



J. Aron & Company LLC and Subsidiaries

Consolidated Statement of Financial Condition

December 31, 2022

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Report of Independent Auditors

To the Board of Managers and the Member of J. Aron & Company LLC:

Opinion

We have audited the accompanying consolidated statement of financial condition of J. Aron & Company LLC and its subsidiaries (the “Company”) as of December 31, 2022, including the related notes (referred to as the “consolidated statement of financial condition”).

In our opinion, the accompanying consolidated statement of financial condition presents fairly, in all material respects, the financial position of the Company as of December 31, 2022 in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (US GAAS). Our responsibilities under those standards are further described in the Auditors’ Responsibilities for the Audit of the Consolidated Statement of Financial Condition section of our report. We are required to be independent of the Company and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Consolidated Statement of Financial Condition

Management is responsible for the preparation and fair presentation of the consolidated statement of financial condition in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of a consolidated statement of financial condition that is free from material misstatement, whether due to fraud or error.

In preparing the consolidated statement of financial condition, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company’s ability to continue as a going concern for one year after the date the consolidated statement of financial condition is available to be issued.

Auditors’ Responsibilities for the Audit of the Consolidated Statement of Financial Condition

Our objectives are to obtain reasonable assurance about whether the consolidated statement of financial condition as a whole is free from material misstatement, whether due to fraud or



error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with US GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the consolidated statement of financial condition.

In performing an audit in accordance with US GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the consolidated statement of financial condition, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated statement of financial condition.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are

appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. Accordingly, no such opinion is expressed.

- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the consolidated statement of financial condition.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

A handwritten signature in cursive script that reads "PricewaterhouseCoopers LLP".

New York, New York

February 28, 2023

Consolidated Statement of Financial Condition

<i>\$ in millions</i>	As of December 2022
Assets	
Cash	\$ 3,995
Collateralized agreements:	
Securities purchased under agreements to resell (at fair value)	1,597
Receivables from customers and counterparties, brokers, dealers and clearing organizations	7,224
Financial instruments owned (at fair value and includes \$3,362 pledged as collateral)	22,734
Other assets	126
Total assets	\$ 35,676
Liabilities and member's equity	
Collateralized financings:	
Other secured financings (at fair value)	\$ 3,782
Payables to customers and counterparties, brokers, dealers and clearing organizations	1,296
Financial instruments sold, but not yet purchased (at fair value)	11,662
Unsecured short-term borrowings (includes \$4,089 at fair value)	4,206
Unsecured long-term borrowings (includes \$3,068 at fair value)	4,275
Other liabilities (includes \$2 at fair value)	674
Subordinated borrowings	3,000
Total liabilities	28,895
Commitments, contingencies and guarantees	
Member's equity	
Member's equity	6,874
Accumulated other comprehensive loss	(93)
Total member's equity	6,781
Total liabilities and member's equity	\$ 35,676

The accompanying notes are an integral part of this consolidated statement of financial condition.

Notes to Consolidated Statement of Financial Condition

Note 1.

Description of Business

J. Aron & Company LLC (JANY), a New York limited liability company registered as a swap dealer with the U.S. Commodities Futures Trading Commission (CFTC), together with its consolidated subsidiaries (collectively, the firm), is a wholly-owned subsidiary of The Goldman Sachs Group, Inc. (Group Inc.), a Delaware corporation. The firm is a market maker and transacts on a principal basis with producers, end-users, investors, and other clients and counterparties, in currency, commodity, and interest rate derivatives as well as physical commodity transactions and related financial instruments on both regulated exchanges and over-the-counter (OTC) markets worldwide.

Note 2.

Basis of Presentation

This consolidated statement of financial condition is prepared in accordance with accounting principles generally accepted in the United States (U.S. GAAP) and include the accounts of JANY and all other entities in which the firm has a controlling financial interest. Intercompany transactions and balances have been eliminated.

All references to 2022 refer to the date December 31, 2022. Any reference to a future year refers to a year ending on December 31 of that year.

Note 3.

Significant Accounting Policies

The firm's significant accounting policies include when and how to measure the fair value of assets and liabilities and when to consolidate an entity. See Note 4 for policies on fair value measurements and below and Note 14 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
Financial Instruments Owned and Financial Instruments Sold, But Not Yet Purchased	Note 6
Derivatives and Hedging Activities	Note 7
Fair Value Option	Note 8
Collateralized Agreements and Financings	Note 9
Other Assets	Note 10
Unsecured Borrowings	Note 11
Subordinated Borrowings	Note 12
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Variable Interest Entities	Note 14
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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).

Notes to Consolidated Statement of Financial Condition

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 14 for further information about VIEs.

Use of Estimates

Preparation of this consolidated statement of financial condition requires management to make certain estimates and assumptions, the most important of which relate to fair value measurements, accounting for 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.

Financial Assets and Liabilities at Fair Value

Financial instruments owned and financial instruments sold, but not yet purchased are recorded 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 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. See Note 4 for further information about fair value measurements.

Transfers of Financial Assets

Transfers of financial assets are accounted for as sales when the firm has relinquished control over the assets transferred. Assets or liabilities that arise from the firm's continuing involvement with transferred financial assets are initially recognized at fair value. See Note 9 for further information about transfers of financial assets accounted for as collateralized financings.

Cash

Cash included cash and due from banks of \$22 million as of December 2022. Cash also included interest-bearing deposits of \$3.97 billion as of December 2022.

The firm segregates cash for contractual purposes related to client activity. As of December 2022, \$11 million of cash was segregated for contractual purposes.

Receivables from Customers and Counterparties, Brokers, Dealers and Clearing Organizations

Receivables from customers and counterparties, brokers, dealers and clearing organizations are accounted for at amortized cost, which generally approximates fair value. Substantially all of these receivables relate to collateral posted in connection with certain derivative transactions and margin receivables relating to transactions cleared on derivative exchanges. As these receivables generally do not give rise to material credit risk for the firm, no allowance for credit losses is held against them. 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 December 2022. Interest on receivables from customers and counterparties, brokers, dealers and clearing organizations is recognized over the life of the transaction.

Payables to Customers and Counterparties, Brokers, Dealers and Clearing Organizations

Substantially all payables to customers and counterparties, brokers, dealers and clearing organizations consist of collateral received in connection with certain derivative transactions. Payables to customers and counterparties, brokers, dealers and clearing organizations 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 December 2022. Interest on payables to customers and counterparties, brokers, dealers and clearing organizations is recognized over the life of the transaction.

Notes to Consolidated Statement of Financial Condition

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 statement of financial condition when a legal right of setoff exists under an enforceable netting agreement. Securities purchased under agreements to resell (resale agreements) and securities sold under agreements to repurchase (repurchase agreements) with the same settlement date are presented on a net-by-counterparty basis in the consolidated statement of financial condition when such transactions meet certain settlement criteria and are subject to netting agreements.

In the consolidated statement of financial condition, 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 statement of financial condition, resale agreements are not reported net of the related cash and securities received or posted as collateral. See Note 9 for further information about collateral received and pledged, including rights to deliver or repledge collateral. See Notes 7 and 9 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 statement of financial condition.

Accounting for Metal Swaps

Metal swaps (including gold, other precious metals and base metals) involve a contemporaneous spot and fixed price forward transaction in the underlying metal with the same counterparty where there is deliberate financing intent. The firm accounts for metal swaps as financing transactions and the amounts are included in financial instruments owned, at fair value and other secured financings.

Accounting for Precious Metal Deposits

Precious metal deposits involve counterparties transferring precious metals to the firm for a fixed term, in exchange for a fee and the firm's obligation to return a fixed notional of precious metal at maturity of the transaction. The firm accounts for these transactions by recognizing the precious metal received as commodities in financial instruments owned and a corresponding hybrid liability within unsecured short-term borrowings.

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 statement of financial condition.

Notes to Consolidated Statement of Financial Condition

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. The ASU is effective in January 2024 under a prospective approach. Early adoption is permitted. Adoption of this ASU is not expected to have a material impact on the firm’s consolidated statement of financial condition.

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 level 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 accounted for at fair value.

<i>\$ in millions</i>	<i>As of</i> December 2022
Total level 1 financial assets	\$ —
Total level 2 financial assets	40,319
Total level 3 financial assets	1,914
Counterparty and cash collateral netting	(17,902)
Total financial assets at fair value	\$ 24,331
Total assets	\$ 35,676
Total level 3 financial assets divided by:	
Total assets	5.4%
Total financial assets at fair value	7.9%
Total level 1 financial liabilities	\$ —
Total level 2 financial liabilities	30,545
Total level 3 financial liabilities	997
Counterparty and cash collateral netting	(8,939)
Total financial liabilities at fair value	\$ 22,603
Total liabilities	\$ 28,895
Total level 3 financial liabilities divided by:	
Total liabilities	3.5%
Total financial liabilities at fair value	4.4%

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.

<i>\$ in millions</i>	<i>As of</i> December 2022
Cash instruments	\$ 309
Derivatives	1,605
Total	\$ 1,914

Notes to Consolidated Statement of Financial Condition

See Note 5 for further information about level 3 financial assets (including information about transfers in 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 Cash Instruments

Level 1. The firm did not have any level 1 cash instruments as of December 2022.

Level 2. Level 2 cash instruments include other debt obligations, most corporate debt instruments and most commodities.

Valuations of level 2 cash 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 cash instruments (i) if the cash 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 cash instruments have one or more significant valuation inputs that are not observable. Absent evidence to the contrary, level 3 cash 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 cash 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 cash instrument are described below:

Corporate Debt Instruments

Corporate debt instruments consists of corporate loans. 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).

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, discounted cash flow valuation methodologies are used. Significant inputs include discount rates.

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.

Notes to Consolidated Statement of Financial Condition

- **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 and natural gas), 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. The firm did not have any level 1 derivatives as of December 2022.

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 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 credit derivatives, significant unobservable inputs include illiquid credit spreads.
- 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 currency derivatives, significant unobservable inputs include correlations of certain currencies and interest rates, longer-dated interest rates, and volatilities of option prices.

Notes to Consolidated Statement of Financial Condition

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, credit valuation adjustments 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 Instruments at Fair Value

In addition to cash instruments and derivatives, the firm accounts for certain of its other financial assets and liabilities at fair value under the fair value option or in accordance with other U.S. GAAP. Such instruments include resale agreements; other secured financings, including transfers of assets accounted for as financings; most unsecured short-term borrowings, including certain prepaid physical commodity transactions and certain hybrid financial instruments; and certain unsecured long-term borrowings, including certain prepaid physical commodity transactions and certain hybrid financial instruments and certain other 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 instruments are described below.

Resale Agreements. The significant inputs to the valuation of resale agreements are funding spreads, the amount and timing of expected future cash flows and interest rates.

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, 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) and the frequency of additional collateral calls. See Note 9 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, Group Inc.'s credit spreads and commodity prices for prepaid commodity transactions, and correlations and volatility in the case of certain hybrid financial instruments. 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 11 for further information about unsecured borrowings.

Note 5.

Fair Value Hierarchy

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

Fair Value of Cash Instruments by Level

The table below presents cash instruments by level within the fair value hierarchy.

\$ in millions	As of December 2022			
	Level 1	Level 2	Level 3	Total
Assets				
Corporate debt instruments	\$ —	\$ 2,728	\$ 282	\$ 3,010
Other debt obligations	—	229	—	229
Equity securities	—	—	25	25
Commodities	—	5,377	2	5,379
Total	\$ —	\$ 8,334	\$ 309	\$ 8,643
Liabilities				
Corporate debt instruments	\$ —	\$ (43)	\$ (10)	\$ (53)
Total	\$ —	\$ (43)	\$ (10)	\$ (53)

Cash instruments consists of instruments primarily held in connection with the firm's market-making or risk management activities. These instruments are accounted for at fair value.

Notes to Consolidated Statement of Financial Condition

In the table above:

- Cash instrument assets are shown as positive amounts and cash instrument liabilities are shown as negative amounts.
- Corporate debt instruments includes corporate loans, prepaid commodity transactions and transfers of assets accounted for as secured loans rather than purchases.
- Equity securities includes private equities.
- Other debt obligations includes money market 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 cash instruments.

Significant Unobservable Inputs for Cash Instrument Assets

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

<i>\$ in millions</i>	As of December 2022	
	Amount or Range	Weighted Average
Corporate debt instruments	\$ 282	
Yield	8.3% to 12.7%	11.2%
Duration (years)	2.5 to 2.9	2.6

Level 3 equity securities and commodities were not material and therefore are not included in the table above.

In the table above:

- Ranges represent the significant unobservable inputs that were used in the valuation of each type of cash instrument.
- Weighted averages are calculated by weighting each input by the relative fair value of the 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 cash instrument. For example, the highest yield 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 cash instruments.
- Increases in yield or duration used in the valuation of level 3 cash instruments would have resulted in a lower fair value measurement as of December 2022. Due to the distinctive nature of each level 3 cash instrument, the interrelationship of inputs is not necessarily uniform within each product type.
- Cash instruments are valued using discounted cash flows.

Level 3 Transfers for Cash Instruments

Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur.

Transfers into level 3 cash instrument assets during 2022 were \$12 million. The drivers of transfers into level 3 cash instruments assets during 2022 were not material.

Transfers out of level 3 cash instruments assets during 2022 were \$85 million, primarily reflecting 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, and unobservable yield and duration inputs no longer being significant to the valuation of these instruments).

Fair Value of Derivatives by Level

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

<i>\$ in millions</i>	As of December 2022			
	Level 1	Level 2	Level 3	Total
Assets				
Interest rates	\$ —	\$ 45,916	\$ 158	\$ 46,074
Credit	—	16	7	23
Currencies	—	29,132	136	29,268
Commodities	—	35,374	1,617	36,991
Gross fair value	—	110,438	1,918	112,356
Counterparty netting in levels	—	(80,050)	(313)	(80,363)
Subtotal	\$ —	\$ 30,388	\$ 1,605	\$ 31,993
Cross-level counterparty netting				(3,720)
Cash collateral netting				(14,182)
Net fair value				\$ 14,091
Liabilities				
Interest rates	\$ —	\$(45,576)	\$(161)	\$(45,737)
Credit	—	(56)	(271)	(327)
Currencies	—	(25,829)	(297)	(26,126)
Commodities	—	(28,159)	(562)	(28,721)
Gross fair value	—	(99,620)	(1,291)	(100,911)
Counterparty netting in levels	—	80,050	313	80,363
Subtotal	\$ —	\$(19,570)	\$(978)	\$(20,548)
Cross-level counterparty netting				3,720
Cash collateral netting				5,219
Net fair value				\$ (11,609)

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.

Notes to Consolidated Statement of Financial Condition

- Derivative assets are shown as positive amounts and derivative 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 for Derivatives

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.

<i>\$ in millions, except inputs</i>	As of December 2022	
	Amount or Range	Average/Median
Currencies, net	\$ (161)	
Volatility	20% to 21%	20%/20%
Commodities, net	\$ 1,055	
Volatility	20% to 118%	50%/46%
Natural gas spread	\$(3.21) to \$5.85	\$(0.20)/\$(0.27)
Oil spread	\$12.68 to \$48.92	\$20.42/\$20.36
Electricity price	\$3.00 to \$329.28	\$47.19/\$39.69

Level 3 interest rates derivative assets (liabilities) were not material and therefore are not included in the table above. Each of the significant unobservable inputs for credit derivatives did not have a range (and there was no average/median) as each pertained to individual positions and therefore are not included in the table above.

In the table above:

- Derivative assets are shown as positive 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 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 oil spread inputs 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 volatility for commodities derivatives is appropriate for valuing a specific commodity derivative but may not be appropriate for valuing any other commodity derivative. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of level 3 derivatives.

- The fair value of any one instrument may be determined using multiple valuation techniques. For example, option pricing models and discounted cash flows models are typically used together to determine fair value. Therefore, the level 3 balance encompasses both of these techniques.
- 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 for Derivatives

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

- **Credit spreads.** The ranges for credit spreads 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.
- **Volatility.** Ranges for volatility cover numerous underliers across a variety of markets, maturities and strike prices.
- **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 for Derivatives

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 period-end:

- **Credit spreads.** In general, the fair value of purchased credit protection increases as credit spreads increase. Credit spreads 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.
- **Volatility.** In general, for purchased options, an increase in volatility results in a higher fair value measurement.

Notes to Consolidated Statement of Financial Condition

- **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 Transfers for Derivatives

Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur.

Transfers into level 3 derivatives during 2022 were \$167 million, primarily reflecting 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 were \$181 million, primarily reflecting transfers of certain commodity derivative assets to level 2 (principally due to certain unobservable natural gas spread and electricity prices no longer being significant to the valuation of these derivatives).

Fair Value of Other Financial Assets and Liabilities by Level

The table below presents, by level within the fair value hierarchy, other financial assets and liabilities accounted for at fair value under the fair value option.

\$ in millions	As of December 2022			
	Level 1	Level 2	Level 3	Total
Assets				
Resale agreements	\$ —	\$ 1,597	\$ —	\$ 1,597
Total	\$ —	\$ 1,597	\$ —	\$ 1,597
Liabilities				
Other secured financings	\$ —	\$ (3,782)	\$ —	\$ (3,782)
Unsecured borrowings:				
Short-term	—	(4,089)	—	(4,089)
Long-term	—	(3,059)	(9)	(3,068)
Other liabilities	—	(2)	—	(2)
Total	\$ —	\$ (10,932)	\$ (9)	\$ (10,941)

In the table above, other financial assets are shown as positive amounts and other financial 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 for Other Financial Instruments at Fair Value

See below for information about the significant unobservable inputs used to value level 3 other financial assets and liabilities at fair value.

Unsecured Long-Term Borrowings. As of December 2022, certain of the firm's unsecured long-term borrowings were classified in level 3, all of which are hybrid financial instruments. As the significant unobservable inputs used to value hybrid financial instruments primarily relate to the embedded derivative component of these borrowings, these unobservable inputs are incorporated in the firm's derivative disclosures in Note 7. See Note 11 for further information about unsecured borrowings.

Level 3 Transfers for Other Financial Instruments at Fair Value

There were no transfers into or out of level 3 other financial liabilities during 2022.

Note 6.

Financial Instruments Owned and Financial Instruments Sold, But Not Yet Purchased

Financial instruments owned and financial instruments sold, but not yet purchased include cash instruments and derivatives primarily held in connection with the firm's market-making or risk management activities. These assets and liabilities are accounted for at fair value either under the fair value option or in accordance with other U.S. GAAP.

The table below presents a summary of financial instruments owned and financial instruments sold, but not yet purchased.

\$ in millions	As of December 2022	
	Financial Instruments Owned	Financial Instruments Sold, But Not Yet Purchased
Cash instruments	\$ 8,643	\$ 53
Derivatives	14,091	11,609
Total	\$ 22,734	\$ 11,662

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

Notes to Consolidated Statement of Financial Condition

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 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 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 financial instruments owned and derivative liabilities are included in financial instruments sold, but not yet purchased.

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

<i>\$ in millions</i>	As of December 2022	
	Derivative Assets	Derivative Liabilities
OTC-cleared	\$ 28	\$ 34
Bilateral OTC	46,046	45,703
Total interest rates	46,074	45,737
Credit – bilateral OTC	23	327
Currencies – bilateral OTC	29,268	26,126
Exchange-traded	6,100	6,292
OTC-cleared	673	763
Bilateral OTC	30,218	21,666
Total commodities	36,991	28,721
Total gross fair value	\$ 112,356	\$ 100,911

Offset in the consolidated statement of financial condition

Exchange-traded	\$ (2,833)	\$ (2,833)
OTC-cleared	(612)	(612)
Bilateral OTC	(80,638)	(80,638)
Counterparty netting	(84,083)	(84,083)
Cash collateral netting – bilateral OTC	(14,182)	(5,219)
Total amounts offset	\$ (98,265)	\$ (89,302)

Included in the consolidated statement of financial condition

Exchange-traded	\$ 3,267	\$ 3,459
OTC-cleared	89	185
Bilateral OTC	10,735	7,965
Total	\$ 14,091	\$ 11,609

Not offset in the consolidated statement of financial condition

Cash collateral	\$ (14)	\$ (69)
Securities collateral	—	(239)
Total	\$ 14,077	\$ 11,301

<i>\$ in millions</i>	Notional Amounts as of December 2022	
Exchange-traded	\$	5,174
OTC-cleared		2,394
Bilateral OTC		5,414,619
Total interest rates		5,422,187
Credit – bilateral OTC		3,527
Currencies – bilateral OTC		753,826
Exchange-traded		278,959
OTC-cleared		2,923
Bilateral OTC		245,542
Total commodities		527,424
Equities – exchange-traded		4
Total notional amounts	\$	6,706,968

Notes to Consolidated Statement of Financial Condition

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 \$3.83 billion and derivative liabilities of \$2.48 billion, 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.

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 credit derivatives to manage the credit risk associated with market-making activities. 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.

Credit Default Swaps. Single-name credit default swaps protect the buyer against the loss of principal on one or more bonds (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.

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.

As of December 2022, written credit derivatives had a total gross notional amount of \$1.51 billion and purchased credit derivatives had a total gross notional amount of \$2.02 billion, for total net notional purchased protection of \$517 million. All of the firm's written and purchased credit derivatives are credit default swaps.

The table below presents information about credit derivatives.

	As of December 2022				
	Credit Spread on Underlier (basis points)				Total
<i>\$ in millions</i>	0 - 250	251 - 500	501 - 1,000	Greater than 1,000	
Maximum Payout/Notional Amount of Written Credit Derivatives by Tenor					
Less than 1 year	\$ 121	\$ 2	\$ 4	\$ 2	\$ 129
1 – 5 years	838	14	3	—	855
Greater than 5 years	518	2	1	—	521
Total	\$ 1,477	\$ 18	\$ 8	\$ 2	\$ 1,505
Maximum Payout/Notional Amount of Purchased Credit Derivatives					
Offsetting	\$ 984	\$ 15	\$ 7	\$ 2	\$ 1,008
Other	948	39	16	11	1,014
Fair Value of Written Credit Derivatives					
Asset	\$ 54	\$ 1	\$ —	\$ —	\$ 55
Liability	150	2	1	—	153
Net liability	\$ (96)	\$ (1)	\$ (1)	\$ —	\$ (98)

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.

Notes to Consolidated Statement of Financial Condition

Bifurcated Embedded Derivatives

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

<i>\$ in millions</i>	As of December 2022
Fair value of assets	\$ 64
Fair value of liabilities	\$ (164)
Net liability	\$ (100)
Notional amount	\$ 2,192

In the table above, derivatives that have been bifurcated from their related borrowings are recorded at fair value and consist of commodity products. These derivatives are included in unsecured short- and long-term borrowings 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 Group Inc.'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 Group Inc. 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 at the reporting date by counterparties in the event of a one- or two-notch downgrade in Group Inc.'s credit ratings.

<i>\$ in millions</i>	As of December 2022
Net derivative liabilities under bilateral agreements	\$ 2,180
Collateral posted	\$ 1,180
Additional collateral or termination payments:	
One-notch downgrade	\$ 125
Two-notch downgrade	\$ 299

Note 8.

Fair Value Option

Other Financial Assets and Liabilities at Fair Value

In addition to financial instruments owned and financial instruments sold, but not yet purchased, the firm accounts for certain of its other financial assets and liabilities at fair value 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 instruments owned 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).

Hybrid financial instruments are instruments that contain bifurcated 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. 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:

- Resale agreements;
- Other secured financings, including transfers of assets accounted for as financings;
- Most unsecured short-term borrowings, including certain prepaid physical commodity transactions and certain hybrid financial instruments;
- Certain unsecured long-term borrowings, including certain prepaid physical commodity transactions and certain hybrid financial instruments; and
- Certain other liabilities.

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 at fair value, and Note 5 for information about other financial assets and liabilities at fair value within the fair value hierarchy.

Notes to Consolidated Statement of Financial Condition

Long-Term Debt Instruments

The difference between the aggregate contractual principal amount and the related fair value of long-term other secured financings and long-term unsecured borrowings for which the fair value option was elected was not material as of December 2022.

Note 9.

Collateralized Agreements and Financings

Collateralized agreements are resale agreements. Collateralized financings are repurchase agreements and other secured financings. The firm enters into these transactions in order to, among other things, facilitate client activities and to 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 and collateralized financings is recognized over the life of the transaction.

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 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 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 statement of financial condition.

Offsetting Arrangements

The table below presents resale and repurchase agreements included in the statement of financial condition, as well as amounts not offset in the statement of financial condition.

<i>\$ in millions</i>	As of December 2022	
	Assets	Liabilities
	Resale agreements	Repurchase agreements
Included in the statement of financial condition		
Gross carrying value	\$ 2,001	\$ 404
Counterparty netting	(404)	(404)
Total	1,597	—
Amounts not offset		
Collateral	(1,454)	—
Total	\$ 143	\$ —

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 the fair value of collateral received or posted subject to enforceable credit support agreements.
- Resale agreements 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.

Other Secured Financings

The firm funds certain assets through the use of other secured financings, which consist of transfers of assets accounted for as financings rather than sales (i.e., pledged commodities).

The firm has elected to apply the fair value option to 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 8 for further information about other secured financings that are accounted for at fair value.

The table below presents information about other secured financings.

<i>\$ in millions</i>	As of December 2022	
Other secured financings (short-term)	\$	3,440
Other secured financings (long-term)		342
Total other secured financings	\$	3,782
Other secured financings collateralized by financial instruments	\$	2,681

Notes to Consolidated Statement of Financial Condition

In the table above:

- Short-term other secured financings includes financings maturing within one year of the financial statement date.
- Other secured financings collateralized by financial instruments included \$2.34 billion of other secured financings collateralized by financial instruments owned, and \$337 million of other secured financings collateralized by financial instruments received as collateral and repledged.

The table below presents other secured financings by contractual maturity.

<i>\$ in millions</i>	As of December 2022
Other secured financings (short-term)	\$ 3,440
Other secured financings (long-term):	
2023	291
2024	51
Total other secured financings (long-term)	342
Total other secured financings	\$ 3,782

Collateral Received and Pledged

The firm receives cash, securities (e.g., U.S. government and agency obligations, and other sovereign and corporate obligations) and commodities as collateral, primarily in connection with resale agreements, derivative transactions and metal swaps transactions. 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. The firm is also permitted to deliver or repledge these financial instruments in connection with other secured financings and collateralized derivative transactions.

The firm also pledges certain financial instruments owned in connection with repurchase agreements and 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.

<i>\$ in millions</i>	As of December 2022
Collateral available to be delivered or repledged	\$ 2,163
Collateral that was delivered or repledged	\$ 1,134

The table below presents information about assets pledged.

<i>\$ in millions</i>	As of December 2022
Financial instruments owned, pledged to counterparties that had the right to deliver or repledge	\$ 3,362

Note 10.

Other Assets

The table below presents other assets by type.

<i>\$ in millions</i>	As of December 2022
Receivables from affiliates	\$ 70
Income tax-related assets	14
Miscellaneous receivables and other	42
Total	\$ 126

Note 11.

Unsecured Borrowings

The table below presents information about unsecured borrowings.

<i>\$ in millions</i>	As of December 2022
Unsecured short-term borrowings	\$ 4,206
Unsecured long-term borrowings	4,275
Total	\$ 8,481

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 8 for further information about unsecured short-term borrowings that are accounted for at fair value. 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, they would have been classified in level 2 as of December 2022.

Notes to Consolidated Statement of Financial Condition

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

<i>\$ in millions</i>	As of December 2022
Hybrid financial instruments	\$ 4,160
Other unsecured short-term borrowings	45
Borrowings from Group Inc.	1
Total unsecured short-term borrowings	\$ 4,206
Weighted average interest rate	4.73%

Unsecured Long-Term Borrowings

Unsecured long-term borrowings consists of floating rate U.S. dollar denominated borrowings with maturities extending through 2046. The floating interest rates are generally based on London Interbank Offered Rate.

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

<i>\$ in millions</i>	As of December 2022
2024	\$ 1,876
2025	993
2026	161
2027	86
2028 - thereafter	1,159
Total	\$ 4,275

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.

The table below presents unsecured long-term borrowings.

<i>\$ in millions</i>	As of December 2022
Fixed-rate obligations:	
At fair value	\$ 53
At amortized cost	1,207
Floating-rate obligations at fair value	3,015
Total	\$ 4,275

In the table above, the aggregate amounts of unsecured long-term borrowings related to fixed rate obligations had a weighted average interest rate of 5.03% as of December 2022. This rate excludes unsecured long-term borrowings accounted for at fair value under the fair value option.

The firm did not elect the fair value option for certain of its long-term borrowings. As of December 2022, the carrying value of such unsecured long-term borrowings was \$1.21 billion and the estimated fair value was \$1.20 billion. 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, they would have been classified in level 2 as of December 2022.

Note 12.

Subordinated Borrowings

As of December 2022, the firm had outstanding borrowings of \$3.00 billion from Group Inc. under a revolving subordinated loan agreement, maturing in 2024.

The interest rate on these subordinated loan agreements is the Secured Overnight Financing Rate plus 2.25% per annum. The carrying value of these borrowings approximates fair value. As these subordinated loan 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 borrowings been included in the firm's fair value hierarchy, substantially all would have been classified in level 2 as of December 2022.

The subordinated borrowings from Group Inc. are available in computing net capital requirements under the bank-based method under CFTC Regulation. To the extent that such borrowings are required for the firm's continued compliance with minimum net capital requirements, they may not be repaid.

Note 13.

Other Liabilities

The table below presents other liabilities by type.

<i>\$ in millions</i>	As of December 2022
Income tax-related liabilities	\$ 313
Payables to affiliates	246
Compensation and benefits	48
Accrued expenses and other	67
Total	\$ 674

Notes to Consolidated Statement of Financial Condition

Note 14.

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 common equity and guarantees.

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 investments in 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:

Commodity-Related VIEs. The firm purchases equity issued by and sells commodities to VIEs that primarily hold receivables from Group Inc. The firm also guarantees certain obligations of VIEs.

Nonconsolidated VIEs

The table below presents information for nonconsolidated VIEs in which the firm holds variable interests.

<i>\$ in millions</i>	As of December 2022	
Commodity-related		
Assets in VIEs	\$	9,494
Carrying value of variable interests – assets	\$	230
Carrying value of variable interests – liabilities	\$	1
Maximum exposure to loss:		
Guarantees	\$	97
Debt and equity		230
Total	\$	327

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 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 guarantees 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 guarantees.
- The maximum exposure to loss from debt and equity is the carrying value of these interests.

As of December 2022, the carrying values of the firm's variable interests in nonconsolidated VIEs are included in other assets and financial instruments sold, but not yet purchased.

Notes to Consolidated Statement of Financial Condition

Consolidated VIEs

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

<i>\$ in millions</i>	As of December 2022
Commodity-related	
<i>Assets</i>	
Cash	\$ 1
Financial instruments owned	1,338
Total	\$ 1,339
<i>Liabilities</i>	
Other secured financings	\$ 1,338
Total	\$ 1,338

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.

Note 15.

Commitments, Contingencies and Guarantees

Commitments

The table below presents commitments by type.

<i>\$ in millions</i>	As of December 2022
Commitment Type	
Non-investment-grade commercial lending	\$ 407
Letters of credit	306
Other	290
Total commitments	\$ 1,003

The table below presents commitments by expiration.

<i>\$ in millions</i>	As of December 2022			
	2023	2024 - 2025	2026 - 2027	2028 - Thereafter
Commitment Type				
Non-investment-grade				
commercial lending	\$ 147	\$ 253	\$ —	\$ 7
Letters of credit	264	33	—	9
Other	290	—	—	—
Total commitments	\$ 701	\$ 286	\$ —	\$ 16

Lending Commitments

The firm's 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 accounts for the commitments to extend credit at fair value and gains or losses related to such lending commitments, if any, are recorded net of any fees in market making.

Letters of Credit

The firm has commitments under letters of credit issued by various banks which the firm provides to counterparties in lieu of securities or cash to satisfy various collateral requirements.

Contingencies — Legal Proceedings

See Note 20 for information about legal proceedings.

Guarantees

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

<i>\$ in millions</i>	As of December 2022	
	Derivatives	Other financial guarantees
Carrying Value of Net Liability	\$ 498	\$ 2
Maximum Payout/Notional Amount by Period of Expiration		
2023	\$ 6,441	\$ 20
2024 - 2025	11,221	38
2026 - 2027	3,255	54
2028 - thereafter	—	37
Total	\$ 20,917	\$ 149

In the table above:

- The maximum payout is based on the notional amount of the contract and does not represent anticipated losses.
- The carrying value for derivatives included derivative assets of \$79 million and derivative liabilities of \$577 million.

Notes to Consolidated Statement of Financial Condition

Derivative Guarantees. The firm enters into various derivatives that meet the definition of a guarantee under U.S. GAAP, including written 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 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.

Other Financial Guarantees. In the ordinary course of business, the firm provides other financial guarantees of the obligations of third parties (e.g., other guarantees to enable clients to complete transactions). 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.

Note 16.

Regulation and Capital Adequacy

As a registered swap dealer, the firm is subject to the regulatory capital requirements imposed by the CFTC and the National Futures Association. Part 23 Subpart E of the CFTC rules specify uniform minimum capital requirements, as defined, for their registrants. The firm has elected to compute its minimum capital risk-based requirements in accordance with the bank-based capital requirements under the CFTC regulation, which require a Common Equity Tier 1 Capital ratio (CET1) and Total Capital ratio of at least 6.5% and 8%, respectively. As of December 2022, the firm had a CET1 ratio of 11.8% and a Total Capital ratio of 17.1%.

Note 17.

Transactions with Related Parties

The firm enters into transactions with Group Inc. and affiliates in the normal course of business as part of market making and general operations.

The table below presents assets and liabilities with affiliates.

<i>\$ in millions</i>	As of December 2022	
Assets		
Cash	\$	3,914
Resale agreements		1,997
Receivables from customers and counterparties, brokers, dealers and clearing organizations		5,625
Financial instruments owned		1,940
Other assets		70
Total	\$	13,146
Liabilities		
Other secured financings	\$	2,438
Payables to customers and counterparties, brokers, dealers and clearing organizations		835
Financial instruments sold, but not yet purchased		645
Unsecured short-term borrowings		208
Unsecured long-term borrowings		73
Other liabilities		246
Subordinated borrowings		3,000
Total	\$	7,445

In the table above, financial instruments owned and financial instruments sold, but not yet purchased, consist of derivative contracts with affiliates, prepaid commodity transactions and transfers of assets accounted for as secured loans rather than purchases.

The firm is subject to service charges from affiliates for employment related costs of employees of affiliates.

The firm receives operational and administrative support and management services from affiliates.

The firm has revenue sharing agreements with affiliated entities related to certain activities under which it transfers revenues to, and receives revenues from, such entities. Revenues related to market and credit risk exposures held by the firm or by affiliated entities that arise from activities covered by these agreements are shared among the firm and these entities.

Notes to Consolidated Statement of Financial Condition

Note 18.

Income Taxes

The Inflation Reduction Act of 2022 includes income tax incentives to encourage investments in clean energy and a new 15% corporate alternative minimum tax (CAMT). The CAMT applies to corporations with average annual profits over \$1 billion and is calculated on their financial statement income, with certain adjustments, for years beginning after December 31, 2022. The legislation had no impact on the firm for 2022 and based on our current understanding of the CAMT, is not expected to have a material impact on the firm for 2023.

Provision for Income Taxes

The firm has elected to be taxed as a corporation for U.S. federal income tax purposes. As a corporation for tax purposes, the firm is subject to U.S. federal and various state and local income taxes on its earnings. The firm is included with Group Inc. and subsidiaries in the consolidated corporate federal tax return as well as consolidated or combined state and local tax returns. The firm computes its tax liability on a modified separate company basis and settles such liability with Group Inc. pursuant to a tax sharing arrangement. To the extent the firm generates tax benefits from losses, it will be reimbursed by Group Inc. pursuant to the tax sharing arrangement. The firm's state and local tax liabilities are allocated to reflect its share of the consolidated or combined state and local income tax liability.

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.

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. As of December 2022, the firm had no valuation allowance to reduce deferred tax assets. Tax liabilities are included in other liabilities.

The table below presents information about deferred tax assets and liabilities.

<i>\$ in millions</i>	As of	
	December 2022	
Deferred tax assets		
Compensation and benefits	\$	16
Depreciation and amortization		1
Total deferred tax assets	\$	17
Deferred tax liabilities		
Unrealized gains	\$	5
Total deferred tax liabilities	\$	5

Unrecognized Tax Benefits

The firm recognizes tax positions in the consolidated statement of financial condition 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 statement of financial condition.

As of December 2022, the firm had no net liability for unrecognized tax benefits.

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 New York State and City. The tax years under examination vary by jurisdiction.

Group Inc. has been accepted into the Compliance Assurance Process program by the IRS for each of the tax years from 2013 through 2023. This program allows Group Inc. 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 and 2012 tax years have been resolved and completion is pending final review by the Joint Committee on Taxation (JCT). During 2022, Group Inc. reached an agreement with IRS Appeals on the remaining issues for tax years 2012 through 2019. Subject to final review by JCT, this agreement will not have a material impact on the firm. During 2022, the fieldwork for the 2020 tax year was completed and the final resolution is not expected to have a material impact on the firm. The 2021 tax year remains subject to post-filing review.

Notes to Consolidated Statement of Financial Condition

New York State and City examinations of tax years 2015 through 2018 commenced during 2021. All years, including and subsequent to 2015 for New York State and City and all other significant states, remain open to examination by the taxing authorities.

Note 19.

Credit Concentrations

The firm's concentrations of credit risk arise from its market making activities and collateralized transactions, 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 counterparty, borrower, 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.

As of December 2022, the firm had credit exposure with a global clearinghouse which represented 10.3% of total assets. The firm did not have credit exposure to any other external counterparty that exceeded 5.0% of total assets.

Note 20.

Legal Proceedings

The firm is involved in a number of judicial, regulatory and arbitration proceedings 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.

With respect to material proceedings, management is generally unable to estimate a range of reasonably possible loss for matters 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.

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.

Note 21.

Employee Benefit Plans

The firm's employees participate in various Group Inc. sponsored pension plans and certain other postretirement benefit plans, primarily healthcare and life insurance. The firm, through Group Inc., also provides certain benefits to former or inactive employees prior to retirement. The cost of these plans is allocated to the firm by Group Inc.

Defined Benefit Pension Plans and Postretirement Plans

Group Inc. 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, Group Inc. 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.

Defined Contribution Plans

The firm contributes to Group Inc.'s employer-sponsored U.S. defined contribution plan.

Notes to Consolidated Statement of Financial Condition

Note 22.

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 are paid on outstanding restricted stock units (RSUs).

Stock Incentive Plan

Group Inc. 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, Group Inc.'s 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 Group Inc.'s shareholders. The 2021 SIP is scheduled to terminate on the date of Group Inc.'s annual meeting of shareholders that occurs in 2025.

Restricted Stock Units

Group Inc. grants RSUs 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 Group Inc. expects to make available shortly following grant. RSUs generally vest and underlying shares of common stock deliver (net of required withholding tax) 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 generally vest and deliver over a three-year period. The subsequent amortization of the cost of these RSUs is allocated to the firm by Group Inc.

The table below presents the 2022 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	16,128	91,084	\$ 254.25	\$ 241.90
Granted	33,312	73,053	\$ 331.12	\$ 316.93
Forfeited	(7,385)	—	\$ 283.16	\$ —
Delivered	—	(57,770)	\$ —	\$ 248.78
Vested	(12,823)	12,823	\$ 286.20	\$ 286.20
Transfers	31	—	\$ 347.32	\$ —
Ending balance	29,263	119,190	\$ 320.57	\$ 289.32

In the table above:

- The weighted average grant-date fair value of RSUs granted was \$321.38 during 2022. The fair value of the RSUs granted included an average liquidity discount of 6.4% during 2022 to reflect post-vesting and delivery transfer restrictions, generally of 1 year.
- The aggregate fair value of awards that vested was \$27 million during 2022.

In relation to 2022 year-end, during the first quarter of 2023, Group Inc. granted to the firm's employees 81,549 RSUs (of which 22,987 RSUs require future service as a condition of delivery for the related shares of common stock). RSU are subject to additional conditions as outlined in the award agreements. Shares underlying these RSUs, net of required withholding tax, generally deliver 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.

Note 23.

Subsequent Events

In February 2023, the firm entered into an agreement to lend up to \$2.00 billion to Group Inc., and the full amount was drawn.

Management has evaluated subsequent events through February 28, 2023, the date the consolidated statement of financial condition was issued, and determined that there were no other material events or transactions that would require recognition or disclosure in this consolidated statement of financial condition.