS Bank USA must also meet the "well-capitalized" requirements in the table below. GS Bank USA's capital levels and prompt corrective action classification are also subject to qualitative judgments by the regulators about components of capital, risk weightings and other factors. Failure to comply with the capital requirements, including a breach of the buffers described below, would result in restrictions being imposed by the regulators.

The table below presents GS Bank USA's risk-based capital, leverage and "well-capitalized" requirements.

	Requirements	"Well-capitalized" Requirements
Risk-based capital requirements		
CET1 capital ratio	**7.0 %**	**6.5 %**
Tier 1 capital ratio	**8.5 %**	**8.0 %**
Total capital ratio	**10.5 %**	**10.0 %**
Leverage requirements		
Tier 1 leverage ratio	**4.0 %**	**5.0 %**
SLR	**3.0 %**	**6.0 %**

In the table above:

- The CET1 capital ratio requirement includes a minimum of 4.5%, the Tier 1 capital ratio requirement includes a minimum of 6.0% and the Total capital ratio requirement includes a minimum of 8.0%. These requirements also include the capital conservation buffer requirements consisting of a 2.5% buffer and the countercyclical capital buffer, which the FRB has set to zero percent.
- The "well-capitalized" requirements are the binding requirements for leverage ratios.

The table below presents information about GS Bank USA's risk-based capital ratios.

$ in millions	Standardized	Advanced
As of December 2023		
CET1 capital	**$ 53,781**	**$ 53,781**
Tier 1 capital	**$ 53,781**	**$ 53,781**
Tier 2 capital	**$ 6,314**	**$ 2,951**
Total capital	**$ 60,095**	**$ 56,732**
RWAs	**$ 380,774**	**$ 288,938**
CET1 capital ratio	**14.1 %**	**18.6 %**
Tier 1 capital ratio	**14.1 %**	**18.6 %**
Total capital ratio	**15.8 %**	**19.6 %**
As of December 2022		
CET1 capital	$ 46,845	$ 46,845
Tier 1 capital	$ 46,845	$ 46,845
Tier 2 capital	$ 8,042	$ 5,382
Total capital	$ 54,887	$ 52,227
RWAs	$ 357,112	$ 275,451
CET1 capital ratio	13.1 %	17.0 %
Tier 1 capital ratio	13.1 %	17.0 %
Total capital ratio	15.4 %	19.0 %

In the table above:

- The lower of the Standardized or Advanced ratio is the ratio against which GS Bank USA's compliance with the capital requirements is assessed under the risk-based Capital Rules, and therefore, the Standardized ratios applied to GS Bank USA as of both December 2023 and December 2022.
- Beginning in January 2022, GS Bank USA started to phase in the estimated reduction to regulatory capital as a result of adopting the CECL model at 25% per year through January 2025. The total amount to be phased in includes the impact of adopting CECL as of January 1, 2020, as well as 25% of the increase in the allowance for credit losses from January 1, 2020 through December 31, 2021.
- The Standardized and Advanced risk-based capital ratios increased from December 2022 to December 2023, reflecting an increase in capital, principally due to net earnings, partially offset by an increase in Credit RWAs.

The table below presents information about GS Bank USA's leverage ratios.

	For the Three Months Ended or as of December	
$ in millions	**2023**	2022
Tier 1 capital	**$ 53,781**	$ 46,845
Average adjusted total assets	**$ 523,546**	$ 499,108
Total leverage exposure	**$ 722,465**	$ 671,215
Tier 1 leverage ratio	**10.3 %**	9.4 %
SLR	**7.4 %**	7.0 %

In the table above:

- Average adjusted total assets represents the average daily assets for the quarter adjusted for deductions from Tier 1 capital and the impact of CECL transition.
- Tier 1 leverage ratio is calculated as Tier 1 capital divided by average adjusted total assets.
- SLR is calculated as Tier 1 capital divided by total leverage exposure.

The FRB requires that GS Bank USA maintain cash reserves with the Federal Reserve. As of both December 2023 and December 2022, the reserve requirement ratio was zero percent. See Note 26 for further information about cash deposits held by the firm at the Federal Reserve.

GS Bank USA is a registered swap dealer with the CFTC and a registered security-based swap dealer with the SEC. As of both December 2023 and December 2022, GS Bank USA was subject to and in compliance with applicable capital requirements for swap dealers and security-based swap dealers.

Restrictions on Payments

Group Inc. may be limited in its ability to access capital held at certain subsidiaries as a result of regulatory, tax or other constraints. These limitations include provisions of applicable law and regulations and other regulatory restrictions that limit the ability of those subsidiaries to declare and pay dividends without prior regulatory approval. For example, the amount of dividends that may be paid by GS Bank USA are limited to the lesser of the amounts calculated under a recent earnings test and an undivided profits test.

In addition, subsidiaries not subject to separate regulatory capital requirements may hold capital to satisfy local tax and legal guidelines, rating agency requirements (for entities with assigned credit ratings) or internal policies, including policies concerning the minimum amount of capital a subsidiary should hold based on its underlying level of risk.

Group Inc.'s equity investment in subsidiaries was $133.75 billion as of December 2023 and $134.59 billion as of December 2022, of which Group Inc. was required to maintain $95.80 billion as of December 2023 and $82.52 billion as of December 2022, of minimum equity capital in its regulated subsidiaries in order to satisfy the regulatory requirements of such subsidiaries.

Group Inc.'s capital invested in certain non-U.S. dollar functional currency subsidiaries is exposed to foreign exchange risk, substantially all of which is managed through a combination of non-U.S. dollar-denominated debt and derivatives. See Note 7 for information about the firm's net investment hedges used to hedge this risk.

Note 21.

Earnings Per Common Share

Basic earnings per common share (EPS) is calculated by dividing net earnings to common by the weighted average number of common shares outstanding and restricted stock units (RSUs) for which the delivery of the underlying common stock is not subject to satisfaction of future service, performance or market conditions (collectively, basic shares). Diluted EPS includes the determinants of basic EPS and, in addition, reflects the dilutive effect of the common stock deliverable for RSUs for which the delivery of the underlying common stock is subject to satisfaction of future service, performance or market conditions.

The table below presents information about basic and diluted EPS.

	Year Ended December		
in millions, except per share amounts	**2023**	2022	2021
Net earnings to common	**$ 7,907**	$ 10,764	$ 21,151
Weighted average basic shares	**340.8**	352.1	350.5
Effect of dilutive RSUs	**5.0**	6.0	5.3
Weighted average diluted shares	**345.8**	358.1	355.8
Basic EPS	**$ 23.05**	$ 30.42	$ 60.25
Diluted EPS	**$ 22.87**	$ 30.06	$ 59.45

In the table above:

- Net earnings to common represents net earnings applicable to common shareholders, which is calculated as net earnings less preferred stock dividends.
- Unvested share-based awards that have non-forfeitable rights to dividends or dividend equivalents are treated as a separate class of securities under the two-class method. Distributed earnings allocated to these securities reduce net earnings to common to calculate EPS under this method. The impact of applying this methodology was a reduction in basic EPS of $0.15 for both 2023 and 2022 and $0.10 for 2021.
- Diluted EPS does not include antidilutive RSUs, including those that are subject to market or performance conditions, of 0.4 million for 2023, 0.5 million for 2022 and 0.3 million for 2021.

Note 22.

Transactions with Affiliated Funds

The firm has formed nonconsolidated investment funds with third-party investors. As the firm generally acts as the investment manager for these funds, it is entitled to receive management fees and, in certain cases, advisory fees or incentive fees from these funds. Additionally, the firm invests alongside the third-party investors in certain funds.

The tables below present information about affiliated funds.

	Year Ended December		
$ in millions	**2023**	2022	2021
Fees earned from funds	**$ 4,726**	$ 4,553	$ 3,707

	As of December	
$ in millions	**2023**	2022
Fees receivable from funds	**$ 1,536**	$ 1,175
Aggregate carrying value of interests in funds	**$ 4,042**	$ 3,801

The firm has waived, and may waive in the future, certain management fees on selected money market funds to enhance the yield for investors in such funds. Management fees waived were $33 million for 2023, $123 million for 2022 and $595 million for 2021.

In accordance with the Volcker Rule, the firm does not provide financial support to covered funds. However, in the ordinary course of business, the firm may choose to provide voluntary financial support to funds that are not subject to the Volcker Rule, although any such support is not expected to be material to the results of operations of the firm. Except for the fee waivers noted above, the firm did not provide any additional financial support to its affiliated funds during either 2023 or 2022.

In addition, in the ordinary course of business, the firm may also engage in other activities with its affiliated funds, including, among others, securities lending, trade execution, market-making, custody, and acquisition and bridge financing. See Note 18 for information about the firm's investment commitments related to these funds.

Note 23.

Interest Income and Interest Expense

Interest is recorded over the life of the instrument on an accrual basis based on contractual interest rates.

The table below presents sources of interest income and interest expense.

	Year Ended December		
$ in millions	**2023**	2022	2021
Deposits with banks	**$ 10,949**	$ 3,233	$ (24)
Collateralized agreements	**16,405**	4,468	(980)
Trading assets	**8,460**	5,087	4,716
Investments	**3,856**	2,199	1,589
Loans	**14,905**	9,059	5,319
Other interest	**13,940**	4,978	1,500
Total interest income	**68,515**	29,024	12,120
Deposits	**17,010**	5,823	1,303
Collateralized financings	**12,705**	2,808	–
Trading liabilities	**2,453**	1,923	1,662
Short-term borrowings	**1,322**	541	527
Long-term borrowings	**11,084**	5,716	3,231
Other interest	**17,590**	4,535	(1,073)
Total interest expense	**62,164**	21,346	5,650
Net interest income	**$ 6,351**	$ 7,678	$ 6,470

In the table above:

- Collateralized agreements includes rebates paid and interest income on securities borrowed.
- Loans excludes interest on loans held for sale that are accounted for at the lower of cost or fair value. Such interest is included within other interest.
- Other interest income includes interest income on customer debit balances, other interest-earning assets and loans held for sale that are accounted for at the lower of cost or fair value.
- Collateralized financings consists of repurchase agreements and securities loaned.
- Short- and long-term borrowings include both secured and unsecured borrowings.
- Other interest expense includes rebates received on other interest-bearing liabilities and interest expense on customer credit balances.

Note 24.

Income Taxes

Provision for Income Taxes

Income taxes are provided for using the asset and liability method under which deferred tax assets and liabilities are recognized for temporary differences between the financial reporting and tax bases of assets and liabilities. The firm reports interest expense related to income tax matters in provision for taxes and income tax penalties in other expenses.

The table below presents information about the provision for taxes.

	Year Ended December		
$ in millions	**2023**	2022	2021
Current taxes			
U.S. federal	**$ 1,230**	$ 2,356	$2,904
State and local	**389**	623	574
Non-U.S.	**1,964**	1,658	1,926
Total current tax expense	**3,583**	4,637	5,404
Deferred taxes			
U.S. federal	**(954)**	(2,079)	192
State and local	**(356)**	(436)	72
Non-U.S.	**(50)**	103	(259)
Total deferred tax (benefit)/expense	**(1,360)**	(2,412)	5
Provision for taxes	**$ 2,223**	$ 2,225	$ 5,409

The table below presents a reconciliation of the U.S. federal statutory income tax rate to the effective income tax rate.

	Year Ended December		
	2023	2022	2021
U.S. federal statutory income tax rate	**21.0 %**	21.0 %	21.0 %
State and local taxes, net of U.S. federal benefit	**0.6**	1.3	1.9
Settlement of employee share-based awards	**(1.8)**	(2.4)	(0.7)
Non-U.S. operations	**(2.4)**	(3.4)	(1.8)
GILTI	**4.4**	1.8	0.3
Tax credits	**(1.6)**	(0.9)	(0.6)
Tax-exempt income, including dividends	**(1.0)**	(2.2)	(0.5)
Non-deductible legal expenses	**0.2**	0.8	–
Other	**1.3**	0.5	0.4
Effective income tax rate	**20.7 %**	16.5 %	20.0 %

In the table above:

- Non-U.S. operations includes the impact of the Base Erosion and Anti-Abuse Tax.
- The firm recognizes income tax expense associated with Global Intangible Low Taxed Income (GILTI) in the period in which it is incurred.
- Beginning in the fourth quarter of 2023, GILTI is presented as a separate reconciliation item. Previously, GILTI was included in non-U.S. operations. Prior period amounts have been conformed to the current presentation.

Deferred Income Taxes

Deferred income taxes reflect the net tax effects of temporary differences between the financial reporting and tax bases of assets and liabilities. These temporary differences result in taxable or deductible amounts in future years and are measured using the tax rates and laws that will be in effect when such differences are expected to reverse. Valuation allowances are established to reduce deferred tax assets to the amount that more likely than not will be realized and primarily relate to the ability to utilize losses in various tax jurisdictions. Tax assets are included in other assets and tax liabilities are included in other liabilities.

The table below presents information about deferred tax assets and liabilities, excluding the impact of netting within tax jurisdictions.

	As of December	
$ in millions	**2023**	2022
Deferred tax assets		
Compensation and benefits	**$ 1,773**	$ 1,889
ASC 740 asset related to unrecognized tax benefits	**331**	315
Non-U.S. operations	**1,278**	1,224
Unrealized losses	**2,100**	887
Net operating losses	**929**	787
Occupancy-related	**98**	123
Other comprehensive income/(loss)-related	**1,198**	1,225
Tax credits carryforward	**236**	87
Operating lease liabilities	**636**	587
Allowance for credit losses	**1,450**	1,580
Other, net	**165**	221
Subtotal	**10,194**	8,925
Valuation allowance	**(1,978)**	(1,569)
Total deferred tax assets	**$ 8,216**	$ 7,356
Deferred tax liabilities		
Depreciation and amortization	**$ 752**	$ 1,240
Operating lease right-of-use assets	**574**	556
Total deferred tax liabilities	**$ 1,326**	$ 1,796

The firm has recorded deferred tax assets of $929 million as of December 2023 and $787 million as of December 2022, in connection with U.S. federal, state and local and foreign net operating loss carryforwards. The firm also recorded a valuation allowance of $396 million as of December 2023 and $301 million as of December 2022, related to these net operating loss carryforwards.

As of December 2023, the U.S. federal net operating loss carryforward was $1.8 billion, the state and local net operating loss carryforward was $2.7 billion, and the foreign net operating loss carryforward was $1.6 billion. If not utilized, the U.S. federal, the state and local, and foreign net operating loss carryforwards will begin to expire in 2024. If these carryforwards expire, they will not have a material impact on the firm's results of operations. As of December 2023, the firm has recorded deferred tax assets of $172 million in connection with foreign tax credit carryforwards and a related valuation allowance of $172 million. As of December 2023, the firm has recorded deferred tax assets of $46 million in connection with general business credit carryforwards and $18 million in connection with state and local tax credit carryforwards. If not utilized, the foreign tax credit carryforward will begin to expire in 2033, the general business credit carryforward will begin to expire in 2024 and the state and local tax credit carryforward will begin to expire in 2026.

As of both December 2023 and December 2022, the firm had no U.S. capital loss carryforwards and no related net deferred income tax assets. As of December 2023, the firm had deferred tax assets of $328 million in connection with foreign capital loss carryforwards and a valuation allowance of $308 million related to these capital loss carryforwards.

The valuation allowance increased by $409 million during 2023 and $674 million during 2022. The increases in both 2023 and 2022 were primarily due to an increase in deferred tax assets from which the firm does not expect to realize any benefit.

The firm permanently reinvested eligible earnings of certain foreign subsidiaries. As of both December 2023 and December 2022, all U.S. taxes were accrued on these subsidiaries' distributable earnings.

Unrecognized Tax Benefits

The firm recognizes tax positions in the consolidated financial statements only when it is more likely than not that the position will be sustained on examination by the relevant taxing authority based on the technical merits of the position. A position that meets this standard is measured at the largest amount of benefit that will more likely than not be realized on settlement. A liability is established for differences between positions taken in a tax return and amounts recognized in the consolidated financial statements.

The accrued liability for interest expense related to income tax matters and income tax penalties was $320 million as of December 2023 and $205 million as of December 2022. The firm recognized interest expense and income tax penalties of $90 million for 2023, $59 million for 2022 and $13 million for 2021. It is reasonably possible that unrecognized tax benefits could change significantly during the twelve months subsequent to December 2023 due to potential audit settlements. However, at this time it is not possible to estimate any potential change.

The table below presents the changes in the liability for unrecognized tax benefits, which is included in other liabilities.

	Year Ended or as of December		
$ in millions	**2023**	2022	2021
Beginning balance	**$ 1,533**	$ 1,446	$ 1,251
Increases based on current year tax positions	**143**	190	297
Increases based on prior years' tax positions	**164**	10	95
Decreases based on prior years' tax positions	**(92)**	(32)	(111)
Decreases related to settlements	**(20)**	(76)	(80)
Exchange rate fluctuations	**(2)**	(5)	(6)
Ending balance	**$ 1,726**	$ 1,533	$ 1,446

In the table above, the liability for unrecognized tax benefits included $1.4 billion as of December 2023, and $1.2 billion as of both December 2022 and December 2021 of unrecognized tax benefits which, if recognized, would reduce the annual effective tax rate. The remaining unrecognized tax benefits in the table above would not affect the annual tax rate, as such benefits have jurisdictional offsets or relate to temporary differences.

Regulatory Tax Examinations

The firm is subject to examination by the U.S. Internal Revenue Service (IRS) and other taxing authorities in jurisdictions where the firm has significant business operations, such as the United Kingdom, Japan, Hong Kong and various states, such as New York. The tax years under examination vary by jurisdiction. The firm does not expect completion of these audits to have a material impact on the firm's financial condition, but it may be material to operating results for a particular period, depending, in part, on the operating results for that period.

The table below presents the earliest tax years that remain subject to examination by major jurisdiction.

Jurisdiction	**As of December 2023**
U.S. Federal	**2011**
New York State and City	**2015**
United Kingdom	**2017**
Japan	**2017**
Hong Kong	**2017**

The firm has been accepted into the Compliance Assurance Process program by the IRS for each of the tax years from 2013 through 2024. This program allows the firm to work with the IRS to identify and resolve potential U.S. federal tax issues before the filing of tax returns. All issues for the 2011 through 2018 tax years have been resolved and completion is pending final review by the Joint Committee on Taxation. All issues for the 2019 through 2021 tax years have been resolved and will be effectively settled pending administrative completion by the IRS. Final completion of tax years 2011 through 2021 will not have a material impact on the effective tax rate. The 2022 tax year remains subject to post-filing review. New York State and City examinations of tax years 2015 through 2018 commenced during 2021.

All years, including and subsequent to the years in the table above, remain open to examination by the taxing authorities. The firm believes that the liability for unrecognized tax benefits it has established is adequate in relation to the potential for additional assessments.

Note 25.

Business Segments

The firm manages and reports its activities in three business segments: Global Banking & Markets, Asset & Wealth Management and Platform Solutions. See Note 1 for information about the firm's business segments.

Compensation and benefits expenses in the firm's segments reflect, among other factors, the overall performance of the firm, as well as the performance of individual businesses. Consequently, pre-tax margins in one segment of the firm's business may be significantly affected by the performance of the firm's other business segments.

The firm allocates assets (including allocations of global core liquid assets and cash, secured client financing and other assets), revenues and expenses among the three business segments. Due to the integrated nature of these segments, estimates and judgments are made in allocating certain assets, revenues and expenses. The allocation process is based on the manner in which management currently views the performance of the segments.

The allocation of common shareholders' equity and preferred stock dividends to each segment is based on the estimated amount of equity required to support the activities of the segment under relevant regulatory capital requirements.

Net earnings for each segment is calculated by applying the firmwide tax rate to each segment's pre-tax earnings.

Management believes that this allocation provides a reasonable representation of each segment's contribution to consolidated net earnings to common, return on average common equity and total assets. Transactions between segments are based on specific criteria or approximate third-party rates.

Segment Results

The table below presents a summary of the firm's segment results.

	Year Ended December		
$ in millions	**2023**	2022	2021
Global Banking & Markets			
Non-interest revenues	**$ 29,254**	$ 30,042	$ 34,079
Net interest income	**742**	2,445	2,655
Total net revenues	**29,996**	32,487	36,734
Provision for credit losses	**401**	468	(171)
Operating expenses	**18,040**	17,851	19,542
Pre-tax earnings	**$ 11,555**	$ 14,168	$ 17,363
Net earnings	**$ 9,163**	$ 11,830	$ 13,890
Net earnings to common	**$ 8,703**	$ 11,458	$ 13,535
Average common equity	**$ 71,863**	$ 69,951	$ 60,064
Return on average common equity	**12.1 %**	16.4 %	22.5 %
Asset & Wealth Management			
Non-interest revenues	**$ 10,790**	$ 9,843	$ 18,922
Net interest income	**3,090**	3,533	3,043
Total net revenues	**13,880**	13,376	21,965
Provision for credit losses	**(508)**	519	(169)
Operating expenses	**13,029**	11,550	11,406
Pre-tax earnings	**$ 1,359**	$ 1,307	$ 10,728
Net earnings	**$ 1,078**	$ 1,092	$ 8,582
Net earnings to common	**$ 952**	$ 979	$ 8,459
Average common equity	**$ 30,078**	$ 31,762	$ 29,988
Return on average common equity	**3.2 %**	3.1 %	28.2 %
Platform Solutions			
Non-interest revenues	**$ (141)**	$ (198)	$ (132)
Net interest income	**2,519**	1,700	772
Total net revenues	**2,378**	1,502	640
Provision for credit losses	**1,135**	1,728	697
Operating expenses	**3,418**	1,763	990
Pre-tax earnings/(loss)	**$ (2,175)**	$ (1,989)	$ (1,047)
Net earnings/(loss)	**$ (1,725)**	$ (1,661)	$ (837)
Net earnings/(loss) to common	**$ (1,748)**	$ (1,673)	$ (843)
Average common equity	**$ 3,863**	$ 3,574	$ 1,777
Return on average common equity	**(45.2)%**	(46.8)%	(47.4)%
Total			
Non-interest revenues	**$ 39,903**	$ 39,687	$ 52,869
Net interest income	**6,351**	7,678	6,470
Total net revenues	**46,254**	47,365	59,339
Provision for credit losses	**1,028**	2,715	357
Operating expenses	**34,487**	31,164	31,938
Pre-tax earnings	**$ 10,739**	$ 13,486	$ 27,044
Net earnings	**$ 8,516**	$ 11,261	$ 21,635
Net earnings to common	**$ 7,907**	$ 10,764	$ 21,151
Average common equity	**$ 105,804**	$ 105,287	$ 91,829
Return on average common equity	**7.5 %**	10.2 %	23.0 %

In the table above:

- Revenues and expenses directly associated with each segment are included in determining pre-tax earnings.
- Net revenues in the firm's segments include allocations of interest income and expense to specific positions in relation to the cash generated by, or funding requirements of, such positions. Net interest is included in segment net revenues as it is consistent with how management assesses segment performance.
- Expenses not directly associated with specific segments are allocated based on an estimate of support provided to each segment.

The table below presents depreciation and amortization expense by segment.

	Year Ended December		
$ in millions	**2023**	2022	2021
Global Banking & Markets	**$ 1,109**	$ 1,033	$ 934
Asset & Wealth Management	**2,425**	1,212	1,003
Platform Solutions	**1,322**	210	78
Total	**$ 4,856**	$ 2,455	$ 2,015

In the table above:

- Asset & Wealth Management included impairments related to commercial real estate included within CIEs of $1.46 billion for 2023.
- Platform Solutions included the $506 million write-down related to GreenSky for 2023, and an impairment of goodwill of $504 million related to Consumer platforms for 2023.

Segment Assets

The table below presents assets by segment.

	As of December	
$ in millions	**2023**	2022
Global Banking & Markets	**$ 1,381,247**	$ 1,169,539
Asset & Wealth Management	**191,863**	214,970
Platform Solutions	**68,484**	57,290
Total	**$ 1,641,594**	$ 1,441,799

Geographic Information

Due to the highly integrated nature of international financial markets, the firm manages its businesses based on the profitability of the enterprise as a whole. The methodology for allocating profitability to geographic regions is dependent on estimates and management judgment because a significant portion of the firm's activities require cross-border coordination in order to facilitate the needs of the firm's clients. Geographic results are generally allocated as follows:

- Global Banking & Markets: Investment banking fees and Other: location of the client and investment banking team; FICC intermediation and Equities intermediation: location of the market-making desk; FICC financing and Equities financing: location of the desk.
- Asset & Wealth Management (excluding direct-to-consumer business, Equity investments and Debt investments): location of the sales team and/or investments; Direct-to-consumer business: location of the client; Equity investments and Debt investments: location of the investment or investment professional.
- Platform Solutions: location of the client.

The table below presents total net revenues, pre-tax earnings and net earnings by geographic region.

$ in millions	**2023**		2022		2021	
Year Ended December						
Americas	**$ 29,335**	**64 %**	$ 28,669	61 %	$ 37,217	63 %
EMEA	**11,744**	**25 %**	12,860	27 %	14,474	24 %
Asia	**5,175**	**11 %**	5,836	12 %	7,648	13 %
Total net revenues	**$ 46,254**	**100 %**	$ 47,365	100 %	$ 59,339	100 %
Americas	**$ 6,038**	**56 %**	$ 7,016	52 %	$ 17,314	64 %
EMEA	**4,033**	**38 %**	5,260	39 %	7,164	27 %
Asia	**668**	**6 %**	1,210	9 %	2,566	9 %
Total pre-tax earnings	**$ 10,739**	**100 %**	$ 13,486	100 %	$ 27,044	100 %
Americas	**$ 4,849**	**57 %**	$ 6,067	54 %	$ 13,796	64 %
EMEA	**3,137**	**37 %**	4,164	37 %	5,778	27 %
Asia	**530**	**6 %**	1,030	9 %	2,061	9 %
Total net earnings	**$ 8,516**	**100 %**	$ 11,261	100 %	$ 21,635	100 %

In the table above:

- Americas pre-tax earnings for 2023 were impacted by the impairments related to commercial real estate included within CIEs, the write-down related to GreenSky, the impairment of goodwill related to Consumer platforms and the FDIC special assessment fee.
- Substantially all of the amounts in Americas were attributable to the U.S.
- Asia includes Australia and New Zealand.

Note 26.

Credit Concentrations

The firm's concentrations of credit risk arise from its market-making, client facilitation, investing, underwriting, lending and collateralized transactions, and cash management activities, and may be impacted by changes in economic, industry or political factors. These activities expose the firm to many different industries and counterparties, and may also subject the firm to a concentration of credit risk to a particular central bank, counterparty, borrower or issuer, including sovereign issuers, or to a particular clearinghouse or exchange. The firm seeks to mitigate credit risk by actively monitoring exposures and obtaining collateral from counterparties as deemed appropriate.

The firm measures and monitors its credit exposure based on amounts owed to the firm after taking into account risk mitigants that the firm considers when determining credit risk. Such risk mitigants include netting and collateral arrangements and economic hedges, such as credit derivatives, futures and forward contracts. Netting and collateral agreements permit the firm to offset receivables and payables with such counterparties and/or enable the firm to obtain collateral on an upfront or contingent basis.

The table below presents the credit concentrations included in trading cash instruments and investments.

	As of December	
$ in millions	**2023**	2022
U.S. government and agency obligations	**$ 260,531**	$ 205,935
Percentage of total assets	**15.9 %**	14.3 %
Non-U.S. government and agency obligations	**$ 90,681**	$ 40,334
Percentage of total assets	**5.5 %**	2.8 %

In addition, the firm had $206.07 billion as of December 2023 and $208.53 billion as of December 2022 of cash deposits held at central banks (included in cash and cash equivalents), of which $105.66 billion as of December 2023 and $165.77 billion as of December 2022 was held at the Federal Reserve.

As of both December 2023 and December 2022, the firm did not have credit exposure to any other counterparty that exceeded 2% of total assets.

Collateral obtained by the firm related to derivative assets is principally cash and is held by the firm or a third-party custodian. Collateral obtained by the firm related to resale agreements and securities borrowed transactions is primarily U.S. government and agency obligations, and non-U.S. government and agency obligations. See Note 11 for further information about collateralized agreements and financings.

The table below presents U.S. government and agency obligations, and non-U.S. government and agency obligations that collateralize resale agreements and securities borrowed transactions.

	As of December	
$ in millions	**2023**	2022
U.S. government and agency obligations	**$ 154,056**	$ 164,897
Non-U.S. government and agency obligations	**$ 92,833**	$ 76,456

In the table above:

- Non-U.S. government and agency obligations primarily consists of securities issued by the governments of the U.K., Japan, Germany, France and Italy.
- Given that the firm's primary credit exposure on such transactions is to the counterparty to the transaction, the firm would be exposed to the collateral issuer only in the event of counterparty default.

Note 27.

Legal Proceedings

The firm is involved in a number of judicial, regulatory and arbitration proceedings (including those described below) concerning matters arising in connection with the conduct of the firm's businesses. Many of these proceedings are in early stages, and many of these cases seek an indeterminate amount of damages.

Under ASC 450, an event is "reasonably possible" if "the chance of the future event or events occurring is more than remote but less than likely" and an event is "remote" if "the chance of the future event or events occurring is slight." Thus, references to the upper end of the range of reasonably possible loss for cases in which the firm is able to estimate a range of reasonably possible loss mean the upper end of the range of loss for cases for which the firm believes the risk of loss is more than slight.

With respect to matters described below for which management has been able to estimate a range of reasonably possible loss where (i) actual or potential plaintiffs have claimed an amount of money damages, (ii) the firm is being, or threatened to be, sued by purchasers in a securities offering and is not being indemnified by a party that the firm believes will pay the full amount of any judgment, or (iii) the purchasers are demanding that the firm repurchase securities, management has estimated the upper end of the range of reasonably possible loss based on (a) in the case of (i), the amount of money damages claimed, (b) in the case of (ii), the difference between the initial sales price of the securities that the firm sold in such offering and the estimated lowest subsequent price of such securities prior to the action being commenced and (c) in the case of (iii), the price that purchasers paid for the securities less the estimated value, if any, as of December 2023 of the relevant securities, in each of cases (i), (ii) and (iii), taking into account any other factors believed to be relevant to the particular matter or matters of that type. As of the date hereof, the firm has estimated the upper end of the range of reasonably possible aggregate loss for such matters and for any other matters described below where management has been able to estimate a range of reasonably possible aggregate loss to be approximately $2.1 billion in excess of the aggregate reserves for such matters.

Management is generally unable to estimate a range of reasonably possible loss for matters other than those included in the estimate above, including where (i) actual or potential plaintiffs have not claimed an amount of money damages, except in those instances where management can otherwise determine an appropriate amount, (ii) matters are in early stages, (iii) matters relate to regulatory investigations or reviews, except in those instances where management can otherwise determine an appropriate amount, (iv) there is uncertainty as to the likelihood of a class being certified or the ultimate size of the class, (v) there is uncertainty as to the outcome of pending appeals or motions, (vi) there are significant factual issues to be resolved, and/or (vii) there are novel legal issues presented. For example, the firm's potential liabilities with respect to the investigations and reviews described below in "Regulatory Investigations and Reviews and Related Litigation" generally are not included in management's estimate of reasonably possible loss. However, management does not believe, based on currently available information, that the outcomes of such other matters will have a material adverse effect on the firm's financial condition, though the outcomes could be material to the firm's operating results for any particular period, depending, in part, upon the operating results for such period.

1MDB-Related Matters

Between 2012 and 2013, subsidiaries of the firm acted as arrangers or purchasers of approximately $6.5 billion of debt securities of 1MDB.

On November 1, 2018, the U.S. Department of Justice (DOJ) unsealed a criminal information and guilty plea by Tim Leissner, a former participating managing director of the firm, and an indictment against Ng Chong Hwa, a former managing director of the firm. On August 28, 2018, Leissner was adjudicated guilty by the U.S. District Court for the Eastern District of New York of conspiring to launder money and to violate the U.S. Foreign Corrupt Practices Act's (FCPA) anti-bribery and internal accounting controls provisions. Ng was charged with conspiring to launder money and to violate the FCPA's anti-bribery and internal accounting controls provisions, and on April 8, 2022, Ng was found guilty on all counts following a trial.

On August 18, 2020, the firm announced that it entered into a settlement agreement with the Government of Malaysia to resolve the criminal and regulatory proceedings in Malaysia involving the firm, which includes a guarantee that the Government of Malaysia receives at least $1.4 billion in assets and proceeds from assets seized by governmental authorities around the world related to 1MDB. See Note 18 for further information about this guarantee, including related arbitration proceedings.

On October 22, 2020, the firm announced that it reached settlements of governmental and regulatory investigations relating to 1MDB with the DOJ, the SEC, the FRB, the NYDFS, the Financial Conduct Authority, the Prudential Regulation Authority, the Singapore Attorney General's Chambers, the Singapore Commercial Affairs Department, the Monetary Authority of Singapore and the Hong Kong Securities and Futures Commission. Group Inc. entered into a three-year deferred prosecution agreement with the DOJ, in which a charge against the firm, one count of conspiracy to violate the FCPA, was filed and will be dismissed within six months after the October 22, 2023 expiration of the agreement if the firm has abided by the terms of the agreement. In addition, GS Malaysia pleaded guilty to one count of conspiracy to violate the FCPA, and was sentenced on June 9, 2021. In May 2021, the U.S. Department of Labor granted the firm a five-year exemption to maintain its status as a qualified professional asset manager (QPAM).

On December 20, 2018, a putative securities class action lawsuit was filed in the U.S. District Court for the Southern District of New York against Group Inc. and certain former officers of the firm alleging violations of the anti-fraud provisions of the Exchange Act with respect to Group Inc.'s disclosures and public statements concerning 1MDB and seeking unspecified damages. The plaintiff filed the second amended complaint on October 28, 2019. On June 28, 2021, the court dismissed the claims against one of the individual defendants but denied the defendants' motion to dismiss with respect to the firm and the remaining individual defendants. On August 4, 2023, the plaintiff filed a third amended complaint. On September 29, 2023, the plaintiff moved for class certification.

Mortgage-Related Matters

Beginning in April 2010, a number of purported securities law class actions were filed in the U.S. District Court for the Southern District of New York challenging the adequacy of Group Inc.'s public disclosure of, among other things, the firm's activities in the collateralized debt obligation market, and the firm's conflict of interest management.

The consolidated amended complaint filed on July 25, 2011, which named as defendants Group Inc. and certain current and former officers and employees of Group Inc. and its affiliates, generally alleges violations of Sections 10(b) and 20(a) of the Exchange Act and seeks monetary damages. The defendants have moved for summary judgment. On April 7, 2020, the U.S. Court of Appeals for the Second Circuit affirmed the district court's August 14, 2018 grant of class certification. On June 21, 2021, the United States Supreme Court vacated the judgment of the Second Circuit and remanded the case for further proceedings, and on August 26, 2021, the Second Circuit vacated the district court's grant of class certification and remanded the case for further proceedings. On December 8, 2021, the district court granted the plaintiffs' motion for class certification. On March 9, 2022, the Second Circuit granted defendants' petition seeking interlocutory review of the district court's grant of class certification and on August 10, 2023, reversed the district court's class certification order and remanded with instructions to decertify the class. On November 16, 2023, the parties voluntarily dismissed the action with prejudice.

Complaints were filed in the U.S. District Court for the Southern District of New York on July 25, 2019 and May 29, 2020 against Goldman Sachs Mortgage Company and GS Mortgage Securities Corp. by U.S. Bank National Association, as trustee for two residential mortgage-backed securitization trusts that issued $1.7 billion of securities. The complaints generally allege that mortgage loans in the trusts failed to conform to applicable representations and warranties and seek specific performance or, alternatively, compensatory damages and other relief. On November 23, 2020, the court granted in part and denied in part defendants' motion to dismiss the complaint in the first action and denied defendants' motion to dismiss the complaint in the second action. On January 14, 2021, amended complaints were filed in both actions.

Currencies-Related Litigation

GS&Co. is among the defendants named in a putative class action filed in the U.S. District Court for the Southern District of New York on August 4, 2021. The amended complaint, filed on January 6, 2022, generally asserts claims under federal antitrust law and state common law in connection with an alleged conspiracy among the defendants to manipulate auctions for foreign exchange transactions on an electronic trading platform, as well as claims under the Racketeer Influenced and Corrupt Organizations Act. The complaint seeks declaratory and injunctive relief, as well as unspecified amounts of treble and other damages. On May 18, 2023, the court dismissed certain state common law claims, but denied dismissal of the remaining claims. On July 7, 2023, the plaintiffs filed a second amended complaint.

Banco Espirito Santo S.A. and Oak Finance

In December 2014, September 2015 and December 2015, the Bank of Portugal (BoP) rendered decisions to reverse an earlier transfer to Novo Banco of an $835 million facility agreement (the Facility), structured by GSI, between Oak Finance Luxembourg S.A. (Oak Finance), a special purpose vehicle formed in connection with the Facility, and Banco Espirito Santo S.A. (BES) prior to the failure of BES. In response, GSI and, with respect to the BoP's December 2015 decision, GSIB commenced actions beginning in February 2015 against Novo Banco S.A. (Novo Banco) in the English Commercial Court and the BoP in Portuguese Administrative Court. In July 2018, the English Supreme Court found that the English courts will not have jurisdiction over GSI's action unless and until the Portuguese Administrative Court finds against BoP in GSI's parallel action. In July 2018, the Liquidation Committee for BES issued a decision seeking to claw back from GSI $54 million paid to GSI and $50 million allegedly paid to Oak Finance in connection with the Facility, alleging that GSI acted in bad faith in extending the Facility, including because GSI allegedly knew that BES was at risk of imminent failure. In October 2018, GSI commenced an action in Lisbon Commercial Court challenging the Liquidation Committee's decision and has since also issued a claim against the Portuguese State seeking compensation for losses of approximately $222 million related to the failure of BES, together with a contingent claim for the $104 million sought by the Liquidation Committee. On April 11, 2023, GSI commenced administrative proceedings against the BoP, seeking the nullification of the BoP's September 2015 and December 2015 decisions on new grounds.

Financial Advisory Services

Group Inc. and certain of its affiliates are from time to time parties to various civil litigation and arbitration proceedings and other disputes with clients and third parties relating to the firm's financial advisory activities. These claims generally seek, among other things, compensatory damages and, in some cases, punitive damages, and in certain cases allege that the firm did not appropriately disclose or deal with conflicts of interest.

Archegos-Related Matters

GS&Co. is among the underwriters named as defendants in a putative securities class action filed on August 13, 2021 in New York Supreme Court, County of New York, relating to ViacomCBS Inc.'s (ViacomCBS) March 2021 public offerings of $1.7 billion of common stock and $1.0 billion of preferred stock. In addition to the underwriters, the defendants include ViacomCBS and certain of its officers and directors. GS&Co. underwrote 646,154 shares of common stock representing an aggregate offering price of approximately $55 million and 323,077 shares of preferred stock representing an aggregate offering price of approximately $32 million. The complaint asserts claims under the federal securities laws and alleges that the offering documents contained material misstatements and omissions, including, among other things, that the offering documents failed to disclose that Archegos Capital Management, LP (Archegos) had substantial exposure to ViacomCBS, including through total return swaps to which certain of the underwriters, including GS&Co., were allegedly counterparties, and that such underwriters failed to disclose their exposure to Archegos. On December 21, 2021, the plaintiffs filed a corrected amended complaint. The complaint seeks rescission and compensatory damages in unspecified amounts. On January 4, 2022, the plaintiffs moved for class certification. On February 6, 2023, the court dismissed the claims against ViacomCBS and the individual defendants, but denied the defendants' motions to dismiss with respect to GS&Co. and the other underwriter defendants. On February 15, 2023, the underwriter defendants appealed the court's denial of the motion to dismiss. On March 10, 2023, the plaintiffs appealed the court's dismissal of the claims against ViacomCBS and the individual defendants. On June 12, 2023, the court denied the underwriter defendants' motion to stay the proceedings pending their appeal of the court's denial of the motion to dismiss, and on November 2, 2023, the Appellate Division for the First Department affirmed the court's denial of the underwriter defendants' motion. On January 4, 2024, the court granted the plaintiffs' motion for class certification.

Group Inc. is also a defendant in putative securities class actions filed beginning in October 2021 and consolidated in the U.S. District Court for the Southern District of New York. The complaints allege that Group Inc., along with another financial institution, sold shares in Baidu Inc. (Baidu), Discovery Inc. (Discovery), GSX Techedu Inc. (Gaotu), iQIYI Inc. (iQIYI), Tencent Music Entertainment Group (Tencent), ViacomCBS, and Vipshop Holdings Ltd. (Vipshop) based on material nonpublic information regarding the liquidation of Archegos' position in Baidu, Discovery, Gaotu, iQIYI, Tencent, ViacomCBS and Vipshop, respectively. The complaints generally assert violations of Sections 10(b), 20A and 20(a) of the Exchange Act and seek unspecified damages. On June 13, 2022, the plaintiffs in the class actions filed amended complaints. On March 31, 2023, the court granted the defendants' motions to dismiss the amended complaints without prejudice. In May 2023, the plaintiffs in the class actions filed second amended complaints, and on July 18, 2023, the defendants moved to dismiss the second amended complaints.

On January 24, 2022, the firm received a demand from an alleged shareholder under Section 220 of the Delaware General Corporation Law for books and records relating to, among other things, the firm's involvement with Archegos and the firm's controls with respect to insider trading.

Silicon Valley Bank Matters

GS&Co. is among the underwriters named as defendants in a putative securities class action filed on April 7, 2023 and consolidated in the U.S. District Court for the Northern District of California and an individual action filed on January 25, 2024 in the same court relating to SVB Financial Group's (SVBFG) January 2021 public offerings of $500 million principal amount of senior notes and $750 million of depositary shares representing interests in preferred stock, March 2021 public offering of approximately $1.2 billion of common stock, May 2021 public offerings of $1.0 billion of depositary shares representing interests in preferred stock and $500 million principal amount of senior notes, August 2021 public offering of approximately $1.3 billion of common stock, and April 2022 public offering of $800 million aggregate principal amount of senior notes, among other public offerings of securities. In addition to the underwriters, the defendants include certain of SVBFG's officers and directors and its auditor. GS&Co. underwrote an aggregate of 831,250 depositary shares representing an aggregate offering price of approximately $831 million, an aggregate of 3,266,108 shares of common stock representing an aggregate offering price of approximately $1.8 billion and senior notes representing an aggregate price to the public of approximately $727 million. The complaints generally assert claims under the federal securities laws and allege that the offering documents contained material misstatements and omissions. The complaints seek compensatory damages in unspecified amounts. On March 17, 2023, SVBFG filed for Chapter 11 bankruptcy in the U.S. Bankruptcy Court for the Southern District of New York. On January 16, 2024, the plaintiffs filed a consolidated amended complaint in the putative class action.

The firm is also cooperating with and providing information to various governmental bodies in connection with their investigations and inquiries regarding SVBFG and its affiliates (collectively SVB), including the firm's business with SVB in or around March 2023, when SVB engaged the firm to assist with a proposed capital raise and SVB sold the firm a portfolio of securities.

Underwriting Litigation

Firm affiliates are among the defendants in a number of proceedings in connection with securities offerings. In these proceedings, including those described below, the plaintiffs assert class action or individual claims under federal and state securities laws and in some cases other applicable laws, allege that the offering documents for the securities that they purchased contained material misstatements and omissions, and generally seek compensatory and rescissory damages in unspecified amounts, as well as rescission. Certain of these proceedings involve additional allegations.

Uber Technologies, Inc. GS&Co. is among the underwriters named as defendants in several putative securities class actions filed beginning in September 2019 in California Superior Court, County of San Francisco and the U.S. District Court for the Northern District of California, relating to Uber Technologies, Inc.'s (Uber) $8.1 billion May 2019 initial public offering. In addition to the underwriters, the defendants include Uber and certain of its officers and directors. GS&Co. underwrote 35,864,408 shares of common stock representing an aggregate offering price of approximately $1.6 billion. On November 16, 2020, the court in the state court action granted defendants' motion to dismiss the consolidated amended complaint filed on February 11, 2020, and on December 16, 2020, plaintiffs appealed. On August 7, 2020, defendants' motion to dismiss the district court action was denied. On September 25, 2020, the plaintiffs in the district court action moved for class certification. On December 5, 2020, the plaintiffs in the state court action filed a complaint in the district court, which was consolidated with the existing district court action on January 25, 2021. On May 14, 2021, the plaintiffs filed a second amended complaint in the district court, purporting to add the plaintiffs from the state court action as additional class representatives. On October 1, 2021, defendants' motion to dismiss the additional class representatives from the second amended complaint was denied, and on July 26, 2022, the district court granted the plaintiffs' motion for class certification. On February 27, 2023, the U.S. Court of Appeals for the Ninth Circuit denied the defendants' petition seeking interlocutory review of the district court's grant of class certification.

GoHealth, Inc. GS&Co. is among the underwriters named as defendants in putative securities class actions filed beginning on September 21, 2020 and consolidated in the U.S. District Court for the Northern District of Illinois relating to GoHealth, Inc.'s (GoHealth) $914 million July 2020 initial public offering. In addition to the underwriters, the defendants include GoHealth, certain of its officers and directors and certain of its shareholders. GS&Co. underwrote 11,540,550 shares of common stock representing an aggregate offering price of approximately $242 million. On February 25, 2021, the plaintiffs filed a consolidated complaint. On April 5, 2022, the defendants' motion to dismiss the consolidated complaint was denied. On September 23, 2022, the plaintiffs moved for class certification. On February 21, 2024, the court preliminarily approved a settlement. Under the terms of the settlement, GS&Co. will not be required to contribute to the settlement.

Array Technologies, Inc. GS&Co. is among the underwriters named as defendants in a putative securities class action filed on May 14, 2021 in the U.S. District Court for the Southern District of New York relating to Array Technologies, Inc.'s (Array) $1.2 billion October 2020 initial public offering of common stock, $1.3 billion December 2020 offering of common stock and $993 million March 2021 offering of common stock. In addition to the underwriters, the defendants include Array and certain of its officers and directors. GS&Co. underwrote an aggregate of 31,912,213 shares of common stock in the three offerings representing an aggregate offering price of approximately $877 million. On December 7, 2021, the plaintiffs filed an amended consolidated complaint, and on May 19, 2023, the court granted the defendants' motion to dismiss the amended consolidated complaint. On July 5, 2023, the court denied the plaintiffs' request for leave to amend the amended consolidated complaint and dismissed the case with prejudice. On August 4, 2023, plaintiffs appealed to the U.S. Court of Appeals for the Second Circuit.

ContextLogic Inc. GS&Co. is among the underwriters named as defendants in putative securities class actions filed beginning on May 17, 2021 and consolidated in the U.S. District Court for the Northern District of California, relating to ContextLogic Inc.'s (ContextLogic) $1.1 billion December 2020 initial public offering of common stock. In addition to the underwriters, the defendants include ContextLogic and certain of its officers and directors. GS&Co. underwrote 16,169,000 shares of common stock representing an aggregate offering price of approximately $388 million. On July 15, 2022, the plaintiffs filed a consolidated amended complaint, and on March 10, 2023, the court granted the defendants' motion to dismiss the consolidated amended complaint with leave to amend. On April 10, 2023, the plaintiffs filed a second consolidated amended complaint, and on December 22, 2023, the court granted in part and denied in part the defendants' motion to dismiss the second consolidated amended complaint with leave to amend. On February 15, 2024, the plaintiffs filed a third consolidated amended complaint.

DiDi Global Inc. Goldman Sachs (Asia) L.L.C. (GS Asia) is among the underwriters named as defendants in putative securities class actions filed beginning on July 6, 2021 in the U.S. District Courts for the Southern District of New York and the Central District of California and New York Supreme Court, County of New York, relating to DiDi Global Inc.'s (DiDi) $4.4 billion June 2021 initial public offering of American Depositary Shares (ADS). In addition to the underwriters, the defendants include DiDi and certain of its officers and directors. GS Asia underwrote 104,554,000 ADS representing an aggregate offering price of approximately $1.5 billion. On September 22, 2021, plaintiffs in the California action voluntarily dismissed their claims without prejudice. On May 5, 2022, plaintiffs in the consolidated federal action filed a second consolidated amended complaint, which includes allegations of violations of Sections 10(b) and 20A of the Exchange Act against the underwriter defendants. On June 3, 2022, the defendants moved to dismiss the second consolidated amended complaint.

Vroom Inc. GS&Co. is among the underwriters named as defendants in an amended complaint for a putative securities class action filed on October 4, 2021 in the U.S. District Court for the Southern District of New York relating to Vroom Inc.'s (Vroom) approximately $589 million September 2020 public offering of common stock. In addition to the underwriters, the defendants include Vroom and certain of its officers and directors. GS&Co. underwrote 3,886,819 shares of common stock representing an aggregate offering price of approximately $212 million. On December 20, 2021, the defendants served a motion to dismiss the consolidated complaint.

Zymergen Inc. GS&Co. is among the underwriters named as defendants in a putative securities class action filed on August 4, 2021 in the U.S. District Court for the Northern District of California relating to Zymergen Inc.'s (Zymergen) $575 million April 2021 initial public offering of common stock. In addition to the underwriters, the defendants include Zymergen and certain of its officers and directors. GS&Co. underwrote 5,750,345 shares of common stock representing an aggregate offering price of approximately $178 million. On February 24, 2022, the plaintiffs filed an amended complaint, and on November 29, 2022, the court granted in part and denied in part the defendants' motion to dismiss the amended complaint, denying dismissal of the claims for violations of Section 11 of the Securities Act. On August 11, 2023, the court granted the plaintiffs' motion for class certification. On October 3, 2023, Zymergen and three affiliates filed Chapter 11 bankruptcy petitions in the U.S. Bankruptcy Court for the District of Delaware.

Waterdrop Inc. GS Asia is among the underwriters named as defendants in a putative securities class action filed on September 14, 2021 in the U.S. District Court for the Southern District of New York relating to Waterdrop Inc.'s (Waterdrop) $360 million May 2021 initial public offering of ADS. In addition to the underwriters, the defendants include Waterdrop and certain of its officers and directors. GS Asia underwrote 15,300,000 ADS representing an aggregate offering price of approximately $184 million. On February 21, 2022, the plaintiffs filed an amended complaint, and on February 3, 2023, the court granted the defendants' motion to dismiss the amended complaint. On January 16, 2024, the U.S. Court of Appeals for the Second Circuit affirmed the dismissal.

Sea Limited. GS Asia is among the underwriters named as defendants in putative securities class actions filed on February 11, 2022 and June 17, 2022, respectively, in New York Supreme Court, County of New York, relating to Sea Limited's approximately $4.0 billion September 2021 public offering of ADS and approximately $2.9 billion September 2021 public offering of convertible senior notes, respectively. In addition to the underwriters, the defendants include Sea Limited, certain of its officers and directors and certain of its shareholders. GS Asia underwrote 8,222,500 ADS representing an aggregate offering price of approximately $2.6 billion and convertible senior notes representing an aggregate offering price of approximately $1.9 billion. On August 3, 2022, the actions were consolidated, and on August 9, 2022, the plaintiffs filed a consolidated amended complaint. The defendants had previously moved to dismiss the action on July 15, 2022, with the parties stipulating that the motion would apply to the consolidated amended complaint. On May 15, 2023, the court granted the defendants' motion to dismiss the consolidated amended complaint with prejudice, and on June 15, 2023, the plaintiffs moved for a rehearing or for leave to amend the consolidated amended complaint and also appealed. On November 20, 2023, the court denied the plaintiffs' motion for a rehearing or for leave to amend.

Rivian Automotive Inc. GS&Co. is among the underwriters named as defendants in putative securities class actions filed on March 7, 2022 and February 28, 2023 in the U.S. District Court for the Central District of California and in the Superior Court of the State of California, County of Orange, respectively, relating to Rivian Automotive Inc.'s (Rivian) approximately $13.7 billion November 2021 initial public offering. In addition to the underwriters, the defendants include Rivian and certain of its officers and directors. GS&Co. underwrote 44,733,050 shares of common stock representing an aggregate offering price of approximately $3.5 billion. On March 2, 2023, the plaintiffs in the federal court action filed an amended consolidated complaint, and on July 3, 2023, the court denied the defendants' motion to dismiss the amended consolidated complaint. On June 30, 2023, the court in the state court action granted the defendants' motion to dismiss the complaint, and on September 1, 2023, the plaintiffs appealed. On December 1, 2023, the plaintiffs moved for class certification.

Natera Inc. GS&Co. is among the underwriters named as defendants in putative securities class actions in New York Supreme Court, County of New York and the U.S. District Court for the Western District of Texas filed on March 10, 2022 and October 7, 2022, respectively, relating to Natera Inc.'s (Natera) approximately $585 million July 2021 public offering of common stock. In addition to the underwriters, the defendants include Natera and certain of its officers and directors. GS&Co. underwrote 1,449,000 shares of common stock representing an aggregate offering price of approximately $164 million. On July 15, 2022, the parties in the state court action filed a stipulation and proposed order approving the discontinuance of the action without prejudice. On September 11, 2023, the federal court granted in part and denied in part the defendants' motion to dismiss.

Robinhood Markets, Inc. GS&Co. is among the underwriters named as defendants in a putative securities class action filed on December 17, 2021 in the U.S. District Court for the Northern District of California relating to Robinhood Markets, Inc.'s (Robinhood) approximately $2.2 billion July 2021 initial public offering. In addition to the underwriters, the defendants include Robinhood and certain of its officers and directors. GS&Co. underwrote 18,039,706 shares of common stock representing an aggregate offering price of approximately $686 million. On February 10, 2023, the court granted the defendants' motion to dismiss the complaint with leave to amend, and on March 13, 2023, the plaintiffs filed a second amended complaint. On January 24, 2024, the court granted the defendants' motion to dismiss the second amended complaint without leave to amend.

ON24, Inc. GS&Co. is among the underwriters named as defendants in a putative securities class action filed on November 3, 2021 in the U.S. District Court for the Northern District of California relating to ON24, Inc.'s (ON24) approximately $492 million February 2021 initial public offering of common stock. In addition to the underwriters, the defendants include ON24 and certain of its officers and directors, including a director who was a Managing Director of GS&Co. at the time of the initial public offering. GS&Co. underwrote 3,616,785 shares of common stock representing an aggregate offering price of approximately $181 million. On March 18, 2022, the plaintiffs filed a consolidated complaint, and on July 7, 2023, the court granted the defendants' motion to dismiss the consolidated complaint with leave to amend. On September 1, 2023, the plaintiffs filed an amended consolidated complaint, and on October 16, 2023, the defendants moved to dismiss the amended consolidated complaint.

Oscar Health, Inc. GS&Co. is among the underwriters named as defendants in a putative securities class action filed on May 12, 2022 in the U.S. District Court for the Southern District of New York relating to Oscar Health, Inc.'s (Oscar Health) approximately $1.4 billion March 2021 initial public offering. In addition to the underwriters, the defendants include Oscar Health and certain of its officers and directors. GS&Co. underwrote 12,760,633 shares of common stock representing an aggregate offering price of approximately $498 million. On December 5, 2022, the plaintiffs filed an amended complaint. On April 4, 2023, the defendants moved to dismiss the amended complaint.

Oak Street Health, Inc. GS&Co. is among the underwriters named as defendants in an amended complaint for a putative securities class action filed on May 25, 2022 in the U.S. District Court for the Northern District of Illinois relating to Oak Street Health, Inc.'s (Oak Street) $377 million August 2020 initial public offering, $298 million December 2020 secondary equity offering, $691 million February 2021 secondary equity offering and $747 million May 2021 secondary equity offering. In addition to the underwriters, the defendants include Oak Street, certain of its officers and directors and certain of its shareholders. GS&Co. underwrote 4,157,103 shares of common stock in the August 2020 initial public offering representing an aggregate offering price of approximately $87 million, 1,503,944 shares of common stock in the December 2020 secondary equity offering representing an aggregate offering price of approximately $69 million, 3,083,098 shares of common stock in the February 2021 secondary equity offering representing an aggregate offering price of approximately $173 million and 3,013,065 shares of common stock in the May 2021 secondary equity offering representing an aggregate offering price of approximately $187 million. On February 10, 2023, the court granted in part and denied in part the defendants' motion to dismiss, dismissing the claim alleging a violation of Section 12(a)(2) of the Securities Act and, with respect to the May 2021 secondary equity offering only, the claim alleging a violation of Section 11 of the Securities Act, but declining to dismiss the remaining claims. On December 15, 2023, the plaintiffs moved for class certification.

Reata Pharmaceuticals, Inc. GS&Co. is among the underwriters named as defendants in a consolidated amended complaint for a putative securities class action filed on June 21, 2022 in the U.S. District Court for the Eastern District of Texas relating to Reata Pharmaceuticals, Inc.'s (Reata) approximately $282 million December 2020 public offering of common stock. In addition to the underwriters, the defendants include Reata and certain of its officers and directors. GS&Co. underwrote 1,000,000 shares of common stock representing an aggregate offering price of approximately $141 million. On September 7, 2022, the defendants moved to dismiss the consolidated amended complaint. On November 27, 2023, the court preliminarily approved a settlement, which would not require a contribution from GS&Co.

Bright Health Group, Inc. GS&Co. is among the underwriters named as defendants in an amended complaint for a putative securities class action filed on June 24, 2022 in the U.S. District Court for the Eastern District of New York relating to Bright Health Group, Inc.'s (Bright Health) approximately $924 million June 2021 initial public offering of common stock. In addition to the underwriters, the defendants include Bright Health and certain of its officers and directors. GS&Co. underwrote 11,297,000 shares of common stock representing an aggregate offering price of approximately $203 million. On October 12, 2022, the defendants moved to dismiss the amended complaint.

17 Education & Technology Group Inc. GS Asia is among the underwriters named as defendants in a putative securities class action filed on July 19, 2022 in the U.S. District Court for the Central District of California and transferred to the U.S. District Court for the Southern District of New York in November 2022 relating to 17 Education & Technology Group Inc.'s (17EdTech) approximately $331 million December 2020 initial public offering of ADS. In addition to the underwriters, the defendants include 17EdTech and certain of its officers and directors. GS Asia underwrote 12,604,000 ADS representing an aggregate offering price of approximately $132 million. On January 31, 2023, the plaintiffs filed an amended complaint. On November 8, 2023, the court granted the defendants' motion to dismiss the amended complaint and denied the plaintiffs' request for leave to amend.

LifeStance Health Group, Inc. GS&Co. is among the underwriters named as defendants in a putative securities class action filed on August 10, 2022 in the U.S. District Court for the Southern District of New York relating to LifeStance Health Group, Inc.'s (LifeStance) approximately $828 million June 2021 initial public offering of common stock. In addition to the underwriters, the defendants include LifeStance and certain of its officers and directors. GS&Co. underwrote 10,580,000 shares of common stock representing an aggregate offering price of approximately $190 million. On December 19, 2022, the plaintiffs filed an amended complaint, and on April 10, 2023, the defendants' motion to dismiss the amended complaint was denied. On September 7, 2023, the court granted the plaintiffs' motion for class certification. On January 30, 2024, the court approved a settlement, which will not require a contribution from GS&Co.

MINISO Group Holding Limited. GS Asia is among the underwriters named as defendants in a putative securities class action filed on August 17, 2022 in the U.S. District Court for the Central District of California and transferred to the U.S. District Court for the Southern District of New York on November 18, 2022 relating to MINISO Group Holding Limited's (MINISO) approximately $656 million October 2020 initial public offering of ADS. In addition to the underwriters, the defendants include MINISO and certain of its officers and directors. GS Asia underwrote 16,408,093 ADS representing an aggregate offering price of approximately $328 million. On April 24, 2023, the plaintiffs filed a second amended complaint, and on June 23, 2023, the defendants moved to dismiss the second amended complaint.

Coupang, Inc. GS&Co. is among the underwriters named as defendants in a putative securities class action filed on August 26, 2022 in the U.S. District Court for the Southern District of New York relating to Coupang, Inc.'s (Coupang) approximately $4.6 billion March 2021 initial public offering of common stock. In addition to the underwriters, the defendants include Coupang and certain of its officers and directors. GS&Co. underwrote 42,900,000 shares of common stock representing an aggregate offering price of approximately $1.5 billion. On May 24, 2023, the plaintiffs filed an amended complaint, and on July 28, 2023, the defendants moved to dismiss the amended complaint.

Yatsen Holding Limited. GS Asia is among the underwriters named as defendants in a putative securities class action filed on September 23, 2022 in the U.S. District Court for the Southern District of New York relating to Yatsen Holding Limited's (Yatsen) approximately $617 million November 2020 initial public offering of ADS. In addition to the underwriters, the defendants include Yatsen and certain of its officers and directors. GS Asia underwrote 22,912,500 ADS representing an aggregate offering price of approximately $241 million. On October 4, 2023, the plaintiffs filed an amended complaint, and on December 4, 2023, the defendants moved to dismiss the amended complaint.

Rent the Runway, Inc. GS&Co. is among the underwriters named as defendants in a putative securities class action filed on November 14, 2022 in the U.S. District Court for the Eastern District of New York relating to Rent the Runway, Inc.'s (Rent the Runway) $357 million October 2021 initial public offering of common stock. In addition to the underwriters, the defendants include Rent the Runway and certain of its officers and directors. GS&Co. underwrote 5,254,304 shares of common stock representing an aggregate offering price of approximately $110 million. On September 5, 2023, the plaintiffs filed an amended complaint, and on October 20, 2023, the defendants served a motion to dismiss the amended complaint.

Opendoor Technologies Inc. GS&Co. is among the underwriters named as defendants in a putative securities class action filed on November 22, 2022 in the U.S. District Court for the District of Arizona relating to, among other things, Opendoor Technologies Inc.'s (Opendoor) approximately $886 million February 2021 public offering of common stock. In addition to the underwriters, the defendants include Opendoor and certain of its officers and directors. GS&Co. underwrote 10,173,401 shares of common stock representing an aggregate offering price of approximately $275 million. On April 17, 2023, the plaintiffs filed a consolidated amended complaint, and on June 30, 2023, the defendants moved to dismiss the consolidated amended complaint.

FIGS, Inc. GS&Co. is among the underwriters named as defendants in a putative securities class action filed on December 8, 2022 in the U.S. District Court for the Central District of California relating to FIGS, Inc.'s (FIGS) approximately $668 million May 2021 initial public offering and approximately $413 million September 2021 secondary equity offering. In addition to the underwriters, the defendants include FIGS, certain of its officers and directors and certain of its shareholders. GS&Co. underwrote 9,545,073 shares of common stock in the May 2021 initial public offering representing an aggregate offering price of approximately $210 million and 3,179,047 shares of common stock in the September 2021 secondary equity offering representing an aggregate offering price of approximately $128 million. On April 10, 2023, the plaintiffs filed a consolidated complaint, and on January 17, 2024, the court granted the defendants' motions to dismiss the consolidated complaint with leave to amend.

Silvergate Capital Corporation. GS&Co. is among the underwriters and sales agents named as defendants in a putative securities class action filed on January 19, 2023 in the U.S. District Court for the Southern District of California, as amended on May 11, 2023, relating to Silvergate Capital Corporation's (Silvergate) approximately $288 million January 2021 public offering of common stock, approximately $300 million "at-the-market" offering of common stock conducted from March through May 2021, approximately $200 million July 2021 public offering of depositary shares representing interests in preferred stock, and approximately $552 million December 2021 public offering of common stock. In addition to the underwriters and sales agents, the defendants include Silvergate and certain of its officers and directors. GS&Co. underwrote 1,711,313 shares of common stock in the January 2021 public offering of common stock representing an aggregate offering price of approximately $108 million, acted as a sales agent with respect to up to a $300 million aggregate offering price of shares of common stock in the March through May 2021 "at-the-market" offering, underwrote 1,600,000 depositary shares in the July 2021 public offering representing an aggregate offering price of approximately $40 million, and underwrote 1,375,397 shares of common stock in the December 2021 public offering of common stock representing an aggregate offering price of approximately $199 million. On July 10, 2023, the defendants moved to dismiss the consolidated amended complaint.

Centessa Pharmaceuticals plc. GS&Co. is among the underwriters named as defendants in an amended complaint for a putative securities class action filed on February 10, 2023 in the U.S. District Court for the Southern District of New York relating to Centessa Pharmaceuticals plc's (Centessa) approximately $380 million May 2021 initial public offering of ADS. In addition to the underwriters, the defendants include Centessa and certain of its officers and directors. GS&Co. underwrote 6,072,000 ADS representing an aggregate offering price of approximately $121 million. On June 7, 2023, the defendants moved to dismiss the amended complaint.

iQIYI, Inc. GS Asia is among the underwriters named as defendants in a putative securities class action filed on June 1, 2021 in the U.S. District Court for the Eastern District of New York relating to iQIYI's approximately $2.4 billion March 2018 initial public offering of ADS. In addition to the underwriters, the defendants include iQIYI, certain of its officers and directors and its controlling shareholder. GS Asia underwrote 69,751,212 ADS representing an aggregate offering price of approximately $1.3 billion. On November 30, 2022, the defendants served a motion to dismiss the amended complaint.

F45 Training Holdings Inc. GS&Co. is among the underwriters named as defendants in an amended complaint for a putative securities class action filed on May 19, 2023 in the U.S. District Court for the Western District of Texas relating to F45 Training Holdings Inc.'s (F45) approximately $350 million July 2021 initial public offering of common stock. In addition to the underwriters, the defendants include F45, certain of its officers and directors and certain of its shareholders. GS&Co. acted as a qualified independent underwriter for the offering and underwrote 8,303,744 shares of common stock representing an aggregate offering price of approximately $133 million. On August 7, 2023, the defendants filed a motion to dismiss the amended complaint. On January 25, 2024, the plaintiffs filed a second amended complaint.

Olaplex Holdings, Inc. GS&Co. is among the underwriters named as defendants in a putative securities class action filed on April 28, 2023 in the U.S. District Court for the Central District of California relating to Olaplex Holdings, Inc.'s (Olaplex) approximately $1.8 billion September 2021 initial public offering of common stock. In addition to the underwriters, the defendants include Olaplex, certain of its officers and directors and selling shareholders. GS&Co. underwrote 19,419,420 shares of common stock representing an aggregate offering price of approximately $408 million. On June 22, 2023, the plaintiffs filed a revised consolidated complaint. On July 19, 2023, the defendants moved to dismiss the revised consolidated complaint.

Investment Management Services

Group Inc. and certain of its affiliates are parties to various civil litigation and arbitration proceedings and other disputes with clients relating to losses allegedly sustained as a result of the firm's investment management services. These claims generally seek, among other things, restitution or other compensatory damages and, in some cases, punitive damages.

Securities Lending Antitrust Litigation

Group Inc. and GS&Co. were among the defendants named in a putative antitrust class action and three individual actions relating to securities lending practices filed in the U.S. District Court for the Southern District of New York beginning in August 2017. The complaints generally assert claims under federal and state antitrust law and state common law in connection with an alleged conspiracy among the defendants to preclude the development of electronic platforms for securities lending transactions. The individual complaints also assert claims for tortious interference with business relations and under state trade practices law and, in the second and third individual actions, unjust enrichment under state common law. The complaints seek declaratory and injunctive relief, as well as unspecified amounts of compensatory, treble, punitive and other damages. Group Inc. was voluntarily dismissed from the putative class action on January 26, 2018. Defendants' motion to dismiss the class action complaint was denied on September 27, 2018. Defendants' motion to dismiss the first individual action was granted on August 7, 2019. On September 30, 2021, the defendants' motion to dismiss the second and third individual actions, which were consolidated in June 2019, was granted, and on March 24, 2023, the U.S. Court of Appeals for the Second Circuit affirmed the dismissal. On June 30, 2022, the Magistrate Judge recommended that the plaintiffs' motion for class certification in the putative class action be granted in part and denied in part. On August 15, 2022, the plaintiffs and defendants filed objections to the Magistrate Judge's report and recommendation with the district court. On September 1, 2023, the court preliminarily approved a settlement among the plaintiffs and certain defendants, including the firm, to resolve this action. The firm had reserved the full amount of its proposed contribution to the settlement.

Variable Rate Demand Obligations Antitrust Litigation

Group Inc. and GS&Co. were among the defendants named in a putative class action relating to variable rate demand obligations (VRDOs), filed beginning in February 2019 under separate complaints and consolidated in the U.S. District Court for the Southern District of New York. The consolidated amended complaint, filed on May 31, 2019, generally asserts claims under federal antitrust law and state common law in connection with an alleged conspiracy among the defendants to manipulate the market for VRDOs. The complaint seeks declaratory and injunctive relief, as well as unspecified amounts of compensatory, treble and other damages. Group Inc. was voluntarily dismissed from the putative class action on June 3, 2019. On November 2, 2020, the court granted in part and denied in part the defendants' motion to dismiss, dismissing the state common law claims against GS&Co., but denying dismissal of the federal antitrust law claims.

GS&Co. is also among the defendants named in a related putative class action filed on June 2, 2021 in the U.S. District Court for the Southern District of New York. The complaint alleges the same conspiracy in the market for VRDOs as that alleged in the consolidated amended complaint filed on May 31, 2019, and asserts federal antitrust law, state law and state common law claims against the defendants. The complaint seeks declaratory and injunctive relief, as well as unspecified amounts of compensatory, treble and other damages. On August 6, 2021, plaintiffs in the May 31, 2019 action filed an amended complaint consolidating the June 2, 2021 action with the May 31, 2019 action. On September 14, 2021, defendants filed a joint partial motion to dismiss the August 6, 2021 amended consolidated complaint. On June 28, 2022, the court granted in part and denied in part the defendants' motion to dismiss, dismissing the state breach of fiduciary duty claim against GS&Co., but declining to dismiss any portion of the federal antitrust law claims. On September 21, 2023, the court granted the plaintiffs' motion for class certification. On October 5, 2023, the defendants filed a petition with the U.S. Court of Appeals for the Second Circuit seeking interlocutory review of the district court's grant of class certification.

Interest Rate Swap Antitrust Litigation

Group Inc., GS&Co., GSI, GS Bank USA and Goldman Sachs Financial Markets, L.P. are among the defendants named in a putative antitrust class action relating to the trading of interest rate swaps, filed in November 2015 and consolidated in the U.S. District Court for the Southern District of New York. The same Goldman Sachs entities are also among the defendants named in two antitrust actions relating to the trading of interest rate swaps, commenced in April 2016 and June 2018, respectively, in the U.S. District Court for the Southern District of New York by three operators of swap execution facilities and certain of their affiliates. These actions have been consolidated for pretrial proceedings. The complaints generally assert claims under federal antitrust law and state common law in connection with an alleged conspiracy among the defendants to preclude exchange trading of interest rate swaps. The complaints in the individual actions also assert claims under state antitrust law. The complaints seek declaratory and injunctive relief, as well as treble damages in an unspecified amount. Defendants moved to dismiss the class and the first individual action and the district court dismissed the state common law claims asserted by the plaintiffs in the first individual action and otherwise limited the state common law claim in the putative class action and the antitrust claims in both actions to the period from 2013 to 2016. On November 20, 2018, the court granted in part and denied in part the defendants' motion to dismiss the second individual action, dismissing the state common law claims for unjust enrichment and tortious interference, but denying dismissal of the federal and state antitrust claims. On March 13, 2019, the court denied the plaintiffs' motion in the putative class action to amend their complaint to add allegations related to conduct from 2008 to 2012, but granted the motion to add limited allegations from 2013 to 2016, which the plaintiffs added in a fourth consolidated amended complaint filed on March 22, 2019. On December 15, 2023, the court denied the plaintiffs' motion for class certification, and on December 28, 2023, the plaintiffs filed a petition with the U.S. Court of Appeals for the Second Circuit seeking interlocutory review of the district court's denial of class certification.

Commodities-Related Litigation

GSI is among the defendants named in putative class actions relating to trading in platinum and palladium, filed beginning on November 25, 2014 and most recently amended on May 15, 2017, in the U.S. District Court for the Southern District of New York. The amended complaint generally alleges that the defendants violated federal antitrust laws and the Commodity Exchange Act in connection with an alleged conspiracy to manipulate a benchmark for physical platinum and palladium prices and seek declaratory and injunctive relief, as well as treble damages in an unspecified amount. On March 29, 2020, the court granted the defendants' motions to dismiss and for reconsideration, resulting in the dismissal of all claims, and on February 27, 2023, the U.S. Court of Appeals for the Second Circuit reversed the district court's dismissal of certain plaintiffs' antitrust claims and vacated the district court's dismissal of the plaintiffs' Commodity Exchange Act claim. On April 12, 2023, the defendants' petition for rehearing or rehearing en banc with the U.S. Court of Appeals for the Second Circuit was denied. On July 21, 2023, the defendants filed a motion for judgment on the pleadings.

GS&Co., GSI, J. Aron & Company LLC and Metro International Trade Services (Metro), a previously consolidated subsidiary of Group Inc. that was sold in the fourth quarter of 2014, are among the defendants in a number of putative class and individual actions filed beginning on August 1, 2013 and consolidated in the U.S. District Court for the Southern District of New York. The complaints generally allege violations of federal antitrust laws and state laws in connection with the storage of aluminum and aluminum trading. The complaints seek declaratory, injunctive and other equitable relief, as well as unspecified monetary damages, including treble damages. In December 2016, the district court granted defendants' motions to dismiss and on August 27, 2019, the Second Circuit vacated the district court's dismissals and remanded the case to district court for further proceedings. On July 23, 2020, the district court denied the class plaintiffs' motion for class certification, and on December 16, 2020 the Second Circuit denied leave to appeal the denial. On February 17, 2021, the district court granted defendants' motion for summary judgment with respect to the claims of most of the individual plaintiffs, and on November 1, 2023, the U.S. Court of Appeals for the Second Circuit affirmed the district court's judgment. On May 31, 2022, the two remaining individual plaintiffs entered into a settlement with the defendants. The firm has paid the full amount of its contribution to the settlement.

In connection with the sale of Metro, the firm agreed to provide indemnities to the buyer, including for any potential liabilities for legal or regulatory proceedings arising out of the conduct of Metro's business while the firm owned it.

U.S. Treasury Securities Litigation

GS&Co. is among the primary dealers named as defendants in several putative class actions relating to the market for U.S. Treasury securities, filed beginning in July 2015 and consolidated in the U.S. District Court for the Southern District of New York. GS&Co. is also among the primary dealers named as defendants in a similar individual action filed in the U.S. District Court for the Southern District of New York on August 25, 2017. The consolidated class action complaint, filed on December 29, 2017, generally alleges that the defendants violated antitrust laws in connection with an alleged conspiracy to manipulate the when-issued market and auctions for U.S. Treasury securities and that certain defendants, including GS&Co., colluded to preclude trading of U.S. Treasury securities on electronic trading platforms in order to impede competition in the bidding process. The individual action alleges a similar conspiracy regarding manipulation of the when-issued market and auctions, as well as related futures and options in violation of the Commodity Exchange Act. The complaints seek declaratory and injunctive relief, treble damages in an unspecified amount and restitution. Defendants' motion to dismiss was granted on March 31, 2021. On May 14, 2021, plaintiffs filed an amended complaint. Defendants' motion to dismiss the amended complaint was granted on March 31, 2022 and on February 1, 2024, the U.S. Court of Appeals for the Second Circuit affirmed the dismissal.

Corporate Bonds Antitrust Litigation

Group Inc. and GS&Co. are among the dealers named as defendants in a putative class action relating to the secondary market for odd-lot corporate bonds, filed on April 21, 2020 in the U.S. District Court for the Southern District of New York. The amended consolidated complaint, filed on October 29, 2020, asserts claims under federal antitrust law in connection with alleged anti-competitive conduct by the defendants in the secondary market for odd-lots of corporate bonds, and seeks declaratory and injunctive relief, as well as unspecified monetary damages, including treble and punitive damages and restitution. On October 25, 2021, the court granted defendants' motion to dismiss with prejudice. On November 23, 2021, plaintiffs appealed to the U.S. Court of Appeals for the Second Circuit. On November 10, 2022, the district court denied the plaintiffs' motion for an indicative ruling that the judgment should be vacated because the wife of the district judge owned stock in one of the defendants and the district judge did not recuse himself.

Credit Default Swap Antitrust Litigation

Group Inc., GS&Co. and GSI were among the defendants named in a putative antitrust class action relating to the settlement of credit default swaps, filed on June 30, 2021 in the U.S. District Court for the District of New Mexico. The complaint generally asserts claims under federal antitrust law and the Commodity Exchange Act in connection with an alleged conspiracy among the defendants to manipulate the benchmark price used to value credit default swaps for settlement. The complaint also asserts a claim for unjust enrichment under state common law. The complaint seeks declaratory and injunctive relief, as well as unspecified amounts of treble and other damages. On November 15, 2021, the defendants filed a motion to dismiss the complaint. On February 4, 2022, the plaintiffs filed an amended complaint and voluntarily dismissed Group Inc. from the action. On June 5, 2023, the court dismissed the claims against certain foreign defendants for lack of personal jurisdiction but denied the defendants' motion to dismiss with respect to GS&Co., GSI and the remaining defendants. On January 24, 2024, the court granted the defendants' motion to stay the proceedings pending the resolution of the motion filed by the defendants on November 3, 2023 in the U.S. District Court for the Southern District of New York to enforce a 2015 settlement and release among the parties. On January 26, 2024, the U.S. District Court for the Southern District of New York granted the defendants' motion to enforce the settlement and release and enjoined the plaintiffs from pursuing any claims against the defendants in the New Mexico action for any alleged violation of law based on conduct before June 30, 2014.

Employment-Related Matters

On September 15, 2010, a putative class action was filed in the U.S. District Court for the Southern District of New York by three female former employees. The complaint, as subsequently amended, alleges that Group Inc. and GS&Co. have systematically discriminated against female employees in respect of compensation, promotion and performance evaluations. The complaint alleges a class consisting of all female employees employed at specified levels in specified areas by Group Inc. and GS&Co. since July 2002, and asserts claims under federal and New York City discrimination laws.

On November 7, 2023, the court approved a settlement among the parties pursuant to which the firm made a payment of $215 million. The settlement also provides that the firm will engage an independent expert to complete standard validation studies of its performance evaluation and promotion from vice president to managing director processes, continue or implement certain practices as part of its performance evaluation and promotion processes, and engage an independent expert to perform an annual pay equity analysis for the 2023, 2024 and 2025 year-end compensation cycles.

Consumer Investigation and Review

The firm is cooperating with the CFPB and other governmental bodies relating to investigations and/or inquiries concerning GS Bank USA's credit card account management practices and is providing information regarding the application of refunds, crediting of nonconforming payments, billing error resolution, advertisements, reporting to credit bureaus, and any other consumer-related information requested by them.

Regulatory Investigations and Reviews and Related Litigation

Group Inc. and certain of its affiliates are subject to a number of other investigations and reviews by, and in some cases have received subpoenas and requests for documents and information from, various governmental and regulatory bodies and self-regulatory organizations and litigation and shareholder requests relating to various matters relating to the firm's businesses and operations, including:

- The securities offering process and underwriting practices;
- The firm's investment management and financial advisory services;
- Conflicts of interest;
- Research practices, including research independence and interactions between research analysts and other firm personnel, including investment banking personnel, as well as third parties;
- Transactions involving government-related financings and other matters, municipal securities, including wall-cross procedures and conflict of interest disclosure with respect to state and municipal clients, the trading and structuring of municipal derivative instruments in connection with municipal offerings, political contribution rules, municipal advisory services and the possible impact of credit default swap transactions on municipal issuers;
- Consumer lending, as well as residential mortgage lending, servicing and securitization, and compliance with related consumer laws;

- The offering, auction, sales, trading and clearance of corporate and government securities, currencies, commodities and other financial products and related sales and other communications and activities, as well as the firm's supervision and controls relating to such activities, including compliance with applicable short sale rules, algorithmic, high-frequency and quantitative trading, the firm's U.S. alternative trading system (dark pool), futures trading, options trading, when-issued trading, transaction and regulatory reporting, technology systems and controls, communications recordkeeping and recording, securities lending practices, prime brokerage activities, trading and clearance of credit derivative instruments and interest rate swaps, commodities activities and metals storage, private placement practices, allocations of and trading in securities, and trading activities and communications in connection with the establishment of benchmark rates, such as currency rates;
- Compliance with the FCPA;
- The firm's hiring and compensation practices;
- The firm's system of risk management and controls; and
- Insider trading, the potential misuse and dissemination of material nonpublic information regarding corporate and governmental developments and the effectiveness of the firm's insider trading controls and information barriers.

The firm is cooperating with all such governmental and regulatory investigations and reviews.

Note 28.

Employee Benefit Plans

The firm sponsors various pension plans and certain other postretirement benefit plans, primarily healthcare and life insurance. The firm also provides certain benefits to former or inactive employees prior to retirement.

Defined Benefit Pension Plans and Postretirement Plans

Employees of certain non-U.S. subsidiaries participate in various defined benefit pension plans. These plans generally provide benefits based on years of credited service and a percentage of eligible compensation. The firm maintains a defined benefit pension plan for certain U.K. employees. As of April 2008, the U.K. defined benefit plan was closed to new participants and frozen for existing participants as of March 31, 2016. The non-U.S. plans do not have a material impact on the firm's consolidated results of operations.

The firm also maintains a defined benefit pension plan for substantially all U.S. employees hired prior to November 1, 2003. As of November 2004, this plan was closed to new participants and frozen for existing participants. In addition, the firm maintains unfunded postretirement benefit plans that provide medical and life insurance for eligible retirees and their dependents covered under these programs. These plans do not have a material impact on the firm's consolidated results of operations.

The firm recognizes the funded status of its defined benefit pension and postretirement plans, measured as the difference between the fair value of the plan assets and the benefit obligation, in the consolidated balance sheets. As of December 2023, other assets included $93 million (related to overfunded pension plans) and other liabilities included $449 million related to these plans. As of December 2022, other assets included $111 million (related to overfunded pension plans) and other liabilities included $337 million related to these plans.

Defined Contribution Plans

The firm contributes to employer-sponsored U.S. and non-U.S. defined contribution plans. The firm's contribution to these plans was $377 million for 2023, $378 million for 2022 and $274 million for 2021.

Note 29.

Employee Incentive Plans

The cost of employee services received in exchange for a share-based award is generally measured based on the grant-date fair value of the award. Share-based awards that do not require future service (i.e., vested awards, including awards granted to retirement-eligible employees) are expensed immediately. Share-based awards that require future service are amortized over the relevant service period. Forfeitures are recorded when they occur.

Cash dividend equivalents paid on RSUs are generally charged to retained earnings. If RSUs that require future service are forfeited, the related dividend equivalents originally charged to retained earnings are reclassified to compensation expense in the period in which forfeiture occurs.

The firm generally issues new shares of common stock upon delivery of share-based awards. In limited cases, as outlined in the applicable award agreements, the firm may cash settle share-based compensation awards accounted for as equity instruments. For these awards, additional paid-in capital is adjusted to the extent of the difference between the value of the award at the time of cash settlement and the grant-date value of the award. The tax effect related to the settlement of share-based awards and payments of dividend equivalents is recorded in income tax benefit or expense.

Stock Incentive Plan

The firm sponsors a stock incentive plan, The Goldman Sachs Amended and Restated Stock Incentive Plan (2021) (2021 SIP), which provides for grants of RSUs, restricted stock, dividend equivalent rights, incentive stock options, nonqualified stock options, stock appreciation rights, and other share-based awards, each of which may be subject to terms and conditions, including performance or market conditions. On April 29, 2021, shareholders approved the 2021 SIP. The 2021 SIP is a successor to several predecessor stock incentive plans, the first of which was adopted on April 30, 1999, and each of which was approved by the firm's shareholders.

As of December 2023, 58.4 million shares were available to be delivered pursuant to awards granted under the 2021 SIP. If any shares of common stock underlying awards granted under the 2021 SIP or awards granted under predecessor stock incentive plans are not delivered because such awards are forfeited, terminated or canceled, or if shares of common stock underlying such awards are surrendered or withheld to satisfy any obligation of the grantee (including taxes), those shares will become available to be delivered pursuant to awards granted under the 2021 SIP. Shares available to be delivered under the 2021 SIP also are subject to adjustment for certain events or changes in corporate structure as provided under the 2021 SIP. The 2021 SIP is scheduled to terminate on the date of the annual meeting of shareholders that occurs in 2025.

Restricted Stock Units

The firm grants RSUs (including RSUs subject to performance or market conditions) to employees, which are generally valued based on the closing price of the underlying shares on the date of grant, after taking into account a liquidity discount for any applicable post-vesting and delivery transfer restrictions. The value of equity awards also considers the impact of material non-public information, if any, that the firm expects to make available shortly following grant. RSUs not subject to performance or market conditions generally vest and underlying shares of common stock are delivered (net of required withholding tax) over a three-year period as outlined in the applicable award agreements. Award agreements generally provide that vesting is accelerated in certain circumstances, such as on retirement, death, disability and, in certain cases, conflicted employment. Delivery of the underlying shares of common stock is conditioned on the grantees satisfying certain vesting and other requirements outlined in the award agreements.

RSUs that are subject to performance or market conditions generally are settled after the end of a three- to five-year period. For awards that are subject to performance or market conditions, generally the final award is adjusted from zero up to 150% of the original grant based on the extent to which those conditions are satisfied. Dividend equivalents that accrue on these awards are paid when the awards settle.

The table below presents the 2023 activity related to stock settled RSUs.

	Restricted Stock Units Outstanding		Weighted Average Grant-Date Fair Value of Restricted Stock Units Outstanding	
	Future Service Required	No Future Service Required	Future Service Required	No Future Service Required
Beginning balance	5,288,222	17,326,792	$ 298.14	$ 281.78
Granted	**3,000,465**	**3,874,660**	**$ 332.02**	**$ 327.07**
Forfeited	**(441,127)**	**(344,784)**	**$ 315.63**	**$ 305.62**
Delivered	**–**	**(9,018,166)**	**$ –**	**$ 272.79**
Vested	**(3,468,419)**	**3,468,419**	**$ 309.85**	**$ 309.85**
Ending balance	**4,379,141**	**15,306,921**	**$ 310.31**	**$ 304.37**

In the table above:

- The weighted average grant-date fair value of RSUs granted was $329.23 during 2023, $316.98 during 2022 and $264.57 during 2021. The grant-date fair value of these RSUs included an average liquidity discount of 4.5% during 2023, 6.0% during 2022 and 10.2% during 2021, to reflect post-vesting and delivery transfer restrictions, generally of 1 year for both 2023 and 2022, and up to 4 years for 2021.
- The aggregate fair value of awards that vested was $2.47 billion during 2023, $3.91 billion during 2022 and $2.64 billion during 2021.
- The ending balance included restricted stock subject to future service requirements of 347,240 shares as of December 2023 and 357,367 shares as of December 2022.
- The ending balance included RSUs subject to future service requirements and performance or market conditions of 617,655 RSUs as of December 2023 and 618,248 RSUs as of December 2022, and the maximum amount of such RSUs that may be earned was 913,551 RSUs as of December 2023 and 914,441 RSUs as of December 2022.
- The ending balance also included RSUs not subject to future service requirements but subject to performance conditions of 1,620,470 RSUs as of December 2023 and 1,457,702 RSUs as of December 2022, and the maximum amount of such RSUs that may be earned was 2,430,705 RSUs as of December 2023 and 2,186,553 RSUs as of December 2022.

In relation to 2023 year-end, during the first quarter of 2024, the firm granted to its employees 6.4 million RSUs (of which 2.1 million RSUs require future service as a condition for delivery of the related shares of common stock). These RSUs are subject to additional conditions as outlined in the award agreements. Shares underlying these RSUs, net of required withholding tax, generally are delivered over a three-year period. These awards are generally subject to a one-year post-vesting and delivery transfer restriction. These awards are not included in the table above.

As of December 2023, there was $642 million of total unrecognized compensation cost related to non-vested share-based compensation arrangements. This cost is expected to be recognized over a weighted average period of 1.79 years. In addition, there is unrecognized compensation cost related to share-based compensation arrangements subject to performance conditions. The maximum payout related to these awards is $487 million. This cost is expected to be recognized over a weighted average period of 1.41 years.

The table below presents the share-based compensation and the related excess tax benefit.

	Year Ended December		
$ in millions	**2023**	2022	2021
Share-based compensation	**$ 2,098**	$ 4,107	$ 2,553
Excess net tax benefit for share-based awards	**$ 198**	$ 324	$ 196

In the table above, excess net tax benefit for share-based awards includes the net tax benefit on dividend equivalents paid on RSUs and the delivery of common stock underlying share-based awards.

Overrides

The firm shares a portion of its overrides related to investment management services with approximately 800 employees. The fair value of these overrides is recognized as compensation expense over the vesting period. Such expense was $407 million for 2023, $493 million for 2022 and $547 million for 2021.

Note 30.

Parent Company

Group Inc. – Condensed Statements of Earnings

$ in millions	Year Ended December 2023	2022	2021
Revenues			
Dividends from subsidiaries and other affiliates:			
Bank	**$ 58**	$ 101	$ 16,990
Nonbank	**11,499**	6,243	15,562
Other revenues	**(1,965)**	(3,590)	529
Total non-interest revenues	**9,592**	2,754	33,081
Interest income	**18,839**	8,367	3,695
Interest expense	**21,479**	9,428	4,570
Net interest loss	**(2,640)**	(1,061)	(875)
Total net revenues	**6,952**	1,693	32,206
Operating expenses			
Compensation and benefits	**287**	328	750
Other expenses	**219**	685	1,005
Total operating expenses	**506**	1,013	1,755
Pre-tax earnings	**6,446**	680	30,451
Benefit for taxes	**(1,070)**	(1,398)	(551)
Undistributed earnings/(loss) of subsidiaries and other affiliates	**1,000**	9,183	(9,367)
Net earnings	**8,516**	11,261	21,635
Preferred stock dividends	**609**	497	484
Net earnings applicable to common shareholders	**$ 7,907**	$ 10,764	$ 21,151

Supplemental Disclosures:

In the condensed statements of earnings above, revenues and expenses included the following with subsidiaries and other affiliates:

- Dividends from bank subsidiaries included cash dividends of $58 million for 2023, $97 million for 2022 and $16.99 billion for 2021.
- Dividends from nonbank subsidiaries and other affiliates included cash dividends of $11.49 billion for 2023, $6.14 billion for 2022 and $15.14 billion for 2021.
- Other revenues included $(892) million for 2023, $(3.34) billion for 2022 and $(1.01) billion for 2021.
- Interest income included $16.82 billion for 2023, $7.47 billion for 2022 and $3.39 billion for 2021.
- Interest expense included $9.94 billion for 2023, $3.80 billion for 2022 and $1.24 billion for 2021.
- Other expenses included $105 million for 2023, $116 million for 2022 and $113 million for 2021.

Group Inc.'s other comprehensive income/(loss) was $92 million for 2023, $(942) million for 2022 and $(634) million for 2021.

Group Inc. – Condensed Balance Sheets

$ in millions	As of December 2023	2022
Assets		
Cash and cash equivalents:		
With third-party banks	**$ 35**	$ 35
With subsidiary bank	**7**	46
Loans to and receivables from subsidiaries:		
Bank	**1,833**	3,545
Nonbank (**$4,813** and $4,825 at fair value)	**286,688**	259,402
Investments in subsidiaries and other affiliates:		
Bank	**55,164**	49,533
Nonbank	**78,591**	85,058
Trading assets (at fair value)	**3,197**	5,431
Investments (**$22,443** and $23,894 at fair value)	**79,300**	69,483
Other assets	**7,408**	6,576
Total assets	**$ 512,223**	$ 479,109
Liabilities and shareholders' equity		
Repurchase agreements with subsidiaries (at fair value)	**$ 78,776**	$ 66,839
Secured borrowings with subsidiaries	**19,233**	16,749
Payables to subsidiaries	**568**	510
Trading liabilities (at fair value)	**898**	2,544
Unsecured short-term borrowings:		
With third parties (**$4,721** and $5,002 at fair value)	**31,833**	23,823
With subsidiaries	**5,710**	4,328
Unsecured long-term borrowings:		
With third parties (**$28,966** and $22,422 at fair value)	**175,335**	185,972
With subsidiaries	**79,316**	57,565
Other liabilities	**3,649**	3,590
Total liabilities	**395,318**	361,920
Commitments, contingencies and guarantees		
Shareholders' equity		
Preferred stock	**11,203**	10,703
Common stock	**9**	9
Share-based awards	**5,121**	5,696
Additional paid-in capital	**60,247**	59,050
Retained earnings	**143,688**	139,372
Accumulated other comprehensive loss	**(2,918)**	(3,010)
Stock held in treasury, at cost	**(100,445)**	(94,631)
Total shareholders' equity	**116,905**	117,189
Total liabilities and shareholders' equity	**$ 512,223**	$ 479,109

Supplemental Disclosures:

Goldman Sachs Funding LLC, a wholly-owned, direct subsidiary of Group Inc., has provided Group Inc. with a committed line of credit that allows Group Inc. to draw sufficient funds to meet its cash needs in the ordinary course of business.

Trading assets included derivative contracts with subsidiaries of $155 million as of December 2023 and $2.17 billion as of December 2022.

Trading liabilities included derivative contracts with subsidiaries of $898 million as of December 2023 and $2.54 billion as of December 2022.

As of December 2023, unsecured long-term borrowings with subsidiaries by maturity date are $77.53 billion in 2025, $228 million in 2026, $119 million in 2027, $202 million in 2028 and $1.23 billion in 2029-thereafter.

Group Inc. – Condensed Statements of Cash Flows

	Year Ended December		
$ in millions	**2023**	2022	2021
Cash flows from operating activities			
Net earnings	**$ 8,516**	$ 11,261	$ 21,635
Adjustments to reconcile net earnings to net cash provided by operating activities:			
Undistributed (earnings)/loss of subsidiaries and other affiliates	**(1,000)**	(9,183)	9,367
Depreciation and amortization	**13**	9	9
Deferred income taxes	**(380)**	(1,523)	(241)
Share-based compensation	**(11)**	378	335
Changes in operating assets and liabilities:			
Collateralized transactions (excluding secured borrowings, net)	**11,937**	66,839	–
Trading assets	**7,620**	(23,451)	(10,273)
Trading liabilities	**(1,646)**	1,428	796
Other, net	**(221)**	5,933	(5,213)
Net cash provided by operating activities	**24,828**	51,691	16,415
Cash flows from investing activities			
Purchase of property, leasehold improvements and equipment	**(48)**	(64)	(13)
Repayments/(issuances) of short-term loans to subsidiaries, net	**3,145**	2,210	(9,951)
Issuance of term loans to subsidiaries	**(25,473)**	(1,859)	(37,260)
Repayments of term loans by subsidiaries	**921**	2,311	10,059
Purchase of investments	**(25,904)**	(47,247)	(16,964)
Sales/paydowns of investments	**17,801**	3,162	10,896
Capital distributions from/(contributions to) subsidiaries, net	**1,205**	(5,665)	(23,978)
Net cash used for investing activities	**(28,353)**	(47,152)	(67,211)
Cash flows from financing activities			
Secured borrowings with subsidiary, net	**3,810**	(36,389)	12,346
Unsecured short-term borrowings, net:			
With third parties	**87**	13	(683)
With subsidiaries	**19,314**	27,803	7,007
Issuance of unsecured long-term borrowings	**127,728**	78,803	73,164
Repayment of unsecured long-term borrowings	**(136,618)**	(65,960)	(31,588)
Preferred stock redemption	**(1,000)**	–	(2,675)
Common stock repurchased	**(5,796)**	(3,500)	(5,200)
Settlement of share-based awards in satisfaction of withholding tax requirements	**(1,345)**	(1,595)	(985)
Dividends and dividend equivalents paid on stock and share-based awards	**(4,189)**	(3,682)	(2,725)
Issuance of preferred stock, net of costs	**1,496**	–	2,172
Other financing, net	**(1)**	–	(14)
Net cash provided by/(used for) financing activities	**3,486**	(4,507)	50,819
Net increase/(decrease) in cash and cash equivalents	**(39)**	32	23
Cash and cash equivalents, beginning balance	**81**	49	26
Cash and cash equivalents, ending balance	**$ 42**	$ 81	$ 49

Supplemental Disclosures:

Cash payments for interest, net of capitalized interest, were $20.53 billion for 2023, $8.54 billion for 2022 and $4.72 billion for 2021, and included $9.40 billion for 2023, $3.55 billion for 2022 and $1.33 billion for 2021 of payments to subsidiaries.

Cash payments/(refunds) for income taxes, net, were $671 million for 2023, $2.59 billion for 2022 and $3.74 billion for 2021.

Non-cash activities during the year ended December 2023:

- Group Inc. exchanged $1.42 billion of equity investment in its wholly-owned subsidiaries for loans.

Non-cash activities during the year ended December 2022:

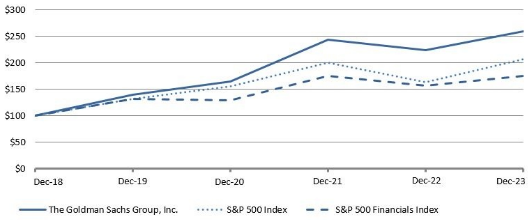
- Group Inc. issued $1.75 billion of equity in connection with the acquisition of GreenSky. Upon closing of the transaction, GreenSky became a wholly-owned subsidiary of GS Bank USA.

Non-cash activities during the year ended December 2021:

- Group Inc. exchanged $948 million of loans for additional equity investment in its wholly-owned subsidiaries.

Common Stock Performance

The graph and table below compare the performance of an investment in the firm's common stock from December 31, 2018 (the last trading day before the firm's 2019 fiscal year) through December 31, 2023, with the S&P 500 Index (S&P 500) and the S&P 500 Financials Index (S&P 500 Financials).



	As of December					
	2018	2019	2020	2021	2022	**2023**
Group Inc.	$ 100.00	$ 140.46	$ 165.01	$ 243.54	$ 224.40	**$ 260.10**
S&P 500	$ 100.00	$ 131.47	$ 155.65	$ 200.29	$ 163.97	**$ 207.03**
S&P 500 Financials	$ 100.00	$ 132.09	$ 129.77	$ 175.01	$ 156.52	**$ 175.45**

The graph and table above assume $100 was invested on December 31, 2018 in each of the firm's common stock, the S&P 500 and the S&P 500 Financials, and the dividends were reinvested without payment of any commissions. The performance shown represents past performance and should not be considered an indication of future performance.

Statistical Disclosures

Distribution of Assets, Liabilities and Shareholders' Equity

The tables below present information about average balances, interest and average interest rates.

	Average Balance for the Year Ended December		
$ in millions	**2023**	2022	2021
Assets			
U.S.	**$ 129,718**	$ 151,152	$ 103,182
Non-U.S.	**127,250**	107,843	95,735
Deposits with banks	**256,968**	258,995	198,917
U.S.	**214,772**	241,968	202,841
Non-U.S.	**158,347**	169,621	148,604
Collateralized agreements	**373,119**	411,589	351,445
U.S.	**205,013**	165,331	173,498
Non-U.S.	**146,655**	123,332	136,075
Trading assets	**351,668**	288,663	309,573
U.S.	**123,828**	97,221	69,893
Non-U.S.	**15,003**	14,696	18,573
Investments	**138,831**	111,917	88,466
U.S.	**156,349**	144,781	108,032
Non-U.S.	**19,112**	22,067	21,455
Loans	**175,461**	166,848	129,487
U.S.	**85,373**	95,513	98,086
Non-U.S.	**55,043**	64,301	55,530
Other interest-earning assets	**140,416**	159,814	153,616
Interest-earning assets	**1,436,463**	1,397,826	1,231,504
Cash and due from banks	**6,372**	7,715	10,804
Other non-interest-earning assets	**109,042**	137,418	128,521
Assets	**$ 1,551,877**	$ 1,542,959	$ 1,370,829
Liabilities			
U.S.	**$ 307,686**	$ 302,678	$ 231,967
Non-U.S.	**82,321**	74,662	72,899
Interest-bearing deposits	**390,007**	377,340	304,866
U.S.	**154,341**	107,008	110,099
Non-U.S.	**93,697**	83,783	72,691
Collateralized financings	**248,038**	190,791	182,790
U.S.	**62,254**	80,950	67,734
Non-U.S.	**76,057**	83,657	75,763
Trading liabilities	**138,311**	164,607	143,497
U.S.	**47,878**	34,322	31,866
Non-U.S.	**27,166**	28,675	34,326
Short-term borrowings	**75,044**	62,997	66,192
U.S.	**197,442**	221,598	216,864
Non-U.S.	**45,611**	37,656	29,764
Long-term borrowings	**243,053**	259,254	246,628
U.S.	**149,883**	166,200	139,278
Non-U.S.	**94,915**	98,130	85,913
Other interest-bearing liabilities	**244,798**	264,330	225,191
Interest-bearing liabilities	**1,339,251**	1,319,319	1,169,164
Non-interest-bearing deposits	**4,733**	4,811	5,920
Other non-interest-bearing liabilities	**91,194**	102,839	94,040
Liabilities	**1,435,178**	1,426,969	1,269,124
Shareholders' equity			
Preferred stock	**10,895**	10,703	9,876
Common stock	**105,804**	105,287	91,829
Shareholders' equity	**116,699**	115,990	101,705
Liabilities and shareholders' equity	**$ 1,551,877**	$ 1,542,959	$ 1,370,829
Percentage attributable to non-U.S. operations			
Interest-earning assets	**36.30 %**	35.90%	38.65%
Interest-bearing liabilities	**31.34 %**	30.82%	31.76%

$ in millions	Interest for the Year Ended December 2023	2022	2021
Assets			
U.S.	**$ 7,074**	$ 2,793	$ 143
Non-U.S.	**3,875**	440	(167)
Deposits with banks	**10,949**	3,233	(24)
U.S.	**11,301**	3,463	(383)
Non-U.S.	**5,104**	1,005	(597)
Collateralized agreements	**16,405**	4,468	(980)
U.S.	**5,717**	3,362	2,943
Non-U.S.	**2,743**	1,725	1,773
Trading assets	**8,460**	5,087	4,716
U.S.	**3,055**	1,656	991
Non-U.S.	**801**	543	598
Investments	**3,856**	2,199	1,589
U.S.	**13,332**	7,967	4,423
Non-U.S.	**1,573**	1,092	896
Loans	**14,905**	9,059	5,319
U.S.	**8,266**	3,236	1,201
Non-U.S.	**5,674**	1,742	299
Other interest-earning assets	**13,940**	4,978	1,500
Interest-earning assets	**$ 68,515**	$ 29,024	$ 12,120
Liabilities			
U.S.	**$ 13,658**	$ 4,959	$ 1,098
Non-U.S.	**3,352**	864	205
Interest-bearing deposits	**17,010**	5,823	1,303
U.S.	**8,750**	2,027	146
Non-U.S.	**3,955**	781	(146)
Collateralized financings	**12,705**	2,808	–
U.S.	**969**	872	661
Non-U.S.	**1,484**	1,051	1,001
Trading liabilities	**2,453**	1,923	1,662
U.S.	**1,200**	408	476
Non-U.S.	**122**	133	51
Short-term borrowings	**1,322**	541	527
U.S.	**10,838**	5,570	3,139
Non-U.S.	**246**	146	92
Long-term borrowings	**11,084**	5,716	3,231
U.S.	**11,228**	2,356	(897)
Non-U.S.	**6,362**	2,179	(176)
Other interest-bearing liabilities	**17,590**	4,535	(1,073)
Interest-bearing liabilities	**$ 62,164**	$ 21,346	$ 5,650
Net interest income			
U.S.	**$ 2,102**	$ 6,285	$ 4,695
Non-U.S.	**4,249**	1,393	1,775
Net interest income	**$ 6,351**	$ 7,678	$ 6,470

	Average Rate for the Year Ended December 2023	2022	2021
Assets			
U.S.	**5.45 %**	1.85%	0.14%
Non-U.S.	**3.05 %**	0.41%	(0.17)%
Deposits with banks	**4.26 %**	1.25%	(0.01)%
U.S.	**5.26 %**	1.43%	(0.19)%
Non-U.S.	**3.22 %**	0.59%	(0.40)%
Collateralized agreements	**4.40 %**	1.09%	(0.28)%
U.S.	**2.79 %**	2.03%	1.70%
Non-U.S.	**1.87 %**	1.40%	1.30%
Trading assets	**2.41 %**	1.76%	1.52%
U.S.	**2.47 %**	1.70%	1.42%
Non-U.S.	**5.34 %**	3.69%	3.22%
Investments	**2.78 %**	1.96%	1.80%
U.S.	**8.53 %**	5.50%	4.09%
Non-U.S.	**8.23 %**	4.95%	4.18%
Loans	**8.49 %**	5.43%	4.11%
U.S.	**9.68 %**	3.39%	1.22%
Non-U.S.	**10.31 %**	2.71%	0.54%
Other interest-earning assets	**9.93 %**	3.11%	0.98%
Interest-earning assets	**4.77 %**	2.08%	0.98%
Liabilities			
U.S.	**4.44 %**	1.64%	0.47%
Non-U.S.	**4.07 %**	1.16%	0.28%
Interest-bearing deposits	**4.36 %**	1.54%	0.43%
U.S.	**5.67 %**	1.89%	0.13%
Non-U.S.	**4.22 %**	0.93%	(0.20)%
Collateralized financings	**5.12 %**	1.47%	0.00%
U.S.	**1.56 %**	1.08%	0.98%
Non-U.S.	**1.95 %**	1.26%	1.32%
Trading liabilities	**1.77 %**	1.17%	1.16%
U.S.	**2.51 %**	1.19%	1.49%
Non-U.S.	**0.45 %**	0.46%	0.15%
Short-term borrowings	**1.76 %**	0.86%	0.80%
U.S.	**5.49 %**	2.51%	1.45%
Non-U.S.	**0.54 %**	0.39%	0.31%
Long-term borrowings	**4.56 %**	2.20%	1.31%
U.S.	**7.49 %**	1.42%	(0.64)%
Non-U.S.	**6.70 %**	2.22%	(0.20)%
Other interest-bearing liabilities	**7.19 %**	1.72%	(0.48)%
Interest-bearing liabilities	**4.64 %**	1.62%	0.48%
Interest rate spread	**0.13 %**	0.46%	0.50%
U.S.	**0.23 %**	0.70%	0.62%
Non-U.S.	**0.81 %**	0.28%	0.37%
Net yield on interest-earning assets	**0.44 %**	0.55%	0.53%

In the tables above:

- Assets, liabilities and interest are classified as U.S. and non-U.S. based on the location of the legal entity in which the assets and liabilities are held.
- Derivative instruments and commodities are included in other non-interest-earning assets and other non-interest-bearing liabilities.
- Average collateralized agreements included $179.35 billion of resale agreements and $193.77 billion of securities borrowed for 2023, $216.73 billion of resale agreements and $194.86 billion of securities borrowed for 2022 and $167.95 billion of resale agreements and $183.50 billion of securities borrowed for 2021.
- Other interest-earning assets primarily consists of certain receivables from customers and counterparties.

- Collateralized financings included $198.26 billion of repurchase agreements and $49.78 billion of securities loaned for 2023, $150.23 billion of repurchase agreements and $40.56 billion of securities loaned for 2022, and $145.68 billion of repurchase agreements and $37.11 billion of securities loaned for 2021.
- Substantially all of the other interest-bearing liabilities consists of certain payables to customers and counterparties.
- Interest rates for borrowings include the effects of interest rate swaps accounted for as hedges.
- Loans exclude loans held for sale that are accounted for at the lower of cost or fair value. Such loans are included within other interest-earning assets.
- Short- and long-term borrowings include both secured and unsecured borrowings.

Changes in Net Interest Income, Volume and Rate Analysis

The tables below present the effect on net interest income of volume and rate changes. In this analysis, changes due to volume/rate variance have been allocated to volume.

	Year Ended December 2023 versus December 2022		
	Increase (decrease) due to change in:		
$ in millions	**Volume**	**Rate**	**Net Change**
Interest-earning assets			
U.S.	**$ (1,169)**	**$ 5,450**	**$ 4,281**
Non-U.S.	**591**	**2,844**	**3,435**
Deposits with banks	**(578)**	**8,294**	**7,716**
U.S.	**(1,431)**	**9,269**	**7,838**
Non-U.S.	**(363)**	**4,462**	**4,099**
Collateralized agreements	**(1,794)**	**13,731**	**11,937**
U.S.	**1,107**	**1,248**	**2,355**
Non-U.S.	**436**	**582**	**1,018**
Trading assets	**1,543**	**1,830**	**3,373**
U.S.	**656**	**743**	**1,399**
Non-U.S.	**16**	**242**	**258**
Investments	**672**	**985**	**1,657**
U.S.	**986**	**4,379**	**5,365**
Non-U.S.	**(243)**	**724**	**481**
Loans	**743**	**5,103**	**5,846**
U.S.	**(982)**	**6,012**	**5,030**
Non-U.S.	**(954)**	**4,886**	**3,932**
Other interest-earning assets	**(1,936)**	**10,898**	**8,962**
Change in interest income	**(1,350)**	**40,841**	**39,491**
Interest-bearing liabilities			
U.S.	**222**	**8,477**	**8,699**
Non-U.S.	**312**	**2,176**	**2,488**
Interest-bearing deposits	**534**	**10,653**	**11,187**
U.S.	**2,683**	**4,040**	**6,723**
Non-U.S.	**418**	**2,756**	**3,174**
Collateralized financings	**3,101**	**6,796**	**9,897**
U.S.	**(291)**	**388**	**97**
Non-U.S.	**(148)**	**581**	**433**
Trading liabilities	**(439)**	**969**	**530**
U.S.	**340**	**452**	**792**
Non-U.S.	**(7)**	**(4)**	**(11)**
Short-term borrowings	**333**	**448**	**781**
U.S.	**(1,326)**	**6,594**	**5,268**
Non-U.S.	**43**	**57**	**100**
Long-term borrowings	**(1,283)**	**6,651**	**5,368**
U.S.	**(1,222)**	**10,094**	**8,872**
Non-U.S.	**(215)**	**4,398**	**4,183**
Other interest-bearing liabilities	**(1,437)**	**14,492**	**13,055**
Change in interest expense	**809**	**40,009**	**40,818**
Change in net interest income	**$ (2,159)**	**$ 832**	**$ (1,327)**

	Year Ended December 2022 versus December 2021		
	Increase (decrease) due to change in:		
$ in millions	Volume	Rate	Net Change
Interest-earning assets			
U.S.	$ 886	$ 1,764	$ 2,650
Non-U.S.	49	558	607
Deposits with banks	935	2,322	3,257
U.S.	560	3,286	3,846
Non-U.S.	125	1,477	1,602
Collateralized agreements	685	4,763	5,448
U.S.	(166)	585	419
Non-U.S.	(178)	130	(48)
Trading assets	(344)	715	371
U.S.	465	200	665
Non-U.S.	(143)	88	(55)
Investments	322	288	610
U.S.	2,022	1,522	3,544
Non-U.S.	30	166	196
Loans	2,052	1,688	3,740
U.S.	(87)	2,122	2,035
Non-U.S.	238	1,205	1,443
Other interest-earning assets	151	3,327	3,478
Change in interest income	3,801	13,103	16,904
Interest-bearing liabilities			
U.S.	1,159	2,702	3,861
Non-U.S.	20	639	659
Interest-bearing deposits	1,179	3,341	4,520
U.S.	(59)	1,940	1,881
Non-U.S.	103	824	927
Collateralized financings	44	2,764	2,808
U.S.	142	69	211
Non-U.S.	99	(49)	50
Trading liabilities	241	20	261
U.S.	29	(97)	(68)
Non-U.S.	(26)	108	82
Short-term borrowings	3	11	14
U.S.	119	2,312	2,431
Non-U.S.	31	23	54
Long-term borrowings	150	2,335	2,485
U.S.	382	2,871	3,253
Non-U.S.	271	2,084	2,355
Other interest-bearing liabilities	653	4,955	5,608
Change in interest expense	2,270	13,426	15,696
Change in net interest income	$ 1,531	$ (323)	$ 1,208

Deposits

The table below presents information about interest-bearing deposits.

$ in millions	Year Ended December 2023	2022
Average balances		
U.S.		
Savings and demand	**$ 241,356**	$ 231,693
Time	**66,330**	70,985
Total U.S.	**307,686**	302,678
Non-U.S.		
Demand	**57,506**	45,066
Time	**24,815**	29,596
Total non-U.S.	**82,321**	74,662
Total	**$ 390,007**	$ 377,340
Average interest rates		
U.S.		
Savings and demand	**4.57 %**	1.69%
Time	**3.97 %**	1.48%
Total U.S.	**4.44 %**	1.64%
Non-U.S.		
Demand	**3.99 %**	1.20%
Time	**4.26 %**	1.09%
Total non-U.S.	**4.07 %**	1.16%
Total	**4.36 %**	1.54%

In the table above, deposits are classified as U.S. and non-U.S. based on the location of the entity in which such deposits are held.

The amount of deposits in U.S. offices held by non-U.S. depositors was $10.34 billion as of December 2023 and $6.39 billion as of December 2022.

The amount of uninsured deposits in U.S. offices was $111.60 billion as of December 2023 and $128.72 billion as of December 2022. The amount of uninsured deposits in non-U.S. offices was $69.30 billion as of December 2023 and $41.33 billion as of December 2022.

The table below presents uninsured time deposits by maturity.

$ in millions	As of December 2023 U.S.	Non-U.S.
3 months or less	**$ 3,667**	**$ 18,133**
3 to 6 months	**2,253**	**8,763**
6 to 12 months	**2,534**	**2,646**
Greater than 12 months	**411**	**1,775**
Total	**$ 8,865**	**$ 31,317**

In the table above:

- All U.S. time deposits were in accounts eligible for FDIC insurance and non-U.S. time deposits include deposits in accounts eligible for insurance in their local jurisdictions, as well as deposits in uninsured accounts.
- The insurance limit is allocated between time and other deposits on a pro-rata basis for account holders who have both time and other deposits that, in aggregate, exceed the insurance limit.

Loan Portfolio

The table below presents information about gross loans.

$ in millions	As of December 2023		2022	
Corporate	**$ 35,874**	**19 %**	$ 40,135	22%
Commercial real estate	**26,028**	**14 %**	28,879	16%
Residential real estate	**25,388**	**13 %**	23,035	12%
Securities-based	**14,621**	**8 %**	16,671	9%
Other collateralized	**62,225**	**33 %**	51,702	28%
Consumer:				
Installment	**3,298**	**2 %**	6,326	3%
Credit cards	**19,361**	**10 %**	15,820	9%
Other	**1,613**	**1 %**	2,261	1%
Total	**$ 188,408**	**100 %**	$ 184,829	100%

Maturities and Interest Rates. The table below presents gross loans by tenor.

$ in millions	As of December 2023 1 year or less	More than 1 year to 5 years	More than 5 years to 15 years	More than 15 years	Total
Corporate	$ 2,813	$ 28,853	$ 4,207	$ 1	$ 35,874
Commercial real estate	4,571	19,663	1,791	3	26,028
Residential real estate	3,522	10,493	127	11,246	25,388
Securities-based	14,608	13	–	–	14,621
Other collateralized	23,660	36,486	1,623	456	62,225
Consumer:					
Installment	70	803	2,334	91	3,298
Credit cards	19,361	–	–	–	19,361
Other	740	455	416	2	1,613
Total	$ 69,345	$ 96,766	$ 10,498	$ 11,799	$ 188,408

The table below presents the gross loans by tenor and for loans with tenors greater than one year, the distributions of such loans between fixed and floating interest rates.

	As of December 2023			
	1 year	More than one year		
$ in millions	or less	Fixed-rate	Floating-rate	Total
Corporate	$ 2,813	$ 345	$ 32,716	$ 35,874
Commercial real estate	4,571	1,274	20,183	26,028
Residential real estate	3,522	11,937	9,929	25,388
Securities-based	14,608	13	–	14,621
Other collateralized	23,660	850	37,715	62,225
Consumer:				
Installment	70	3,228	–	3,298
Credit cards	19,361	–	–	19,361
Other	740	377	496	1,613
Total	$ 69,345	$ 18,024	$ 101,039	$ 188,408

Allowance for Loan Losses

The table below presents information about the allowance for loan losses.

	As of December	
$ in millions	2023	2022
Corporate	$ 1,307	$ 1,535
Commercial real estate	765	572
Residential real estate	129	122
Other collateralized	340	264
Other	35	69
Wholesale	2,576	2,562
Installment	23	831
Credit cards	2,451	2,150
Consumer	2,474	2,981
Total	$ 5,050	$ 5,543

The table below presents information about the net charge-off ratio for loans accounted for at amortized cost.

$ in millions	Net charge-offs	Average balance	Net charge-off ratio
Year Ended December 2023			
Wholesale	$ 400	$ 151,834	0.3 %
Installment	86	3,721	2.3 %
Credit cards	1,062	17,028	6.2 %
Consumer	1,148	20,749	5.5 %
Total	$ 1,548	$ 172,583	0.9 %
Year Ended December 2022			
Wholesale	$ 253	$ 144,129	0.2%
Installment	46	4,711	1.0%
Credit cards	427	11,984	3.6%
Consumer	473	16,695	2.8%
Total	$ 726	$ 160,824	0.5%

In the table above, the net charge-off ratio is calculated by dividing the net charge-offs by average gross loans accounted for at amortized cost. Net charge-offs for wholesale loans were primarily related to corporate loans for both 2023 and 2022.